

Buying Crafts

Objective - Consumers become aware of the aspects of
buying crafts

Uses: Special Interest meetings

Craft Leader's report

Radio

News article

This information was not designed for Extension Homemaker
Club Meetings

Additional Material

Slides and script on Buying Crafts

September 1968

Buying Crafts

(Suggested outline for a special interest meeting on Buying Crafts)

Advanced planning

1. If possible collect good crafts for an exhibit
2. Arrange to show slides on Buying Crafts
3. Study lesson sheet on Buying Crafts
4. Plan follow-up activities. These could include educational tours to craft shops, craft exhibits, craft fairs, etc.

Meeting

1. If possible arrange exhibit of good crafts
2. Present talk on "Buying Crafts"
3. Show and discuss slides
4. Discuss exhibit
5. Discuss follow-up plans and activities

NOTE: If in 1969 you want to use the slides on "Buying Crafts", please request them now. Do Not wait until plan of work time to send your request. The state office needs to know by November 1, 1968, what agents want to use the slides and when they want them. This will give time to get slides duplicated and in the hands of the agents who want to use them in January. This early request will help to reserve the slides for when you want them. Your County Plan of Work is due usually on November 1, but oftentimes specialists do not receive copies until 2 or 3 weeks later. Please use the form below.

September 1968

(Cut here)

Send to Marjorie Shearin
by November 1, 1968 or sooner

County _____
Agent _____
Date _____

Please reserve the slides on "Buying Crafts" for me as follows:

First choice date _____
Second choice date _____
Third choice date _____

If at all possible, you will receive your first choice date.
Please do not send but one request per county.

Buying Crafts

Craftsmen are creators of beauty. Consumers enjoy and use in their homes beautiful objects created by craftsmen. In buying a beautiful craft a consumer can enjoy having a "one of a kind" piece of art. Craft objects are distinctive as each craftsman has his own individual style and no other craftsman works in this style. Using distinctive crafts is one way to create interest and individuality in ones home.

The investment in a good craft is like an investment in an original painting: it's value increases with age. If you keep the investment aspect in mind when crafts are bought, you need to be a discriminating shopper. Only buy those crafts that you think are truly beautiful and that will add beauty in your home. Look for beauty and good quality in wood carvings, textiles, rugs, glass, metals, needlecrafts, etc. Crafts of good quality include good workmanship, use of the best available materials, good design, and a wise choice of color. All crafts of good quality include these four characteristics. Delete any one and the quality of a craft item declines sharply. It is the combination of good workmanship, good materials, good design, and the use of color that makes for the best in quality.

Many good crafts are expensive. If recently you have hired someone to weave a cane seat, you may have thought the craftsman charged too much for his work. On the other hand, if ever you have spent two days (about fifteen hours) learning to weave a cane seat, you are more appreciative of the time and talents spent by the hired craftsman.

In this day and time "time is money." Craftsmen must charge enough for their work so they can justify time spent in creative ventures. Craftsmen must price their products to receive a fair profit over and above production costs, which includes time. After all craftsmen must provide for their families as do other gainfully employed people. This is why objects made by hand are more expensive than machine made items.

Good taste is involved in buying crafts to use in the home. Good taste denotes certain standard; it is not what one happens to like or dislike. One can improve his taste and standards in crafts by seeing and studying beautiful crafts made by others. Find out what is being offered today in the craft market. Visit good craft shops and exhibits. We have many in North Carolina. See what crafts are available and how much they cost. Attend the Craftsmen's Fairs to see and visit with craftsmen at work. Craft fairs are sponsored annually in North Carolina by the Southern Highland Handicraft Guild in Asheville in July; the Albemarle Craftsman's Guild in Elizabeth City in April or September; Piedmont Craftsmen, Inc., in Winston-Salem in November; and the State Fair in October.

Not everything of beauty we use in our homes is expensive. A beautiful rock found on the seashore or in a river bed can be used as a paper weight or in flower arrangements. Oftentimes you find beautiful driftwood that can be used effectively in the home. But if you are going to buy beautiful crafts for your home you can expect most of them to be rather expensive. Remember, however, that crafts can be a good investment that with age will increase in value. Be a discriminating shopper, but remember that time, labor, and creative ability determine retail prices. This is why good crafts are more expensive than machine made objects.

BUYING CRAFTS

This form is designed to get some indication of consumers' awareness of the aspects in buying crafts.

Section A

1. Number of special interest meetings held by agents _____
2. Number of craft leaders giving reports _____
3. Number of radio programs given _____
4. Number of news articles published _____

Section B (please read and check the answer that seems most correct)

1. Crafts are a good investment because
 - a. _____ They are expensive
 - b. Their value increase with age
 - c. _____ Crafts are popular today
2. Good crafts are expensive because
 - a. _____ "Time is money"
 - b. _____ Crafts are handmade
 - c. Craftsmen must price their products to receive a fair profit
3. Good taste in crafts
 - a. Denotes a certain standard
 - b. _____ Is what a buyer likes
4. Check the statement which best describes good quality in crafts
 - a. _____ Good workmanship
 - b. _____ Good workmanship and good design
 - c. A combination of good design, and a wise choice of color

NOTE: This is a key sheet. Leave off x's when reproducing for county use

Outline for Lesson on

Furnishing Your Home: Buying Upholstered Furniture

Teaching Objective: To provide information to help families become knowledgeable consumers of upholstered furniture.

Recommendations and Teaching Aids: This bulletin is designed to provide competency in the selection of upholstered furniture.

Agent presentation is recommended. Can be used effectively for regular monthly meetings or for special interest groups.

There is a kit for loan which contains upholstery components - including samples of upholstery fabrics.

I. Introduction

Today's upholstered furniture comes in a wide selection of styles, sizes, qualities and prices.

A. It may be fully upholstered or partly upholstered.

B. The choice is influenced by many factors.

1. The atmosphere desired
2. Personal preference
3. Furnishings on hand
4. The floor space
5. The furnishings Budget

II. Many exposed outside features offer indications of general quality.

A. Tailoring

1. Fabric grain line should be straight and even
2. Pattern centered and straight
3. Cording, welting or finish edge even and smooth
4. Amount and type of decorative detail

B. Upholstery coverings

1. Upholstery fabrics

- a. Should be strong and closely woven.
- b. Rubber or synthetic coating often used to stabilize fabric and facilitate handling.
- c. Each fiber has characteristics that determine wear.
- d. Label should indicate light fastness.
- e. Special finishes provide spot and stain resistance.

2. Leather

- a. Excellent but expensive upholstery fabric.
- b. Has been improved to soften and permit detail tailoring.
- c. Available in wide range of colors and textures.

3. Vinyl plastic

- a. Available in many qualities.
- b. Some have backing; others do not.
- c. High-quality vinyl is very durable.

4. Exposed surface

- a. Exposed wooden parts should be well finished.
- b. Upholstery should fit smoothly to exposed areas.

III. Many of the inside features determine serviceability.

A. Framework

1. Must be constructed to withstand stress and strain.
2. Must be of hardwood, free of imperfections.
3. Some of newer frames of metal or rigid foam.

B. The Springs

1. Used for resilience.
2. There are two major types.
 - a. Flat "S" type - often referred to as arch or zig-zag
 - b. Coil type
3. Usually placed on and attached to webbing or steel bands.
4. Proper tying is important.

C. Padding and filling

1. Should be selected and applied to add comfort and smooth shape.
2. Many different types are used.
 - a. Goosedown
 - b. Rubberized or curled hair
 - c. Latex or rubber foam
 - d. Urethane foam
 - e. Man-made fiber fills
 - (1) Dacron
 - (2) Acrilan
 - f. Natural hair
 - g. Cotton

IV. Upholstered furniture should provide seating and sometimes sleeping comfort.

- A. Should be selected for persons who will use it.
- B. Dimensions of piece help determine comfort.
- C. Test for seating comfort.

V. Glossary of upholstery terms.

References:

- Faulkner, Ray and Sarah Faulkner. Inside Today's Home. New York: Holt, Rinehart and Winston, revised 1968.
- Schoenfeld, Morton. Newlywed's Furniture Handbook. New York: Crown Publishers, 1960.
- Stepet-Devan, Dorothy. Introduction to Home Furnishings. New York: The MacMillan Company.

Suggested Evaluation for

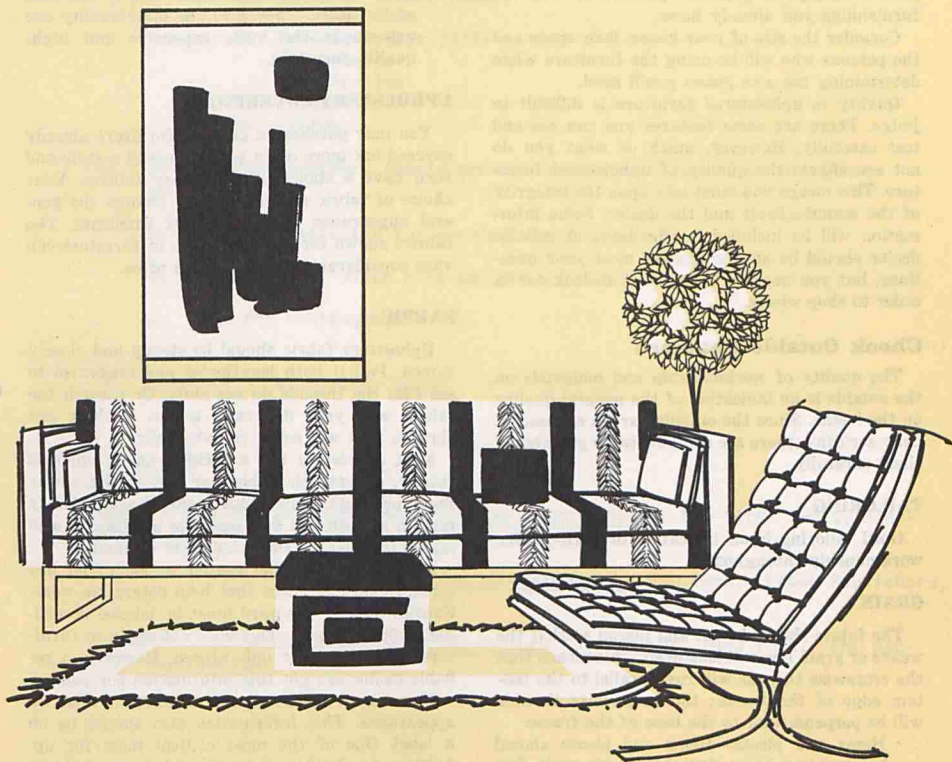
Furnishing Your Home: Buying Upholstered Furniture

In buying upholstered furniture, each homemaker must decide which piece will best serve her needs and fit her budget. Since it is difficult to judge quality in upholstered furniture, there are some basic guidelines which help to assure wise choice in buying this type of furniture. Read the list below and write the word 'yes' before those statements which you feel are correct and the word 'no' before those which you feel are not correct.

- no 1. Good tailoring is always an indication of high quality workmanship throughout a piece of upholstered furniture.
- yes 2. In a quality upholstered piece, the fabric under the cushion and across the back are the same as that used for the more exposed areas.
- no 3. Spot and stain resistant finishes are used on all upholstery fabrics.
- yes 4. Many of the features that determine quality of upholstered pieces are not exposed.
- no 5. Joints of upholstered pieces are always reinforced with corner blocks.
- yes 6. In a majority of light-scaled upholstered pieces, flat springs are used instead of coil springs.
- yes 7. Padding should be selected and applied to provide an even smooth shape that will not shift or lump.
- yes 8. The test of an upholstered piece is in the seating comfort.

* Attention Home Economics Agent: The key is provided for agent use only. Please caution homemakers to read instructions carefully. Make any revisions you deem appropriate to measure homemaker competency following the lesson. Evaluation should be made an interesting experience.

Buying Upholstered Furniture



furnishing your home

Buying Upholstered Furniture

SUGGESTIONS FOR SCORING AND SUMMARIZING

In order to get a complete picture of homemaker competence after teaching the lesson, it is suggested that the home economics agent responsible for the lesson prepare a county summary from the evaluation forms to include the information listed below:

1. Name of agent and county
2. Total number of persons receiving lesson.
3. Tabulate scores using this system

No. Correct Answers	Rating	Percent Homemakers Scoring
8 correct	Excellent	_____
7-6 correct	Good	_____
5 and below	Poor - further learning is needed	_____

4. Write brief summary pointing up the highlights and implications for future programming.
5. Send one copy of the county summary on questionnaire form to specialist involved so that district and state summaries may be made.

Buying Upholstered Furniture

Today's upholstered furniture comes in a wide variety of styles, sizes, qualities and prices. When you get ready to select a chair or sofa, you must decide which piece will best serve your needs and fit your budget. The choice of style is determined by the general atmosphere you wish to create in your home, your personal preference and the furnishings you already have.

Consider the size of your house, floor space and the persons who will be using the furniture when determining the size pieces you'll need.

Quality in upholstered furniture is difficult to judge. There are some features you can see and test carefully. However, much of what you do not see affects the quality of upholstered furniture. This means you must rely upon the integrity of the manufacturer and the dealer. Some information will be included on the label. A reliable dealer should be able to answer most your questions, but you need to know what to look for in order to shop wisely.

Check Outside Features

The quality of workmanship and materials on the outside is an indication of the general quality on the inside. Since the outside part is exposed to daily scrutiny, there are some features you should check carefully.

TAILORING

Good tailoring is an indication of high-quality workmanship throughout.

GRAIN

The fabric should be cut and placed so that the weave or grain line will look even. This means that the crosswise threads will run parallel to the bottom edge of the frame; the lengthwise threads will be perpendicular to the base of the frame.

- Hems and pleats—Hems and pleats should be even and hang straight. Check grain line carefully.
- Pattern—Fabric patterns, whether large or small, should be centered and carefully placed. The placement of pattern, particularly bold patterns, on the back, cushion, front and arms should be placed to best advantage.
- Welting—The cording or welting should be smooth, straight and firmly stitched.
- Cushions—Cushions should fit snugly into seat corners and with adjoining cushions. Re-

versible cushions will help distribute wear.

- Use of fabric—In better quality furniture the areas under the cushions and across the back are of the same quality fabric as that used for the more exposed areas.
- Decorative detail—Tufting, trapunto, buttons and other decorative details add to the cost of furniture. They give the individuality one expects in the more expensive and high-quality furniture.

UPHOLSTERY COVERINGS

You may purchase a piece of furniture already covered but more often you will select a style and then have a choice of upholstery fabrics. Your choice of fabric may completely change the general appearance of the piece of furniture. The fabrics shown for the same piece of furniture can vary considerably in quality and price.

FABRIC

Upholstery fabric should be strong and closely woven. Pull it both lengthwise and crosswise to see that the threads do not shift. Or scratch the fabric with your fingernail to see if there are threads that will catch or pull easily.

Most upholstery has a backing finish which is rubber, a synthetic rubber or one of the newer foam products. This helps make the upholstery remain smooth and firm over the padding. It also makes it easier for the upholsterer to handle.

Learn about the fiber content as each fiber has certain characteristics that help determine wear. Fabrics sold by the yard must be labeled according to fiber content. This does not apply to furniture that is already upholstered. However, a reliable dealer can get this information for you.

You cannot tell about the fastness of color by appearance. This information also should be on a label. One of the most critical tests for upholstery is whether or not the fabric is color-fast to light.

Finishes are available to add spot- and stain-resistance to all fabrics regardless of fiber content. Some protect against water-borne stains; some protect against water and oily stains. They also give increased resistance to wear. If a fabric has been treated for spot- and stain-resistance, this information is usually included on the label. Permanent mothproofing prevents moth damage to wools and wool blends.

All of the classic types of fabric are being made and used—tapestry, damask, brocade, homespun, bouclé, frieze and plush as well as velvet, tweeds and chintz. See fabric glossary page 5. Each of these fabrics is made in a number of different fibers or combination of fibers. Many of the newer fabrics are described by textures, color combinations or the country of origin.

LEATHER

Leather is an excellent though expensive upholstery material. Improvements have made leather softer, thus making beautiful tailoring detail easier. Leathers are available in a lovely range of colors and textures.

VINYL PLASTICS

There are many qualities of vinyl plastics. Some look like leather; some like fabric. Some have a fabric backing; others do not.

Low-quality vinyl tears at the corners and splits at the seams. It also has low resistance to stains and fading.

Vinyl is easily cleaned. It is waterproof. Vinyl is difficult to repair once it breaks.

EXPOSED SURFACES

If a piece of furniture has legs or a frame that is not covered, examine the finish carefully. The wood should have an even color and rich texture. Any carving or ornamental detail should be refined and smooth. The upholstery should be fitted attractively and joined evenly to exposed wood surfaces.

Check Inside Features

The quality of features within the piece of furniture determines serviceability, durability and comfort. You need to know something about the way upholstered furniture is made in order to ask questions about the piece you are considering. You can learn much about quality from comparing upholstered pieces.

FRAMEWORK

The basic frame must be designed and constructed to withstand stress and strain over a long period of time. A hardwood that is free from imperfections and that has been kiln dried is most desirable. Hackberry, elm, gum, maple and oak

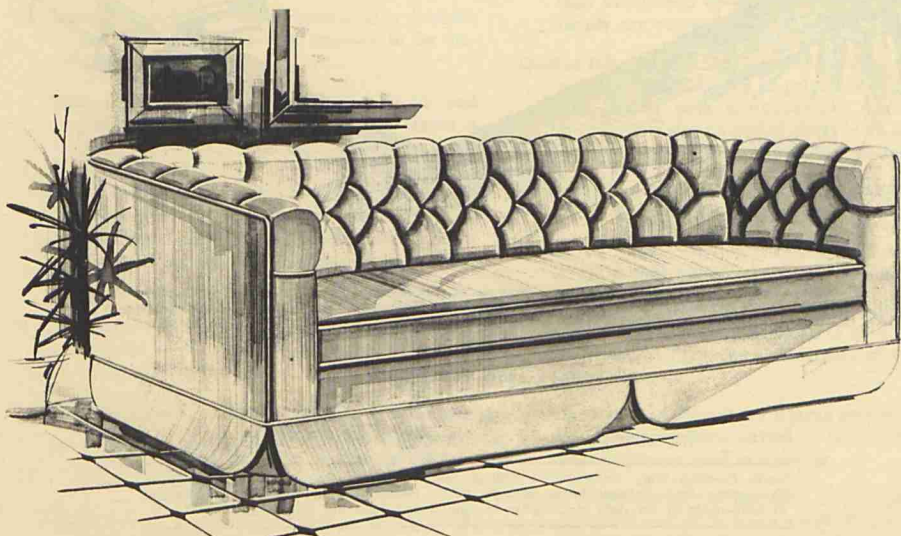


Figure 1. Good piece of furniture pointing out what to look for.

are most commonly used. The frame must hold screws and nails securely.

The joints of quality furniture are usually double dowel construction. Corners should be reinforced with triangular blocks carefully fitted and fastened with glue and screws. Metal plates are often used to strengthen corners.

In some of the newer furniture the complete framework is being made of metal.

THE SPRINGS

Bands of webbing are interlaced and tacked to the frame of most sofas and chairs. Woven jute is commonly used for webbing because it is strong, durable and resilient. Sometimes steel bands or rubber are used. Webbing is not needed for those springs attached directly to the frame.

Springs are used to add resilience to seating. For durability they should be made of tempered steel and placed close together. Better quality furniture may have twelve coils per seat, and no less than eight.

Springs are attached to the webbing or steel bands. Proper tying is important to keep the springs firmly in place and to provide proper resiliency. In the best quality furniture, springs are placed on jute or rubber webbing and tied eight times with flax twine. On steel webbing or bands they should be wire clipped. You can tell something about spring construction by the way the springs feel from underneath the dust cover.

A layer of burlap, cotton felt or rubberized sisal should be placed over the springs to separate them from the padding and to help support and keep filling materials in place. In some light scaled upholstered pieces, flat springs (zigzag or arch type) are used instead of coil springs. These springs do not need the support of webbing nor do they need to be tied.

PADDING AND FILLING

A quality piece of furniture has an ample amount of filling selected and applied so that the piece retains its shape for a long time. Inferior quality is evident when the filling shifts, mats, lumps or distorts the shape rather quickly.

Various fillings are available and are often used in combination. Many states require a label to identify the filling content. However, the label does not indicate the grade or quality of filling material and this can vary widely for each type.

Goose down is a favorite because of its luxurious softness. Goose down or a combination of down and goose feathers is found in many expensive upholstered pieces.

Rubberized or curled hair is used in medium- and low-cost furniture. It has a fair amount of resilience, is cool, nonabsorbent and odor-free.

Rubber foam is durable, comfortable and resilient. It is lightweight and retains its shape. Generally speaking, it is used in the medium- and higher-priced furniture.

Urethane foam is resilient, lightweight and does not absorb water, perspiration and cleaning fluids. It can be cut, sliced, stitched or glued and has high resistance to tearing.

Man-made fiberfills such as a Dacron polyester and Acrilan acrylic are used as complete filling or wrapping for other filling. They are resilient, and resist insects, mildew, drycleaning solvents and alcohol. If properly made, they need no fluffing.

Natural hair remains resilient over a long period of time. Horse hair is best but cattle and hog hairs are also used.

Moss, kapok and sisal have a relatively short life expectancy. They are used in the lower quality grades of furniture.

Cotton padding is often used in combination with other materials. It has little resiliency but it does provide a firm, smooth surface.

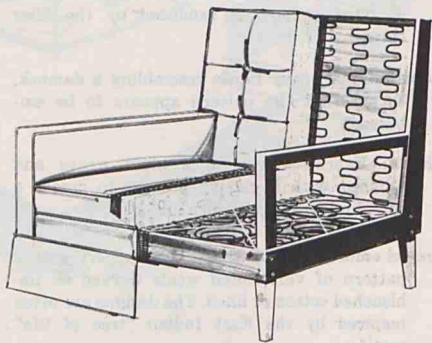


Figure 2. Cutaway of upholstered piece.

Comfort

You depend on upholstered furniture in your home for comfort in sitting and sometimes sleeping. Therefore, when selecting a piece of furniture you should consider the people who will be using it most often.

A seat that slants toward the back is usually most comfortable. It should be the right height so a person can rest his feet comfortably on the

floor and the right depth so he has good back support.

The height, width and slant of the seat and the back should be tested carefully. The height of the arms will also affect comfort. Try sitting in chairs and sofas of different heights, with and without arms. Then make your choice in terms of the purpose the piece will serve.

No upholstered piece of furniture should be selected hurriedly. Each piece deserves careful study and thought. That way you will select the piece that best suits your needs.

Additional references in *Furnishing Your Home Series*:

H.E. 75: *Begin with a Plan*

H.E. 78: *Buying Case Goods*

H.E. 80: *Arranging Furniture*

H.E. 79: *The Furniture Story: Periods and Styles*

Glossary

Appliqué: A pattern that is cut out and sewed or applied on the surface of another material.

Bouclé: An irregular, tightly looped yarn that gives a rough, nubby appearance when woven.

Brocade: A kind of weave, also a finished cloth, which, although made on a loom, resembles embroidery. It is woven on a Jacquard loom. A relief pattern is produced by the filler thread.

Brocatelle: A heavy fabric resembling a damask, except that the pattern appears to be embossed.

Chintz: Fabrics woven in a plain weave and finished with a glazing process to create a soft, lustrous appearance and hand.

Crewel embroidery: A kind of embroidery with a pattern of varicolored wools worked on unbleached cotton or linen. The designs are often inspired by the East Indian "tree of life" motif.

Frisé (free-zay): A looped pile fabric with designs created by cut or uncut loops, by use of different colored yarns.

Guimpe (gämp): A braid made of heavy yarns used as a finish, particularly for joining upholstery to the frame or exposed wood surface.

Matelassé: A woven fabric with a distinct puff design that creates a cushion effect.

Mohair: A particularly heavy and durable pile upholstery fabric made from the hair of goats.

Moiré (mō' rā): A fabric that has a watered grain or a wavy appearance achieved by a finishing process.

Needlepoint: A type of embroidery on canvas using diagonal stitches of wool.

Pile: The family name for any of a group of fabrics having a surface with upright ends that are looped or cut. Included in the pile family are velvets, velours, freizes, plush.

Quilted fabrics: Any fabric that has been sewn to a filling material, such as polyester or cotton, and backed with a lightweight canvas or muslin. This gives a puffed effect in an all-over design or an outline of the fabric pattern.

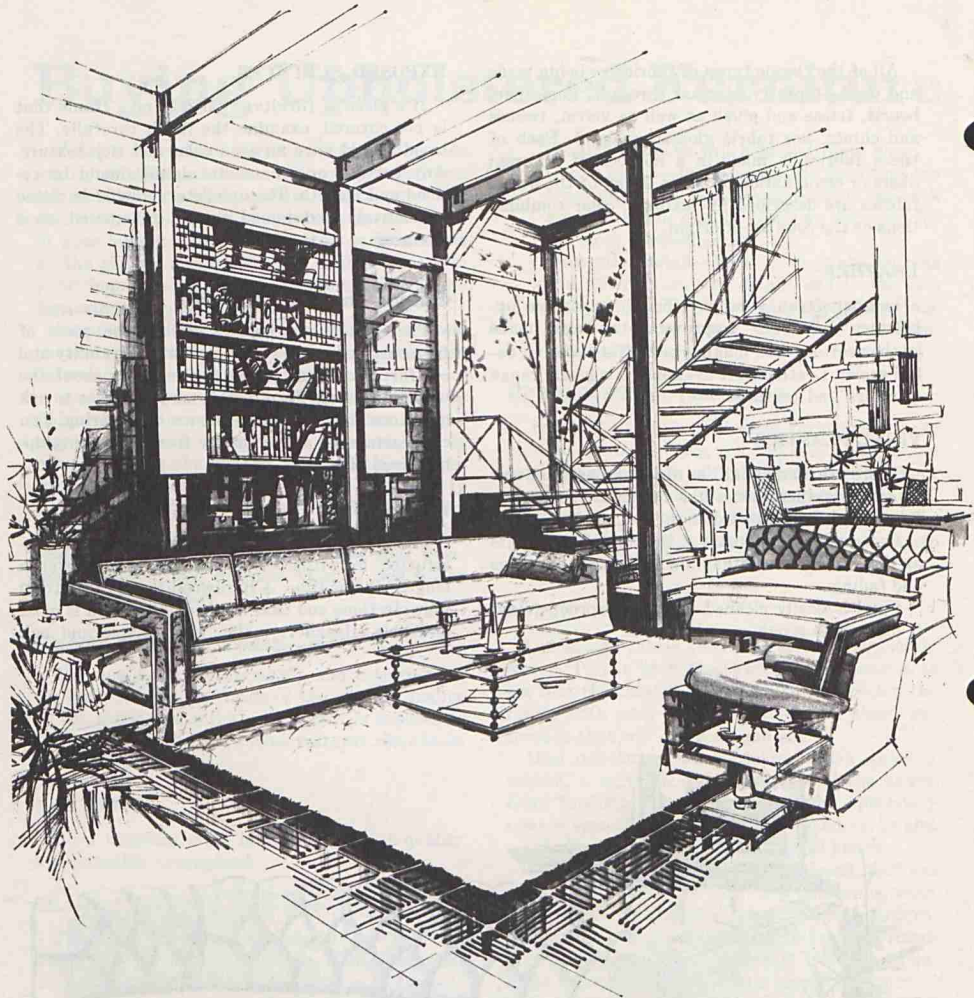
Suede cloth: A woven fabric with a close nap that gives the effect of suede leather.

Tapestry: Fabric designs depicting historic or other scenes woven on Jacquard loom.

Trapunto (tra-pōōn' to): A type of quilting in which the pattern is outlined to give a high relief effect. Only the quilted part of the design is padded.

Tweed: The family name for a large group of textured fabrics characterized by the use of two or more colors used in weaving.

Welt: The covered cording used to join sections of upholstery or to make a neat finish where upholstery joins exposed wood surfaces.



Grateful acknowledgement is given for critique of manuscript by panel members of Southern Furniture Manufacturers' Association and by Miss Elizabeth Hathaway, Professor of Home Economics of the University of North Carolina at Greensboro. The art work was provided by S. F. M. A.

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Outline for Lesson
Furnishing Your Home: Buying Case Goods

Teaching Objective: To provide information to help homemakers become knowledgeable consumers of case goods.

Special Recommendations and Teaching Aids: This bulletin provides consumer information needed for decision-making when selecting and buying wood furniture.

Agent presentation is recommended. Suitable for regular group meetings and for special interest groups.

The kit contains a variety of most commonly used furniture woods, a variety of finishes used for furniture, examples of different types of construction, joints and illustrations of typical case pieces.

I. Introduction

- A. Wood furniture is referred to by industry as case goods.
- B. This category includes chests, dressers, tables, beds, desks and similar items.
- C. Other materials in addition to woods often include metal, glass and plastics.
- D. Quality varies with type of wood, construction features, finish and decorative features.

II. Quality, availability and cost usually determine how the various woods are used.

- A. Botanically, woods are classified as hard and soft.
 - 1. Hardwood trees have broad, flat leaves that fall off in winter.
 - 2. Softwood trees stay green all year.
 - 3. Degree of hardness varies within each category.
 - 4. Growth determines grain pattern.
- B. Solid and veneered constructions both used in furniture of varying qualities.
 - 1. In "solid" construction all wood parts, including case and table tops, end panels, drawer fronts, etc., are made of whole wood.

2. In "plywood" construction layers of wood are placed on either side of a center core, using glue and pressure to laminate together.

- a. Core may be solid or chip core.
- b. Face veneer is cut from woods selected for beauty of grain, color, texture.
- c. Improved glues and alternating grain provides maximum strength.

C. At the present time, depending on their availability, a variety of woods are used.

1. Chosen for color, texture, grain pattern.

2. Favorite woods include mahogany, walnut, oak, maple, birch, ash, poplar, pine and pecan.

D. Construction features indicate quality. Some points to check include

1. Rigidity

2. Finish of unexposed parts

3. Type of joinings

E. Hardware should be in keeping with piece of furniture and functional.

III. In order to be a competent consumer, one should become familiar with the terminology generally used by manufacturers and trades people.

References:

Faulkner, Ray and Sarah Faulkner. Inside Today's Home. New York: Holt, Rinehart and Winston, revised 1967.

Schoenfeld, Morton. Newlywed's Furniture Handbook. New York: Crown Publishers, 1960.

Stepat-DeVan, Dorothy. Introduction to Home Furnishings. New York: The MacMillan Company.

Suggested Evaluation for
Furnishing Your Home: Buying Case Goods

Mrs. Brown and her family have recently moved into a new home, and they need new dining room furniture. The budget will permit this purchase. Read the following statements and place a check (x) only before the statements which will help Mrs. Brown invest wisely.

- 1. Quality furniture is always made of solid hardwoods.
- 2. Veneered construction is used where matching or contrasting pattern is important or where strong lightweight construction is desired.
- 3. Soft woods are often used for inside parts of wood furniture pieces to reduce costs.
- 4. Veneered construction provides strength through the use of superior glues and lamination process.
- 5. The types of joinings should always be tongue and grooved or lapped.

As Mrs. Jones browses through the showrooms, she can look for certain characteristics that will help assure her of quality in a piece of wood furniture. Read the following statements and place a check (x) only before the statements that will help her recognize quality in wood furniture.

- 1. The finishing of the inside of drawers and other unexposed parts reflects good workmanship.
- 2. A label indicating a walnut finish assures you a fine cabinet wood.
- 3. A fine finish is smooth, satin-like in appearance and feel.
- 4. Decorative detail always enhances the beauty of a piece of furniture.
- 5. All movable parts should operate smoothly and evenly.

Attention: Home Economics Agent

The key is provided for agent use only. Please caution homemakers to read instructions carefully. Make any revisions you feel appropriate to evaluate homemakers' knowledge following presentation of lesson. Make evaluating an interesting experience.

(Over)

Suggestions for Scoring and Summarizing

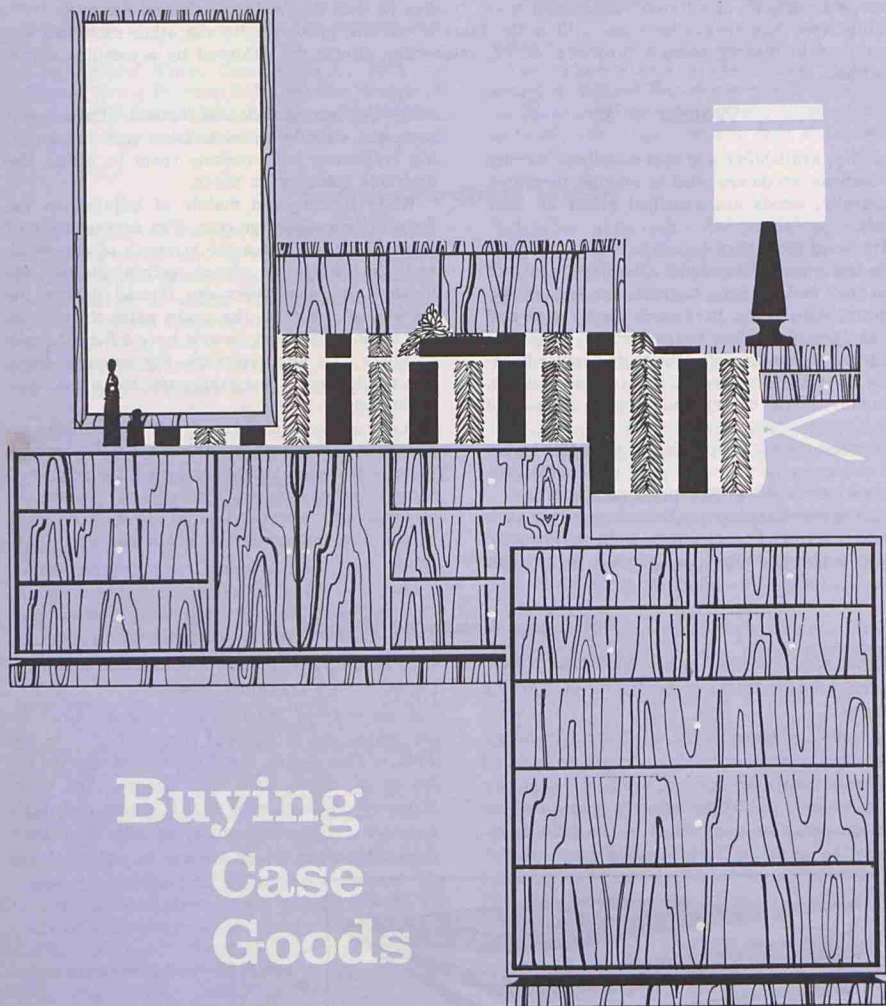
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1. Name of agent and county
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3. Tabulate scores using this system

No. Correct Answers	Rating	Percent Homemakers Scoring
6 correct	Excellent	_____
4-5 correct	Good	_____
3 or less	Poor - Suggest further learning	_____

4. Write brief summary pointing up the highlights and implications for future programming.
5. Send one copy of the county summary on questionnaire form to specialist involved so that district and state summaries may be made.

furnishing your home



Buying
Case
Goods

Buying Case Goods

Wood furniture is usually referred to as case goods. This category of furniture includes chests, dressers, tables, headboards, desks and similar items. Recognizing good quality in case goods requires a knowledge of different woods and wood finishes as well as good construction features.

While wood has always been and still is the favorite, metals, glass, plastic and other materials are being used in making today's furniture. Often, interesting effects are achieved by a combination of materials.

Woods

Quality, availability and cost usually determine how various woods are used in making furniture. Botanically, woods are classified either as hard or soft.

Hardwood trees have broad, flat leaves that fall off in the winter. They have a natural beauty of grain that makes them desirable for fine quality furniture. As a group, hardwoods are stronger and less likely to dent than the softwoods; they also hold screws more securely. The more popular hardwoods for furniture construction include: walnut, mahogany, birch, cherry, maple, gum, pecan and oak.

Softwood trees have needles or scale-like leaves that stay green all year. The most often used softwoods are redwood, pine, cypress and cedar.

The degree of hardness of the woods within each category varies. For example, some hardwoods, such as poplar and aspen, are actually softer than

some of the so-called softwoods. Each wood possesses definite characteristics and the knowing craftsman will combine them to utilize the desirable qualities he needs.

Wood is composed mainly of cellulose in the form of long fibers or cells. The arrangement of these fibers influences the strength of the wood, and the ability to absorb paints, stains and finishes. As new fibers are formed during the growth of the tree, the grain pattern develops. The various species of woods have different types of fibers that affect texture. For example, birch and maple have a fine grain; oak has a coarse or "open" grain.

A cross-section of a tree trunk shows fibers arranged in "annual rings." When the fiber arrangement is distorted, twisted or curled, the grain patterns may be enhanced. Examples of this are the crotch figures, knots and burls. The way the trunk is cut also influences the grain pattern of the wood.

Solid and Veneered Woods

Either solid, veneered or a combination of both can be used in making furniture of varying qualities.

In "solid" construction all wood parts, including case and table tops, end panels, drawer fronts, and headboard panels, are made of whole wood, usually the same species. There may be some surface decoration such as inlay. Most of the solid furniture on the market is Early American and colonial

style furniture with some Scandinavian and eighteenth century traditional pieces.

A majority of the furniture manufactured today makes use of plywood construction. The top layer, or face veneer, is cut from wood selected for beauty of grain, color and texture. The other layers are made of wood that is strong and stable but less costly. The center or core is usually thicker than the others and can be either solid or

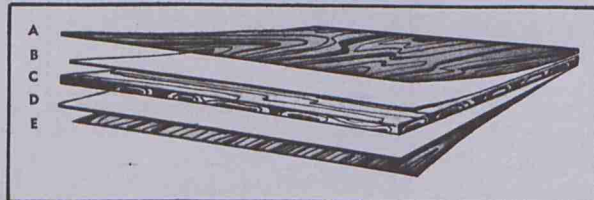


Figure 1. Sample of 5-ply veneer construction.

- A—Face Veneer (of fine hardwood)
- B—Crossband (usually poplar or gum)
- C—Core (lumber, chips)
- D—Crossband (poplar, etc.)
- E—Back Veneer

chipcore. All layers are glued with synthetic resins that provide a secure bond. Improved methods of gluing and alternating grains provide strength, both crosswise and lengthwise, and therefore maximum strength in construction. Plywood is used in much of the finest furniture. Rare and exotic woods are often used for the exposed surfaces.

The Federal Trade Commission in 1963 established Trade Practice Rules for the Household Furniture Industry. This ruling prohibits false and misleading representation of wood and wood



imitation.

Two organizations in the United States, the American Walnut Manufacturer's Association and the Mahogany Association, Inc., supply and promote the use of identification tags and labels.

Favorite Furniture Woods

The history of furniture reflects the availability and use of various woods in making fine furniture. At the present time designers are using a wide variety of woods. The woods are chosen for their colors, textures and grains which become an integral part of the furniture design.

MAHOGANY—Master craftsmen of the past often preferred mahogany because of its strength, beautiful grain and workability. Genuine mahogany grows in tropical regions of Central America, the West Indies, South America and Africa. Luan, known as Philippine Mahogany, and the Primavera, known as white mahogany, are both used in making furniture but are not true mahoganies.

Natural mahogany varies in color from a light golden brown to a deeper brown with a reddish cast. Today's finish is often chosen to enhance the natural light brown color. Or the wood is bleached and finished a lighter tone.

WALNUT—The popularity of walnut for fine furniture is due primarily to its natural beauty. It is a hardwood with high strength that can withstand stress and strain. It has a medium grain and can be finished in a variety of ways.

The different species vary in color range. The native American walnut, or "black walnut," ranges from light to dark rich brown tones. It is named for the color of the nut shells. Butternut, often called "white walnut," is lighter in color. The crotch, burl and stump wood produce a wide variety of beautiful grain patterns.

OAK—Because of its availability and its hard durable qualities, oak has been widely used for both architectural design and furniture since medieval days. Many species of the oak tree grow in North America, Asia, Europe and Africa. About fifty varieties are native to the United States. The white and red oak are best known.

Oak has a characteristic coarse "open grain." This makes it especially suited to special color effects and finishes. The natural color varies from light yellow to a deep amber.

MAPLE—Maple wood is close-grained, hard, strong and durable. It shapes easily and has high resistance to splitting. Its fine texture has a natural smoothness; its color range is from almost white to a reddish brown.

The grain of maple is normally straight but the wavy, curly and bird's-eye grain patterns are beautiful variations.

The sugar maple, or rock maple, of the northern United States was used extensively for making furniture during colonial days. The color and texture of this variety of maple are still closely associated with the colonial early American styles of furniture.

BIRCH—The general characteristics of birch are similar to maple. Since it is durable and relatively low in cost, it is often used in plywood construction and for structural parts of furniture.

The color is light golden brown, but it can be bleached or stained to resemble other woods.

FRUITWOODS—Since there is no one fruitwood, this term is often misunderstood. The term covers the group of woods coming from trees that bear fruits. The most common are cherry, apple and pear. Other woods are often given a fruitwood finish. This finish is a light brown tone to simulate that used in making French Provincial furniture of actual fruitwood.

CHERRY—Is the most widely used in the fruitwoods. It has a natural reddish color. The grain is close and suited to a variety of finishes, but the grain pattern is less distinctive than that of some of the other hardwoods.

Due to the waste in cutting, cherry wood is expensive. Apple and pear woods are rare and used

chiefly for trim and inlay work on fine furniture. Both are light in color and have fine smooth grain. **TEAK**—Teak wood is imported from India, Burma and surrounding areas. It is a moderately hardwood with a natural color that ranges from light to dark brown with fine black streaks. It is usually finished a dark brown, almost black.

Since it works easily, it has been a favorite with furniture designers over the years.

ROSEWOOD—The color gradations from light to dark reddish brown make this an interesting wood. In modern furniture the finish is chosen to capitalize on the dark streaks often found in rosewood. It is an imported wood from Brazil and India.

GUM—This is a native wood that is readily available and relatively inexpensive. However, it must be seasoned properly under controlled conditions or it will split and warp. It has a close smooth

grain that is easy to work with. It can be finished to resemble walnut, mahogany and other woods.

Gum is often used for framework and solid parts, such as posts and legs.

ASH—White ash is the most common variety used in furniture construction. It is a hard, strong wood with a grain very much like oak. Ash is used mostly in frames and unexposed parts. The natural color varies from white to light brown.

POPLAR—Several types grow in eastern and southern states. They range in color from white through yellow to light brown. The woods are easy to work, lightweight, and take well to paints and finishes.

PINE—Pine is a softwood and is not widely used in furniture construction. It is used in certain styles of furniture and in making unpainted furniture.

Construction

Many of the construction features that indicate quality are easy to see in wooden furniture. You should ask the salesman about the points you cannot examine.

Rigidity—Test for rigidity by placing your hand firmly on the top of the table or chest and try to "rock" it back and forth. It should be sturdy enough to withstand firm pressure. If it rocks or is not sturdy, low-quality construction is indicated.

Unexposed Parts—The finishing of underneath and unexposed parts is often a clue to the manufacturer's standards. These areas need not be of the same quality as the exposed parts, but they should be sanded smooth and stained to match the rest of the piece. Back panels should be precisely fitted and smoothly finished.

Moving Parts—Doors and other movable parts should operate properly and with ease. Drawers should fit perfectly and operate smoothly when pulled from only one side. Center guides are desirable. A drawer stop or tiny lock on the back of the drawer will prevent it from pulling all the way out unexpectedly.

Tables and desks that open out often require some sort of support for the extended surface. Extension tables should usually have extra support when additional leaves are used.

Construction Joints—The various sections of a

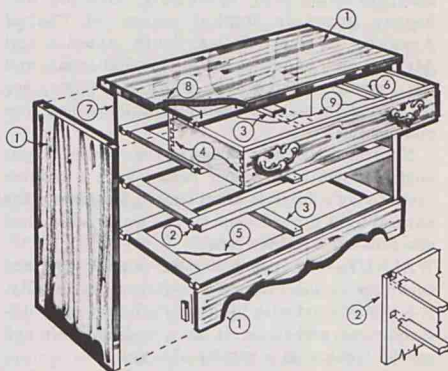


Figure 2. Inner characteristics of furniture determine durability. 1. Selected hardwoods; 2. Mortise and tenon joints; 3. Heavy-duty center drawer guides; 4. Drawers dovetailed front and back; 5. Durable dust panels between drawers; 6. Durable drawer bottoms held rigidly in grooves; 7. Strong case backs recessed into ends; 8. Well mounted top and sides; 9. Drawer interiors sanded and sealed.

piece of furniture must be joined firmly and securely. In furniture of superior quality, the joinings are as near perfectly matched as possible and are smooth and tight. Crevices and gaps filled in with glue reflect inferior workmanship.

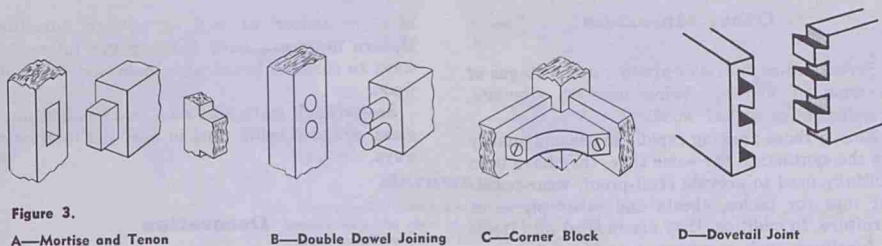


Figure 3.

A—Mortise and Tenon

B—Double Dowel Joining

C—Corner Block

D—Dovetail Joint

Here are some construction features to look for:

- Mortise and tenon or double dowel joining necessary to hold outer frame securely.
- Triangular-shaped corner blocks should be used to reinforce joints where rigidity is

important. They should be glued and fastened with screws.

- All four corners of drawers should have interlocking dovetail joints.

The Finish

Many types of finishes are used today. Woods are often given an entirely new look through their finish. For example, we usually think of mahogany as a dark reddish wood. With one of the new finishes it can be a soft brown color resembling walnut or fruitwood. Woods may be bleached and stained, made dark or light and given a glossy or dull finish.

Finishes are applied to wood furniture:

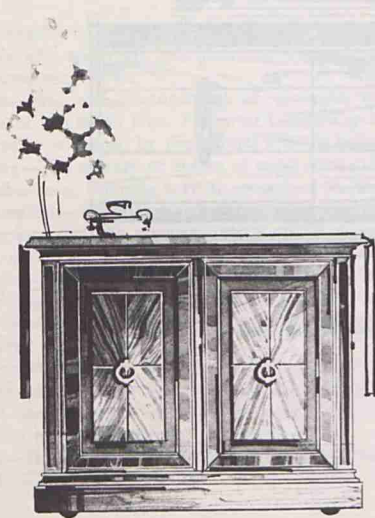
1. To produce or develop color.
2. To seal the pores, to prevent moisture movement and to provide a smooth even surface.
3. To protect the wood.
4. To decorate the surface.

Fine wood finishes require a series of processes that cannot be hurried. Many manufacturers maintain that a lovely patina can be developed only by the time-consuming hand method. Naturally, the number of operations and cost of labor affect retail cost.

Plastics have been developed to match wood grain and are being used by many manufacturers. Improved printing or engraving wood techniques have also made these processes gain in consumer acceptance. Each season finds these finishes being used on better furniture.

You should inspect any finish in a good light. It should be smooth and free from rough spots. Some finishes are resistant to heat, alcohol, water and other types of wear.

Labels concerning finishes are extremely important. Don't be misled by the label that reads "walnut finish," or any other kind of wood finish. It means that the piece of wood has been finished to look like walnut and does not refer to the type of wood. Manufacturers develop their own finishes and name them for customer appeal.



Other Materials

Several other materials are in various stages of development and are being used to simulate, complement or replace wood.

Among those growing rapidly in use and quality are the synthetics. For some time, they have been skillfully used to provide scuff-proof, wear-resistant tops for tables, chests and other pieces of furniture. In addition, they are molded into items of furniture, such as a chair or table; into parts, such as legs or drawer fronts; or into intricate decorative designs. Both the laminates and molded plastics can be finished to look like beautiful woods.

Because plastics are light in weight, durable, easily maintained and comparatively inexpensive they are likely to play an increasingly important role in furniture production.

The metals are strong, durable materials suit-

able for indoor as well as outdoor furniture. Modern designers have found many interesting ways to combine brass, aluminum and iron with wood.

See-through materials, such as glass and plexiglass, are also being used in new and interesting ways.

Decoration

Dollar for dollar you can expect better quality in furniture that has little or no decoration. If furniture has good line, good proportion and is of good quality, fancy decoration is not necessary. However, some styles of furniture require embellishment. Veneer is often used as a form of decoration. Carving, marquetry and inlay are expensive and are seldom found in low-cost furniture. Low-quality imitations are quickly detected.

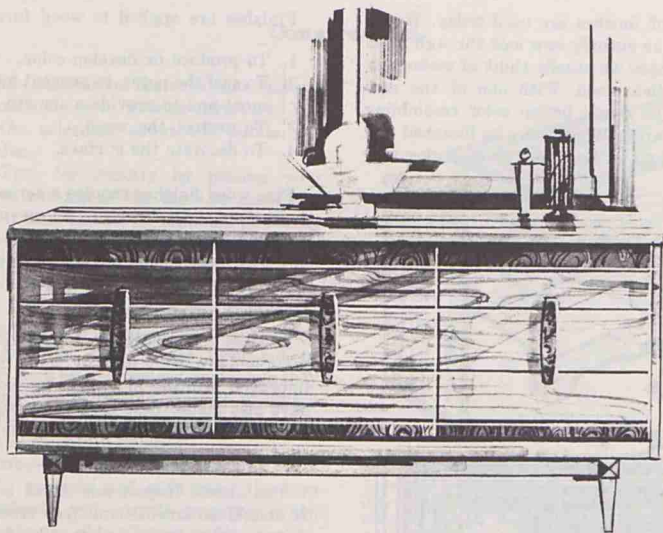


Figure 4. Decoration includes the use of matched veneer, molding and choice of hardware.



Hardware

Drawer pulls, handles and hinges should be in keeping with the style of furniture. Pulls and handles should be easy to find and use, carefully detailed and well attached. They should be strong enough to stand pull and strain. Metals should be rust- and tarnish-resistant. Metal or plastic glides or rubber tips may be needed to avoid scratching floors.

Furniture Terminology

It is helpful to learn the terminology used by the people who make and sell furniture. These terms are used most often:

Grain—Size and arrangement of the cells and pores of the living tree. The most common grain character is caused by the annual growth rings.

Figure—The pattern or design of wood created by the abnormal, than the normal, growth of the tree.

Lamination—The process of gluing or bonding the components of the plywood into a single permanent unit.

Veneer—Refers to the layers of wood that go into a plywood construction. The top or face is usually of a wood with an interesting grain pattern and is referred to as veneer.

Cross-banding—Layers of hardwood used on either side of the core with the grain running at right angles to the grain of the core. They are used to provide strength.

Core—The strong, thick center of wood or timber used in modern plywood. Usually chosen for

strength rather than beauty. It may be solid wood, chip or flake board.

Fruitwood—The group of woods coming from trees that bear fruit, such as cherry and apple.

Nutwoods—The group of woods coming from trees that bear nuts, such as walnut, beech and oak.

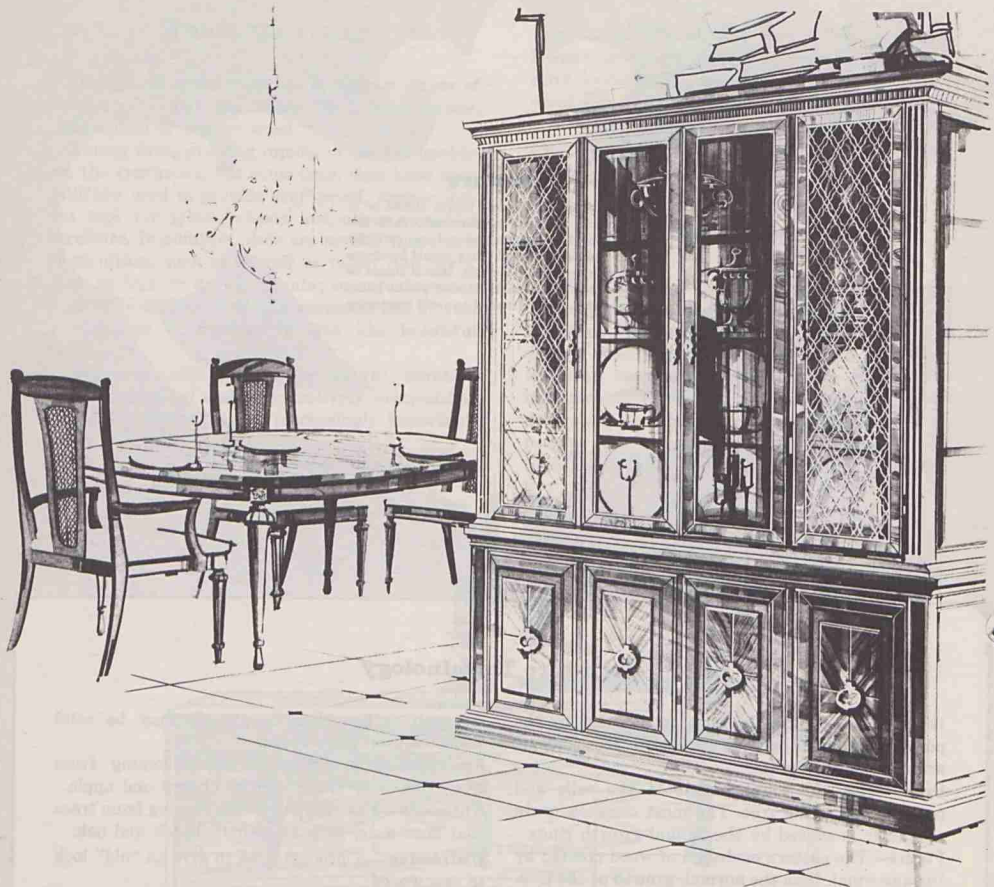
Distressing—A process used to give an "old" look to new woods.

Inlay—A design in the surface of furniture formed by inserting woods, ivory, metal or other materials of contrasting color.

Marquetry—A term applied when an entire surface, such as a table top, is covered with veneers or inlays in a close fitting pattern.

Burl—A curly-grained wood surface or veneer cut from irregular growths of the tree, such as roots or crotch.

Crotch—A thin sheet of wood cut from the intersection of the main trunk and branch of a tree, showing an irregular effect of graining.



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June, 1968

Home Economics 78

Outline for Lesson

Furnishing the Home: Periods and Styles

Teaching Objective: To provide consumer information needed to recognize the styles of furniture and the guidelines for successfully combining them in today's home.

Specialist's Recommendations and Teaching Aids: This lesson is designed to provide background for recognizing the basic styles of furniture and some guidelines for combining styles in today's home. It is not meant to be a complete history of periods and styles, but rather a basis for recognizing characteristics borrowed from various periods and modified for use in the furniture found in today's market place. Set of teaching slides available.

It is recommended that this lesson be handled by the home economics agent.

- I. Introduction; There is a wide variety of styles in furniture found in today's market place.
 - A. The best designs of each era serve as the inspiration for each succeeding generation.
 - B. There is furniture of good design in every price range if you know what to look for.
- II. It is helpful to learn the terminology used in identifying furniture.
 - A. "Style" refers to the use of certain design characteristics.
 - B. "Period" designates a measure of time when these characteristics were popularized.
 - C. There are three broad areas on which the furniture world agrees on basic characteristics.
 1. Traditional
 2. Provincial (country or rural)
 3. Contemporary--modern
- III. The choice of style for each family depends on the atmosphere desired.
 - A. The present trend is to mix styles.
 - B. A knowledge of the characteristics of important styles helps to make selections.

IV. Furniture styles have developed over a long period of time.

- A. Some of the forces that have influenced these are: (1) economic status, (2) artistic development, (3) religion, (4) politics, (5) technology, (6) communications, (7) climate, (8) available materials.
- B. Interest in furniture was stimulated with the Renaissance in Italy.
- C. The decorative arts flourished in France, then England and surrounding countries.
- D. Furniture of the seventeenth, eighteenth and nineteenth centuries has had a great impact on today's styles.

V. It was during the seventeenth century that people first began to expect comfort in furniture.

- A. By the end of the century most of the different pieces we know today had been designed.
- B. The style changes in Europe were slowly reflected in American designs.
- C. Early furniture of the colonies was simple and crude.

Typical pieces: wainscot, slat, banister chairs, trestle tables, chests, settles.

- D. Styles referred to as "Early American" are based on those of the last of the seventeenth and the first of the eighteenth century.

VI. The eighteenth century was rich in the area of decorative arts--golden age of cabinet.

- A. Prosperity of all nations inspired
 - 1. Lavish living.
 - 2. Rapid exchange of ideas.
 - 3. Increased foreign trade.
 - 4. New and variety of styles of furniture.
- B. French styles changed from ornate Baroque to Louis XV, Louis XVI and Directoire.
- C. English styles included Queen Anne, Chippendale, Adams, Hepplewhite, Sheraton.
- D. American designers included Duncan Phyfe, Goddard, Townsend, Davery.

VII. The nineteenth century was one of decorative conflict.

- A. Families of wealth and prestige built and furnished elaborate homes combining styles with a free hand.
- B. Mass production began to replace individual craftsmanship.
- C. The discovery of the ruins of Pompeii inspired revival of ancient Greek and Roman designs and a succession of styles.
- D. New processes and materials yielded a break with traditional designs.

VIII. "Modern" design of the twentieth century evolved around an effort to create functional forms.

- A. Modern materials and technology changed traditional construction methods.
 - 1. Functional emphasis stimulated production of dual-purpose furniture, modular units, furniture scaled to fit today's homes.
 - 2. Artists who have contributed to the modern style include Miles van der Rohe, Charles, Eames, etc.
- B. Interest in traditional styles continues.
 - 1. The fine originals have become valuable.
 - 2. Authentic reproductions are preferred by many.
 - 3. Many traditional styles have been modified and scaled to fit today's homes.

IX. Many styles of furniture combine with ease.

Suggested Evaluation for

Furnishing the Home: Periods and Styles

Suppose your neighbor asked you for certain information pertaining to the different periods and styles of furniture? Place a check (x) in the column that best represents your answer.

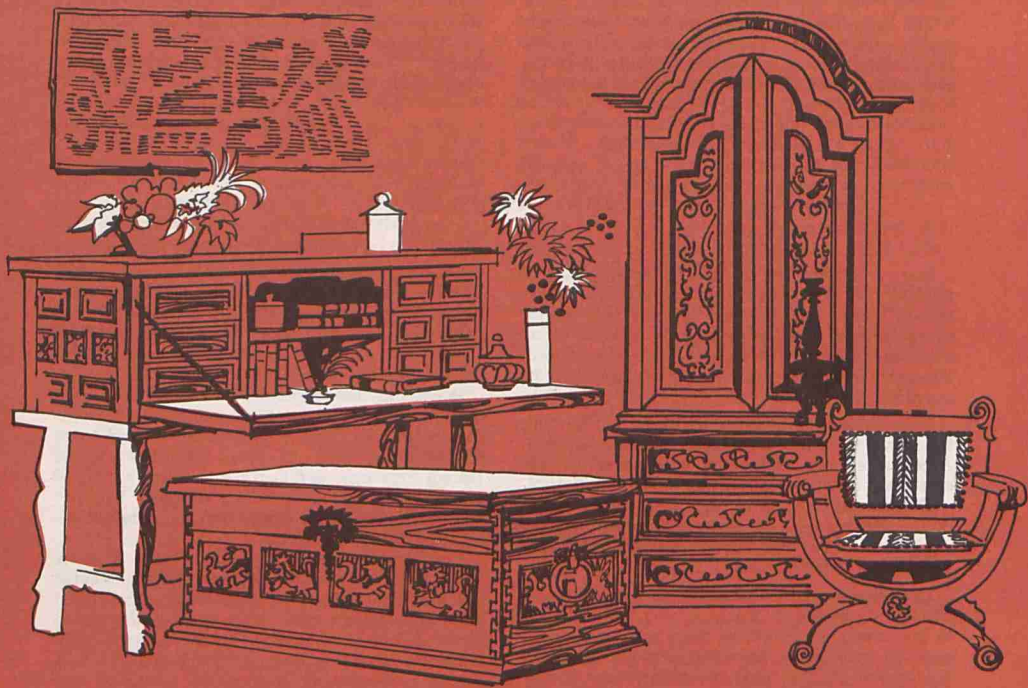
Statements	Yes	No
1. Design characteristics help determine the particular style of a piece of furniture.	x	
2. Furniture styles based on the eighteenth century are very popular at the present time.	x	
3. Provincial furniture includes country French, Italian, English and Early American styles.	x	
4. Families in America had only the simple styles of furniture in their homes during the nineteenth century.		x
5. Modern designs of the twentieth century were designed to create functional furniture.		x
6. One style of furniture should dominate in a room but some pieces of contrasting styles add interest.	x	
7. The quality of formality and informality of furniture helps to determine how it is combined.	x	
8. Satins, damasks and velvets are at home with the less formal styles of furniture.		x
9. Walnut was the favorite wood used in making furniture of the Queen Anne period.	x	
10. Furniture styles were set in England and migrated to France.	x	

SUGGESTIONS FOR SCORING AND SUMMARIZING

In order to get a complete picture of homemaker competence after teaching the lesson, it is suggested that the home agent responsible for the lesson prepare a county summary from the evaluation forms to include the information listed below:

1. Name of agent and county.
2. Total number of persons receiving lesson.
3. Tabulate scores using this system

No. Correct Answers	Rating	Percent Homemakers Scoring
10-9 correct	Excellent	_____
8-6 correct	Good	_____
5 & below	Poor-suggest further learning	_____



Furnishing Your Home

Periods and Styles

Periods and Styles

Throughout the ages furniture designs have represented a way of life. Whether an authentic antique, a reproduction, an adaptation, or this year's modern, furniture tells a story about people and their cultures.

The best designs of each era have lived, been copied, modified and used again and again. You are fortunate to live in a period when there is such a variety of furniture from which to choose.

The styles being designed and produced offer almost custom choice—never before known.

There is furniture of good design in every price range if you know what to look for. The choice is much easier if you begin with a furnishings plan—one that fits your home, your family and the way you wish to live. Such a plan not only helps you to know what pieces of furniture are needed but will also help guide the selection of just the right styles for your home.

Style Terminology

Due to differences in interpretations, terms relating to styles are often confusing. *Style* usually refers to the use of certain design characteristics. *Period* designates a measure of time when these characteristics were popularized. However, these terms are used interchangeably in the furniture world.

Fashion should be thought of as a changing thing which comes and goes with the seasons. Acceptance of a fashion is determined by the customers desire for something new and different.

Design characteristics help identify furniture of the various periods. These characteristics are copied or adapted by designers and manufacturers in creating today's styles.

Each manufacturer identifies his products with descriptive names which may also be confusing to the consumer. However, there are three broad areas on which the furniture world, in general, does agree on the basic characteristics: *Traditional*, *Provincial* and *Contemporary-Modern*.

Traditional includes those styles with design characteristics typical of master craftsmen of past generations. The terms period and style

usually refer to either an original or a reproduction which contains enough of its characteristics to make its origin clear. Much of the traditional furniture was first designed for royal courts and nobility. Through the years it has been associated with elegance and formality.

It was only natural that the court styles of each country should be copied in simplified versions for the masses. This furniture is referred to as provincial, country, or rural. The French and Italian Provincial and Early American are typical examples of this style. Each of them has two qualities in common: simplicity and comfort designed for informal living.

Contemporary and its counterpart, Modern, include a broad group of designs that are adapted for modern methods of production and present day living. Contemporary is inspired by traditional styles while modern breaks completely all ties with previous designs. The beauty of both lies in simplicity of line, smooth contours, and effective use of time-proven as well as new materials and new technology. Much of it is small in scale, light in appearance, versatile in use and easy to care for.

Selecting a Style

The task of selecting the right style furniture for you and your family is made simpler by first deciding on the atmosphere you wish to create. Is it one of formality, of casual informality or

something in between? With this decision as your guide, you are not likely to limit your choice to any one style but to select a combination of compatible styles that seem to belong together.

Development of Furniture Styles

Styles of furniture have developed gradually over a long period of time and have reached different areas of the world at widely spaced intervals. The forces that influence the way people live also influence their furnishings.

Economic status, artistic development, religion, politics, technology, communications, the climate and available materials have affected the development of the furniture of each era and country.

Current furniture designs usually date back to about the fifteenth century. However, ideas and motifs are often borrowed from the ancient Greeks, Romans and Egyptians.

As the nations of Europe developed, their peoples began to erect large buildings; chiefly castles, churches and monasteries. Architecture became an important mode of expression and architectural details were applied to furniture. By the thirteenth and fourteenth centuries the Gothic style flourished and furniture followed the same theme. Furniture was large and heavy with extensive carving. It was characterized by architectural detail, pointed arches and religious motifs.

A new movement called the Renaissance, meaning new birth, began in Italy during the four-

teenth century and reached its height during the last half of the sixteenth century. The Renaissance spread to each country and stimulated an era of cultural development.

Furniture designs reflected the new interest in the arts by becoming more refined in form and more graceful in proportion. The techniques of ornamentation followed the development of an appreciation of the artistic.

Following the Renaissance, the decorative arts flourished in France; then in England and surrounding countries. The early settlers of America were predominantly English but there were also Dutch, Scandinavian, German, French and Spanish. They brought with them furniture and ideas from their homelands. American furniture styles are a blending of many influences.

The styles you see today in stores, homes and showrooms have been largely influenced by furniture designs of the last three centuries.

Therefore, an overview of the seventeenth, eighteenth and nineteenth centuries, followed by a summary of the important furniture styles of each era, will provide a better understanding of the different styles, their relationship to each other and their influence on today's furniture.

Seventeenth Century

The seventeenth century was a brilliant and boisterous era. Bold and adventurous men were exploring and settling new lands. In Europe there was religious and political unrest. A new wealth was changing the style and manner of living, especially for the upper class.

During the first part of the century, furniture design was dominated by the elegance of the Renaissance but gradually changed to the Baroque; a massive, ornate style, which had its origin in Italy. The Baroque reached its height in France under Louis XIV and moved on to Holland, England, and then America, changing as it spread by taking on regional or national characteristics.

For the first time people began to expect furniture to be comfortable. They also began to think about beauty. By the end of the century most the pieces of furniture we know today had made their appearances.

In America the colonists were devoting all their time to getting established. Their furniture was of necessity simple and often crude in construction. Local woods were used, especially pine, oak and fruitwoods. Typical pieces are wainscot, slat and banister chairs, trestle tables, chests and the settle.

The style changes in Europe were reflected in America as the colonies grew and prospered. However, in the beginning, due to slow communications as much as two decades elapsed before new ideas of design were used by American craftsmen.

The styles that are today referred to as "Early American" are really based on those of the very last of the seventeenth century and the first of the eighteenth century. Outstanding styles of this era were the French Louis XIV; the English Jacobean and William and Mary; and the American Early Colonial.

Eighteenth Century

In the area of decorative arts the eighteenth century was one of the richest the world has ever known. People were ready for houses and furniture designed to reflect the elaborate social customs of the day.

Industrial development and international trade created a prosperity that affected all nations. A great part of the wealth was spent on lavish living.

A rapid exchange of ideas was brought about by expansion in foreign trade and migration of craftsmen. The oriental influence and foreign materials, especially mahogany, played an important role in furniture designs of the first half of the century; the discovery of Pompeii and the use of satinwood influenced furniture designs of the latter half.

This century has been called the golden age of cabinet making. New pieces and new designs appeared to meet the needs of the social life of the era. This was the beginning of the elegant traditional furniture as we know it today.

Styles were set in France, migrated to England and then found their way to America.

In France the furniture styles changed from the massive, ornate Baroque of Louis XIV to the delicate decorated Rococo of Louis XV, then to the neo-classic of Louis XVI and Directoire.

The Queen Anne period, often referred to as the age of walnut, ushered in a golden age in English design. Then, there was a rapid succession of styles named after master craftsmen of the period. These included Thomas Chippendale, Robert Adams, George Hepplewhite and Thomas Sheraton. Furniture pattern books made their appearance along with these cabinet makers; so their furniture designs were widely copied. These styles are often referred to as Georgian since they enjoyed popularity during the reign of the three Georges.

The colonies were eager to adopt the rapidly changing manners and customs of their mother country. They readily accepted the idea of hierarchy of social rank. Aristocracy in America reached its height between 1750 and 1800.

Many wealthy colonists imported furniture. However, talented American craftsmen copied foreign versions with skill and imagination. Consequently, American homes had both original and American versions of Queen Anne, Chippendale, Sheraton and Hepplewhite during the Colonial and Federal periods.

America's most outstanding contribution to furniture designers of the period was Duncan Phyfe. While he was influenced by other crafts-

men, he developed a style of furniture that was uniquely his own. Goddard, Townsend, Savery and others also made fine furniture during this period.

Nineteenth Century

The nineteenth century was one of decorative conflict. It was the era when families of social prestige and wealth, such as the Vanderbilts, and Astors, built and furnished elaborate homes combining styles with a free hand.

Industrially, mass production was replacing individual craftsmanship. Names like Hitchcock, Eastlake and Morris were associated with machine production.

A wave of classicism inspired by the discovery of the ruins of Pompeii and social unrest began at the end of the eighteenth century and continued into the early nineteenth century. This classic trend found expression in the Louis XV and French Empire styles, the Adams, Sheraton, Hepplewhite and Regency styles in England and the Federal furniture of the colonies. During this time design elements borrowed from ancient Egypt, Greece and Rome were used in American architecture and furniture.

About the middle of the century the Gothic influences reappeared. The Victorian and Louis XV styles of the later half century combined elements of both Gothic and Renaissance styles. Louis XV and XVI styles reappeared in Europe, England and America.

By the end of the century traditional methods and designs were yielding to a vogue for experimental forms of simpler lines, new processes and new materials.

Twentieth Century

Every style of the past was at one time "modern" and each one had good and poor examples. While many contemporary designs draw upon ideas of the past, they are still a part of the modern style in its broadest interpretation.

The term *organic* is often used for those modern designs that attempt to break with past traditions. This style has evolved through a series of efforts to create beauty in a functional form. The effort began toward the end of the nineteenth century and was given impetus by the archi-

tectural designs of Louis Sullivan and Frank Lloyd Wright in the early part of the twentieth. By 1925 there was widespread interest in this new style of furniture, both in America and Europe.

At the present time there are many interpretations of the modern style. New shapes and forms have been introduced. Modern materials and technology have changed traditional construction methods. The functional emphasis has stimulated production of dual-purpose furniture, modular units, wall-hung furniture, and furniture scaled to fit apartment living and today's smaller homes.

Wood is still the most popular material, but glass, metal and plastics are also used. Beauty is provided through structure and materials rather than surface ornamentation.

Many artists and craftsmen have contributed to the development of the modern style. However, a few of them should be mentioned since their influence is so prevalent in the marketplace at the present time. Some of them are Mies van der

Rohe, Marcel Breur, Charles Eames, Eero Saarinen, Edward Wormley, Jens Risom, Bertola, Estelle and Erwine Laverne, George Nelson and T. H. Robsjohn-Gibbings.

Interest in traditional styles of furniture continues. The fine originals of the seventeenth and eighteenth centuries have become more valuable with the passing years. Many of these are now preserved for study in museums. "Antiquing" has become a fascinating venture for many people. Others actually prefer an authentic reproduction to the original.

Much of the furniture in the marketplace is traditional in styling. Designers have borrowed traditional characteristics but modified and scaled them to fit today's homes. These designs are referred to as contemporary.

There is a wide selection of furniture available in today's market place. You need to be able to select the styles that are most appropriate for your home and way of life.

Combining Styles of Furniture

"Putting furniture together" may be compared to dressing for a party. The dress-up occasion calls for silks, satins, jewels and furs. The casual get-together suggests denims and play clothes or just everyday apparel.

Like parties, most furniture falls into three major classifications—*formal*, *semi-formal* and *informal*. On the formal side we find the stately elegance of most eighteenth century English, with Regency close behind. At the opposite extreme is Provincial furniture with varying degrees of formality.

By keeping the quality of formality or informality in mind, it is usually easy to achieve a pleasing combination of furniture pieces. To the formal styles you would add formal fabrics, such as satin, damask and velvet; rich wood finishes; full-length draperies and elegant floor coverings. With the informal styles, choose the gaily printed chintz; the nubby-textured fabrics; the softer tones of fruitwood, pine and maple; tweedy floor coverings and simple window treatments.

Since there is always overlapping of styles, the periods that follow each other in development can usually be blended safely. For example, Early American will combine nicely with Colonial American and the more elaborate Colonial with Federal.

By today's standards a room in one style of furniture is monotonous. There are no set rules for blending but these general principles can guide you in combining furniture successfully.

1. One style of furniture should dominate, but a few well-chosen pieces of another style for contrast will add interest.
2. The style of the house, the way you and your family live and your personal tastes may dictate the style you wish to have predominate.
3. A more interesting and lived-in appearance may be achieved by using some old pieces along with new furniture.
4. The woods may also offer a cue in combining. They do not necessarily have to match but they should be compatible.
5. Pieces of about the same characteristics and scale are usually compatible when used together.
6. Color can be the ingredient that unifies a grouping made up of different styles.
7. Don't copy someone else. Remember, you are selecting and combining furniture to fit your house and the way you and your family live.

Many styles offered by today's manufacturers combine with ease. The way you select and combine the styles is an important way to add individuality and a touch of personality to your home.

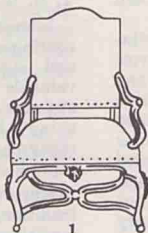
Furniture styles of the past three centuries are presented in a chronological order in the following chart. Those styles that have had the greatest influence on today's furniture are included. Additional references are given for those interested in a more comprehensive background and description of the various styles of furniture.

I. SEVENTEENTH CENTURY

STYLE CHARACTERISTICS TYPICAL PIECE AND DECORATION

1. Louis XIV 1643-1715
French Court Furniture
(Formal)

- Built for grandeur rather than comfort
- Elaborately decorated
- Decorated with carving, gilding, inlaying, metal mounts (ormolu), Boulle work, lacquer
- Elaborate tapestries



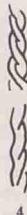
1. Louis XIV
2. Rayed Sun
3. Shell Motif
4. Boulle Work

2. Jacobean 1603-1689

English
(Informal)

James I
Charles I
Cromwell
Charles II
James II

- Influenced by Elizabethan
- Early Jacobean—straight lines, strap work, split spindles
- Cromwellian—severely simple, undecorated
- Carolean—curvilinear influenced by Flemish Baroque; used caning
- Wood—primarily oak



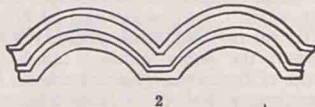
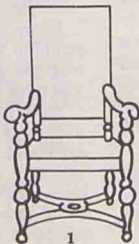
1. Wainscoat Chair
2. Elizabethan Legs
3. Jacobean Legs
4. Legs

STYLE CHARACTERISTICS TYPICAL PIECE AND DECORATION

3. William and Mary 1689-1702

English
(Informal)

- Simple, light, comfortable
- X stretchers with finial
- Spiral and trumpet leg
- Club, bun, scroll foot
- Veneering and cross banding
- Decorative elements—marquetry inlay, Chinese lacquer
- Wood—walnut



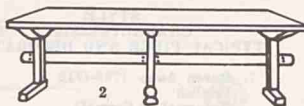
1. William and Mary Chair
2. Double Bonnet
3. S-Curve
4. Trumpet Leg
5. Rope Leg
6. Bun Leg

4. Early American 1620-1725
(Informal)

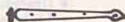
- Simple straight lines
- No decoration on early pieces
- Tables—gate and trestle
- Chairs—Banister, slat, ladder back
- Settle



1



2



5



3

4

1. Slat Back Chair
2. Trestle Table
3. H-Hinge
4. H-L Hinge
5. Strap Hinge

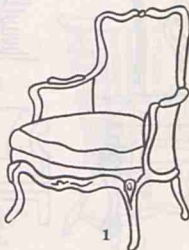
II. EIGHTEENTH CENTURY

STYLE CHARACTERISTICS TYPICAL PIECE AND DECORATION

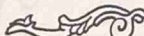
5. Louis XV 1730-1760

French
(Formal)
French Provincial based
on this style
(Informal)

- Decorative
- Light in scale
- Rococo—rock and shell was dominant motif
- Cabriole leg
- Curved scroll front
- Painted and gilded furniture popular
- Popular woods—walnut mahogany and ebony



1



2



4



3

1. Louis XV
2. Asymmetrical Detail
3. Rococo Motif
4. Cabriole Leg

6. Louis XVI 1760-1789

French
(Formal)
Italian Provincial
has same basic lines
(Informal)

- Inspired by Grecian designs
- Graceful combination of straight and curved lines
- Legs without stretchers
- Motifs were rosettes, garlands, festoons, urns, lyre
- Shaped backs—design often woven to fit



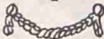
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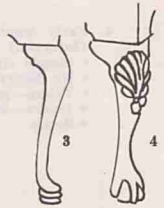
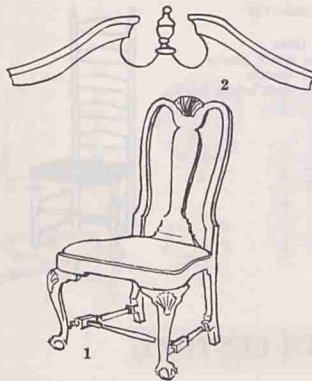
4

1. Louis XVI
2. Symmetrical Mounts
3. Rosette
4. Fluted Leg

STYLE
CHARACTERISTICS
TYPICAL PIECE AND DECORATION

7. Queen Anne 1702-1712
English
(Informal or Formal)

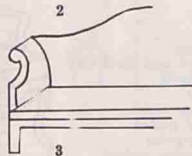
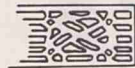
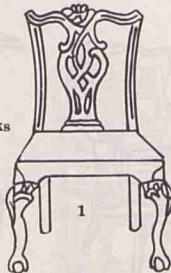
- Graceful curves
- Light scale
- Cabriole legs
- Pad, ball and claw feet
- Simple shell motif
- Wood—walnut



1. Splat Back
2. Broken Pediment
3. Cabriole Leg Pad Foot
4. Shell, Ball and Claw

8. Chippendale 1717-1779
English
(Formal or Semiformal)

- Graceful, medium scale
- Solid appearance
- Embellished with carving
- Early pieces had cabriole legs, fiddle back, ball and claw
- Later—straight legs carved cabriole, bow-shaped ladder backs
- Used shell motif, fret, ribbons, pagodas, "C" and "S" curves
- Wood—mahogany

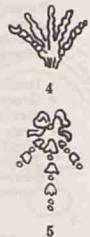
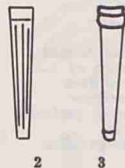
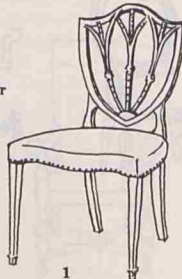


1. Yoke-Pierced Splat Back
2. Fret Work
3. Rolled Arm
4. Mount

STYLE
CHARACTERISTICS
TYPICAL PIECE AND DECORATION

9. Hepplewhite 1760-1786
English
(Formal)

- Graceful and light scale
- Usually square tapered legs
- Sometimes round with reeding or fluting
- Shield back was his trademark
- Decorated with wheat husks, swags, Prince of Wales feathers
- Extensive use of inlay and veneer
- Wood—mahogany was favorite
- Rosewood, stainwood, tulip wood inlay



1. Shield Back
2. Reeded Leg
3. Turned Leg
4. Wheat Motif
5. Husk Motif

10. Sheraton 1751-1806
English
(Formal)

- Simplicity was the keynote
- Seldom used stretchers
- Legs were round or square tapered, reeded or fluted
- Made specialty of sideboards
- Used veneering expertly
- Favorite motifs were delicate swags and small urns
- Wood—satinwood

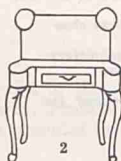


1. Vase Back
2. Light Scale Sofa
3. Pedestal Table
4. Mounts
5. Mounts

STYLE
CHARACTERISTICS
TYPICAL PIECE AND DECORATION

11. Colonial 1720-1790
American
(Formal and Informal)

- Influenced by Queen Anne, Chippendale, Hepplewhite and Sheraton
- Ranges from simplicity to rich ornamentation
- Motifs often shell, pendant, acanthus leaf, pineapple
- Block-front desk, rocking chair, low post bed, of American origin
- Informal pieces usually in pine, walnut, oak, maple, fruitwoods
- Formal pieces in mahogany or walnut

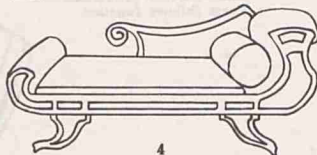
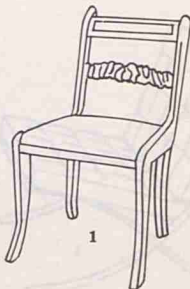


1. Windsor Chair
2. Card Table
3. Block-front Desk

III. NINETEENTH CENTURY

12. Directoire 1789-1804
French
Empire 1804-1820
French
English Regency 1810-1820
American Federal 1781-1830
(Formal—had many characteristics in common)

- Used classic forms
- Combined straight lines and curves
- Large unadorned wood surfaces
- Legs often splayed
- Wood—mahogany, rosewood

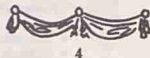
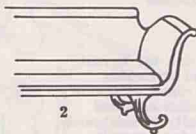
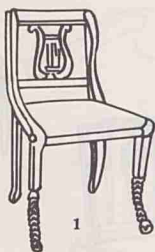


1. Chair—Curved Lines
2. Greek Key
3. Sphinx
4. Sofa—Rolled Arms

STYLE
CHARACTERISTICS
TYPICAL PIECE AND DECORATION

13. Duncan Phyfe 1768-1854
American Federal
(Formal)

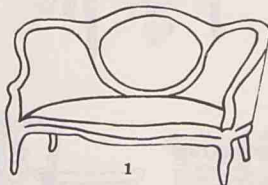
- Combined straight and curved lines
- Chair and sofa backs feature low, rolled top rails
- Lyre motif is distinctly Phyfe
- Decoration usually fluting or reeding
- Wood—mahogany



1. Chair—Lyre Back Splayed Legs
2. Sofa—Rolled Arms
3. Chair—Curved Back
4. Swag

14. Victorian 1837-1901
English
(Formal)

- Made in sets
- Favored carved motifs of flowers, leaves and scrolls
- Chair backs, oval horse shoe shaped
- Plush and mohair upholstery
- Marble tops on tables, dressers, chests
- Wood—walnut, mahogany and rosewood



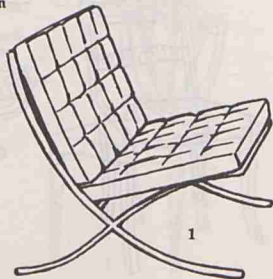
1. Victorian—American Style
2. Victorian—English Style

IV. TWENTIETH CENTURY

STYLE
CHARACTERISTICS
TYPICAL PIECE AND DECORATION

15. Contemporary-Modern 1925-
German
(Informal)

- New shapes and forms introduced
- Modern materials and technology used
- Beauty provided through structure and materials
- Little surface ornamentation
- Form follows function



1. Mies van der Rohe
2. Charles Eames

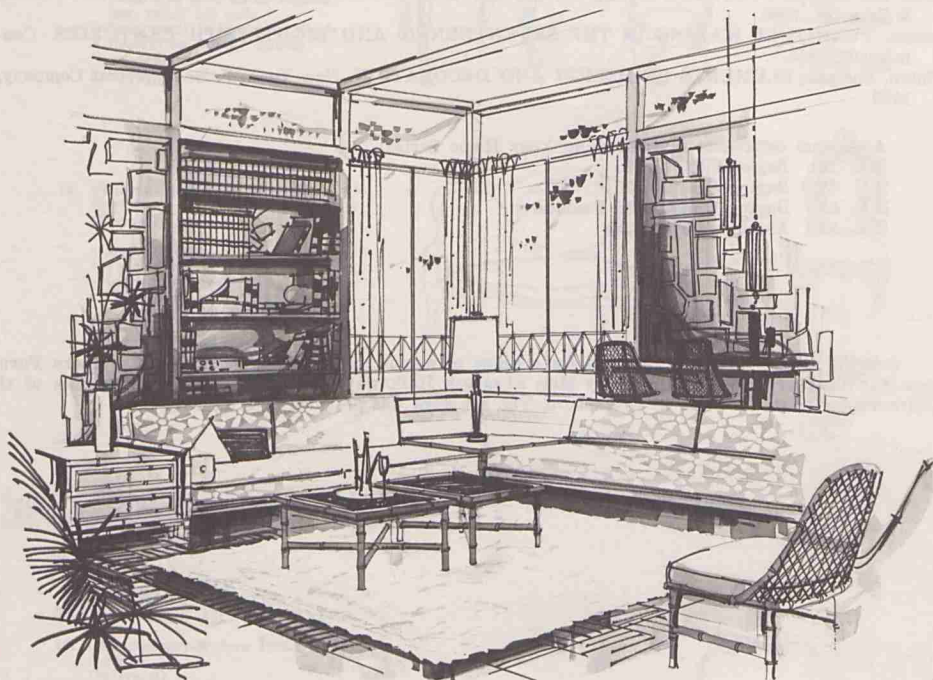
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Additional references in Furnishing Your Home Series:

- H.E. 75: Begin With A Plan
- H.E. 78: Buying Case Goods
- H.E. 81: Buying Upholstered Furniture
- H.E. 80: Arranging Furniture

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Outline for Lesson

Furnishing Your Home: Arranging Furniture

Teaching Objective: To assist homemakers achieve more convenient, comfortable and attractive rooms through well-arranged furniture.

Specialists Recommendations and Teaching Aids: This lesson is designed to help homemakers achieve convenient, comfortable and attractive rooms through well-arranged furniture. It could be handled by agents or leaders. Might easily be a workshop type meeting with homemakers using graph paper and templates for a room in their homes.

- I. Introduction: The final convenience, comfort and appearance of any room largely depend upon the arrangement of the furniture. Thoughtful arrangement of furniture aids decision making in planning furniture needs and in the purchase of individual pieces suitable for available space and use.
- II. Plan on paper.
 - A. Organize the floor space to accommodate the activities that will take place in each room.
 - B. Use graph paper and templates to find out best arrangement.
 - C. Begin with most important groupings.
- III. Allow ample space for people to move within the room and use furniture.
 - A. Check your needs for living area.
 - B. Check your needs for dining area.
 - C. Check your needs for sleeping area.
- IV. Guidelines on arrangement.
 - A. Keep traffic lanes open.
 - B. Place large pieces close to and parallel to the wall.
 - C. Each room should have a center of interest.
 - D. Group pieces that are used together.
 - E. Arrangement can determine function.

F. Create a spacious look.

G. Harmony of scale, line and color contributes to unity.

V. Good design in arrangement includes consideration of:

A. Balance

B. Scale and proportion

C. Contrast or emphasis

D. Unity

Suggested Evaluation for
Furnishing Your Home: Arranging Furniture

Mrs. X is a young bride who has limited knowledge of homemaking. She has asked your advice on arranging her furniture. Check (x) by only the statements below which best represent the advice you would offer.

1. Furniture arrangement is a matter of properly coordinating furnishings with family activities and the floor space for each room.
2. Each piece of furniture is arranged according to floor space without regard to other pieces.
3. If furniture arrangement looks good within the floor space, you need not be concerned about the height of furniture.
4. Ample space should be allowed for people to move easily within the room and use the furniture with ease.
5. Each person needs at least 21-24 inches of table space for dining comfortably.
6. The major conversational grouping of furniture should not be disturbed by traffic.
7. All furniture heights should be the same to give a feeling of harmony.
8. Lightweight pieces with slender legs and open arms give a feeling of spaciousness.

* Attention Home Economics Agent: The key is provided for agent use only. Please caution homemakers to read instructions carefully. Make any revisions you deem appropriate to evaluate homemaker competency following presentation of lesson. Make evaluation an interesting experience.

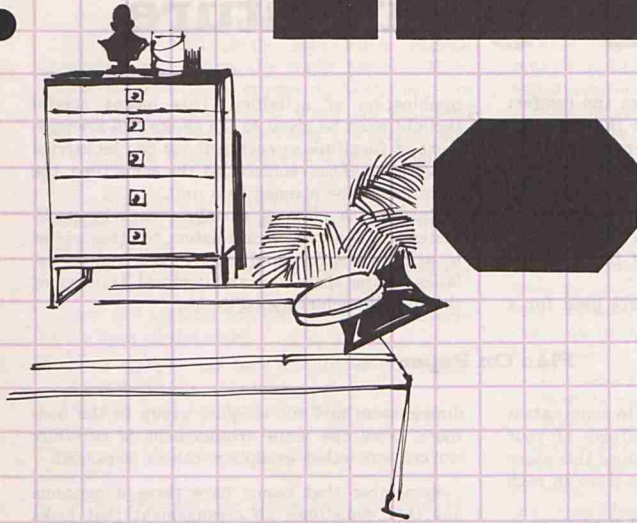
Suggestions for Scoring and Summarizing

In order to get a complete picture of homemaker competence after teaching the lesson, it is suggested that the home agent responsible for the lesson prepare a county summary from the evaluation forms to include the information listed below:

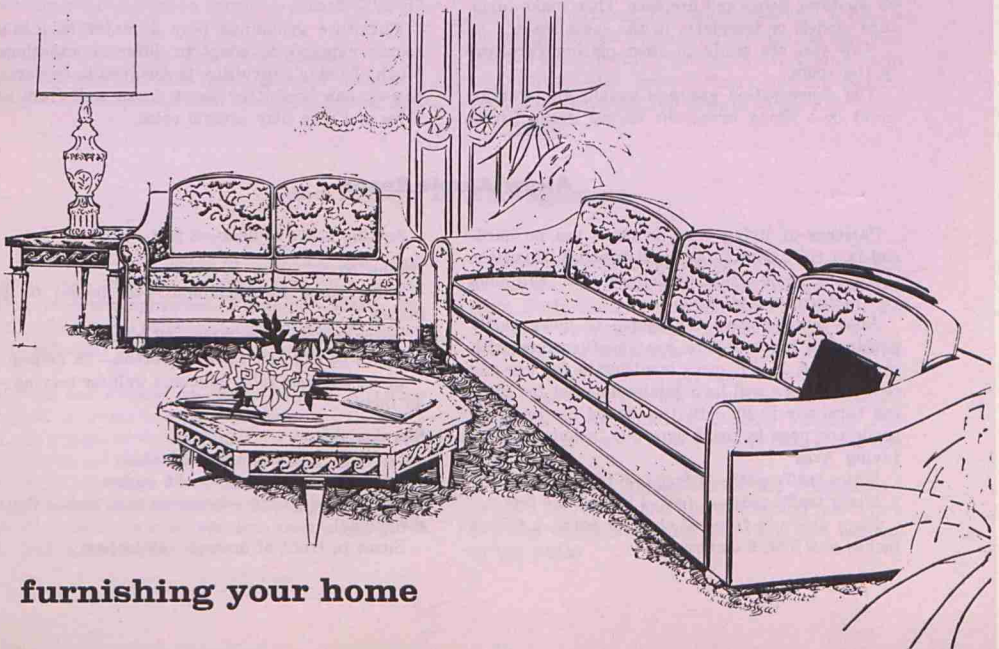
1. Name of agent and county.
2. Total number of persons receiving lesson.
3. Tabulate scores using this system

No. Correct Answers	Rating	Percent homemakers Scoring
6 correct	Excellent	_____
4-5 correct	Good	_____
3 or less	Poor - suggest further learning	_____

4. Write brief summary pointing up the highlights and implications for future programming.
5. Send one copy of the county summary on questionnaire form to specialist involved so that district and state summaries may be made.



Arranging Furniture



furnishing your home

Arranging Furniture

The final appearance, convenience and comfort of any room depends largely upon the furniture arrangement. This is a matter of properly coordinating furnishings with family activities and the floor space you have for each room.

Every family differs in interests, hobbies and activities. So you need to take a look at what your family does; making a list of the activities that take place in each room.

In today's homes, most rooms are used for a

combination of activities. This means special thought must be given to the choice and arrangement of furniture so each activity can be carried on with equal convenience. At the same time, the room should be planned as a unit.

Rarely is a piece of furniture used by itself. Instead, it is arranged in relation to other pieces to achieve comfort and convenience and in relation to the space and architectural features of the room to achieve good design.

Plan On Paper

Floor space is already organized to some extent by partitions and architectural features of your house. Your task is to further organize this space to suit the activities that will take place in each room.

It is far easier to push a pencil than to push furniture. So try out arrangements on paper first.

Use graph paper or measure and draw your rooms to scale, allowing one-quarter inch per foot. Be sure to indicate the architectural details, such as windows, doors and fireplace. Then make furniture models or templates in the same scale.

Now you are ready to start placing furniture in the room.

The conversation group is usually the starting point in a living area; the dining group in the

dining room and the sleeping group in the bedroom. Once the main arrangement is carefully worked out, other groupings can be arranged.

Remember that rooms have three dimensions and that sometimes an arrangement that looks good on flat paper is not balanced properly when the height of the furniture is considered. To check this, the side wall and furniture elevations can be drawn to scale in the same way as you did the floor plan.

Furniture groupings play a major role in a room's capacity to adapt to different situations. Much of today's furniture is designed to be versatile—it can be shifted about, looks well from all sides and may play several roles.

Allow Ample Space

Patterns of living vary so there are no hard-and-fast rules that apply to all families. However, there are some basic guidelines that will help you in furniture placement.

Allow ample space for people to move easily within the room and to use the furniture with convenience. If the space is adequate for use and cleaning, there will be a minimum need for moving furniture to fit activities. Some of the space needs you need to check carefully include:

Living Area

Major traffic path—4 feet to 6 feet

Minor traffic path—1 foot, 4 inches to 4 feet

Floor space in front of chair or sofa—1 foot, 6 inches to 2 feet, 6 inches

Seating space at desk—3 feet

Dining Area

Table space for each adult—21 inches to 24 inches

Space to rise from table—32 inches

Space to edge past seated person—36 inches

Space between table edge and wall for serving—44 inches

Sleeping Area

Space for bed making—22 inches

Space in front of closet—36 inches

Space for dressing—36 inches to 42 inches (both directions)

Space in front of dresser—40 inches

Guidelines On Arrangement

1. *Keep traffic lanes open.*

The paths that people take when walking through a room form the traffic pattern. Place major conversational groups so that they are not disturbed by traffic. If doors are so placed that traffic must bisect the room, you may be able to arrange a main group and a second smaller group.

It is sometimes possible to arrange furniture to redirect traffic and to make the room more usable and interesting.

2. *Place large pieces close to and parallel to the wall.*

They will take up less floor space and conform to the lines of the room.

3. *Each room should have a center of interest or focal point.*

This can be a fireplace, a window area, an important piece of furniture or a beautiful accessory. The way furniture is arranged can dramatize your choice.

4. *Group together the pieces that are used together.*

A work corner with supplies close to the work surface adds to the pleasure and efficiency of sewing, home study or a hobby. Comfortable chairs and a sofa grouped in a semi-circle are comfortable for conversation. Group furniture according to the way it will be used.

5. *Arrangement can determine function.*

Furniture can often function as a divider or partition between different areas. Bookcases, cabi-

nets and chests are often finished on back and front so they can be seen from all sides. Much of today's modular furniture can be stacked and added according to need and use.

Standing screens, shutters and shades are often used to make furniture groupings more effective.

6. *Create a spacious look.*

When rooms are small, your problem is to make them seem as large as possible. Items of furniture should be kept to a minimum. Lightweight pieces with slender legs and open arms give a feeling of spaciousness. Arrange furniture close to the walls to leave floor space open. Avoid too many small accessories. A large mirror carefully hung can work wonders in increasing the apparent size of a room.

7. *Harmony of scale, line and color contributes more to unity than choice of specific furniture styles.*

Almost any styles of furniture can be combined if the pieces have a common unity of character or form. In the final analysis, color is the element that may determine the success of the combination.

The total room should reflect thoughtful use of the elements of good design. Tying lines together is important. Not all surfaces should be the same height, but some uniformity does contribute to the feeling of harmony. Furniture lines should have a pleasing relationship to the architectural features, such as doors, mantels and windows. Arrangement of furniture also helps to carry out the general feeling or character you wish to achieve.

Good Design In Arrangement

Balance—Heavy pieces of furniture and dominant colors must be distributed so that no one area is over-emphasized. Groupings within the room should also balance. A combination of formal and informal balance is usually pleasing.

Scale and Proportion—Each piece of furniture should be proportioned to suit the room, the space it will occupy in the room and the other furniture. This does not always mean one should select large furniture for large rooms and small furniture for small rooms. For example, a full-length sofa in a small room looks more spacious than would three or four separate chairs.

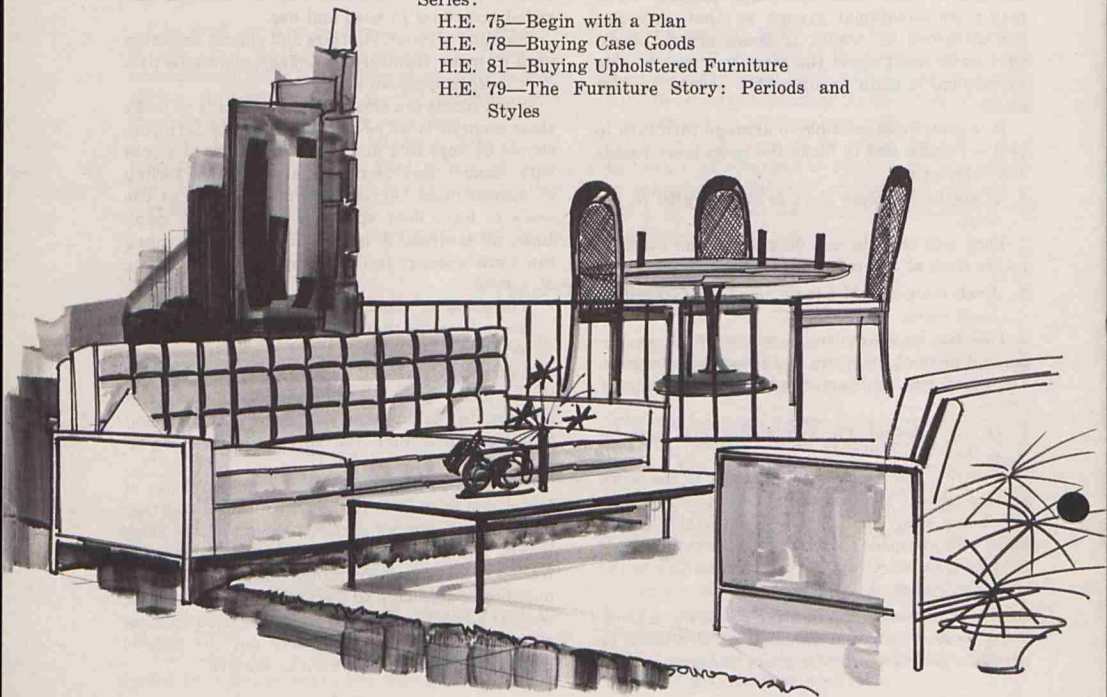
Poor proportion in a room can often be improved by the way furniture is arranged. A long, narrow room, for instance, will appear better proportioned if heavier furniture is placed at the ends.

Contrast or Emphasis—Eye appeal is achieved by use of variety in shape, size, color and texture. Some high and some low furniture adds interest. Likewise, a combination of some straight and some curved lines is more pleasing than either one alone.

Unity—Proper application of the principles of balance, proportion and contrast should result in a blending effect—a feeling that each part belongs to the whole.

Additional references in Furnishing Your Home
Series:

- H.E. 75—Begin with a Plan
- H.E. 78—Buying Case Goods
- H.E. 81—Buying Upholstered Furniture
- H.E. 79—The Furniture Story: Periods and
Styles



Grateful acknowledgement is given for critique of manuscript by panel members of Southern Furniture Manufacturers' Association and by Miss Elizabeth Hathaway, Professor of Home Economics of the University of North Carolina at Greensboro. The art work was provided by S. F. M. A.

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Outline for
Selection of Rugs and Carpets

Teaching Objective: To provide information to help families invest wisely in rugs and carpets for the home.

Recommendations and Teaching Aids: This bulletin is designed to provide consumer competence in the selection of rugs and carpets. It is recommended that the lesson be taught by Home Economics agents.

Appropriate for use with regular group meetings or for special interest groups.

The kits contain samples of carpets of different fibers, designs, textures and qualities produced by a variety of manufacturers. It would be desirable to supplement with local samples. Included also are a number of different types of padding.

1. Carpets and rugs perform many functions.
 - A. In the functional role they
 1. Absorb and deaden sound
 2. Provide insulative qualities
 3. Provide comfort underfoot
 4. Increase safety
 5. Simplify housekeeping
 - B. In the decorative role they may
 1. Give pleasing visual appeal
 2. Provide character
 3. Unify other furnishings
 4. Hide ugly floors
 5. Provide a decorating focal point or
 6. Add individuality

11. Carpet selection is influenced by

A. Size of Room

1. Wall to wall provides a feeling of spaciousness and an unbroken background for furnishings.
 - a. Some extra cost for installation
 - b. Cannot be turned periodically
 - c. Not easy to move
2. Room size are less expensive because there is no installation charge.
 - a. Do not provide the feeling of spaciousness or background unity of wall to wall.
 - b. Standard sizes are available; other sizes can be ordered to fit need.
 - c. Standard widths are 3, 6, 9, 12, 15 and 18 feet.
 - d. Should come within 12 inches of the wall in large room and within 6 to 8 inches in a small room.
3. Room-fit rugs give much the same feeling as wall to wall - follow the contour of room.
 - a. Conceal all of the floor except very narrow margin.
 - b. Can be easily removed.
4. Area rugs can be used effectively as a substitute for or in preference to room-size rugs.
 - a. Unifies or emphasizes a grouping of furniture.
 - b. May give distinctive pattern and color to a room.

B. The kind and amount of traffic influence choice.

1. Regular traffic is the most serious cause of carpet wear.
2. Multi-tone and rough textures are excellent for concealing soil and tracks.
3. Light colors and smooth textures show soil more readily.

C. Color and design are important factors.

1. The carpet may guide the selection of furniture, fabrics, color, design or
2. The furnishings may be used as a basis for making the carpet choice.
3. Certain colors and pattern selections suggest different types of rooms.

- D. Both artificial and natural light should be used in determining color choice.

III. There are several guidelines to help you determine the best use of your money.

A. Type of fiber

- 1. Carpets are made of vegetable, animal and synthetic fibers.
- 2. Each has desirable characteristics (see chart)
- 3. Each manufacturer used his trade name for the fibers he makes.

B. Yarn

- 1. Yarn designed for carpet use is strong, bulky and resilient.
- 2. Ply yarns are used for carpets.

C. Density of pile

- 1. Density is determined by the closeness of the rows and the individual tufts of surface pile.
- 2. Latex is often used to give stability to tufted carpeting; a second backing provides additional stability.

D. Resilience

- 1. Resilience is determined by the kind of fiber and amount of yarn on the surface.
- 2. Some fibers recover slowly and less completely than others.

E. Carpet construction

- 1. Woven carpet is constructed on a loom - these include Wilton, Axminster, velvet chenille.
 - a. Cost is high.
 - b. Small percentage of these in market place.
- 2. Tufting permits rapid production at reduced cost.
 - a. The quality varies.
 - b. The well-made tufted carpet compares favorably in quality with the woven.

3. The non-woven is a recent addition to the market.
 - a. Both fiber and method of production are relatively inexpensive.
 - b. Color range and styling are much improved over first.
- F. Just about all fibers are made into rugs and carpets in each price bracket.
 1. A reputable brand name and a reputable dealer will be some indication of quality.
 2. In general, buy the best you can afford.
- G. Rug cushions
 1. Increase the service of rugs and carpets.
 - a. Absorb friction of walking
 - b. Add resilience to rug
 2. Cushions are made of hair, felt, hair-felt combinations, natural and synthetic foam.
 3. Avoid package deals.
- H. Satisfactory service is dependent upon ease of maintenance.

References:

- American Carpet Institute
Faulkner, Ray and Sarah Faulkner, Inside Today's Home. New York: Holt, Rinehart and Winston, revised 1968.
Hollen, Norma and Jane Sadler. Textiles. New York: The MacMillan Company, 1965.
Home Furnishings Daily.

Suggested Evaluation for
Selection of Rugs and Carpets

Mrs. X wishes to select carpets and rugs for her new home. Due to cost and longtime use, she realizes that buying such furnishings is a major investment. Therefore, it is important for her to consider the following factors in selecting her rugs and carpets.

Check only those facts that you think are correct:

- 1. Carpets and rugs are selected primarily for their decorative role in furnishing the home.
- 2. Wall-to-wall carpeting is an excellent choice for small rooms where a feeling of spaciousness is desired.
- 3. Area rugs can be used effectively to unify or add interest to a grouping of furniture.
- 4. Broadloom is the name of a brand of carpeting.
- 5. Regular everyday traffic is the most serious cause of wear.
- 6. The type of fiber, quality of yarn, density of pile and backings are important in determining wearing quality of carpeting.
- 7. A good quality of tufted carpet will wear as well as a comparable quality of woven carpet.
- 8. When shown a carpet of an unfamiliar fiber, the sales person should be able to tell if the name refers to a class of fibers or if it is the manufacturer's tradename for a fiber belonging to a specific group of fibers.

* Attention Home Economics Agent: The answers are provided for agent use only. Please caution homemakers to read instructions carefully. Make any revisions you feel appropriate to evaluate homemaker competency following presentation of lesson. Don't let evaluations become a "chore" but rather an interesting and helpful experience.

Suggestions for Scoring and Summarizing

In order to get a complete picture of homemaker competence after teaching the lesson, it is suggested that the home economics agent responsible for the lesson prepare a county summary from the evaluation forms to include the information listed below:

1. Name of agent and county _____
2. Total number of persons receiving lesson. _____
3. Tabulate scores using this system _____

No. Correct Answers	Rating	Percent Homemakers Scoring
6 correct	Excellent	_____
4-5 correct	Good	_____
3 or less	Poor - suggest further learning	_____

4. Write brief summary pointing up the highlights and implications for future programming. _____
5. Send one copy of the county summary on questionnaire form to specialist involved so that district and state summaries may be made. _____

Outline for Lesson on
Bedding Buymanship

Teaching Objective: To provide information to help families purchase bedding which will contribute to comfort, general good health and posture.

Recommendations and Teaching Aids: This bulletin is designed to provide consumer competence for decisions relative to the purchase of mattress, springs and pillows - the basic elements for sleeping. It is particularly recommended for use by each county participating in the mattress program. It can be handled effectively by leaders.

The kits contain a miniature innerspring mattress, samples of mattress ticking, samples of foam for mattresses and mattress cover.

1. **Introduction:** A clean comfortable bed is needed for rest and sleeping comfort.
 - A. Bedding should be sized to fit the person.
 1. Each person needs 38 inches of bed width and a length of 9 inches longer than his height.
 2. The National Bedding Association has established a wide range of standard sizes for bedding.
 - B. The basic types of mattresses are innerspring, latex or urethane foam and solid construction.
 1. Innerspring - A combination of the gauge of the coils, the number of coils and the type and amount of upholstery determine the firmness of the mattress.
 - a. Coil unit is covered top and bottom with insulating materials.
 - b. Finished height varies between 6 - 8 inches.
 - c. Smooth and quilted tops replacing once tufted tops.
 2. Foam - Both latex and urethane are used.
 - a. Each is lightweight, non-allergenic, mildew and mold proof.
 - b. Both composed of 80 - 95% air.
 - c. Density or compression determines the firmness - midrange of 25 is suitable for the average person.
 - d. Available with different construction features.
 - e. Varies in height between $4\frac{1}{2}$ and 6 inches. Short height excellent on resilient spring foundation.
 3. Solid upholstered - felted cotton, hair or rubberized hair without innersprings are used.
 - a. Provides firm mattress.
 - b. Varies in quality according to quality of filling.
 - c. Not widely used in today's home.

C. The bedsprings provide one-third or more of the total resilience.

1. Box springs, the most widely used, have coils mounted to wood frame base, are padded and covered.

a. Cover for springs is usually of same material as mattress cover.

b. Most bedding experts recommend that mattress and springs be purchased at the same time.

2. Metal coil springs may be purchased without covering.

a. Stabilizers are needed to prevent sagging and squeaking.

b. Difficult to keep clean.

3. Link springs are used primarily on cots and fold-away beds.

D. Mattress Maintenance

1. A quality mattress should last 10-15 years depending on use.

2. A pad or cover protects from dust, dirt and soil.

3. A major function of the mattress pad is to absorb body moisture.

E. Bedstead

1. Bedstead can always be added as the budget permits - not necessary for sleeping comfort.

2. There are many choices for headboard materials.

3. There are also many imaginative substitutes for a headboard.

F. A good pillow is lightweight, resilient, odorless and free from stiff quills and lumpiness.

1. Filling materials may be down, feathers, foam or one of the man-made fibers.

2. The Textile Labeling Law should provide information as to content and care.

3. Pillow ticking should be closely woven fabric, feather-proof, free from sizing and colorfast.

4. Should be protected with a cover.

G. Summary: A good night's sleep is a necessity for your personal sense of well-being and attractiveness.

Suggested Evaluation for Bedding Buymanship

1. Check (x) the statement below which indicates the minimum amount of bed width and length each person needs.

35 Inches of bed width and a length of 9 Inches longer than the person.

38 Inches of bed width and a length of 9 Inches longer than the person.

2. A good mattress has the following characteristics. Check (x) only one.

firm and remains at an even level with each change of body position.

stiff with a durable covering

soft and easy to clean

3. A good set of springs should be expected to do the following. Check (x) only one.

make up for poor quality of mattress.

provide the proper support for the mattress of your choice.

4. The firmness of a foam mattress is determined by these factors. Check (x) only one.

the thickness of the mattress

the density or compression

the size of the cells or holes

5. A good pillow has the following characteristics. Check (x) only one.

large and heavy

light and resilient

filled with any soft material

Attention: Home Economics Agents

The key is provided for agent or leader use only. Please caution homemakers to read instructions carefully. Make any revisions you feel appropriate to evaluate homemaker knowledge following presentation of lesson. Make the evaluation an interesting experience.

(OVER)

Suggestions for Scoring and Summarizing

In order to get a complete picture of homemaker competence after teaching the lesson, it is suggested that the home agent responsible for the lesson prepare a county summary from the evaluation forms to include the information listed below:

1. Name of agent and county.
2. Total number of persons receiving lesson.
3. Tabulate scores using this system

No. Correct Answers	Rating	Percent Homemakers Scoring
5 correct	Excellent	_____
4 correct	Good	_____
3 or less	Poor - suggests further learning	_____

4. Write brief summary pointing up the highlights and implications for future programming.
5. Send one copy of county summary on questionnaire form to specialist involved so that district and state summaries may be made.

BEDDING BUYMANSHIP

If you live to be 75 and sleep 3 hours a day, you will spend 25 years of your life sleeping or resting."

A clean, comfortable bed is needed if you are to feel fresh and rested each morning. A good bed and the right bedding also contribute to good general health and posture.

Sleeping comfort is based on having a firm, level spring and mattress for the bed; plump, resilient pillows; smooth, clean sheets and pillowcases; sufficient, lightweight coverings; and plenty of room in which to turn.

BEDDING SIZE

Each person needs at least 36 inches of bed width and a length of 9 inches longer than he is. Is it any wonder a 72-inch man in a 75-inch space jams his pillow between the headboard and mattress and turns into a blanket-grabber? Yet a large majority of married couples sleep in double beds 54-inches wide or just 27 inches per sleeper--the exact width of a crib.

Recent studies show that over the past several decades men and women are growing both in height and stature. To accommodate the need and demand for extra width and length, the National Association of Bedding Manufacturers has established a wider range of standard sizes. You can now choose bedding items sized to fit your individual sleeping needs.

MATTRESS TYPES

The basic types of mattresses are: innerspring with many different kinds of upholstery padding, such as cotton, foam, hair, or a combination of these; and latex or urethane foam without innerspring constructions. These are made in many different price ranges, depending on the quality of materials used, the size, and the amount and kind of workmanship.

A good mattress will offer firm, buoyant support allowing the body to float on an even level with each change of position. When the mattress is too stiff to "give" to body contours, it is difficult to relax. If the mattress is too soft, the body is not aligned properly for sleeping comfort.

Test several mattresses by stretching out on them. You can't tell much by pressing the mattress with your hand or even by sitting on it. The overall balance is the crucial test. You have a choice of firmness in each type of mattress.

Innerspring

An innerspring mattress is constructed like a sandwich, beginning with the coils linked as the basic element. The number of coils is not as important as the gauge of steel used, the number of turns or spirals of each coil, and how the coils are made and put together. The coils and a border wire, if the innerspring is designed to have one, are joined together by helical wires into a complete innerspring unit. The number of coils may range from 180 to more than 1,000. In some mattresses each coil is encased individually in a cloth pocket and then sewed or clipped together.

The combination of the gauge of the coils, the number of coils, and the type and amount of upholstery help determine whether a mattress is soft, medium, or firm.

The coil unit is covered top and bottom with insulating material (usually a stitched sisal pad and/or steel wire mesh). This holds the coils in place and keeps the padding from dropping down into the coil area. Two or more thicknesses of cotton felt, top and bottom, complete the inner construction. The padding gives a softer surface to the mattress. Some mattresses have an extra layer of padding in the center third, where most of the sleeper's weight is concentrated. A layer of foam latex or urethane over the cotton padding or in place of it is sometimes used to give an individually-different feel to the mattress surface.

The finished innerspring mattress is $6\frac{1}{2}$ to 8 inches in height.

The smooth-top mattress and the quilted-top have to some extent replaced the once-common tufted top. Quality construction of a smooth-top innerspring mattress will have the inner materials secured firmly to the innerspring unit to prevent shifting and to keep the surface firm and tightly drawn. Tufting may be hidden under the top layer of padding. The top layer of inner materials of a smooth-top mattress may also be secured by a quilting process, which machine-applies a decorative design to the cover at the same time.

If you feel the coils of an innerspring mattress, you can be sure that the construction is inferior.

Foam

Both latex foam and urethane foam are used to make mattresses without innersprings. While the method for producing each is different, the end products have similar characteristics. Each is lightweight, non-allergenic, and mildew- and mold-proof.

Foam latex or urethane provides a "feel" totally different from the surface of an innerspring mattress. Both are actually composed of 80 to 95 percent air, having interconnected cells that differ from most sponge rubber and breathe with every turn of the body--even quiet sleepers turn from 40 to 65 times a night.

The density or compression determines the firmness. Compression may not be easy to determine, though some mattresses are actually stamped with the compression number and it is possible that the shipping carton also carries this information. Compressions range in latex from 13 to 38. Anything below 17 is not recommended by quality manufacturers as they are too soft to provide support and compress to a point where you are literally hitting bottom. Most manufacturers feel a mid-range compression of 25 is suitable for the average person. Urethane producers are also developing compression numbers.

Just as the innerspring mattress offers different construction, the manufacturers of foam mattresses offer different constructions. Some units are so molded that the center third provides greater support than either end. Other units are molded with a solid slab of latex sandwiched between core holes (open areas). Urethane foam is considerably lighter than foam latex.

While foam mattresses can be found in $4\frac{1}{2}$ - and 6-inch heights, don't let the height confuse you. The shorter unit can be excellent if the spring foundation is resilient.

Solid Upholstered

Felted cotton, hair or rubberized hair with innersprings are also used in making solid upholstered mattresses. These fillings provide a firm mattress with less resilience than either the innerspring or foam mattress. A good hair mattress, made of tail or mane hair, is very expensive and must be a special order. There are very few craftsmen left who know how to work this material.

An all-cotton mattress varies according to the quality of cotton used. A fiber-filled mattress tends to become lumpy and needs to be aired and turned regularly. They are not widely used in today's homes.

The mattress cover for each type of mattress should be tailored carefully out of firmly-woven fabric. It should be anchored firmly to the base or filling material. It should have firmly attached handles for ease in handling.

SPRINGS

The bedspring, the foundation for the mattress, provides one-third or more of the total resilience. There are three kinds of spring construction: the box, open-top coil, and flat-link spring.

Box springs, the most commonly used, have steel-spring-wire coils mounted to a wood-frame base and are padded and covered with ticking. The best ones have coils tied securely to each other and to their base and border.

Most bedding experts strongly recommend that mattress and springs be purchased at the same time. In the coil-on-coil units there are the same number of coils in both boxsprings and mattress. Other springs are specially engineered for the foam mattress.

The cover used on the spring should be of a firmly-woven, durable fabric. Since the same type of fabric is used to cover both spring and mattresses, they make an attractive set when purchased together.

Metal coil springs may also be purchased without the covering. Some have steel bands placed over the top of the coils to form a semi-closed surface over which either an innerspring or solid upholstered mattress may be used. Stabilizers are needed to prevent sagging and squeaking. This type of spring is difficult to keep clean.

Link springs are used primarily on cots and fold-away beds. They are inexpensive and tend to sag with use.

MATTRESS MAINTENANCE

A quality mattress should last 10 to 15 years, depending on the kind of use it gets.

Always use a pad or pad and cover on the mattress and, if you prefer, a cover on the boxspring. These help protect the bedding from dust, dirt, and soil.

The major purpose of the mattress pad is to absorb the moisture which your body produces during a night's sleep. Without the pad, this moisture goes directly into the mattress.

When the pad and mattress cover are combined into a single unit, the pad is held firmly in place and does not shift on the bed.

BEDSTEAD

If you must budget, most of your money should go into the purchase of good springs and mattress. These can be mounted on inexpensive legs or a frame until you can purchase the headboard or bedstead of your choice.

This may be one of a variety of attractive designs in wood to match or complement the other bedroom furniture. Or, you may wish to consider some of the other materials, such as brass, rattan, woven cane or wicker, and wrought iron.

Actually, there is no rule which dictates that you must have a headboard at all. There are any number of imaginative and attractive backdrops that can be used for the bed, such as oversized bolsters, colorful pictures, swags of fabric, wallpaper, etc.

PILLOWS

A good pillow is light in weight, resilient, odorless, and free from stiff quilts and lumpiness. It should spring back to a plumpness readily and hold its shape when balanced on the outstretched hand.

The filling materials may be down, feathers, foam, or one of the man-made fibers. Down and goose feathers are the best of the feather fillings. Foam may be either molded or shredded. Like mattresses, foam pillows vary in firmness.

The man-made fiber fills have become increasingly popular. The Textile Labeling Law provides helpful information as to content and care. Foam pillows and man-made fiber fillings are recommended for people with allergies.

The ticking should be a closely-woven fabric, feather-proof, free from sizing, and fast in color.

Pillows should be protected with a cover over which is slipped the pillow case. In this way the pillow is easily kept clean.

SUMMARY

A good night's sleep is a necessity for your personal sense of well-being and attractiveness. Keep in mind that the most important constant factor that determines how well you sleep is your sleep equipment. The selection of just the right comfort is a personal matter. Buy the best you can because it is an investment that will pay big dividends for every member of the family through the years.

Outline for Lesson
Designed for Dining

Teaching Objective: To provide consumer information relative to choice of tableware, table linens and table decorations to add pleasure to family dining.

Recommendations and Teaching Aids: This bulletin is designed to provide consumer competence in the selection of tableware, table linens and table decorations. Appropriate for organized groups or special interest groups. Appropriate for either leader or agent use. Demonstration slides will be available.

- I. **Introduction:** The atmosphere of the dining area and how meals are served strongly influence individual behaviour and dining pleasure.

- II. **Space for Dining**
 - A. Should be adequate for comfortable seating and convenient service.
 - B. The way each family lives and entertains dictates the amount of space needed and the type of furniture needed.

- III. **Tableware should be functional and pleasing to the eye.**
 - A. **Dinnerware**
 1. Is purchased by the place setting, by the set or from open stock.
 2. Is available in a variety of materials.
 - a. Porcelain
 - b. Bone china
 - c. Earthenware
 - d. Stoneware
 - e. Pottery
 - f. Plastics

 - B. **Glassware**
 1. Should harmonize with other table appointments.
 2. Needs are determined by amount and kind of entertaining.
 3. Types vary according to the raw materials used and methods of heating and cooling.
 - a. Lime
 - b. Lead
 - c. Borosilicate

C. Flatware

1. Includes the knives, forks, spoons and other pieces of silver used in eating and serving a meal.
2. Made of several different materials--usually
 - a. Sterling
 - b. Silver plate
 - c. Stainless steel
3. Purchased by individual piece or place settings.
4. Design is a matter of individual preferences.

D. Holloware

1. Includes bowls, pitchers and serving dishes.
2. Should blend with flatware but not necessary to match.
3. Should blend with other table appointments.

IV. Table linens include any fabric, regardless of fiber content, used for table service.

- A. They serve as a background for china, silver and crystal.
- B. They may completely cover the table or serve for one or more place settings.
- C. Types will depend on kind and amount of entertaining.
- D. These factors indicate quality.
 1. Label with fiber content, care and expected service.
 2. Firmly-woven fabric with minimum sizing.
 3. Well-made hems and good finish of details.
- E. The size of the napkin varies according to when it is to be used.
- G. Special finishes may minimize care.

V. An arrangement of fresh flowers, berries and other interesting materials add to dining pleasure.

References:

Faulkner, Ray and Sarah Faulkner. Inside Today's Home. New York: Holt, Rinehart and Winston, revised 1968.

Stepat-DeVan, Dorothy, Introduction to Home Furnishings. New York: The MacMillan Company.

Whiton, Sherrill. Elements of Interior Design and Decoration. New York: J. B. Lippincott Company, 1960.

Suggested Evaluation for Designed for Dining

Check (x) only one in each of the following statements:

1. The kind of design in dinnerware which is most adaptable for food service.
 - a. embossed
 - b. simple
 - c. elaborately decorated
2. Dinnerware purchased by the set has the advantage over that bought in "open stock" because it is
 - a. less difficult to care for
 - b. generally less expensive
 - c. less likely to break
3. Quality in glassware is indicated by
 - a. tall, long stemware
 - b. luster, sparkle and bell-like tone
 - c. decoration
4. The most treasured flatware is
 - a. dirillite
 - b. sterling
 - c. wood and Ivory
5. Your choice tablecloth should
 - a. completely cover the table and hang over 6 to 8 inches.
 - b. always be white
 - c. vary according to the way you live and entertain.

Attention: Home Economics Agent

The key is provided for agent or leader use only. Please caution homemakers to read instructions carefully. Make any revisions you feel appropriate to evaluate homemaker competency following presentation of lesson. Make the evaluation an interesting experience.

SUGGESTIONS FOR SCORING AND SUMMARIZING

In order to get a complete picture of homemaker competence after teaching the lesson, it is suggested that the home agent responsible for the lesson prepare a county summary from the evaluation forms to include the information listed below:

1. Name of agent and county.
2. Total number of persons receiving lesson.
3. Tabulate scores using this system

No. Correct Answers	Rating	Percent Homemakers Scoring
5	Excellent	---
4	Good	---
3 or less	Poor - suggests further learning	---

4. Write brief summary pointing up the highlights and implications for future programming.
5. Send one copy of county summary on questionnaire form to specialist involved so that district and state summaries may be made.

DESIGNED FOR DINING

The atmosphere of the dining area and how meals are served strongly influence individual behavior and the pleasure of dining.

In keeping with today's trend toward casual living, family meals and entertaining of guests are often informal. Meals may be served in a separate dining area, the kitchen, family room, on the patio or in other areas of the house.

Regardless of location or the degree of formality, always serve food in an attractive way; keeping in mind that dining furniture, decorative background, china, silver, glassware, table linens and decorations all contribute to dining pleasure.

Space for Dining

Dining space should be adequate for comfortable seating and convenient serving. The following dimensions are basic in planning eating areas and selecting and arranging furniture.

- Allow: 21-24 inches of table space per person
- 32 inches to rise from chair at table
- 36 inches between wall or piece of furniture and table to edge past seated person
- 44 inches between table and wall to serve comfortably.

The way your family lives and entertains will help dictate the amount of space needed, whether you will have one or more planned eating areas and also the type of furniture needed.

Tableware

Since tableware will probably be used several times a day for a long period of time, it should be functional and pleasing to the eye. Various items should harmonize with one another, should be in keeping with the general spirit and background of your home and should complement the way your family lives.

Dinnerware

Choosing a design in dinnerware from a beautiful display of china is difficult. It helps to visualize how food will look on each plate. Elaborately decorated plates are lovely for display, but the simple designs are more adaptable for food service. Some embossed designs require extra care in washing.

China is often bought in place settings. A five-piece setting generally includes: 1 dinner plate, salad plate, bread and butter plate, cup and saucer.

Some patterns are sold by the set; others may be purchased in "open stock." China usually costs less by the set. Open stock, however, allows you to add pieces over a period of time or to replace pieces as long as the manufacturer continues to make the pattern.

Dinnerware comes in a variety of materials and a wide range of prices. Most widely used are the ceramics including porcelain, bone china, earthenware, stoneware and pottery.

Because porcelain was first made in China, all dinnerware is often incorrectly called china. Porcelain is a fine type of china made from a special white pottery clay called kaolin. It is partly transparent and nonporous.

When bone is added to kaolin, the result is a strong, highly transparent china especially suitable for decoration under the glaze. These materials are used in some of the finest china, such as Spode, Wedgwood, Royal Doulton and others.

Earthenware ceramics are not transparent. They are more porous than the fine porcelains. However, the degree of porosity varies widely.

Some clay mixtures can be fired to temperatures that make them very hard and nonporous. Ironstone is an example.

The term pottery is usually associated with rough textures and earthy colors. It is also used in referring to all ceramics.

There is a growing trend toward the use of plastics. These are light in weight and almost unbreakable. They are now available in a range of pleasing solid colors and designs.

Traditionally, most families have at least two sets of dinnerware, one for family use and another for special occasions. In selecting two or more patterns, decide if you will wish to combine them occasionally. If so, will they look well together?

Glassware

The formality or informality of your dining should help determine the glasses you choose for table use. Design of glassware should harmonize with other table appointments. Simple china and plain silver suggest simplicity in glassware.

Glasses are made in a variety of sizes and shapes. The amount and kind of entertaining you do will help determine your needs. In keeping with today's mode of living, glasses are often adaptable to different uses.

Tall, long-stemmed water goblets are lovely in full-sized dining rooms where there is plenty of table space. The short-stemmed glass of another type is less likely to tip and more practical and suitable for most uses.

Different kinds of glass are produced by varying the raw materials and the methods of heating and cooling. Three general types of glass are lime, lead and borosilicate.

The first type, lime glass, is used for window panes, jars, bottles and inexpensive tableware. It is low in cost and high in durability. Basic ingredients are sand, soda and lime.

Lead glass is expensive and beautiful. It has luster, sparkle and a bell-like tone when tapped. These qualities are produced from a mixture of sand, potash and lead.

When boric oxide is added to sand and soda, glass takes on a heat-resistant quality. This type of glass, called borosilicate, is useful for cooking utensils.

A piece of sparkling glass beautifully formed needs little or no additional decoration. However, there are a number of processes often used to add decorative qualities. These include the addition of color or bubbles; the application of enamels or metals, such as gold, platinum and silver; frosting, etching and cutting. Decoration usually adds to the cost.

Flatware

Flatware refers to the knives, forks, spoons and other pieces of silver used in eating and serving meals. Sterling, silver plate and stainless steel are the most usual types. However, there are other variations, such as Dirilite or Vermeil a gold-colored flatware, and combinations of wood, ivory and other materials.

The most expensive and treasured flatware is sterling silver. Over the years beautiful silverware has reflected family sentiment and prestige. Selecting a pattern of silver is usually considered one of the first steps toward furnishing the home.

Actually, silver is a soft metal and depends on the addition of another metal, usually copper, to add strength. A product marked sterling must have 925 parts of pure silver in every 1000 parts. This is required by law.

Plated ware is made by using a base metal of nickel, copper and zinc. A coating of silver is deposited on the base material. Durability of silver plate depends on the thickness of the coating and how carefully it is applied.

With proper use, a high-quality of silver plate will give satisfactory service for many years. Since there is wide variation in quality, it is wise to deal with a reputable firm.

Stainless steel has developed wide popularity for table use. It has some very practical advantages, even though it does not have the sentimental or prestige value of silver. Since it does not tarnish and resists stains from foods, it requires little care. It is made in a wide range of patterns and costs less than sterling silver.

There are several ways to purchase flatware. You can buy individual place settings or you can buy a set of four, six, eight or twelve settings.

Basic plate settings vary in number and types of pieces. A five-piece setting usually includes a knife, fork, teaspoon, soup spoon and butter spreader. In some patterns, knives and forks are offered in both dinner size and a smaller luncheon size. Most designers now make one all-purpose size.

Choice of design is a matter of individual preference; however, silver should harmonize with other tableware. Handle pieces to be sure they are well-balanced for use.

Holloware

Holloware includes bowls, pitchers and serving dishes. As a rule, they do not match flatware in design. Silver, silver plate and stainless steel are used. Sometimes these are combined with crystal. You would use the same criteria in selecting holloware as you use for flat silver. It, too, should blend pleasingly with other table appointments.

Table Linens

The term "linen" is used to describe any fabric used for the table regardless of fiber content. Linen has long been the favorite even though a variety of other fibers are in popular use.

Your needs for table linens vary according to the way you live and entertain.

Table linens serve as a background for china, silver and crystal and thus should be selected carefully. They are chosen to completely cover the table or to serve for one or more place settings.

Every family needs at least one good (preferably linen) tablecloth. It is durable, beautiful and makes a handsome background for almost any occasion. This can be supplemented with less formal cloths, mats or more elaborate cloths, according to variations in family entertaining.

To get the greatest satisfaction from any of these, there are certain factors to keep in mind:

- The label should tell fiber content and care the linens will need. Labels often give you some indication as to the service you can expect.
- A firmly woven fabric will usually give more satisfactory wear than a loosely woven one. Amount of sizing is also an indication of quality. Some low-quality linens are given a better appearance when sizing is left in. However, this will come out during laundering, leaving a thin, sleazy fabric.
- Examine hems to see if they are hand or machine-sewed. Mitered corners and neatly finished hems are an indication of quality.

For dining, a tablecloth should cover the table and hang over the sides 10 to 12 inches. The same amount of overhang is desirable for a round cloth. However, the cloth for a party table may have a larger overhang.

Colored cloths have become popular and make a smart background for table settings. Attractive designs made by printing, weaving, embroidering or appliqueing

often add beauty and individuality to a table. It is important that table linens should be colorfast since they will be laundered often.

Since most persons serve meals quite informally, place mats have become popular. They are appropriate for breakfast, luncheon and informal dinner settings. They should be made of fabrics that launder easily.

Size of mats is an important consideration. In order to accommodate the china, glassware, silver and napkin for one place setting, the mat should be a minimum of 12 by 18 inches.

Napkins often are of the same fabric as the tablecloth or of a harmonizing fabric. When choosing, consider the same construction features as for tablecloths.

Size of napkins should be checked carefully, as the size needed may vary according to when it is used. For breakfast, a napkin $13\frac{1}{2}$ by $13\frac{1}{2}$ inches will be sufficient. Luncheon napkins should be at least 16 inches square. However, for formal dinners the napkin should be 18 to 24 inches square.

The new no-iron and soil-resistant finishes for table linens are becoming increasingly important.

Centerpiece

An arrangement of fresh flowers, greenery, fruit, berries or other interesting materials can be used to make the table setting complete. Colors, design and material should be in keeping with other table appointments. The arrangement should fit the space without crowding and be low enough to permit easy conversation by those seated at the table. If the arrangement is for a special occasion, rather than dining, a much taller centerpiece may be used.

Candles are often added for evening meals and for late afternoon and evening entertaining. Fresh flowers and candles add a festive feeling and a pleasant touch of hospitality.

References:

Furnishing Your Home: Buying Case Goods, H.E. 78

Faulkner, Ray and Sarah Faulkner. Inside Today's Home. New York: Holt, Rinehart and Winston, revised 1963.

Prepared by Mrs. Lillie B. Little, Extension Housing and House Furnishings Specialist, N. C. State University and the U. S. Department of Agriculture, Cooperating, N. C. State University; Raleigh, North Carolina 27607.

Outline for Lesson
Linens for Bed and Bath

Teaching Objective: To provide information to assist families invest wisely in linens for sleeping and bathing.

Recommendations and Teaching Aids: This lesson is designed to add consumer competence in the selection of linens for bed and bath. It is particularly suited for regular group presentation. Can be effectively handled by leaders.

The kit for loan contains samples of different types of sheets, blankets, pillow cases, towels and washcloths.

- I. Introduction: The right linens for bed and bath play an important role in the total furnishings plan.
 - A. They are available in a variety of fibers, sizes, qualities, colors, decorative features and styles.
 - B. A good label should provide many helpful facts.

- II. Sheets and pillow cases are both functional and decorative.
 - A. Sheets are sized to fit standard beds. (See chart)
 1. May be flat or fitted.
 2. Labels indicate length before hemming.
 3. Pillow cases available in same fabric as sheets and in standard sizes.
 - B. Cotton is by far the most popular fiber for sheets and pillow cases.
 1. The quality depends on choice of fiber.
 2. A standardized classification is determined by thread count.
 - a. Muslin - light, medium, heavyweight.
 - b. Percale - utility, combed.
 3. New "no-iron" sheets and pillow cases are made of polyester and combed cotton.
 - C. Sheets and pillow cases are available in a wide selection of colors and styles.

1. They contribute to bedroom decor.
 2. They should be a part of the color plan.
- D. They are priced according to the quality of the fiber, decorative detail and size.
1. Regular sizes in staple cotton are the least expensive.
 2. These are some indications of quality:
 - a. Weave even and firm.
 - b. Amount of sizing.
 - c. Hems even, straight, well-sewn.
 3. Label should indicate expected shrinkage.
- E. Supply of sheets and pillow cases should allow for regular changes for each bed.
1. A good rule to follow--six sheets for each bed and three pairs of pillow cases.
 2. It is good practice to replace a pair for each bed each year.
- F. In order to increase the life of bed linens
1. Take care in removing sheets from bed.
 2. Watch for needed repairs.
 3. Protect with mattress pads.
 4. Change before becoming too soiled.
 5. Avoid strong bleaches.
 6. Dry and fold carefully.
 7. Avoid using high temperature when ironing.
 8. Rotate sheets--reverse top and bottom to distribute wear.
 9. "No-iron" sheets dry quickly and last longer.

III. A warm blanket has a fine, even, springy nap that retains heat.

- A. The most common fibers are wool, rayon, nylon, modacrylics, such as Dynel, and acrylics such as Orlon, Acrilan and Creslan.

1. Blends of two or more fibers are often used to reduce cost or improve service qualities.
2. Bindings should be neat, strong, securely stitched and attractive.

B. Size affects wear.

1. They are sized to fit standard beds.
2. Electric blankets are practical, easy-to-use, safe if chosen properly.
 - a. Look for Underwriter's seal
 - b. Follow manufacturer's instructions.

IV. Bedspreads may be both functional and beautiful.

- A. Both ready-mades and custom-tailored bedspreads are available in a wide variety.
- B. Choice influenced by occupants, type of furnishings and the way the room is used.
- C. Quality fabrics mean good wear.
 1. Firmly-woven fabrics wear better.
 2. Many have special finishes to resist soil and wrinkles.

V. A towel must meet two requirements--absorb moisture readily and wear well in use and laundering.

- A. Several factors determine quality.
 1. The more loops per square inch the better it will absorb moisture.
 2. Weave should be uniform and good.
 3. Selvage should be even and fast.
 4. Hems should be neatly turned and stitched.
 5. Too much sizing indicates poor quality.
 6. Entire towel should be woven with same tension to prevent puckering.
 7. Color should be fast to laundering.

B. When considering size, consider:

1. Who will use the towel.
2. How it will be used.
3. How it will be laundered.

VI. Summary: Manufacturers are offering coordinated colors and designs for sheets, pillow slips, blankets, bedspreads, bath sets and accessories.

Suggested Evaluation of
Linens for Bed and Bath

1. Check (x) the basic factors any homemaker should consider in selecting sheets and pillow cases.

Decorative features and styles
 Color and design
 Durability and comfort

2. Size of sheets needed is determined by: Check (x) only one

Care required in laundering
 Length and width of bed
 Cost and quality of fabric

3. The standard size of pillows is: Check (x) only one

31 by 37 inches
 20 by 35 inches
 21 by 27 inches

4. You can judge a sheet of good quality by: Check (x) only one

The cost
 The size
 Firm, even weave

5. A warm blanket is: Check (x) only one

Heavy and closely woven
 Light with springy nap

6. Check (x) the factors to be considered in selecting a quality towel:

Closeness of weave
 Selvage edge
 Finish of hems
 Amount of sizing
 Person using towel

Attention: Home Economics Agent

The key is provided for agent or leader use only. Please caution homemakers to read instructions carefully. Make any revisions you feel appropriate to evaluate homemakers' knowledge following presentation of lesson. Make evaluations an interesting experience.

(Over)

Suggestions for Scoring and Summarizing

In order to get a complete picture of homemaker competence after teaching the lesson, it is suggested that the home agent responsible for the lesson prepare a county summary from the evaluation forms to include the information listed below:

1. Name of agent and county.
2. Total number of persons receiving lesson.
3. Tabulate scores using this system

No. Correct Answers	Rating	Percent Homemakers Scoring
6 correct	Excellent	_____
4-5 correct	Good	_____
3 or less	Poor - Suggest further learning	_____

4. Write brief summary pointing up the highlights and implications for future programming.
5. Send one copy of county summary on questionnaire form to specialist involved so that district and state summaries may be made.

LINENS FOR BED AND BATH

The most private rooms in the home are the bedrooms and baths. They should be planned and furnished with the users' comfort, convenience, and taste in mind. The right linens for these rooms play an important role in the total furnishings plan.

The choice is sometimes difficult because of the variety of fibers, sizes, quantities, colors, decorative features, and styles now available. Important factors to consider in the selection of all linens are the use, beauty, quality, cost, and the care required.

A good label will help you to know the kind of merchandise you are buying. Learn to read the labels for such information as:

- Size
- Fiber content
- Construction--the length, width, and thread count
- Special finishes
- Expected service--the amount of shrinkage to expect and the strength of the yarns
- The care required
- The name of the manufacturer

SHEETS AND PILLOWCASES

Sheets and pillowcases are no longer routine household fabrics. Exciting colors, interesting decorative designs, and new styles influence their selection. However, the need for durability and comfort remains basic.

What About Sizes?

Before you start shopping for sheets you need to know what sizes to buy. The size of sheets is determined by the length and width of the bed on which they will be used.

Mattresses have been standardized in size. Dimensions for cot or studio couch, single or twin, three-quarter, and double beds have been established for some time. More recently, extra length and width have been added for the "queen" and "king" size beds. Except for children's beds, mattresses are 74 inches in length for the standard beds and 80 inches for the extra-long. The standard inner-spring mattresses are 6 inches or 7 inches deep and the foam are between $4\frac{1}{2}$ to 6 inches in depth.

Sheets are designed to fit standard mattress sizes. Undersheets should be long enough and wide enough to tuck under the mattress securely. Top sheets should tuck in at the foot and sides and should be long enough to turn back over bed covering at the top.

In order to buy the right size in contour sheets, it is important to know the exact size of the mattress. The fitted type are available for both top and bottom sheets. Those designed for use as top sheets have corners fitted at only one end.

Flat sheets are not preshrunk. The label on them indicates the length before hemming. This means that a finished sheet is about 5 to 7 inches shorter than the label indicates. In addition, it may shrink about another 5 to 8 inches when laundered.

The following table will guide you in choosing the correct sheet sizes:

Types of Beds	Bed Sizes		Flat Sheet Sizes (Before Hemming)	
	Width	Length	Width	Length
				Preferred
Cot or Studio Couch	30"	74"	54"	108"
Single or Twin	39	74	72	108
Long Twin	39	80	72	120
Three-Quarter	48	74	81	108
Double	54	74	81 or 90	108
Long Double	54	80	81 or 90	120
Queen Size	60	80	90	120
King Size	72	84	108	122

Pillowcases are made out of the same fabric as sheets. You usually select the same quality to use together. Pillows vary in size, but the standard is 21" x 27". The pillowcases should fit the pillow neatly but not too closely. The ideal pillowcase is $1\frac{1}{2}$ to 2 inches wider than the pillow to avoid strain during use and 6 to 10 inches longer to protect the pillow from soiling.

What About Fabrics?

Cotton is by far the most popular fiber used for sheets and pillowcases. However, nylon, nylon blends and more recently the "no-iron" blend of polyester and combed cotton are being used.

The quality of cotton sheets depends upon the quality of the cotton fiber, the length of the fibers and the amount of twist in the construction of the yarn. Cotton sheets have been standardized into five classifications. The types are identified as muslin or percale and by "thread count," which indicated the number of lengthwise yarns plus the number of crosswise yarns in a square inch of sheeting.

Minimum Standards for Cotton Sheets

Types	Thread Count (per sq. inch)	Weight (oz./sq. yd.)	Breaking Strength (Pounds per inch)
<u>Muslin</u>			
Light-weight	112	3.7	40 Either Direction
Medium-weight	128	4.2	55 Either Direction
Heavy-weight	140	4.6	70 Either Direction

<u>Percale</u>			
Utility	180	3.7 or 4.0	60 Either Direction
Combed or original	200 square	3.8 max.	60 Either Direction

Many stores do not ordinarily stock the lightweight-muslin type. A good quality of muslin sheeting is strong and durable. It may be coarse or fine, depending on the weave and quality of fiber. A medium-weight muslin is suitable for average household wear. A heavy muslin is recommended when the sheets will receive hard wear.

Percale is made of longer-staple cotton and the yarns are finer and lighter in weight. Therefore, percale sheets are softer, smoother and more luxurious. The new "no-iron" sheets and pillowcases made of polyester and combed cotton are even lighter in weight and softer than percale. This fabric is stronger than regular cotton sheets and also has greater tear strength.

What About Style?

Sheets and pillowcases are now available in a wide selection of solid colors, woven stripes, all-over prints, and with a variety of decorative borders. They can make a pleasing contribution to the bedroom decor if chosen carefully.

Both the color scheme and the general effect of the bedroom should be considered in the selection of linens for the bed.

What About Quality?

The price of sheets can vary considerably. Regular sizes in staple (standard size white) cotton sheets are the least expensive. The price increases with the quality of the fiber, the decorative detail, and extra-large sizes.

There are some very simple tests for judging the quality of the fabric. Hold the material to the light to see if the weave appears even and firm. Rub the fabric between your fingers to see if it has been heavily sized. If it has, it will be sleazy after it is laundered. A good sheet has strong, tape-like selvages with no loose threads. The hems should be straight and neatly sewn.

Since size makes a difference, the amount of shrinkage is important. Sometimes a label will read "pre-shrunk" with no indication as to further shrinkage. However, many manufacturers will guarantee the maximum amount of shrinkage.

How Many Do You Need?

The supply of sheets and pillowcases should allow frequent changes for each bed. This will vary with your laundry practices and equipment. A good rule to follow is to have six sheets for each bed and three pairs of pillowcases for each pair of pillows: two on the bed, two in the wash, and two on the shelf.

It is good practice to replace a pair of sheets and pillowcases for each bed every year.

What About Care?

The life of a sheet depends as much on the care it receives as on making the right choice to begin with.

Proper care should be taken in removing sheets from the bed. Watch for any needed repairs and make them before the sheets are washed. Mattress pads on the beds not only protect the mattress but also protect the sheets from abrasion against the mattress.

Change the beds often enough for the sheets not to become too soiled. Take care in removing spots and stains before laundering. Use plenty of soap and detergent and rinse thoroughly. Strong bleaches damage cotton, but a mild bleach may be needed occasionally.

If you dry sheets out-of-doors, hang them so as to avoid strain. A recommended method is to fold the sheet with the two hems together and pin carefully to the line. Unironed sheets last longer; but if you do iron them, use the proper temperature to avoid damage to the fiber.

For longer wear, rotate the use by putting the freshly-laundered sheets and pillowcases at the bottom of the pile in the linen closet. If regular sheets are used, reverse the top and bottom to distribute the wear.

The "no-iron" sheets should be laundered according to the manufacturer's directions. Less inventory is required due to quick washing, drying and long life of the sheet. They retain smoothness after multiple launderings.

BLANKETS

The weight of a blanket is not always a true indication of warmth. Lightweight blankets may be just as warm as or warmer than heavy, tightly-woven blankets. The warmth of a blanket depends upon its ability to hold warm air as it escapes from the body.

Which Fiber?

The most commonly-used fibers are cotton, wool, rayon, nylon, acrylic (orlon, acrilan, creslan) and modacrylic (dynel) fiber. The warmth of either fiber depends upon the weave, nap, and weight of the blanket.

Wool gives exceptional warmth but does tend to shrink and should have a mothproof finish. Acrilan and orlon are light in weight, do not shrink, but may tend to pill or fuzz. Since rayon does not keep its appearance, it is most often used in blends.

Blends of two or more fibers are often used to improve service qualities. For example, 15% nylon blended with 85% wool in a blanket fabric helps control shrinkage. The fiber present in the largest percentage will give the predominant characteristics to the blanket.

The binding or edge finish affect the beauty and quality of the blanket. The ends are usually finished with a blanket stitch or bound. Cotton, rayon, acetate, and nylon bindings are most commonly used. All may be attractive but the nylon will wear best. The bindings should be neat, strong, and securely stitched. They often either match the blanket or provide a decorative accent.

What Size?

Size affects wear. A blanket which is too small wears out quickly from being pulled here and there to tuck in or to cover the sleeper.

A 90-inch length is needed for use on standard-length beds with innerspring mattresses. A 72-inch width may be used on either a three-quarter or double bed. The 80-inch width is needed for double or king-size beds.

Electric blankets are widely used. If properly chosen and manufacturer's instructions are followed, they are practical, easy to use, and safe.

Be sure that you choose one with an Underwriter's Laboratory seal (UL). A good blanket will be well-labeled, and you should read the instructions carefully so that you will understand how to use and care for it.

For a bed shared by two persons, you need dual controls. It is wise to choose a control that you can easily see at night.

BEDSPREADS

Bedspreads may be functional, decorative or serve both purposes. There is a wide variety of ready-made styles to choose from. However, there is a growing trend to use the custom-tailored type as well as to coordinate bedspread, draperies, and other parts of the room decor.

Some of the factors that influence the choice are the taste and age of the occupants, the size of the room, the other furnishings, and the way the room will be used.

The fabrics used may be light, medium, or heavy but should be strong and wrinkle-resistant. They may vary from organdy for a young girl's room to heavy corduroy or quilted fabrics. Quality fabrics mean good wear. Firmly-woven fabrics wear better than those loosely woven.

Many of today's fabrics are soil-resistant; they resist fading and are easy to care for.

BATH TOWELS

A variety of beautiful terry towels are available for you to select the kind, size, and color to suit your particular needs. To be satisfactory, a towel must meet two requirements. It must absorb moisture readily, and it must wear well in use and in laundering.

How Do You Judge Quality?

Turkish toweling is woven on a special loom which forms loops on both sides of the cloth. The pile adds bulk and absorptive power to the towel. Thus, the more loops per square inch the better the towel absorbs moisture.

The weave itself gives strength and provides the best indication as to how the towel will wear. Hold the towel to the light. If the light shows through in tiny, regular pinpoints, the weave is uniform and good.

Notice the selvage edges. They may be: (1) a fast selvage, which should be closely woven, (2) an over-edged selvage, or (3) a hemmed selvage. Any of these which is properly made will give satisfactory wear.

The hems should be neatly turned back and stitched with small stitches, using strong, fine thread. They should be backstitched at the corners to prevent the stitching from pulling out.

Sizing, such as starch or other filling material, is generally used to hold the yarn in place during the weaving. This is usually removed before the towel is marketed. However, some of the cheaper grades are given a better appearance by sizing after they are woven. This will come out in washing and leave a thin, sleazy fabric.

All towels will shrink some in laundering because of the loose construction of the yarns necessary for proper absorption. Therefore, it is important that the border selvage and main section of the towel be woven with the same tension to prevent puckering. By observing, pulling, and feeling the different sections, you can check the evenness of the tension throughout the towel.

When buying colored towels, it is always well to inquire about their color-fastness to washing. This information should be carried on the label.

Because of the wide variety of colors and designs available, towels have become decorative as well as functional. They should be a planned part of your bathroom color scheme. Bath ensembles to harmonize with the shower and window treatments are becoming increasingly popular.

What About Sizes?

Towels are made in many sizes to fit a wide variety of personal preferences and household needs. When deciding on the sizes, consider:

- Who will use the towel.
- For what purpose it will be used.
- How it will be laundered.

OTHER TOWELS

Face and guest towels are often made out of other fabrics, such as huckaback and crash. Both of these may be purchased in linen, linen and cotton, or all cotton.

SUMMARY

With the current trend to plan coordinated interiors, color and design as well as quality will influence your choice of linens for the bedroom and bath. Many manufacturers are offering coordinating colors and designs for sheets, pillow slips, blankets, bedspreads, bath sets, and accessories. The retail sources are displaying and showing these items in such appealing ways that you have little difficulty finding many beautiful combinations. In fact, the eye appeal is so great that you must be careful not to overlook quality.

Prepared by Lillit B. Little, Extension Housing and House Furnishings Specialist, the North Carolina Extension Service and the U. S. Department of Agriculture, Coordinating, North Carolina State University at Raleigh, Raleigh, N. C. 27607

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MAKE YOUR OWN MATTRESS

Mattress making may be considered a skill, but it involves making many decisions before the skill can be put into action. The mere decision to make rather than purchase a foam mattress is one of the greatest decisions that has to be made.

A hand-made foam mattress may cost from \$15 to \$20. This is 25 to 35% cheaper than those made commercially.

A tailored mattress made at home will have a professional look, will help to save money, will improve sleeping conditions in the home, and if given proper care, will last a long time.

Any person who has the interest and desire may be able to make a mattress. However, ability and skill in handling tools and equipment play a great part in the homemaker's ability to make a tailored mattress with a professional look in a reasonable length of time.

It is hoped that as a result of this publication homemakers can be helped to solve problems of overcrowded sleeping conditions and improve health and sanitation conditions in the home. Also, family members will be encouraged to sleep on clean, comfortable beds.

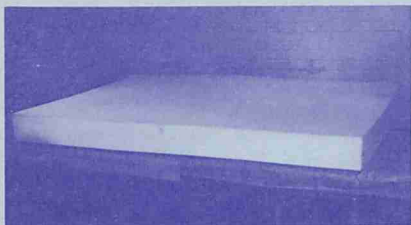


Fig. 1

MATERIALS AND EQUIPMENT*

To make a mattress, you will need (See Figure 1):

--1 slab of urethane foam (any thickness from 4 to 6 inches is good), the size you want the bed.

--6 1/4 yards of closely woven durable mattress ticking 56 inches wide.

--yardstick

--hem gauge

--tape measure

--box of "T" pins and a few dressmaker pins

--pin cushion

--one 4-inch square point curved needle, 18 gauge

--sharp scissors

--one spool of heavy-duty thread

--heavy duty home sewing machine with regular pressure foot and cording (zipper) foot attachments

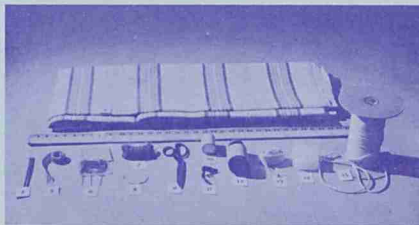
--one 4-fluid-ounce bottle rubber cement

--5/8 yard unbleached muslin

--15 yards cotton cord and wax, preferably beeswax

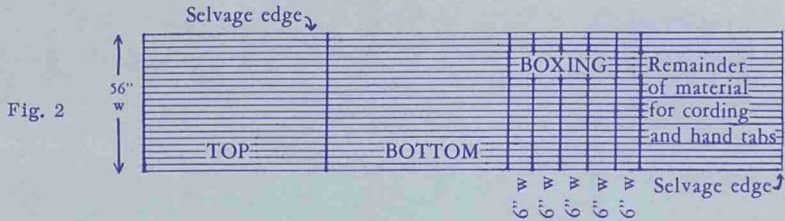
--tailor's chalk; iron and ironing board;

large table the size of mattress on which to work.

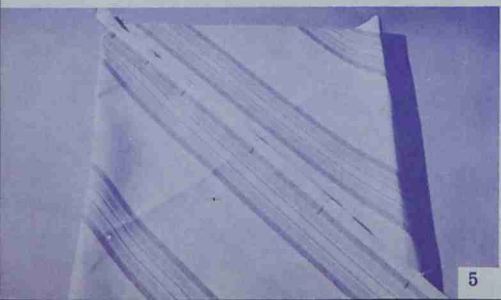
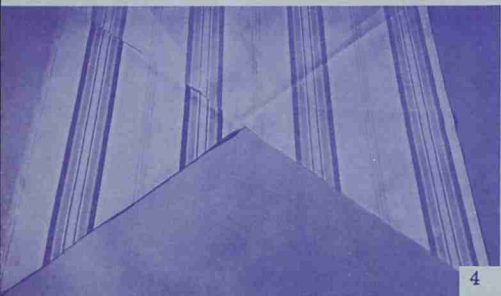
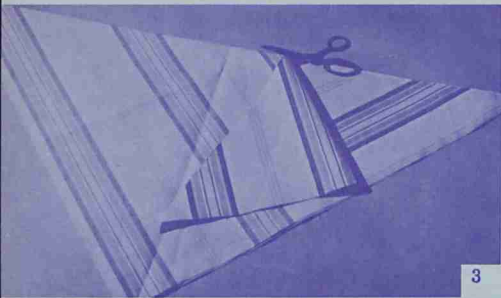


*Consult the county Extension office or housing and house furnishings specialists for further information on obtaining supplies.

DIAGRAM FOR CUTTING STRIPE MATTRESS TICKING
for a 4-inch thick mattress



- Lay out $6\frac{1}{4}$ yards of mattress ticking fabric for a double bed.
- Spread mattress ticking on a long wide table for ease in cutting.



STEP-BY-STEP PROCEDURE

I. Cut Mattress Ticking

A. First, press mattress ticking, if necessary.

B. Using the diagram as a guide (Figure 2), cut two pieces of mattress ticking 3 inches longer than the mattress foam. This allows 1 1/2 inches for seam at the head and foot ends of the mattress. One piece is for the top of the mattress and one for the bottom.

C. Cut 5 strips 6 inches long across the width of the fabric, this gives the necessary boxing for a foam mattress 4 inches thick. A mattress 6 inches thick requires a boxing 8 inches wide.

D. Cut one 30-inch square of mattress ticking for cording.

E. Cut a 4-inch strip of ticking 24 inches long for hand tabs.

II. Cording

A. Use the 30-inch square of ticking fabric to make a bias tubing for cording.

1. Fold the square of material diagonally and cut on the fold, (Figure 3.)

2. With right sides together, turn the top piece a quarter turn and match the lengthwise edges. Make a 1/2-inch seam and press open. (Figure 4.)

3. Lay the fabric flat, wrong side down. Fold each triangle in half to form a rectangle. Put the crosswise edges together so edges extend 1 1/2 inches at each end. (Figure 5.) Sew 1/2-inch seam and press open. You now have a continuous cylinder with a 1 1/2-inch extension at each side, which starts and ends the bias strip.

B. Fit the cylinder over the end of an ironing board, mark 1 1/2-inch strips, and cut bias cording strip. (Figure 6.) This will be enough fabric for 15 yards of bias cording.

C. Stitch cord into bias strip using a cording foot sewing machine attachment. (Figure 7.)

III. Make Hand Tabs

A. Press a crease down the center of the 4-inch strip of mattress ticking 24 inches long.

B. Open and fold cut edges to the crease line.

C. Fold in half along the crease line to form one-inch strip. Press.

D. Edge stitch both sides of the one-inch strip and cut into four equal pieces. This will make 4 hand tabs.

IV. Make Mattress Boxing

A. Stitch mattress boxing pieces together using 1/2-inch seams. Press seams open.

B. Pin-fit boxing firmly around the foam with "T" pins. Make sure the arrangement of stripes at head and foot ends will match the stripes on top and bottom covers.

C. Trim off extra ticking.

D. Pin hand tabs for boxing 24 1/2 inches from the head and foot ends of the foam mattress.

E. Remove boxing and pin two rows of covered cording 4 inches apart to the fitted mattress boxing. Place the cording on the right side of the boxing with the cut edge turned toward the cut edge of the boxing. (Figure 8.)

F. Stitch the cording and hand tabs to the boxing on the right side. Use cording foot attachment to stitch covered cording on the right side. Figure 9 shows this step completed.

V. Join the Boxing to Top Piece of Mattress Cover

A. Place the boxing around the foam, right side out.

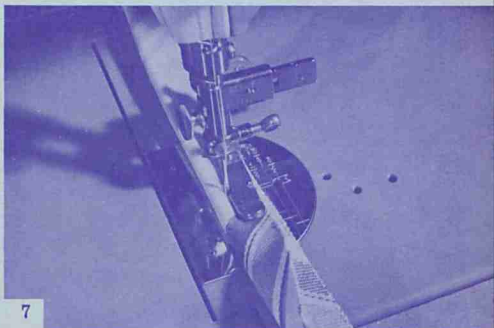
B. Tuck the top cover under the corded edge of the boxing.

C. Pin the boxing to the top cover with "T" pins - do not pin to the foam. Pin short ends first and match stripes, then pin the sides. Keep the grain line straight and pin cording on the edge of the foam.

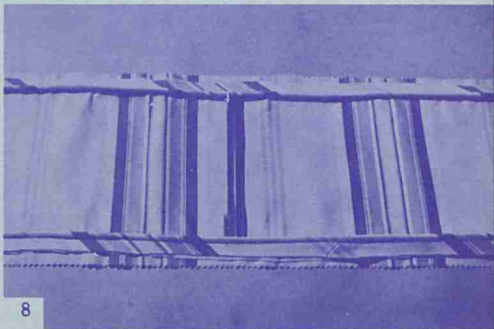
D. Ease ticking smoothly at the corners. Ticking should be pinned firmly and fit smoothly around the corners to keep it from



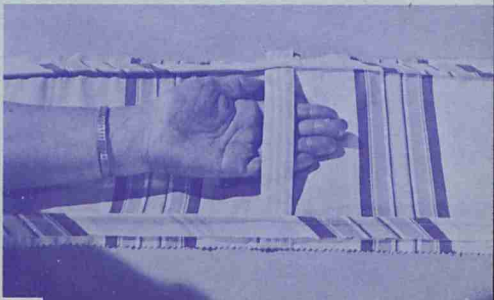
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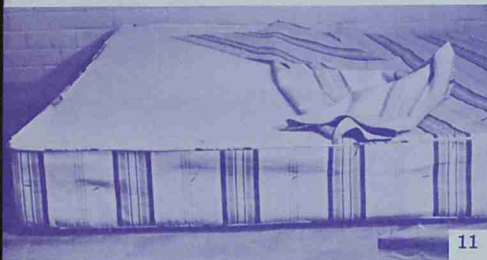
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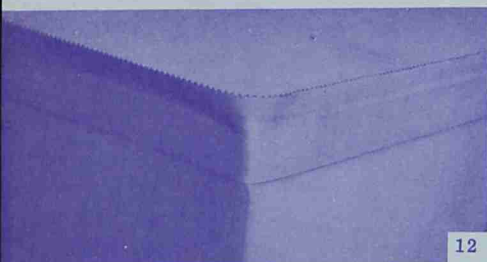
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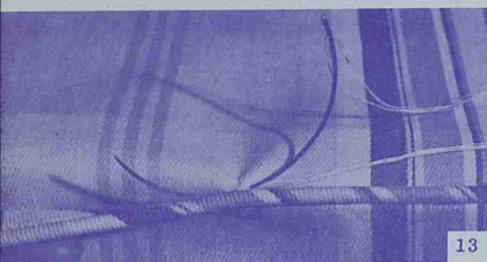
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slipping. Pins may be placed horizontal to cording from 1 to 2 inches apart for ease in stitching. (Figure 10.)

E. Remove the top mattress cover that has been pinned to the boxing and top stitch on the right side to the boxing. Stitch as close to the cording as possible using a cording foot attachment.

VI. Join Boxing to Bottom Piece of Mattress Cover

A. Place the cover on the foam. Pin-fit bottom cover to one-half of the boxing beginning at center of one end and continuing to center of opposite end. (Figure 11.)

B. Remove shell and top stitch as you did in step V above.

VII. Make Unbleached Muslin Mattress Tape

A. Cut a strip of unbleached muslin 1 1/2 inches wide 7 1/2 yards long to make mattress tape. Press a 1-inch crease on one side of the 1 1/2-inch strip.

B. Put rubber cement on the one-inch portion of the strip. Paste the strip a little at a time to the edge of the head, foot and sides of the foam mattress. This will leave 1/2 inch of mattress tape extending beyond the mattress. Figure 12 shows the muslin tape glued to the mattress.

VIII. Complete Mattress

A. Replace the cover on the foam and pin-fit the remaining half of the cover.

B. Hand sew with 4 strands of heavy-duty thread that has been waxed. Use a 4-inch square point curved needle 18-gauge. (Figure 13.) Hand sew to complete mattress. Remove all "T" pins. Your mattress is completed. (Figure 14.)

References:

"Better Bedding for Better Sleep," Home Economics 7, North Carolina Agricultural Extension Service.

"Selection of Household Linens," mimeographed, Housing and House Furnishings Department, North Carolina Agricultural Extension Service.

Prepared by Mrs. Genevieve K. Greenlee, Extension House Furnishings Specialist

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5-67-10M

(Reprint)

Home Economics 42



Your Guide to Beautiful Windows

Teaching Objectives:

1. To develop within homemakers knowledge of the different types of windows and the proper treatments of them.
2. To develop within homemakers an understanding of the types of hardware and installations appropriate for the window types.
3. To develop within homemakers knowledge of the essentials to select appropriate fabrics for the window treatment.

Recommendations and Teaching Aids: Appropriate for organized groups and special interest meetings. Might be used either by agent or leaders. Adaptable for mass media and these key audiences: lay leaders, adolescents, young families, employed homemakers, aging, low-income families. Teaching aids include: lesson sheet, slide set and script, suggested references and evaluation forms.

Outline is not deemed necessary since the lesson sheet uses a visual presentation of subject matter content.

Lesson planner: Lillie B. Little

Suggested Evaluation Form
Your Guide to Beautiful Windows

Read each statement below and place (x) only by those answers you consider correct.

- 1. For a coordinated effect, all of the windows in the home should be treated alike.
- 2. Any type window can become a problem window because of its size and placement.
- 3. A two-way traverse rod does not operate smoothly on an in-swing casement window.
- 4. Only the traverse rod should be installed before measurements are taken for yardage.
- 5. Fabrics should be examined under both artificial light and daylight before selection is final.
- 6. It is better to have full draperies of inexpensive fabric than to skimp on expensive fabric.

Attention: Home Economics Agent

The key is provided for agent or leader use only. Please caution homemakers to read instructions carefully. Make any revisions you feel appropriate to evaluate homemakers' knowledge following presentation of lesson. Make evaluations an interesting experience.

Suggestions for Scoring and Summarizing

In order to get a complete picture of homemaker competence after teaching the lesson, it is suggested that the home agent responsible for the lesson prepare a county summary from the evaluation forms to include the information listed below:

1. Name of agent and county.
2. Total number of persons receiving lesson.
3. Tabulate scores using this system

No. Correct Answers	Rating	Percent Homemakers Scoring
6 correct	Excellent	_____
4-5 correct	Good	_____
3 or less	Poor - suggest further learning	_____

4. Write brief summary pointing up the highlights and implications for future programming.
5. Send one copy of county summary on questionnaire form to specialist involved so that district and state summaries may be made.

LBL(HHF-CC-3)68

YOUR GUIDE TO BEAUTIFUL WINDOWS

Beautiful window treatments can work wonders for a room. They can set the decorating mood. They may become a part of the background or the center of interest; dramatize a lovely view or screen off a poor one; complement pleasing architectural features or conceal lack of them.

In addition, they often play an important functional role in sound absorption and insulation.

The windows of your home provide a transition between outside and inside living. They may control fresh air, light and privacy. The type of windows and the way the room is used influence the type of window treatments you select. There should be a feeling of harmony or unity for all of the windows as viewed from the outside of the home. On the inside there should be a pleasing feeling of coordination as you move from room to room.

Deciding on window treatments becomes much easier if you will: (1) check your window types, (2) consider different basic types of window treatments and possible ways to add individuality, (3) decide on the right hardware for each window and (4) carefully select the appropriate fabrics and trims.

WINDOW TYPES

Window styles are usually grouped according to installation or according to shape, size and placement. There are basic styles commonly used by architects and builders the world over. You need to learn the style names and the terms for the parts of the windows in order to discuss window treatments.

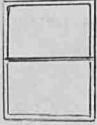
The casing is that part of the window that fits into the wall structure and around the window itself.

The frame, or sash, is the part that holds the glass.

The sill is the narrow shelf at the bottom of the window.

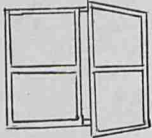
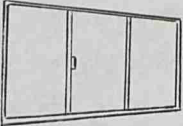
The apron is the part of the casing below the sill.

According to installation, windows are classified as sliding, swing, fixed or a combination of fixed and movable characteristics. These are illustrated in the following window types.



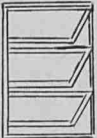
Sliding Windows

1. Double hung--Is the most common of all window types. Has two sashes, one or both of which slide up and down. Unless unusual in size or placement, it is easy to decorate.
2. Horizontal sliding windows and doors--Are often used in multiple units with one section fixed. Often used in ranch type houses and called ranch or strip windows.

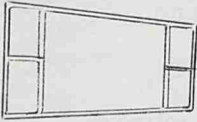


Swing Windows

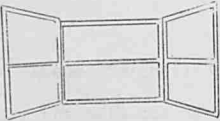
1. In-swinging casement--Opens into the room. Window treatment must not interfere with operation of window.
2. Out-swinging casement--Opens outward. Easy to decorate.
3. Awning--Has wide, horizontal sashes that open outward to any angle. Can be left open when raining. Easy to decorate unless unusual in shape or placement.
4. Jalousie is identified by narrow, horizontal strips of glass that open by means of a crank to any desired angle.



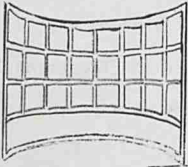
Fixed or Combinations of Fixed and Moving Windows



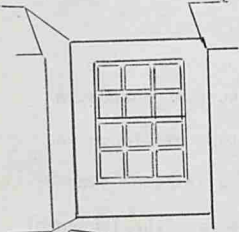
1. Picture window--Is designed to frame a view. It is usually a large fixed pane of glass which cannot be opened. It often has movable sections on both sides of the fixed pane.



2. Bay windows--Consist of three or more windows set at an angle to each other in a recessed area. May be combination of fixed and movable.

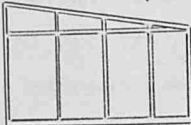


3. Bow window--A curved window often referred to as circular bay. A fixed window area.



Other Types Classified According to Shape, Size or Placement

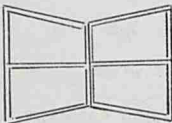
1. Dormer--Usually a double-hung window projecting from the house in an alcove-like extension.



2. Cathedral windows are characterized by the angle at the top that follows the line of a slanting roof.



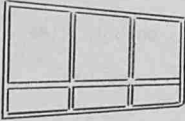
3. Clerestory windows are set near the ceiling. Sometimes placed in slope of beamed ceiling. Often not decorated at all.



4. Corner windows--Include any windows that come together at the corner of a room. Easy to decorate with right hardware.



5. Arched windows--Characterized by curved top.
Need special decorating.



6. Window wall--Is a group of basic window units fitted together to form a glass wall.

Windows often become decorating problems because of unusual proportions or because of their placement. For example, they may appear too tall and narrow or too wide and short in proportion to the size and shape of the room. Or, maybe, the windows are placed too close to the fireplace or a door. With the many types of window treatments available to choose from, there is a satisfactory solution for problems such as these.

BASIC WINDOW TREATMENTS

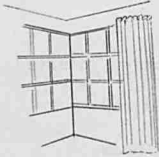
Just as a basic dress is simple and primarily suited to your figure and needs, a basic window treatment is simple and appropriate for the particular type of window you are decorating. Start with the basics, then add the extras, such as a valance, swag or tie backs that make your windows distinctive and different. You can also vary the length of curtains and draperies to complement the window or decorating mood of the room.

Different types of windows suggest certain basic types of window treatments.

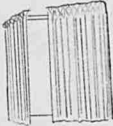
Curtains and Draperies

1. Two-way draw traverse (see p.9)--May be used for glass curtains as well as draperies. Open from center and draw toward outer edges of window.
Suitable for: double-hung, out-swinging casement, awning, jalousie, bay, bow and corner windows.

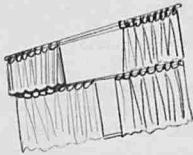




2. One-way draw traverse (see p. 9)--Drapery draws to one side. Suitable for: windows with no wall space on one side, sections of bay windows, corner and slanting windows, sliding windows and doors.



3. Swinging draw draperies (see p.9)--Drapery and rod mounted on frame to swing with French door or in-swing casement window.



4. Cafe curtains and draperies are hung from a cafe rod (see p.9). They may be stationary or traverse. Suitable for double - hung, ranch, picture, dormer, bay and bow windows and glass walls.



5. Sash curtains (see p.9)--Usually cover only the glass section. They are shirred at top and bottom on close-fitting rods. Suitable for: casement and clerestory windows and doors with glass sections.



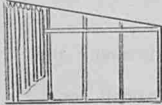
6. Criss-cross curtains are extra wide, ruffled, sheer panels hung so that one overlaps the other. (see p.9) Suitable for: double-hung, bay and picture windows.



7. Stationary curtains and draperies--May hang straight or be tied back. (See p.9) Suitable for double-hung, picture, dormer and bay windows.

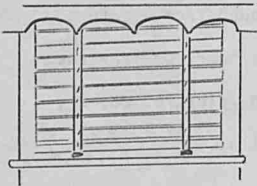


8. Arched treatment--May be either stationary, pleated curtains or draperies hung on an arched rod. Designed specifically for curved-top windows.

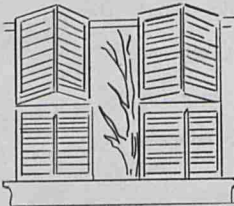


9. Slanting traverse--Is designed to draw in one direction to follow slanting top windows.

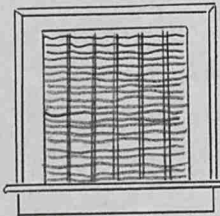
Blinds and Shutters



1. Venetian blinds may be used alone or in combination with curtains and draperies. Available with vertical and horizontal slats. Suitable for most any type window except in-swing, corner, slant or arched-top windows.

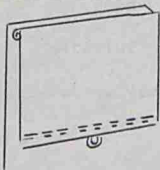


2. Shutters may be used alone or in combination with other types of window treatment. Suitable for same types of windows as Venetian blinds.

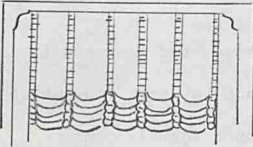


Window Shades

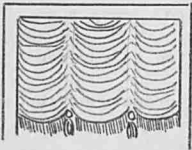
1. Matchstick or bamboo shades are an informal type of window treatment. Especially appropriate for family rooms, porches, informal dining areas.



2. Roller shades are available for any type window. May be functional, decorative or serve both purposes.



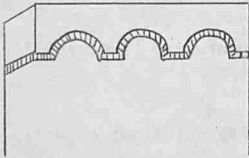
3. Roman shades work on the same principle as matchstick shades, except fabric forms pleats as it is raised and lowered. Adds a decorative note.



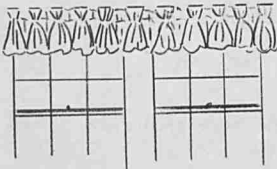
4. Austrian shades are shirred--Usually of sheer to medium-weight fabric. Appropriate for more formal decor.

OVER-TREATMENTS

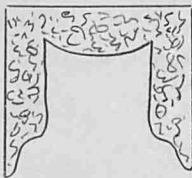
Over-treatments are often used with curtains, draperies, blinds or shades to give a finished appearance to the window. There are several choices, depending on the decorating effect you wish to achieve.



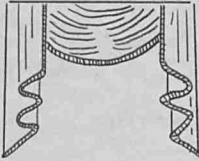
1. Cornices--Are made of lightweight wood construction and mounted on top of window facing or wall above window. They may be painted to match the walls, woodwork or covered with fabric to match or contrast with fabric of curtains or draperies.



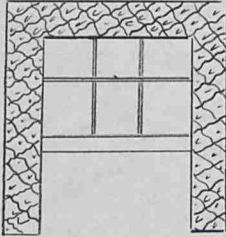
2. Valances--Are made of fabric. May be pleated or shirred on rod or may be lined with buckram or permette to give body and shaped to fit rod.



3. Contonnières--Are made in the same manner as cornices, except they are designed to extend across the width of the window and down the sides of the window.



4. Swags and jabots are draped in sections and fastened to the top of a valance board. They add the soft look which is appropriate for traditional or more formal rooms.



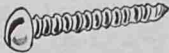
5. Lambrequin is a wooden frame designed to encase the window. It may be painted but more often is covered with fabric and a harmonizing curtain, drapery or shade is used to cover the window area.

DRAPERY HARDWARE

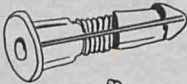
Once you have decided on the style of window treatment, you are ready to select and install the hardware best suited to your choice. This should be done before you estimate yardage for curtains and draperies.

The basic types of hardware used for the basic window treatments have been listed in the preceding section.

Fastening devices are available for mounting rods on different kinds of wall materials. Wood screws are used for casing mounts.



1. Plaster screws will hold lightweight draperies in plaster or dry walls.



2. Plaster plugs hold plaster screws more securely.



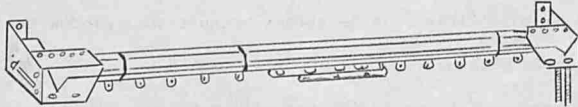
3. Toggle bolts are needed for mounting heavy draperies.



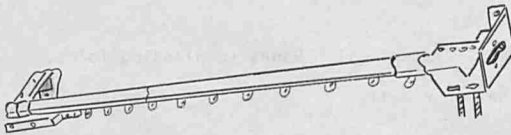
4. Screw anchors or molly bolts will hold brackets securely on plaster or dry walls.

Rods are available in a wide selection of standard models. In addition, they can be custom cut and assembled to any size. They can be mounted on the wall or the window frame, on extenders or inside the casing. Rods for bow and bay windows are custom cut. Decorative rods have become a fashion trend. Many of the basic types are also available in a variety of decorative finishes. The rods then become an important part of the decorating plan.

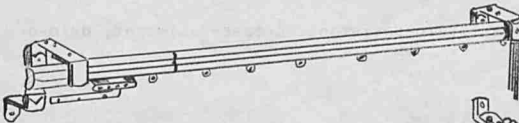
Two-way draw rod



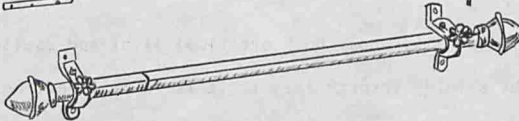
One-way draw rod



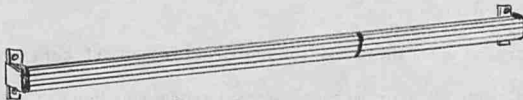
Swinging door rod



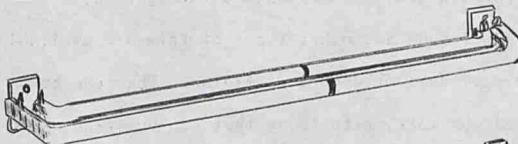
Cafe rod



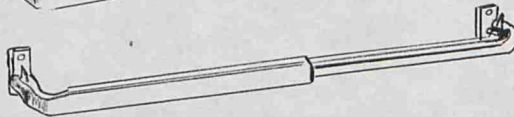
Extension sash rod



Double extension rod



Single extension rod



ROD TYPES MOST OFTEN USED

FABRIC SELECTION

Whether you are selecting ready-mades, custom-mades or making your own curtains and draperies, you have a wide range of fabrics to choose from. Color, design and texture will be your first considerations because your window treatments must harmonize with the other furnishings.

The following qualities in fabrics will make your choice more satisfactory.

1. A good hand--drapes well. Hangs in pleasing folds.
2. Fibers that wear well.
3. Colorfast dyes.
4. Special finishes--stain-resistant, crease-resistant, drip-dry.
5. Preshrunk.

Examine the fabric you like under both artificial light and daylight. See how it looks with the sunlight shining through it. If it is to be lined, hold the fabric and lining up together to see how the color or pattern is affected. Take home swatches to try with your other furnishings.

Always allow for enough fabric to insure graceful, full curtains and draperies. Be sure to check and recheck your measurements before you buy.

Braids, fringes, appliques and other types of trim are available to give your window treatments an individual or decorator finish. They can be an important addition to either the draperies you make or to those that you buy ready made.

Additional References:

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Your Guide to Making Draperies

Objective: To provide information needed by homemakers relative to making decisions regarding styles of window treatments, selecting fabrics, finding and making draperies.

Specialist's Recommendations: This publication is designed for use by homemakers interested in using their skills to make window treatments. At the same time, it involves use of time, money and personal values.

The information is given in sequential order to be followed in workshop sessions. Therefore, an outline is not deemed necessary.

A Scale for Rating Skill in Drapery Making

Well-made draperies will meet certain requirements. In judging the skills of participants, you may use a point system; i.e., give one point for each of the following requirements if satisfactorily met. If not satisfactory, give no points. May be used for workshop rating or self-rating.

Criteria for Well-Made Draperies	Score
1. Draperies begin and end with some structural part of the wall or window.	
2. Fabric choice suitable for type of window.	
3. Allowance for hems at top and bottom satisfactory.	
4. Grain line of fabric in line with hem lines (top, bottom, side hems).	
5. Selvage trimmed or clipped unless special weave or fabric.	
6. Heading crisp and stiff.	
7. Pleats and spaces in good proportion and even.	
8. Thread well matched to drapery fabric.	
9. Draperies hang in even soft folds.	
10. Stitching (hand and machine) neatly done--secure, but not obvious.	

Scores: 8 - 10 points Very Good

5 - 7 points Fair

4 or less Shows need for further learning and practice.

Suggestions for Scoring and Summarizing

In order to get a complete picture of homemaker competence in the area of drapery making, it is suggested that the home agent responsible for the lesson prepare a county summary from the evaluation forms. Since drapery making is closely tied to decisions involving money expenditures, the summary should also reflect estimated savings.

1. Name of agent and county.
2. Number of persons receiving lesson.
3. Tabulate scores. Determine number homemakers needing further assistance.
4. Number of pairs of draperies made.
5. Estimated savings (at average of \$5 per pair for short
\$10 per pair for long
\$5 per pair for extra width.)
6. Write brief summary pointing up highlights and implications for future programming.
7. Send one copy of county summary on questionnaire form to specialist involved so that district and state summaries may be made.

YOUR GUIDE FOR MAKING DRAPERIES

Draperies are the most often used style of window treatment. They may be either stationary or drawn; lined or unlined; hand- or machine-sewn. These step-by-step directions will help you achieve satisfactory results with the type of your choice.

Draperies may cover the window area plus additional wall area or the windows only. If you wish to take advantage of light and a view, you may extend the draperies far enough on each side of the window for the glass area to be completely exposed when draperies are open. This also applies to side draperies that do not draw.

Draperies should begin and end with some structural part of the wall or window. The top of the drapery may extend from the ceiling, top of the window frame, or the top of the sash of a recessed window. The lower edge of drapery may extend to the window sill, to the bottom of the apron (if there is no frame, approximately 1 inch below the opening), or to the floor (or no more than 1 inch above the floor).

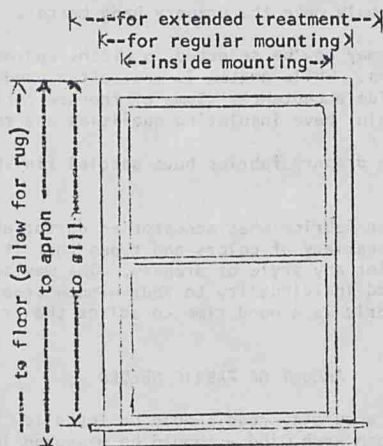


Figure 1

SELECTING THE FABRIC

Your choice of fabric is influenced by the type of window, style of drapery, and the general effect you desire. Fabric may be chosen to filter the light, provide privacy, soften the background for your furnishings, frame a lovely view, or create a center of interest. In either case draperies are an important part of the decorating plan and should be in harmony with other furnishings.

A satisfactory fabric for draperies:

1. is colorfast to light, laundering, and drycleaning.
2. will not shrink or stretch.
3. will resist soil.
4. has resistance to deterioration from light to heat.
5. has excellent draping qualities.
6. will resist abrasion (fibers will not break easily).
7. resists fire (particularly desirable for public buildings).

A lining may serve one or more useful purposes. It may protect the drapery fabric, improve the outside appearance, provide insulation, control the light or simply make the drapery hang better.

Lining fabrics may now be selected in widths approximately the same as the drapery widths. While cotton is most often used, chromespun and rayon are gaining wide acceptance. Some of the new cotton and rayon lining materials resist stain, have insulating qualities and resist wrinkles.

Many of the new drapery fabrics have special finishes and do not require lining.

Trimmings do for fabrics what accessories do for a costume. They come in such a wide variety of colors and types that it is easy to find just the right one for any style of drapery. The way trims are applied can also vary and add individuality to your window treatment. When you are shopping for fabric is a good time to select the trims.

AMOUNT OF FABRIC NEEDED

In order to be accurate, rods should be installed before measurements are taken. Then each window should be measured individually. A steel tape or yardstick is preferred to a cloth tape.

Length of Draperies

The finished length of the drapery should be determined by your personal preference, the structural features of your window and the character of the room.

1. Measure the finished length of the drapery. Fig. 1

2. Allow 4 to 6 inches for the bottom hem of long draperies. Double hems are often desirable for unlined or sheer draperies. A 3- to 4-inch finished hem is satisfactory for apron-length draperies; 3 inches or width not to extend above glass is desirable for sill length.
3. Allow $1\frac{1}{2}$ inches for top heading of lined draperies. An allowance of $3\frac{1}{2}$ or $4\frac{1}{2}$ inches should be made for unlined draperies-- depending on the width of the crinoline. If a sheer fabric is used the allowance can be doubled for covering the crinoline.
4. Check labels for fabric shrinkage. If shrinkage is one percent, allow $1/2$ inch per yard; if two percent, allow $3/4$ inch per yard. If shrinkage is not shown, allow 1 to 2 inches per yard. Subtract one-half to one inch for loosely-woven fabrics that may stretch as they hang.
5. If a patterned fabric is used, begin or end with a complete pattern where it shows most prominently. As a rule, the bottom repeat is more important than the top. To determine additional yardage needed for placing and matching pattern, measure from the edge of one motif to a corresponding point in the next. Divide the total length of the unhemmed drapery by the length of the repeat to estimate the number of repeats you will need. Example: If the total unfinished length of drapery were 95 inches and the repeat 10 inches, then 10 repeats would be required for each width of fabric needed.

Width of Draperies

For side draperies, measure the space you wish to cover and allow at least twice that amount (100 percent fullness).

For draw draperies, the fabric should measure 2 to $2\frac{1}{2}$ times the width of the fixture upon which they hang, plus:

1. $2\frac{1}{2}$ to 3 inches on each panel for overlap at center.
2. $2\frac{1}{2}$ to 4 inches for return on each side (distance from face of rod to the window facing or wall may vary between $2\frac{1}{2}$ to 4 inches).
3. center and side hems-- $1\frac{1}{2}$ - to 2-inch hems (1-inch + $1/2$ -inch turn in or $1\frac{1}{2}$ -inch to $1/2$ -inch turn in).
4. depth of seams if more than one width of fabric is used.
5. ease or drag (1 inch per panel).

Sheer or very soft fabrics may require 3 times width plus allowances given above.

The yardage needed will be the TOTAL LENGTH per unfinished panel times the width or widths for each panel, including all allowances.

DRAPERY CONSTRUCTION

Straighten the fabric with the grain before cutting. If you do not work with the grain of fabric, the drapery will tend to roll to one side. However, if you are using a printed fabric, you will have to work with the pattern rather than the grain line.

Lined Draperies Made by Hand

In the finest draperies, hems and linings are done by hand. This method of construction permits the lining to be attached in several rows from top to bottom and prevents it from rolling on the seam edge. It also eliminates the possibility of being seen from the front side of the drapery.

Cutting the Fabric. Measure and cut the drapery lengths allowing for the hems and heading. If the fabric has a design, use the first panel to match design for other panels. If the design has an "up" and "down," be sure to cut all panels in the same direction.

The width and length of lining will depend on allowances made for hems and heading. The lining should come to within one inch of the top and should hang about one inch shorter than the drapery at the bottom. The top of the lining hem should coincide with the top of the drapery hem.

Joining the Lengths. When more than one width of fabric is used in each panel, pin sections with right sides together, allowing for a 1/2-inch seam. Stitch seam on wrong side from top to bottom. If using 1 1/2 widths per panel, place the seam nearest the side of the window rather than the center.

Selvaged edges are woven closely and tend to shrink or pucker. To prevent this, trim selvage or clip at 1- to 3-inch intervals. Press seams open. Linings should be joined in the same way.

Hemming. A 2-inch finished hem may be blind stitched at the bottom of the lining before joining it to the drapery panel.

Fold and pin side hems of drapery panel, matching crosswise grain of fabric. Press. For double hems, make the second fold the same width as the first. Pin and press. Raw edges should meet exactly the line of the second fold.

Hem by hand, using a blind stitch (slip needle through fold of hem close to the edge, then catch as few yarns as possible on the right side). Make stitches about 1/4-inch long and do not pull tightly. Stop blind stitching several inches before reaching fold line for lower hem and heading.

Fold, pin and press lower hems. If fabric requires weights, attach these inside the hem at each seam. For sheer fabrics a beaded weight can be inserted in the fold of the hem and tacked at the ends. Finish the corner with a mitered corner (excess fabric folded into a dart, pressed in place, but not cut).

Make Heading. Place the panel on a flat surface with the wrong side up. Measure up from lower edge of finished hem to the desired length of finished panel and mark with pin. Repeat this in several places and fold extra fabric to the wrong side at pin marks. Press.

A stiff interfacing or crinoline is needed to make the heading stay erect. Permanent finish crinoline is satisfactory for this and may be purchased in 3- and 4-inch widths. The three-inch width is more appropriate for short draperies.

Cut the crinoline $1/4$ inch shorter than the width of the finished panel. (Or to add extra stiffening at ends, cut 5 inches longer and add extra at each end and fold back.)

Place the crinoline under the hem with the ends inside the fold of the side hems. Machine stitch crinoline to fabric using a long stitch. Place pins at right angles in top of drapery to hold crinoline and fabric in place. Miter corners and blind stitch.

Join Lining and Drapery. Place drapery panel wrong side up on work surface. Turn under $1/2$ inch on sides of lining, and one inch at the top. Press.

Place the lining on the drapery panel, right side up (wrong sides together) matching the top edges of the lower hems and matching seams, if any. Pin the lining to panel on one side. (This leaves $1\frac{1}{2}$ inches of a 2-inch hem or $1/2$ inch of a 1-inch hem.)

Fold the lining back halfway if there is no seam and pin at the fold. Tack with a long (4-inch to 6-inch) loose catch stitch. Use a double thread and begin at the lower edge of the crinoline and stop just above the hem. (If there are seams, tack at each seam rather than at center

Smooth the lining back over the flat panel. Turn lining under at the top so that the folded edge is approximately $1/2$ inch below the top edge of the drapery panel. Press and pin in place.

Turn under $1/2$ inch on lining, press and pin to remaining side of drapery panel.

Slip stitch lining to panel at sides and across top, using stitches $1/2$ - to $3/4$ -inch long. Be careful not to pull thread tight. Catch thread on right side of drapery panel about every six inches. Now the drapery is ready for pleating. Fig. 2

Lined Draperies Made by Machine

Many persons prefer to make draperies by machine because it is faster and does not require so much table space for handling. If you use good construction techniques, you can have satisfactory draperies.

Measure and cut the drapery and lining lengths as for handmade draperies.

Fabric lengths and lining lengths will also be joined in the same manner if more than one width of fabric is used. The lining hem may be machine stitched rather than stitched by hand.

Joining Fabric and Lining. Place the right side of lining and the right side of drapery together with the lining down 2 inches from the top. Pin the side seams together. Stitch 1/2-inch seams and press open.

Turn right side out and adjust so that the turn-back is the same on both sides from top to bottom. Press carefully.

Making the Heading. Cut the crinoline as for hand-sewn draperies. Using a yardstick draw a pencil line from end to end--1 1/2 inches from the lower edge of the crinoline. Place the crinoline on a flat surface and pin the top edge of the drapery (right side up) along the pencil line. Stitch by machine using a long stitch. (The amount of crinoline extending above the drapery will depend on the width of crinoline.)

Turn stiffening under to wrong side so that the full width is between drapery and lining. Put pins in at right angles to top of drapery.

Turn under top of lining 1/2 inch and pin it to fabric. The top of the lining will be about one inch from top of drapery. Fold corners and stitch by hand. (Do not stitch through stiffening.)

Bottom hem will be made as for handmade draperies.

Unlined Draperies

Some of today's fabrics are designed to filter the sunlight rather than close it out. Others have special backings that give protection or provide insulation. Many fabrics resist fading and deterioration from sunlight and moisture. For unlined draperies you may wish to use fabrics with these qualities.

Cut the panels in the same manner as for lined draperies, except allow 3 1/2 or 4 1/2 inches for the heading (depending on the width of the crinoline).

Join the widths together with a French seam so that there are no raw edges. Cut off the selvage edges and turn under the side hems, 1 1/2 to 2 inches. Pin, press and slipstitch by hand.

Cut the crinoline the same as for lined draperies. Measure down one inch more than the width of the crinoline and mark. Place the crinoline on this mark and pin it to the drapery. Fold the excess fabric over the edge of the crinoline and stitch by machine. Turn under the interfaced hem, pin and stitch by hand.

If you use a sheer fabric, measure down twice the width of the crinoline and mark. Place the crinoline on this mark and pin. Fold excess fabric over the top of crinoline, pin and machine stitch. Turn under interfaced hem--you will have a double layer of fabric over the front of the crinoline. Pin and stitch by hand.

FINISHING THE HEADINGS

Pleating is one of the best ways to distribute fullness and make draperies hang in graceful folds.

The number and size of pleats depend on the amount of fullness to be taken upon the rod. It is usually desirable to allow about 5 inches for pleats and 3 to 5 inches between pleats. The spaces between the pleats should be no wider than the amount allowed for pleats themselves to assure proper folding when draperies are open.

For draw draperies it is necessary to know the exact finished width before you begin to make pleats.

To determine the finished width of each panel, measure the length of the face of the rod plus the return to the wall and the center overlap.

Example

Length of rod	60 inches
Rod return (varies $2\frac{1}{2}$ " to 4")	$3\frac{1}{2} \times 2 = 6$ inches
Overlap at center	$3\frac{1}{2} \times 2 = 6$ inches
Total	72 inches

Desired finished width of each panel 36 inches

Using this example let's figure the pleats and spaces for a drapery panel:

Width of finished flat panel 91 inches

Subtract the desired finished width 36 inches
(1/2 rod measurement plus overlap and return) _____

Amount to be put into pleats 55 inches
(This would provide 11 pleats of 5" each)

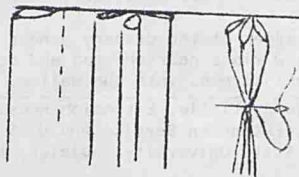
Amount remaining to be divided into spaces 36 inches

a. Measure and subtract amount needed for overlap and return (usually $2\frac{1}{2}$ " or 3") $3\frac{1}{2} \times 2 = 6$ inches

b. Remaining amount to be divided into equal spaces (always one less space than pleats) 30 inches
 $30 \div 10 = 3$ inches

Mark the pleats with pins. Bring pins together to establish stitching lines. Stitch from top through to 1/4 inch below the interfaced hem. Divide each tuck into 3 small pleats and tack by hand to hold. Fig. 2

Fig. 2
French Pleats



Using Commercial Pleater Tape

Many people prefer commercial pleater tape because it is easy to use and when the pins are removed the panels are flat and easy to clean or launder. The new adjustable tape allows for adjusting the heading height and thus the drapery length. It also has more pockets, giving more flexibility in spacing pleats.

For best results install the rod and purchase pleater tape amounting to $2\frac{1}{2}$ times the length of the rod and the pleater hooks. You can determine the exact amount of fabric needed by pleating the tape to fit the rod. Begin at the center and allow 4 inches on the end of the tape for overlap of draperies. Slip one pocket between each pleat in regular tape; in the new tape allow 4 inches between pleats. The last pleat should come at the end of the face of the rod. Allow enough tape for return to wall plus 1/2 inch for hem. Mark where the hooks go and remove them. The length of the tape is the width of the fabric needed for panel plus allowance for side hems.

The pleater tape supplies the stiffening needed for the heading. It can be used with lined or unlined draperies.

The panels are measured and cut as directed for machine-made draperies with 2 inches added for the lining to extend all the way to the top of the drapery panel.

The panels and linings are also joined as for machine draperies.

Pin tape (upside down) to right side of drapery, allowing 1/2 inch of tape to extend beyond the side drapery hems. Stitch both edges of tape to drapery panel. Turn 1/2 inch of tape at sides to wrong side and edge stitch.

Turn tape to wrong side. The 1/2 inch of drapery which extends below the tape is folded under and blind stitched with small stitches by hand.

HANGING DRAPERIES

After the draperies have been pressed, lay out flat; fold pleats in position. Tie in place with tape (but not too tightly) every foot or so. Leave tied for several days. This will train the pleats to fall into position when hung.

Pin the hooks at the correct height for the length of the drapery. Use one hook behind each pleat and one at each end to hold the corners.

The hook in first pleat at the side is placed at the turn of the rod; the end hook is fastened at the back of the rod. The hook in first pleat at the center is placed in the hole of the master slide nearest the plain slides. The end hook should be placed about 1/2 inch from the edge of the panel so that it will be completely hidden from view.

The outside edges of the drapery panels should hang close to the wall. If they do not, sew rings near the top and bottom of the side hems and fasten to cup hooks screwed into the wall or window frame.

Prepared by Lillie B. Little, Extension Housing and House Furnishings Specialist, N. C. Extension Service and U. S. Dept. of Agriculture, Co-operating, N. C. State University, Raleigh, N. C. 27607 April 1968

REUPHOLSTERING FURNITURE

A. Teaching Objectives of Specialist

1. To teach home furnishings leaders how to select furniture that can be made more useful or attractive by reupholstering.
2. To provide an opportunity for home furnishings leaders to examine materials and construction techniques used in today's furniture, and to see and use the kind of equipment needed to reupholster furniture at home.
3. To enable home furnishings leaders to upholster a piece of furniture in order to develop skills and techniques which will enable them to teach others in their counties.

B. Teaching Objectives of Home Furnishings Leaders

1. To teach families with small incomes how to reupholster furniture without a large expenditure of money. (They save not only the cost of labor but possibly the cost of fabrics also, as many reupholsterers insist that the fabric be bought through them--and they make from 40 to 50 percent profit. Some good fabrics can be purchased at mill outlet stores and fabric shops if care is taken in the selection.)
2. To enable participants to have better upholstered furniture. (Many reupholstering shops do not remove or replace worn upholstery padding. This should be done if the new fabric is to give good service.)
3. To provide an opportunity for many families at all income levels to have the satisfaction of working with their hands.
4. To enable some families to add to their incomes.
5. To teach participants how to be better consumers of upholstered goods.

Lesson Planner: Edith B. McGlamery

September 1968

(OVER)

TEACHING OUTLINE: REUPHOLSTERING FURNITURE

- A. The two days are devoted to lecture, demonstration, workshop, and discussion at intervals, as needs arise, in order to provide as many experiences as possible to solve problems.
- B. Procedure for two-day training
 1. Study of chairs
 - a. Styles
 - b. New fabrics--design, texture and color--available for style of chair
 - c. Fabric estimates
 2. Assembling tools, equipment and material
 3. Learning the inside story
 - a. Labeling of old cover
 - b. Remodeling of frames
 - c. Studying inside construction
 - 1) Frame
 - 2) Springs (S and coil)
 - 3) Padding (rubberized hair, polyurethane and rubber foam, fiberfill, cotton, sisal, etc.)
 - 4) Exposed wood
 4. Repairing and replacing inside construction of individual chairs
 - a. Frame (refinish exposed wood)
 - b. Springs (study kinds)
 - c. Padding (variety of materials)
 - d. Muslin cover (why a muslin cover)
 - e. Springs (repocketing)
 5. Making top cover
 - a. Cutting
 - b. Fitting
 - c. Covering cord
 - d. Finishing details
 6. Evaluation
 - a. Chairs--workmanship, cost, etc.
 - b. Workshop procedures
 - c. Further use of training

PREPARATION FOR REUPHOLSTERING WORKSHOP

A. Agent

1. The agent or one of her co-workers should plan to attend th workshop in order to fully understand the work and to be able to follow through with similar workshops in the county.
2. The agent should select 5 to 7 chairs with 3 workers to assist the owner in the work for the two days. (Men workers are helpful.)
3. The agent should:
 - a. Check each chair, help measure for the upholstery material for the cover so the owner will know how much and what type of material to buy. A good cotton upholstery fabric is firm and rather closely woven. The most desirable materials have threads near the same size running in both directions. Long floats will pick easily. Stripes and large designs are harder to work with than a fabric with an allover design, which does not have to be matched. If you can remind the women about these things before they make their purchases, it will help them select more satisfactory material. Also, remind them not to buy plastic or nylon material.
 - b. Provide a low, sturdy table or a pair of sawhorses 22" to 24" high, with three or four loose boards about 3' long. Either of these will make a table of comfortable work height.
 - c. Provide a large table for cutting fabric and a card table to hold supplies for each chair.
 - d. Select a meeting place that is light, airy and large enough to allow working space as well as space for the tables.
 - e. Have a vacuum cleaner with attachments. This is to keep down dust when removing the old cover and padding.
 - f. Insist that each chair owner have a regular-sized sewing machine with a cording foot.

B. Owner of chair. Needs to bring:

1. Material for cover (measure for yardage)
2. Muslin (about 4 yards to cover padding; about 3 additional yards if inner spring cushion is to be repaired)
3. Clean burlap (about 2 yards or two bags)
4. One measuring tape and one 12" inch ruler
5. Heavy-duty thread to match the covering material
6. Newspapers
7. Money to pay for upholstery supplies used in chair, such as cotton, webbing, tacks, etc. The specialist will bring these supplies.

(OVER)

C. Owner of chair and additional workers. Ask each to bring the following:

- | | |
|------------------------------|------------------------|
| 1. Tack hammer | 6. Pins--lots of them! |
| 2. Screw driver 8" to 9" | 7. Pencil |
| 3. Pliers | 8. Tape measure |
| 4. Needle | 9. Scissors--sharp! |
| 5. Sewing thread and thimble | 10. Tack puller |

The workshop should be started by 9:00 a.m. Reupholstering is hard work and we will have to keep the participants busy all of the time, but we feel sure that you and your workers will enjoy and profit from the workshop.

Time could be saved if the participants would bring lunch with them.

SELECTING FABRICS FOR REUPHOLSTERING

New fabrics to re-cover upholstered furniture may be found in many textures, designs, qualities, and colors. In selecting new material it is very important that the following points be considered:

COLOR, DESIGN, AND TEXTURE

Plan and buy the color and design that will fit into your room setting. You will feel better about your finished product if the color for your furniture looks right.

Select a fabric that is suitable for your decorative purpose, and is appropriate for your style of furniture. Texture is an important factor to consider. Many interesting results may be produced through texture variation. Smooth-textured fabrics give a dressy appearance and are thought of as being more formal than rough textures. Rough textures lend interest to casual living. Most coarse textures, if firmly woven, usually wear better for everyday use than the soft, smooth textures.

FABRIC CONSTRUCTION

Select fabrics which will not stretch, shrink, fade, or deteriorate in sunlight, and which will resist soiling. A tightly-twisted yarn is more durable than a soft, loosely-twisted yarn. The tight twist will not allow soil penetration so readily as the loose twist. A firm and closely-woven fabric should hold its shape, and it should resist soiling and wear. Loosely-woven, sleazy materials will stretch and show wear quickly, especially on the corners and sharp edges. Beware of long loops or large-slug yarns, which pick easily.

FINISHES

New treatments and finishes have been added to make fabrics more beautiful and more durable.

Some of the treatments are:

1. Crease-and-wrinkle-resistant treatment, used to add strength, to give crease resistance quality and to prevent penetration of soil.
2. Water-repellent treatment, which is applied to many fabrics to retard absorbency of water. This is done by treating the woven fabric or by applying a rubberized coating on the back. The rubberized coating also anchors the yarn and prevents soil as well as moisture penetration.
3. Stain or spot-resistant treatment. These finishes may be the same as crease-resistant or water-repellent finishes. Some resist water-borne stains; others resist oily stains; others resist both.

4. Anti-static treatment. One objection many people have had to nylon and other synthetics is the fact that they produce static electricity. This is being overcome in the manufacturing process.

POPULAR FABRICS

Upholstery materials are available in many types of popular fabrics. These fabrics may be made of cotton, mohair, wool, silk, rayon, nylon or many other fibers. Many fabrics are combinations of two or more different fibers. Some of the popular fabrics on the market are:

1. Frieze -- looped, spring-pile fabric; cut pile, designs of looped pile. This fabric is found in mohair, wool, nylon, rayon, cotton and fabrics made of two or more fibers.
2. Velvet or velour -- cut loops, thick dense pile. Mohair, wool, cotton and synthetic fibers are used in their construction.
3. Damask, brocade and brocatelle -- woven in elaborate designs. These more formal fabrics are found in cotton, rayon, nylon and silk.
4. Rib weaves, including tapestries, reps and tweeds -- These are made of many grades of cotton, mohair, rayon and silk.
5. Plain weaves, such as chintz, cretonne, and crash, are made of many grades of cotton, mohair, rayon and silk.
6. Plastics, which are of several grades -- A plain sheet of plastic which has no fabric backing is not very durable. In better grades, the plastic is bonded to a fabric backing. The grade depends on the backing and on the finish of the plastic front.

ESTIMATING THE MATERIAL NEEDED

The four factors which will influence the amount of material needed are style of chair, size of furniture to be reupholstered, width of fabric and the design repeat. Add from $1\frac{1}{2}$ to 2 extra yards for loss in centering a design. A tailored skirt requires an extra yard. The average chair will need $3/4$ yard extra for covering cord.

With this in mind, take the lengthwise and crosswise measurements of each section of furniture. Length goes up and down (seat to top back; seat to top of arm; front to back of seat; bottom of chair to top of arm; bottom of chair to top of back).

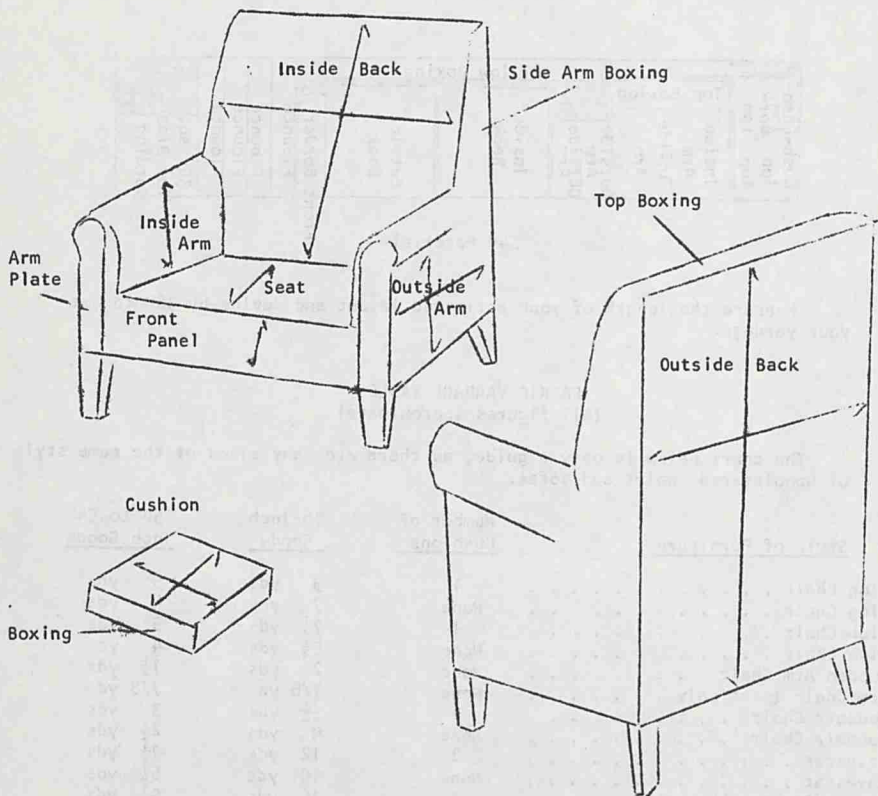
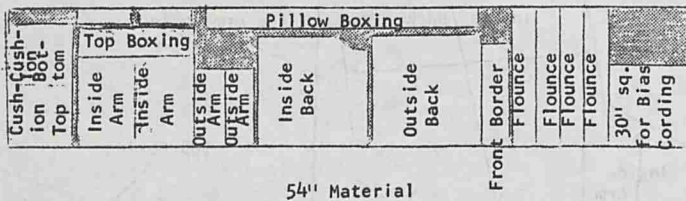


Diagram for Measuring Chair

	<u>Lengthwise</u>	<u>Crosswise</u>		<u>Lengthwise</u>	<u>Crosswise</u>
Inside back	_____	_____	Arm plates (2)	_____	_____
Outside back	_____	_____	Front panels	_____	_____
Seat	_____	_____	Skirt	_____	_____
Inside arm	_____	_____	Cushion (2)	_____	_____
Outside arm	_____	_____	Boxing	_____	_____

Allow 3 inches for tuck-in and pull-throughs. Newspapers taped together with these measurements marked on it.



Measure the length of your estimated layout and divide by 36" to get your yardage.

FABRIC YARDAGE TABLE (All figures approximate)

The chart below is only a guide, as there are many sizes of the same style of upholstered chairs and sofas.

<u>Style of Furniture</u>	<u>Number of Cushions</u>	<u>36-Inch Goods</u>	<u>50 to 54 Inch Goods</u>
Wing Chair	1	9 yds	5 yds
Wing Chair	None	7 yds	4 yds
Club Chair	1	7½ yds	5 yds
Club Chair	None	5½ yds	4 yds
Wooden Arm Chair	None	2 yds	1½ yds
Arm Chair (seat only)	None	7/8 yd	7/8 yd
Boudoir Chair	1	5½ yds	3 yds
Boudoir Chair	None	4 yds	2½ yds
Loveseat	2	12 yds	7½ yds
Loveseat	None	10 yds	6½ yds
Sofa (69" to 84" back)	3	16 yds	9½ yds
Sofa (69" to 84" back)	None	10 yds	7 yds
Ottoman	None	2 yds	1½ yds
3-Piece Suite	5	32 yds	19 yds

PRICE

The price of an upholstered piece of furniture will vary with the quality of the fabric and of the fiber from which the fabric is made. It is an economy to buy the very best material you can afford. This does not necessarily mean the most expensive. A very good grade of cotton might be more durable and chaper than the poor grades of silk or other fibers.

It would be helpful to see the sample books. The fabric swatches should be large enough to see the overall design and to examine closely for firm weave. These samples are available at some reliable furniture stores.

Mill-end stores have limited supplies and qualities of materials at low prices. Watch these materials carefully for soiled spots and defects in weave.

Many of these do not have a finish or backing on them. If these are purchased, buy extra yardage to take care of discoloration and badly-woven spots in the fabric.

Prepared by Edith B. McGlamery, Extension Housing and House Furnishings Specialist, North Carolina State University at Raleigh, U. S. Department of Agriculture, Cooperating, North Carolina Agricultural Extension Service, Raleigh, N. C. 27607

August 1967

RATING SCALE FOR: REUPHOLSTERING FURNITURE

There are several observable features of reupholstering furniture which indicate the general quality of workmanship. As you study your completed work, rate it by using the following scale:

(This device may be used by agent, leader, chair owners or helpers.)

	Possible Score	Excel- lent	Good	Poor
1. The lengthwise thread runs straight up and down on all pieces of upholstery (front panel, boxing, inside arms, outside arms, inside back, outside back, front to back cushion).	10			
2. Tailoring stitched (tacked) evenly and smoothly.	10			
3. Pleats on corners are arranged and even.	10			
4. Cushion: Padding is even. Cover well fitted. Covers smooth.	10			
5. Pattern is centered with main design on arm, seat and backs.	10			
6. Inside arm and inside back fit snugly with no deep cuts.	10			
7. Under padding and outside cover are smooth and even on the right and left sides as you view the chair from the front.	10			
8. The seat, back and arms are comfortable when chair is occupied, with no extra lumps, bumps or bulges.	10			
9. Fabric is firmly woven with tightly twisted yarn.	10			
10. Upholstery fabrics coordinated with home furnishings items on hand.	10			

(OVER)

SUGGESTIONS FOR SCORING AND SUMMARIZING

In order to get a complete picture of homemakers' competence in the area of reupholstering furniture, it is suggested that the home agent responsible for the lesson prepare a county survey from the evaluation forms. Reupholstery work is closely tied to decisions involving money, time and energy expenditures. The summary should at least reflect estimated money saving.

1. Name of county and agent.
2. Number of persons received lesson.
3. Tabulate the rating scale points for each category, using the following system:

90 - 100 points = Excellent
 80 - 89 points = Good
 79 & below = Poor or need for improved skills

4. Using the established estimated saving on labor per piece listed below in Column 2, enter total number of pieces reupholstered in Column 3 and compute total savings in Column 4 for county.

1. <u>Item</u>	2. <u>Estimated Savings in Labor</u>	3. <u>Total Number Reupholstered</u>	4. <u>Total Savings</u>
Simple chair seat and back	\$ 5.00	X	= \$
Simple seat, back and arms	\$10.00	X	= \$
Simple seat, back and arms (with loose cushion)	\$15.00	X	= \$
Channel back	\$ 3.00 per channel	X	= \$
Lounge chair	\$25.00 & up	X	= \$
Sofa	\$45.00 & up	X	= \$
Daybed	\$45.00 & up	X	= \$
Other _____	\$ _____	X	= \$
TOTAL			

5. Write a brief summary pointing up highlights and implications for future programming.
6. Send one copy of county summary and questionnaire form to specialist so that district and state summaries may be made.

remaking an UPHOLSTERED CUSHION

Renovating the Old Cushion . . .

Repair the cushion springs if the cushion appears to be lumpy. Usually the old springs and cotton padding may be used again after they are cleaned and straightened. New cotton at the top, bottom, and sides may be necessary.

Open the cushion cover and remove the filling.

FIGURE 96. Measure across the widest part of the coil with a firm tape measure or ruler. Proceed as shown in the following example:

Width across widest part of coil . . .	3 inches
Add 1 inch for seam	4 inches
Add 3 inches for boxing	7 inches
Double this amount	14 inches

FIGURE 97. Fold torn edges of the strip together and stitch in $\frac{1}{2}$ inch from the selvage on one end. Measure across the widest part of the coil again and add 1 inch. Pin a seam this width parallel to the selvage. Now flatten the spring and slip it into the pocket you have just made. Pin pocket closed with a seam 2 inches from the raw edge.

FIGURE 98. Turn the spring inside the pattern pocket. Let the spring stand $2\frac{1}{2}$ to 3 inches high. Re-pin the top seam of the muslin as needed until the height is correct.

Let the spring sides touch the pocket easily. If it is too tight and stretches against the wire, it will cut the material. If the pocket is too

loose the spring will tend to turn in the pocket. Reset the pins until the spring remains in the correct position.

Remove the pins along the top of the pocket and take out the spring. Reset pins along the side seam so they follow the thread of the goods.

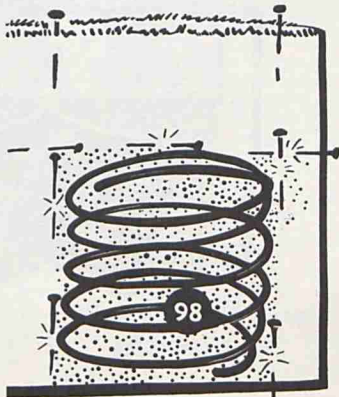
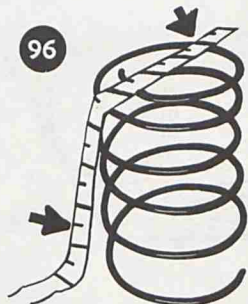
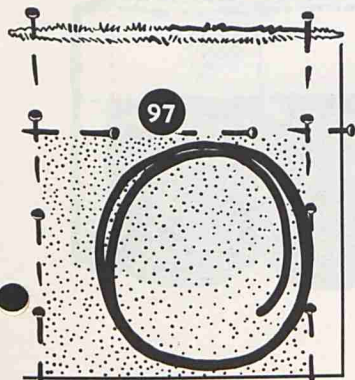
* For parts of this section the author is indebted to Lois A. Lutz, author of "Renovating Innerspring Cushions," Oregon State College Extension Bulletin 643.

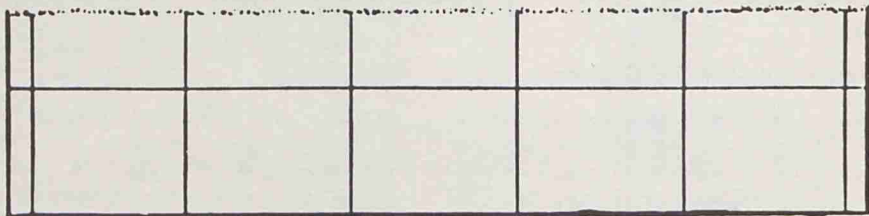
Cut cover and seam lines so the old cover may be a guide in cutting your new one.

Remove the springs. Straighten any crooked or bent ones and arrange them in rows. Be guided by the imprint left on the inside of the cotton padding for correct arrangement and the number of rows used in the original cushion.

Fourteen inches is the width of the muslin strip needed for each row for this particular size of spring. Length of strips = number of springs \times width of spring + seam allowance.

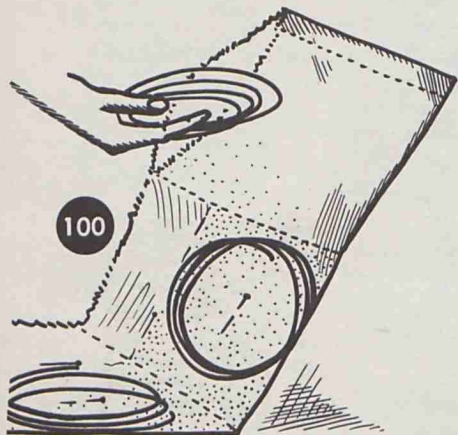
Tear enough strips to make the required rows of pockets.





99

FIGURE 99. With a pencil and ruler mark along the pins. Now remove the pins. Make a measure guide and mark all the pockets required in each pocket strip. Leave all pockets in a series with one row of stitching to separate each two pockets. Follow the thread of the fabric when marking and stitching.



100

FIGURE 100. Fill all the pocket rows. Crush a spring and slip it as far into a pocket as possible. Place one pin close to the spring and one pin in the center to hold each spring in place until the pockets are stitched closed. Pin all of the springs in place. Stitch pockets closed along the line marked, 2 or more inches down and parallel with the torn edges of the pocket strips.

FIGURE 101. Remove the pins and turn each spring around inside its pocket. The filled rows will seem much shorter. They should be firm and straight.

Arrange the completed rows into a unit with all the 2 inch seams up (see Figure 7). This will be the top side of the unit. Clip seams to 1 inch.

101

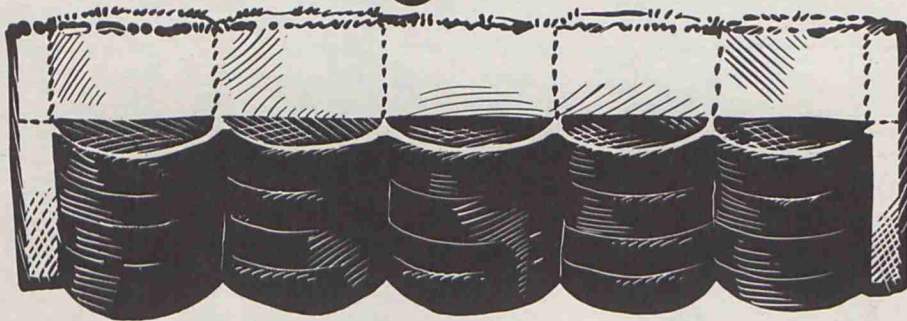
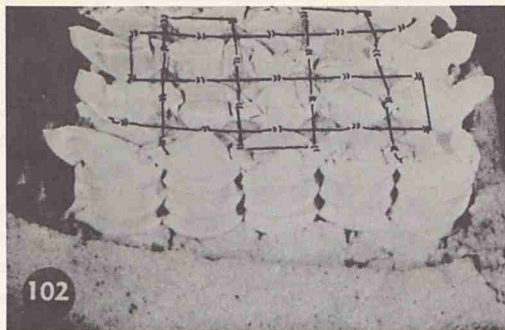


FIGURE 102. With twine or warp sew the rows together with a curved needle, a sack needle, or a darning needle. Sew with a short stitch, taking up the top wire in the two rows that touch. Pass the needle under each wire, draw up the thread until it is taut, and tie it firmly. Now make a stitch over the two top wires. Draw the stitch rather tight, then sew two stitches over the top wires in adjoining springs. Continue along the row to the end.

For the other rows, make a long stitch across the top of the spring to the new two rows, and sew back. Continue until all rows are sewed together. Sew in opposite direction so the springs may be held in position.

Turn the unit over and sew the rows together the same way. Tuck a small ball of cotton in each space formed between the springs. This will help to prevent the springs from overlapping.



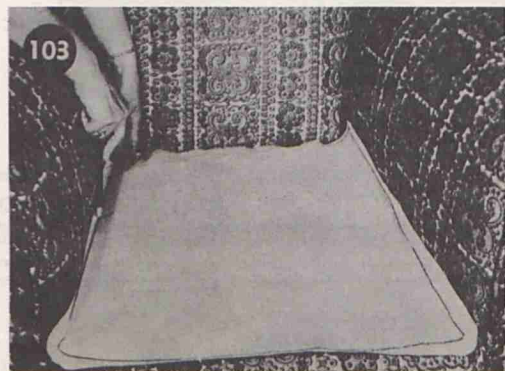
The cushion inner-spring stitched in muslin pockets, with cotton felt on the bottom and sides. The size of the inner-spring should be about 2 inches smaller than the outside casing, to allow for the cotton along the sides.

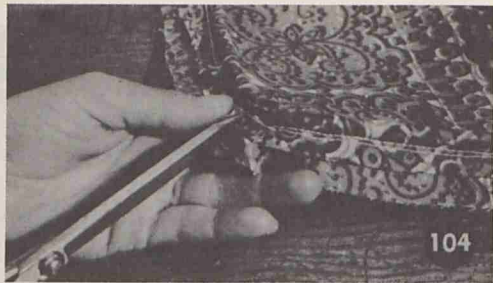
Place cotton over the top of the springs, and reinforce the stuffing in the corners as needed. Place any moss or hair used in the original cushion *under* the solid layer of cotton felt. A sheet of rubberized hair 1 inch thick may be laid on top and bottom and around edges of spring unit. Cut pieces to fit together exactly as shape of cushion. Use 2 inch strips of muslin and rubber cement to hold edges together. Cover completely with solid layer of cotton to give desired thickness.

FIGURE 103. If all new padding has been used in repairing your chair, do not cut the new cushion casing (cover) by the old one. You may find that the size of the cushion will vary slightly with the change in padding. It is safe to cut your new cover by the old one if the padding in the arms and back has not been disturbed in any way.

Using a firm paper, mark the cushion top for shape as shown in Figure 103. Now, use this pattern, allowing ample for seams, to cut your new cover. *Match any design to the back and front seat section.* Lay the fabric piece in the chair, and chalk the exact new stitching line. Cut the cushion boxing the width of the original one, adding a seam allowance.

Fit unit into a muslin cover made exactly like outside cover, omitting the cording. Use plain seams.

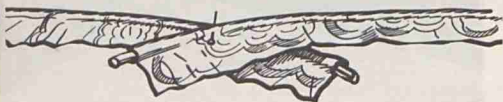




104

Re-covering the Cushion . . .

FIGURE 104. Make and apply a covered welt cord to the top and bottom sections of the cushion following steps given for the arm construction (Figures 68 to 70). Place the final stitching line on the cord *exactly* over the chalked stitching line on the cover. A variation here will affect the final size of the cushion. Clip the corners as shown.



CORDS MEET HERE

105

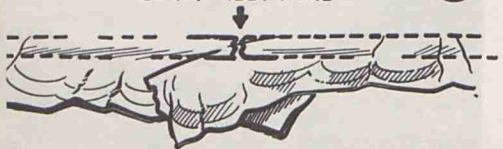


FIGURE 105. To avoid bulkiness do not let the cord overlap and extend down into the seam. With a pin, mark the point where the cord should meet at the back. Measure the length of each cord extending beyond this point. Now pull the cord out from the bias cover. Measure and cut it back to the pin so that the cords will just meet. Join bias with seam.

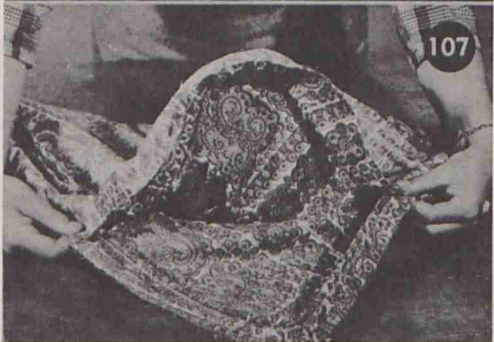
Seam boxing strips together and press the seams open. Avoid placing any seams along the front of the cushion. Match any design along the front boxing.



106

FIGURE 106. Smooth out the fabric. Let the raw edges of the bias strips extend down into the seam as shown.

The cover is ready to be applied to the boxing.



107

FIGURE 107. Match the four center points of the boxing to the cover as shown. Pin and baste the boxing to the cover, working from the center to the corners. Ease any extra fullness around each corner.

FIGURE 108. Machine stitch the boxing very close to the cording. Trim off any excess fabric until the seams are even.

Stitch the boxing to the bottom cover along the front and around each front corner. Leave the two sides and back open to get the cover around the loose padding. Restitch close to the cording around this loose section if the cording seems loose.

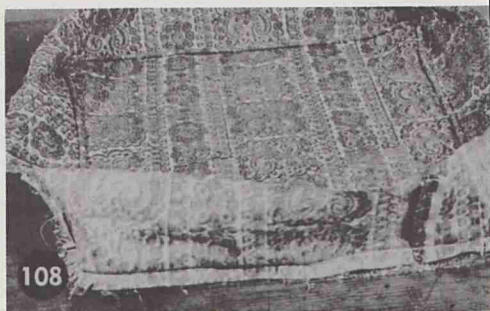


FIGURE 109. Place the spring unit in the new cover, taking care not to tear the cotton.

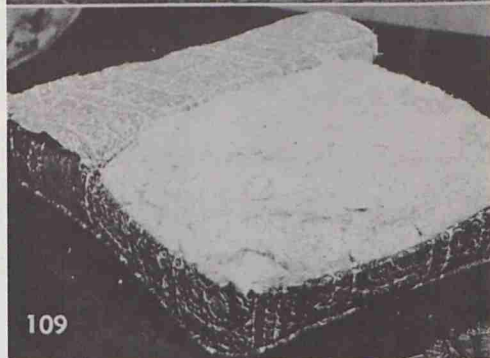


FIGURE 110. Turn down the seam allowance along the loose section of the boxing. With upholstery pins, close the cover as shown. The cover should fit snugly.

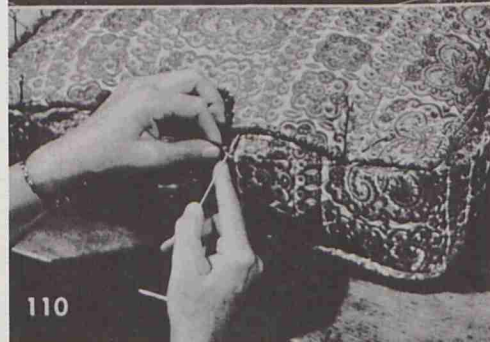


FIGURE 111. Place the upholstery pins 1 inch apart, easing in any fullness at the corners. With a curved needle and strong thread, sew with long slanting stitches.



Reprinted from "Re-Upholstering a Chair at Home", Misc. Pamphlet No. 132,
Oregon State University, Corvallis, 1950.



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8-65-5M

Home Economics Misc.

Home Furnishings for Youth

HOME FURNISHINGS PEN PAL LETTER NO. 2

Objectives:

The purpose of the Pen Pal letter is threefold: (1) to promote further interest among youth in home furnishings projects and activities, (2) to acquaint youth with the revised and new Manuals I and III, and (3) to encourage project completion.

Adaptable for:

Direct mail

Radio

News article

Supporting Teaching Aids:

1. Pen Pal Letter No. 2

2. Manuals

a. Manual I. Start With a Small Change (4-H C-17-6)

Projects: Look for Beauty
Flowers to Share
Fun With Fabric
A Place for Everything

b. Manual II. (not available at present)

Projects available:

Study Area
Sleeping Area
Storage Area
Dressing Area

c. Manual III. Pull Your Room Together (4-H M-17-12)

Projects: Plan on Paper
Background for Your Furnishings
Furniture to Live With

3. Suggestions for evaluation

Lesson Planner: Edith B. McGlamery

September 1968

Home Furnishings Pen Pal Letter No. 2
(for adaptation by agent)

(Date)

Dear Home Furnishings Pen Pal:

It is good to be writing to you again. My letters to you and your requests for materials and information, along with your demonstration and record, help us to keep in touch with each other.

If you did not receive my first pen pal letter or if you misplaced it, you may wish to have another copy. (Write or call the County Extension Office and ask for the first Home Improvement Pen Pal Letter). Many of the things that I want to say will be based on the information I gave in that letter.

We have changed our project name. We now refer to it as the 4-H Home Furnishings Project. It is more descriptive of the youth work in the area of housing and house furnishings.

Two new home furnishings manuals are now available. There are many projects in each, with varying degrees of difficulty and opportunities for you and other boys and girls to learn what is needed most to make the places you live more convenient and colorful.

Home Furnishings Manual I: "Start With a Small Change" includes four projects that will be of very little cost to those of you who wish to carry them out. These projects are: (1) Look for Beauty, (2) Flowers to Share, (3) Fun With Fabric, and (4) A Place for Everything.

Home Furnishings Manual II: "A Place to Call Your Own" will not be ready until 1969. However, at the present time there are available individual leaflets on the (1) storage, (2) sleeping, (3) study, and (4) dressing areas. If these are publications that you need to use in connection with your projects, please ask this office for the appropriate leaflets.

Home Furnishings Manual III: "Pull Your Room Together" contains three projects. The first one, (1) Plan on Paper, will cost you only time and energy as you plan, but it will help you to become a wiser consumer. The color schemes and room arrangements, if well planned, will make your other two projects more satisfactory. The other projects are (2) Background for Your Furnishings and (3) Furniture to Live With. These two projects require an outlay of money and more physical work than the first one.

The projects in the manuals contain not only information which will enable you to become a better consumer, but also ideas for demonstrations, places to visit and references for additional information.

Let us know what material you need for your home furnishings projects and demonstration. Let us hear from you again, no later than March 1969, with a good record of your accomplishments.

Sincerely yours,

(Agent's name and title)

EVALUATION FOR: HOME FURNISHINGS PEN PAL LETTER NO. 2

Name: _____ Parents' Name: _____

Street, Route or Box No.: _____ County: _____

City, State and Zip Code: _____

School Attended: _____ 4-H Leader: _____

Check (X) each activity participated in and projects completed:

Home Furnishings Activities	Activities Participated in	Project Completed
Manual I. Start With a Small Change		
Projects: 1. Look for Beauty		
2. Flowers to Share		
3. Fun With Fabrics		
4. A Place for Everything		
Manual II. Wake Up! Furnish an Area		
Projects: 1. Sleeping Area		
a. Bedspreads		
b. Linens		
2. Study Area		
a. Study Lamp		
b. Desk		
3. Storage Area		
4. Dressing Area		

(OVER)

Home Furnishings Activities	Activities Participated in	Project Completed
Manual III. Pull Your Room Together		
Projects: 1. Plan on Paper		
a. Color Scheme		
b. Room Arrangement		
2. Background for Furnishings		
a. Painting Walls		
b. Floor Covering		
c. Window Treatment		
3. Furniture to Live With		
a. Refinished		
b. Painted		
c. Renovated		
d. New		

SUGGESTIONS FOR SUMMARIZING

1. In order to get a complete picture of the activities participated in and projects completed, please use one of these evaluation forms for entering the county totals for each item and column.
2. Write a brief summary pointing up highlights and implications for future programming.
3. Send one copy of county summary and questionnaire to specialist so that district and state summaries may be made and analyzed for other programming efforts.

HOUSING: HOME KITCHENS

Concept:

The value system of an individual, family or society determines housing goals which materially affect one's choice of housing.

Housing is a compromise among location, tenure and dwelling, and a compromise within the dwelling among equipment, design, state of repairs and space, with cost the comparatively inflexible limiting factor which makes the other choices necessary.

Teaching Objective:

Families to acquire information which will enable them to secure more convenient and attractive kitchens through planning better arrangement and selection of materials.

Use of Materials: Materials should be used by agent for:

Organized clubs	Cabinet makers
Kitchen planning workshops	Radio
Home builders and designers	News release

Teaching Aids:

Bulletins--Home Kitchens, Home Planning Aids, 4 kitchens
Slides and script
List of references
Suggestions for evaluation

Lesson Planner: Charlotte Womble

September 1968

REFERENCES

Consumers All, the Yearbook of Agriculture, 1965. U. S. Government Printing Office, Washington, D. C. 20402

The Modern House, U.S.A. Kate Ellen Rodgers. Harper & Row, Publishers, 49 East 23rd Street, New York, N. Y. 10010

The House: Principles/Resources/Dynamics. Tessie Agan and Elaine Luchsinger. J. B. Lippincott Company, Philadelphia and New York.

Modern Kitchens, a Sunset Book. Lane Book Company, Menlo Park, California 94025

Kitchen Planning Guide. Small Homes Council, Building Research Council, University of Illinois, Urbana, Illinois 61801

Planning the Kitchen and Workroom, Home and Garden Bulletin No. 12. U. S. Government Printing Office, Washington, D. C. 20402

Planning Guides for Southern Rural Homes, Southern Cooperative Series Bulletin No. 58. N. C. State University, Housing and House Furnishings Department, Raleigh, N. C. 27607 (Each county has office copy) 1958.

Space Standards for Household Activities, Bulletin 686. McCullough, Smith, Wood, Woolrick. University of Illinois, Agricultural Experiment Station, Urbana, Illinois. (Copy in county office)

Home Ventilation Fans (mimeographed). Charlotte Womble, 210 Ricks Hall, N. C. State University, Raleigh, N. C. 27607

Planning Your Home Lighting, Home and Garden Bulletin No. 138. U. S. Government Printing Office, Washington, D. C. 20402

Resilient Floor Coverings, H. E. 5, N. C. State University, Raleigh, N. C. 27607

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(Order Form)

HOME KITCHENS

Any well-planned kitchen makes work easier and more satisfying; saves time, steps, and energy; is easy to clean; eliminates confusion; is attractive; meets needs of the family; and encourages family cooperation.

Recent trends favor making the kitchen a center for family living. The larger area required for this type of kitchen-family room permits a mother to keep a young child in view while she works. It sometimes gives several family members opportunity for companionship while they engage in separate activities in different areas of the room.

To plan or improve a kitchen:

1. Plan for convenience in preparing, cooking, and serving food, and for cleaning up afterwards.
2. Plan for dining space, at least for breakfast, lunch, and snacks.
3. Plan for other desired family activities, if extra space is available.
4. Know the features of a really convenient kitchen:
 - a. The major equipment, the work space and storage space for supplies and small equipment needed for different kinds of jobs or activities.
 - b. A specific work center organized for each type of job or activity.
 - c. Work or activity centers arranged in the room for easy flow of work and to save energy.
 - d. Smooth surface for easy care.
 - e. Good lighting by day and night.
5. Review current trends in:
 - a. Appliances and equipment--types and sizes.
 - b. Kitchen-family room.
 - c. Cabinet styles, designs, and finishes.
 - d. Counter-top material and floor and wall coverings.
 - e. Lighting, wiring, and ventilation

----- (cut along line) -----

TO : _____ County Home Economics Extension Office
_____, North Carolina

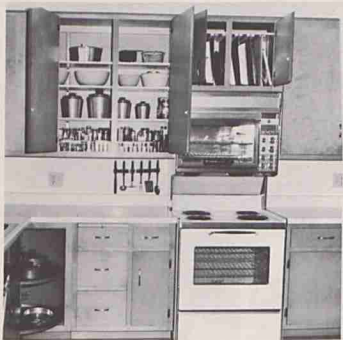
We are planning to build a new home ___; remodel our present home ___. (Check one)

Please send the following materials related to kitchen planning:

- ___ "Home Kitchens," Southern Regional Publication, H.E. 2
- ___ "U-Shaped Kitchen Arrangements," House Planning Aid, H.E. 46
- ___ "Broken-U Kitchen Arrangements," House Planning Aid, H.E. 50
- ___ "L-Shaped Kitchen Arrangements," House Planning Aid, H.E. 47
- ___ "Parallel-Wall Kitchen Arrangements," House Planning Aid, H.E. 48
- ___ "Corner Storage in Kitchens," House Planning Aid, H.E. 51
- ___ "Planning the Kitchen and Workroom," Home & Garden Bulletin No. 12

Name _____

Address _____



HOME KITCHENS

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Cooperative Extension Service

September 1966



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Regional Publication Committee (Housing)

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(Retired 7/1/66)

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ISSUED IN FURTHERANCE OF COOPERATIVE EXTENSION WORK, ACTS OF MAY 8 AND JUNE 30, 1914, IN COOPERATION WITH THE U. S. DEPARTMENT OF AGRICULTURE. W. E. SKELTON, DIRECTOR OF EXTENSION SERVICE, VIRGINIA POLYTECHNIC INSTITUTE, BLACKSBURG, VIRGINIA 24061.

HOME KITCHENS

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The kitchen, the heart of the home, is the most important room in the house. It is the homemaker's workshop, where she spends most of her working hours. When it is attractive and efficient, it promotes pride and contentment in the entire family.

Kitchens vary considerably in size, shape, and purposes. Small kitchens may have only enough space for preparing and serving meals, while larger kitchens may include a dining area and space for various other family activities. Regardless of the total room size or shape, the kitchen work area should be convenient, attractive, and arranged according to recommendations based upon research.

Recent trends favor making the kitchen a center for family living. The larger area required for this type of kitchen-family room permits a mother to keep a young child in view while she works. It sometimes gives several family members opportunity for companionship while they engage in separate activities in different areas of the room.

Any well-planned kitchen makes work easier and more satisfying; saves time, steps, and energy; is easy to keep clean; eliminates confusion; is attractive; meets needs of the family; and encourages family cooperation.

TO PLAN OR IMPROVE A KITCHEN

1 Plan for convenience in preparing, cooking, and serving foods, and for cleaning up afterward.

2 Plan for dining space, at least for breakfast, lunch, or snacks.

3 Plan for other desired family activities, if extra space is available.

Know the features of a really convenient kitchen

1. The major equipment, the work space and storage space, for supplies and small equipment needed for different kinds of jobs or activities.
2. A specific work center organized for each type of job or activity
3. Work or activity centers arranged in the room for easy flow of work and to save energy
4. Smooth surfaces for easy care
5. Good lighting by day and night

Review current trends in:

1. Appliances and equipment, types and sizes.
2. Kitchen-family room.
3. Cabinet styles, designs, and finishes.
4. Counter-top materials and floor and wall coverings.
5. Lighting, wiring, and ventilation.



YOUR WORK CENTERS



Activities carried on in home kitchens vary among households according to family situations and preferences, and the space available. For easy and satisfactory performance of each activity, a special area or center should be established.

A work center consists of appropriate major equipment, adequate counter or work surface, and necessary storage space. Good planning requires well-organized work centers for food mixing or preparation, cooking and serving, and dishwashing. The 3 basic work centers are usually called the mix center, the cook and serve center, and the sink center.



MIX CENTER

At this center you prepare breads, salads, desserts, and other foods to be cooked. For this work you need counter or work surface, storage cabinets, and the refrigerator.

Counter width needed for mix center is 36 in. to 54 in. Counter heights usually are 36 in. but may be 32 in. to 36 in. for women of different heights.

To work seated at this center it is helpful to have either

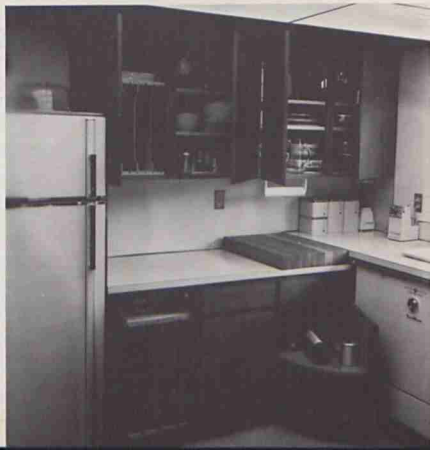
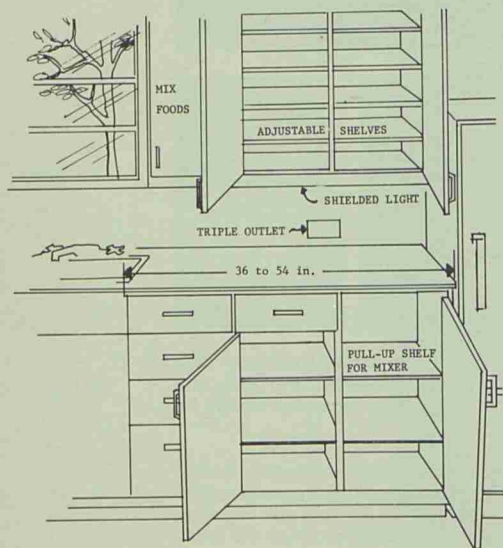
- (1) knee space below counter, for using a work stool comfortably, or
- (2) a pull-out lapboard, 25 in. to 28 in. from the floor, for use with a chair.

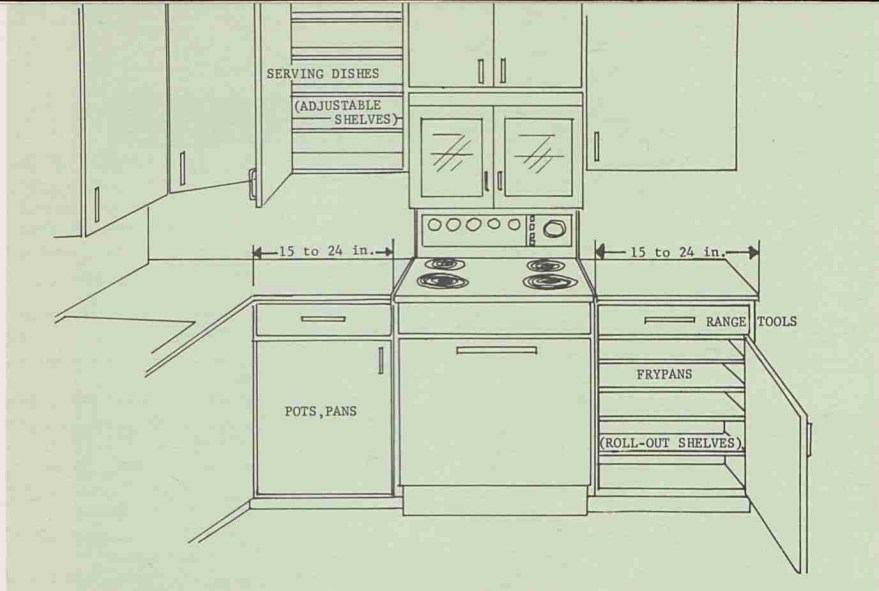
Cabinets above and below this counter usually provide enough storage space for this center. Store here all supplies, small equipment, food mixer, and utensils for preparing foods mentioned above.

The refrigerator is the major equipment item essential to the mix center. It should always open next to the mix counter or another at least 15 in. wide within easy reach of the mix center. Provide at least 16 in. between the latch side of the refrigerator and the turn of a counter.

Locate the mix counter, if possible, between the refrigerator and the sink. Alternate locations may be between the refrigerator and the range, or between the range and the sink.

A home freezer should be installed as near the mix center as possible. It may be located in the kitchen, utility room, family room, or basement, according to space available.





COOK & SERVE CENTER

The final preparation and serving of food is done here. This center includes the range or surface units, certain portable cooking appliances, work counter, and storage space.

Choose a complete range, or surface units with a separate oven, to fit your own needs and the space available. The complete free-standing or drop-in range, with oven below and/or above surface units, is the most practical for small kitchens or limited space. Separate ovens and surface units reduce counter space by at least 4 sq. ft. and therefore require larger kitchens.

A separate oven should not block the flow of work from one counter to another, nor

become a safety hazard in a traffic lane. A separate built-in oven should be installed with the lowest rack position about 36 in. above the floor.

Counter space required on each side of a range or surface unit, and on one side of a separate oven is 15 in. to 24 in.

Wall cabinets above the required counters furnish convenient storage for range supplies and serving dishes. Base cabinets below the required counters provide storage for range tools, fry pans, griddles, and pan covers.

An exhaust fan over the range, and one over a separate oven, are recommended to remove odors, moisture, smoke, and heat.

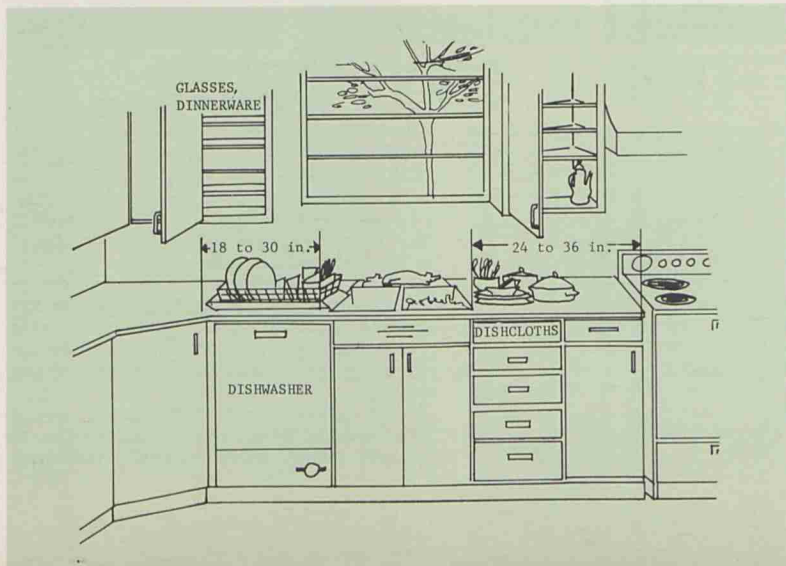


SINK CENTER

This is the most-used center in the kitchen. For this reason, it is most often placed between the mix center and the cook and serve center. Here you prepare fresh fruits and vegetables, wash dishes, and dispose of garbage and trash.

It is important to provide at this center:

- (1) Counter to right of sink for stacking utensils and dishes to be washed, 24 in. to 36 in. wide.
- (2) Counter to left of sink for clean dishes, 18 in. to 30 in. wide. (The counter widths given assume a right-to-left dishwashing sequence; for a left-to-right sequence, reverse the counter widths.)
- (3) Space for dishwasher, either right or left of sink, 24 in. wide.
- (4) Drawer space for dish towels and aprons.
- (5) Towel rod or rack for drying used towels.
- (6) Storage space close to sink for items requiring use of water, such as fruits, vegetables, and other foods; coffee pot, sauce pans, and related tools; cleaning and dishwashing supplies; and everyday dishes (alternate storage in dining area).
- (7) Food waste container or disposer, and a trash can.





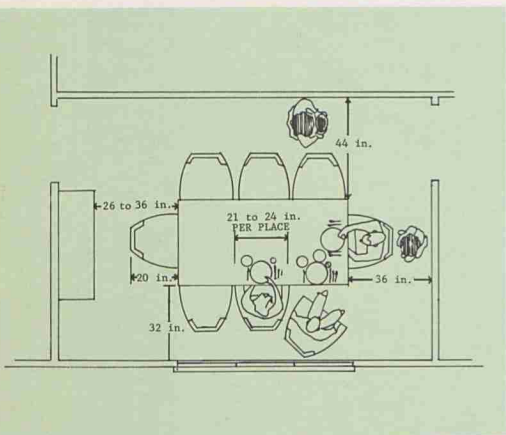
THE DINING AREA

Serving some or all family meals in the kitchen is a time and energy-saving practice, and popular whenever space permits. For this purpose a suitable table and chairs are usually selected for comfort and adaptability. For quick meals or snacks, a bar or counter with chairs or stools is sometimes provided.

The floor area needed for dining is determined by the number of persons to be served and size of table. Space required between the table and a wall or furniture for ease in being seated and for serving is 32 in. to 44 in. Width of table space needed for each person is 21 in. to 24 in.

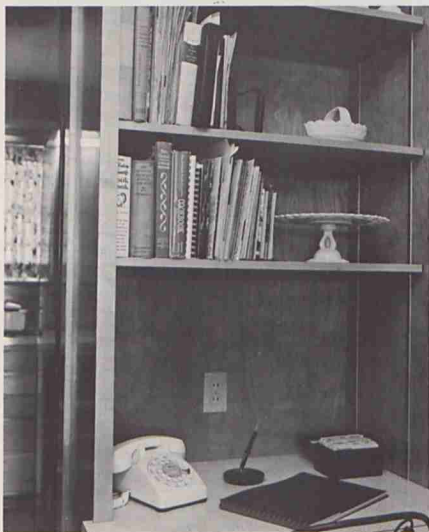
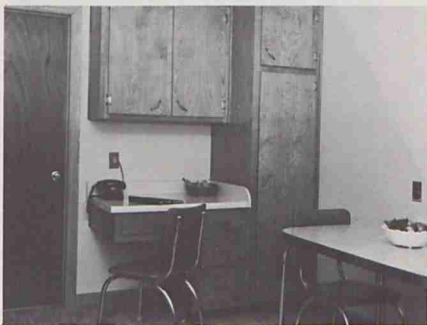
For convenience, locate your dining area near the cook and serve center or near the sink center. Also if possible, locate it close to a window with an attractive view.

A nearby serving counter with storage below is handy for using and storing small appliances used at the table.



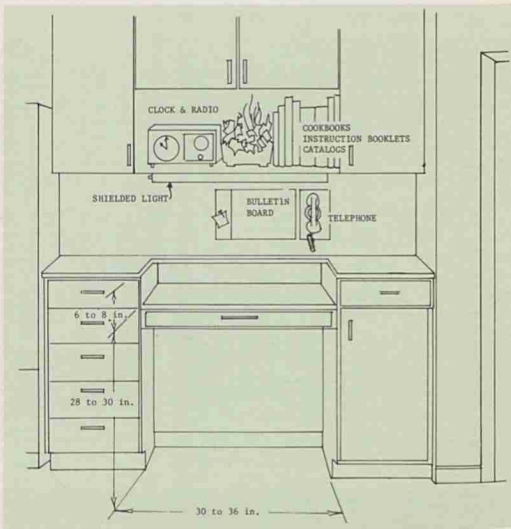
Family needs and interests determine additional centers that might be in a large kitchen or kitchen family room. Centers most often established are those for planning or home business and for laundry. Some families may want or need spaces for study, sewing, or children's play. A closet for outdoor wraps near the back door is useful and desirable. A cleaning closet in or near the kitchen should be provided for storing the equipment and supplies required for cleaning the house. None of the extra centers, however, should be allowed to interfere with or crowd the three basic work centers of the kitchen.

other activity areas



PLANNING CENTER

The kitchen or closely related family room is a good location for a planning or home business center. A counter about 24 in. deep, 30 in. wide, and 28 in. to 30 in. from the floor, or a desk, will serve this purpose. Space should be provided for storage and use of records, cook books, instruction booklets, and catalogs. It may be convenient also to have a bulletin board, clock, radio, and telephone.

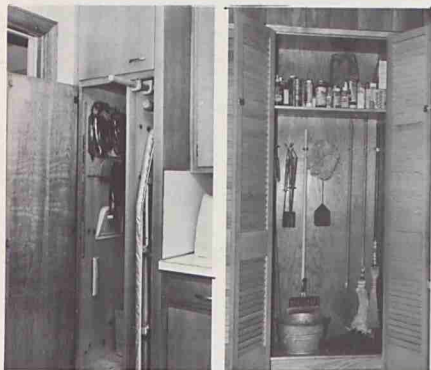


LAUNDRY CENTER

It is an advantage to have the laundry center on the main floor of a house. It may be located in the kitchen, family room, or utility room; in a hallway or a large bathroom; or in a basement if necessary.

A washing machine or a washer and a dryer in the kitchen, family room, or hallway may be enclosed in a special closet or alcove by accordion-type or bi-fold louvered doors. Shelves or cabinets above or beside this laundry equipment provide convenient storage for laundry supplies. Counter space and a sink in this center, when possible, are useful for sorting laundry and pre-treating stains.

An ironing board and related equipment may be stored in a tall cabinet or closet in the laundry center. But if ironing is more conveniently done in some other work center or part of the house, this equipment should be kept close to where it is used.



ARRANGEMENT OF WORK CENTERS

The three basic work centers are interrelated and should be arranged so work flows easily from one to the other.

In a continuous arrangement of centers, one counter will serve two centers. The width of such a double-purpose counter should be the width required for the larger one, plus 12 in. to 15 in.

Total base cabinet frontage should be at least 6 ft. but may be 10 ft. or more in a larger kitchen. Do not count space under sinks, but include storage space below built-in surface units and ovens if it is at least 20 in. high.

Total wall cabinet frontage should be at least equal to base cabinet frontage. It may be from 6 ft. to 14 ft. or more. Do not count

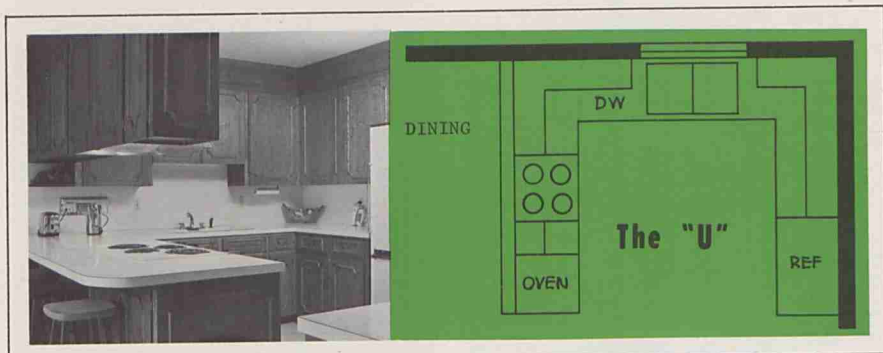
cabinets above sink, refrigerator, or cooking units.

Total counter frontages should be at least 6 ft., but may be 10 ft. or more. Count only the front edges of all usable counter.

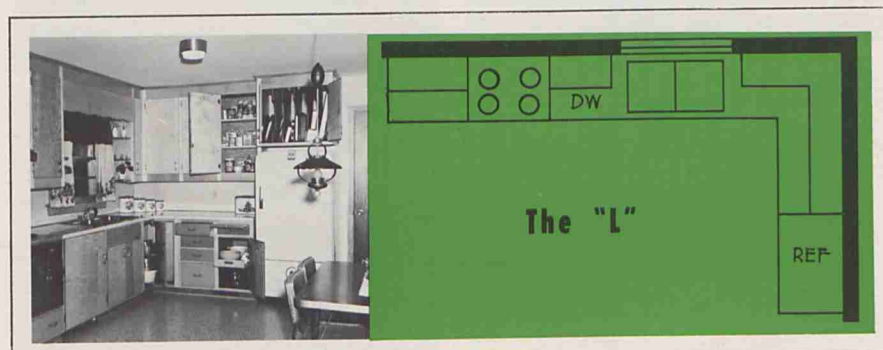
Wall cabinets about 12 in. deep are most accessible when placed 15 in. or 16 in. above counters that are 36 in. high.

The 4 basic shapes for kitchen arrangements are U-shape, L-shape, 2 wall or corridor, and one wall. Common variations are the broken-U and broken-L, in which one center is separated from the other two.

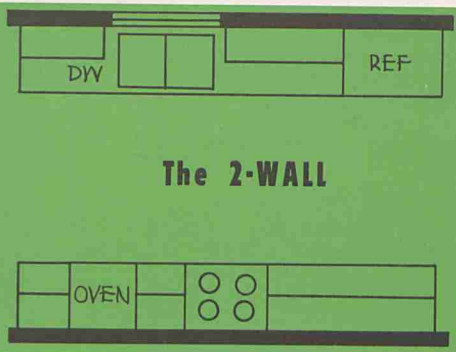
An "individual center" kitchen has all three centers separated. This is necessary sometimes when remodeling an old kitchen where wall spaces do not permit 2 centers to be joined.



The U is compact, saves most steps, and allows no traffic through the work triangle.

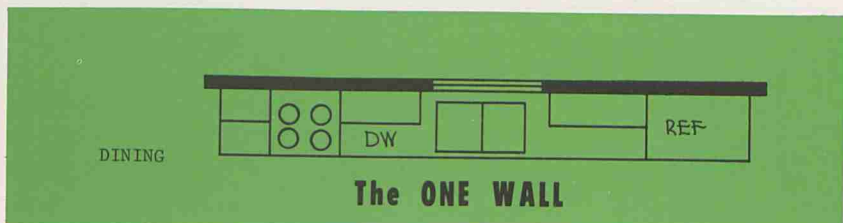


The L allows some traffic control, and has more space for dining or other activities. It has advantages when remodeling.



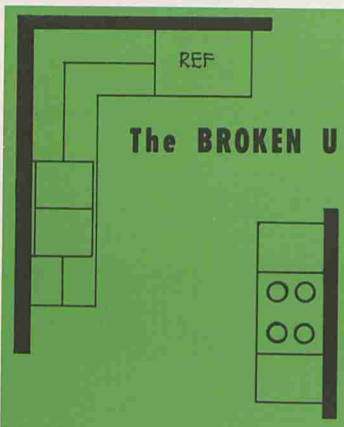
The 2-WALL

THE 2-WALL OR CORRIDOR. This presents traffic problems if open at both ends.



The ONE WALL

THE ONE-WALL is least desirable. Its use is best limited to small apartments.



The BROKEN U

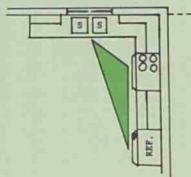
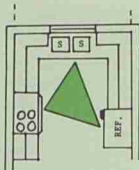
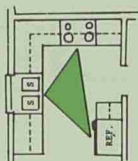
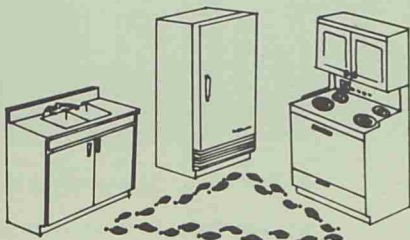
In kitchens of limited space, the 3 basic centers are arranged most satisfactorily along adjoining or opposite walls. In oblong rooms, (10 ft. to 12 ft. wide by 15 ft. to 25 ft. long) with 2 of the centers on one wall or adjoining walls, the third center may form a peninsula. This peninsula could separate the kitchen work area from a dining or other activity area. In a large square room, the third center may be an island, which may also serve as a divider to separate the kitchen work area from dining or other activities.

A BROKEN U or a BROKEN L can be satisfactory if the separate center is complete with its major equipment, counter and storage space.

Kitchen plans must take into account not only the organization and arrangement of definite work centers, but also some specific space allowances and clearances. This is necessary for efficiency, and for the safety, comfort, and satisfaction of persons using the kitchen. The guides listed below should be followed as closely as possible.

ACTIVITY AND SPACE STANDARDS

1. The work triangle. This indicates the amount of walking required by any kitchen arrangement. It is formed by three lines connecting the center fronts of refrigerator, sink, and range or surface unit. The sides of the triangle should total 15 ft. to 23 ft., but never be less than 12 ft. nor more than 26 ft.

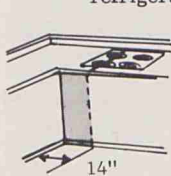


2. Activity space clearances. For better-planned counter and storage areas which allow for comfortable standing or activity space, certain clearances are recommended. Where a counter turns a corner, allow at least:

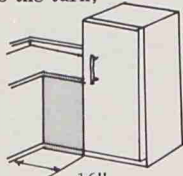
- (1) 9 in. between the edge of the sink and the turn of the counter;
- (2) 14 in. from the center of a front unit or burner to the turn;
- (3) 16 in. from the latch side of a refrigerator to the turn;

- (4) 12 in. to 14 in. on each side of the corner turn from any fixed appliances for installing a corner base cabinet with either fixed or revolving shelves.

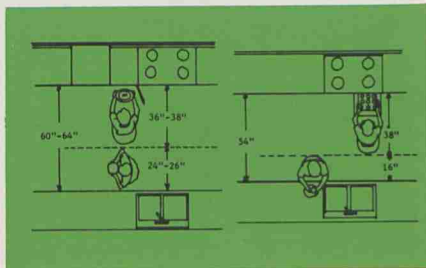
Between appliances or counters on opposite walls allow not less than 4 ft. For 2 people to work and pass each other, allow 54 in. to 60 in.



(2)



(3)



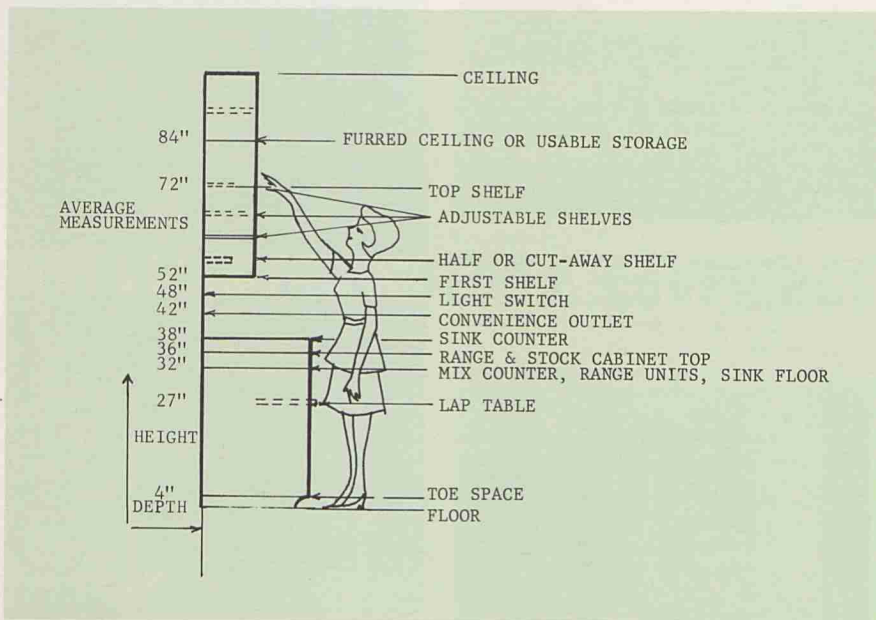
Doors in the kitchen should be: limited to 2 or 3, and located to direct traffic away from the work triangle; hinged so that none will swing in front of counters or appliances to interfere with work; pocket, sliding, bi-fold, or accordion doors where possible or suitable to avoid interference.

3. Kitchen plan related to house size. Consider the house size when developing its kitchen plan. For the small house, it is necessary to choose minimum widths recommended for base cabinets, wall cabinets, and counters. More generous widths are suitable for larger houses.

STORAGE AND WORK HEIGHTS

Work heights need to be adapted, when possible, to the height of the worker and type of job. Indicated below are heights of

appliances and cabinets standardized as reasonably satisfactory for women of average height.



CABINETS AND STORAGE UNITS

Cabinets and other storage units may be custom-built or selected from commercially built stock units.

Interiors of all storage spaces should be designed to keep items in plain view, easily reached, removed, and replaced.

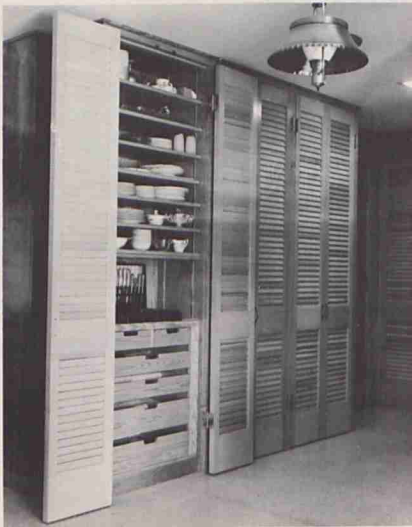
Some features of good kitchen storage are:

1. Doors which open separately, with no frame support where the opening edges of two doors come together.
2. Wall-cabinet doors not more than 12 in. to 14 in. wide and 36 in. long.
3. Door pulls placed low on wall cabinets, and high on base cabinet doors; and drawer pulls placed near tops of drawers.

4. Wall cabinets preferably equipped with adjustable shelves.
5. Drawers of different depths instead of shelves in some base cabinets.
6. Shallow top drawers with dividers for cutlery and small tools.
7. Metal-lined drawers for bread, cookies, flour etc.
8. Easy-glide hardware for drawers and sliding trays or shelves.
9. Cabinet doors with magnetic catches for easy opening and quietness.
10. Vertical file sections on top or upper shelf of wall cabinet, and on bottom shelf or in deep drawer of base cabinet, for filing baking pans and dishes.
11. Shelves in base cabinet built full-, not half-depth, and sliding when possible.
12. Removable in-between or half-shelves used for keeping unlike items separated.
13. Revolving shelves in the corner of a base cabinet when each side of the right angle along the wall is at least 36 in.
14. A full-height cabinet or storage wall to provide additional or reserve storage, 12 in. to 15 in. deep, and as wide as space permits or needs demand.



Example of 3, 11, in dining area.



Example of 14.



Example of 10.



Examples of features 1, 3, 6, 7, 11, 13.



Example of 6, 11.

COUNTER TOPS, FLOOR COVERINGS, & FINISHES

The easy care and attractiveness of a kitchen depend greatly upon choices of surface coverings and finishes. Light colors and smooth surfaces contribute much to easier work.

Counter top materials should be durable, easy to clean, and resistant to moisture, stains, scratches or cuts, and heat. Flexible vinyls and laminated plastics, available in many colors and at different prices, are widely used for this purpose. Other materials sometimes chosen for limited or special areas are stainless steel, ceramic tile, marble, and wood.

Floor coverings should resist wear, stains, solvents, grease, and moisture. They also should be resilient under foot, quiet, nonslippery, and restful to the eye. Recommended for long wear and other qualities desirable in the kitchen are vinyl asbestos, inlaid linoleum, and solid vinyls of medium or standard gauge. Other materials satisfactory in particular situations

include grease-resistant rubber tile and ceramic tile. Enamel or vinyl coated floor coverings are less expensive and also less durable. There are new developments in "kitchen carpeting". None is "the best" floor covering for every situation--choose a kind recommended for kitchens, in the price range you can afford.

Cabinets of any suitable wood may be given a transparent or natural wood finish, or finished with enamel paint. Some cabinets are now finished with laminated plastics. Others made of steel are produced with a baked-on enamel finish.

Walls in kitchens are most often finished with semi-gloss or gloss enamel, but may be covered with vinyl-coated fabric which is grease- and moisture-resistant. Wood-panelled walls are usually given a transparent finish, but may be painted.

Ceilings painted off-white or a very light color give maximum reflection of light.



WIRING AND LIGHTING

Wiring for light and power in the kitchen should be planned for present and future needs. Include plenty of circuits for lighting and for small appliances. Individual equipment circuits are needed for the range, dishwasher, freezer, clothes washer, dryer, and other special equipment. When several cooking appliances are to be used at one time, outlets for them must be supplied on more than one circuit. Follow electrical engineering recommendations when planning the number of circuits and wire size.

Good lighting makes the kitchen more pleasant and efficient. It is recommended that window area equal at least 10% of floor area. For artificial light, plans should include general lighting, plus lighting for basic work areas, the dining area, and other activity areas. Light rather than dark colors used on walls, ceiling, cabinets, and counters reflect more light and increase the efficiency of both natural and artificial light.

Your county Cooperative Extension representatives or local power suppliers can help plan adequate wiring and lighting.

VENTILATION

Mechanical ventilation of the kitchen is desirable to remove odors, moisture, smoke, and heat, without undue loss of coolness in summer or heat in winter. Smaller houses and the open design of many homes make it even more essential to keep cooking odors from spreading through the house.

To have efficient ventilation, select the right type of fan and place it to exhaust as directly as possible to the outside. The hood-fan is the best type since it traps and prevents the escape of greasy smoke and odors to other areas. It should be placed

20 in. to 24 in. above the cooking surface. Hood-fans for built-in ovens remove odors, heat, and smoke from baking or broiling.

An exhaust fan for ceiling or wall is less expensive but also is less efficient. When located directly over the range it does a fairly good job.

Non-ducted fans are recommended only when it is impractical to use duct work for discharging the air to the outside. They do not remove heat or moisture. Removable filters partially clean the air and return it to the room.

TEN STEPS IN MAKING & CHECKING YOUR PLANS

Whether you are planning a new kitchen or remodeling an old one, you follow the same planning principles. When remodeling, you must begin with what you have and consider possible improvements.

1. List first all your needs and wishes, but underscore the "must haves." You and your family should consider the activities to be provided for, amount of space needed, and any special features wanted.
2. Locate your kitchen with easy access to both a service entrance and the rest of the house. It should also have an attractive outlook, if possible, and a clear view of children's play area.
3. Make a floor plan of your proposed kitchen, using a scale of 1/4 in. or 1/2 in. to 1 ft. To test the arrangement you have in mind, use paper cut-outs of the same scale to represent all equipment and cabinets on hand or to be acquired. Apply given recommendations in working out your plan.

If you do not have or know widths of appliances to be installed, for tentative planning you may use:

- 36 in. for refrigerator.
- 36 in. for twin-bowl sink.
- 20 in. for single sink.
- 24 in. for dish washer.
- 30 in. for range or surface units.
- 24 in. for a built-in oven.

4. If you are planning to eat in the kitchen, use cut-outs to represent dining table and chairs to determine if space allowed is sufficient for comfortable use. If your kitchen includes a family living area, use appropriate furniture cut-outs to show arrangement of other activity centers.
5. Decide upon types, styles, and sizes of any new equipment or cabinets to be installed and what improvements might be made in storage units on hand.
6. Choose kinds and colors of counter tops, floor coverings, and other finishes.
7. Determine what you need for good light and ventilation.
8. If you wish assistance with your plans or would like to have them reviewed, consult a Cooperative Extension or other home economist, a qualified engineer, or an architect.
9. When your plans are complete as possible, get estimates of costs from at least 2 reliable builders or contractors.
10. Your final step is to decide whether you can carry out your plans all at one time, or gradually. If you must make changes to meet your budget, avoid violating the basic planning principles you tried to follow.

Information in this bulletin is based chiefly upon research by the Clothing and Housing Research Division of the U. S. Department of Agriculture, the cooperating Experiment Stations, and the land-grant universities in the various states.

Special acknowledgment is made for illustrations in this publication. These were obtained chiefly through the Cooperative Extension Services of Kentucky, Louisiana, South Carolina, and Virginia, with photos selected from homes in these states. Others came from regional research of Agricultural Experiment Stations cooperating with ARS, U. S. Department of Agriculture, and one from the General Electric Lighting Institute.

HOUSING: PLANNING BATHROOMS FOR TODAY'S HOMES

Concept:

The value system of an individual, family or society determines housing goals which materially affect one's choice of housing.

Housing is a compromise among location, tenure and dwelling, and a compromise within the dwelling among equipment, design, state of repairs and space, with cost the comparatively inflexible limiting factor which makes the other choice necessary.

Teaching Objective:

Families to acquire information which will enable them to plan bathroom space and to make wise decisions in the selection of materials for building bathrooms to meet family needs.

Use of Materials: Materials should be used by farm agent or home agent for:

Organized clubs	Radio
Special interest classes	TV
Individual families	Newspapers

Teaching Aids:

1. Bulletins "Planning Bathrooms for Today's Homes" and House Planning Aid: "Bathrooms"
2. Slides and script
3. List of references
4. Suggestions for evaluation

Lesson Planner: Charlotte Womble

September 1968

(OVER)

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(Order Form)

PLANNING BATHROOMS FOR TODAY'S HOMES

Every home should have at least one bathroom to provide maximum family convenience and sanitation. Prospective home owners give high priority to conveniently located, nicely equipped and attractively decorated bathrooms. Adding a bathroom or converting existing space into a bath area is a remodeling project undertaken by many families. Whether you are building or remodeling, it is a good idea to plan the decorating scheme for your bath areas early, before you order bathroom fixtures. This is particularly true if you are using color fixtures.

Bathroom fixtures, counters, cabinets, and floor coverings are costly. You want these permanent furnishings to be as pleasing in five, ten, or even 20 years as they are now. So it is important that you take plenty of time and shop widely before your final selection.

Planning the arrangement and space should be done very carefully. If space is limited, it is very important to arrange the fixtures in logical order. More liberal space will allow for extra storage and more working space.

The bathroom should be located in the house so that it is convenient to all the rooms, if possible, without going through other rooms. Compartmented baths are popular with families with growing children. In remodeling, a compartmented bath often makes the best use of space, particularly if a large area is being converted into a bathroom.

Bathroom fixtures are available in different price ranges. The price depends on the material of which the fixture is made, and the size, color and styling of the fixtures.

Built-in tubs, lavatories and toilets are the three basic pieces of equipment. Shower stalls are preferred to tubs by many people.

Porcelain enameled cast iron and pressed steel are both used for making tubs. Tubs are made in rectangular and square shapes. Steel and iron bathtubs feature an anti-slip embossment or textured surface in the bottom, eliminating the need for bathmats.

(over)

North Carolina Agricultural Extension Service and U. S. Department of Agriculture, Cooperating, North Carolina State University at Raleigh, Raleigh, N. C. 27607

September 1968

Molded polyester fiberglass one-piece fixtures are new dimensions in tubs and shower stalls.

There are many lavatory designs on the market. Porcelain enameled cast iron, enameled and vitreous china are used to make lavatories. All porcelain enameled fixtures now on the market are acid-resistant. Wall-hung and built-in lavatories are used. Built-in is more expensive but it gives more work area and storage space.

Acid-resistant vitreous china is always used for water closets. Floor model one- or two-piece units are available in several price ranges. Wall-hung is the newest design. Three important features to consider when selecting a toilet are: flushing action, water area, and passageway size.

Generally there are three types of flushing action: (1) siphon jet, (2) siphon action, or reverse trap, and (3) washdown, ranked in order of efficiency and sanitation.

It is important to secure the best possible type toilet. The flushing action and the amount of water held in the bowl will determine the type of service to expect from this piece of equipment.

Fittings add the finishing touch to plumbing fixtures installed in a new or re-modeled bathroom. Fittings for plumbing fixtures can be purchased in budget, quality, and deluxe grades. In general, it is poor economy to buy cheap fittings, for they are apt to wear out quickly and need replacing. The price of fittings depends on the material used and the operating mechanism.

An individual towel rack, toothbrush holder and glass holder are needed for each family member. Also needed are soap trays and tissue holders.

(Cut along line)

TO : _____ County Home Economics Extension Office
_____, North Carolina

We are planning to build a new home ___; remodel our present home ___. (Check one)

Please send the following bulletins: ___ "Bathrooms" (House Planning Aid), HE 28
___ "Planning Bathrooms for Today's Home," House & Garden Bulletin No. 99

Name _____

Address _____

SUGGESTED EVALUATION: PLANNING BATHROOMS

Read the statements related to bathroom planning. Answer each statement by a check in the Yes or No column below.

	<u>Yes</u>	<u>No</u>
1. Whether you are building or remodeling, it is a good idea to plan the decorating scheme for your bath before you order fixtures.	X	
2. It is best to have a written agreement with the contractor.	X	
3. Minimum width of bathroom door is 2 ft. 4 inches. This is wide enough to accommodate a wheel chair.		X
4. There are only two types of bathtubs from which to choose.		X
5. The wash-down type of toilet is the hardest to keep clean.	X	
6. One light over the lavatory is sufficient for a bathroom.		X
7. All bathrooms need an exhaust fan for removing odors and moisture.	X	
8. When planning to build or remodel, you should decide how much you can spend, then get the best material you can for the money.	X	
9. Ceramic tile is the most expensive floor and wall covering but the most durable.	X	
10. Towel racks, soap trays and glass holders should be included in the contract price.	X	

(NOTE: The key to correct answers are indicated on this copy. Please omit such symbols when reproducing this evaluation sheet.)

SUMMARY

- Number of programs presented _____
- Number of persons attending meeting _____
- Number of persons completing the form _____
- Percent of questions answered correctly _____
- Do you feel those attending the meeting understand the material covered?

- Based on the summary evaluation outcomes of all participants, write a brief summary indicating the highlights and implications for future programming.

HOUSE PLANNING AIDS



U. S. DEPARTMENT OF AGRICULTURE

Reprinted from U. S. Department of Agriculture Misc. Publication No. 988 and published by the North Carolina Agricultural Extension Service as **Home Economics 28**. Available from Housing and House Furnishings Dept. North Carolina Agricultural Extension Service

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March 1967



BATHROOMS

Consider your family's needs carefully when planning bathrooms. The location, size, and arrangement of your bathrooms—whether in a new or remodeled house—depend upon the uses to be made of them. The single bathroom in a small house may have to serve as the washup area for men coming in from work, as the place

to bathe and change infants, and as the main laundry area or the area for hand-laundering.

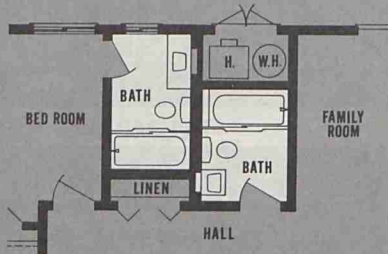
The tub, lavatory, and toilet must be permanently installed, but accessories and other equipment for auxiliary uses can be added readily if space has been planned for them.

LOCATIONS

The bathroom in the plan to the right is convenient to the bedrooms and the back door, so the bathroom can serve as the washup area also. Note that the bathroom door is not visible from the living room. A bathroom next to another room with plumbing—a utility room in this instance—is an economical arrangement.



In a two-story house with all bedrooms on the second floor, the main bathroom is usually located on this floor also. For safety, avoid locating the bathroom door next to or directly across the hall from the stairs. A washup area on the first floor is a convenience when the main bathroom is upstairs.



When more than one complete bathroom is planned, the second often opens from the master bedroom. Always locate one complete bathroom where it can be reached from a hallway.

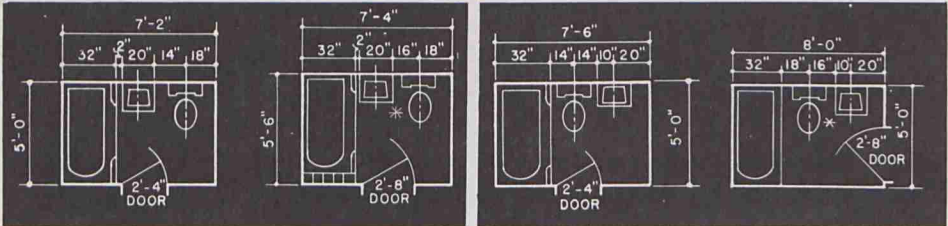
ARRANGEMENT OF FIXTURES

USING SPACE PLANNING STANDARDS

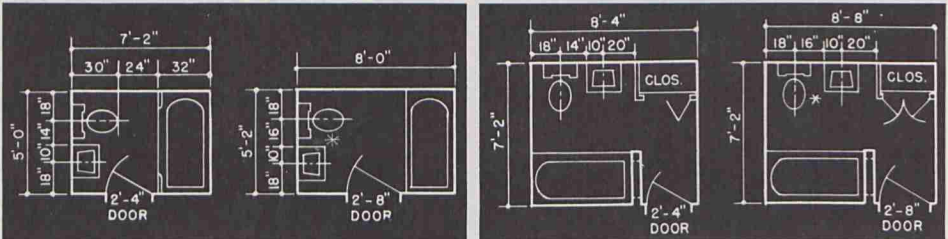
The bathroom plans on these two pages show typical arrangements of three and four fixtures in commonly used sizes. The clearances between fixtures and between fixtures and walls are based on research. Two plans are shown for each arrangement. In the first, minimum clearances are used and a door 2 feet 4 inches wide is used; in the second, space designated by * is provided between two fixtures for a person to stand while helping

a child or elderly person, and a door 2 feet 8 inches wide is used. A 3-foot door is recommended for wheelchairs. Most of these bathrooms will need to be increased in size if you want to add baby equipment, washing machine, laundry hamper, or storage cabinet. Every bathroom should have a window or mechanical ventilation. Avoid, if possible, placing the tub under the window.

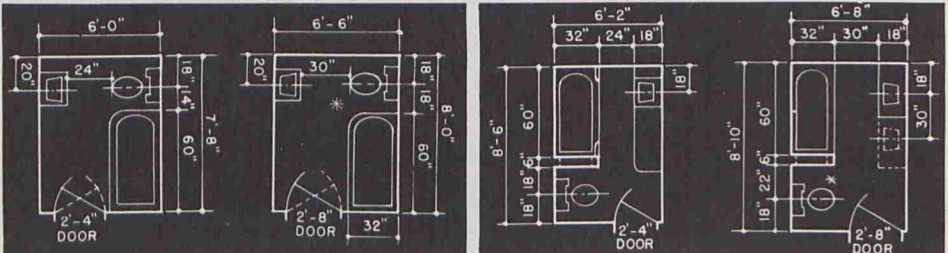
PLUMBING PIPES IN ONE WALL



PLUMBING PIPES IN TWO WALLS

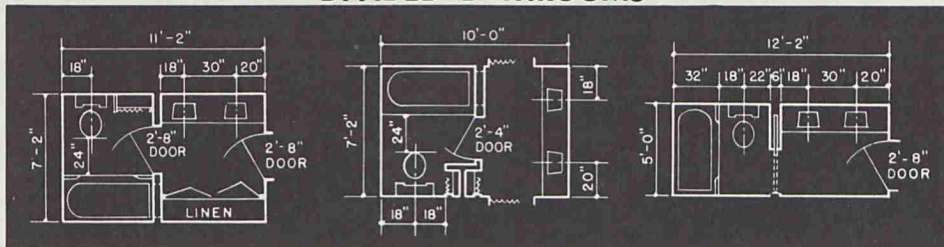


PLUMBING PIPES IN THREE WALLS

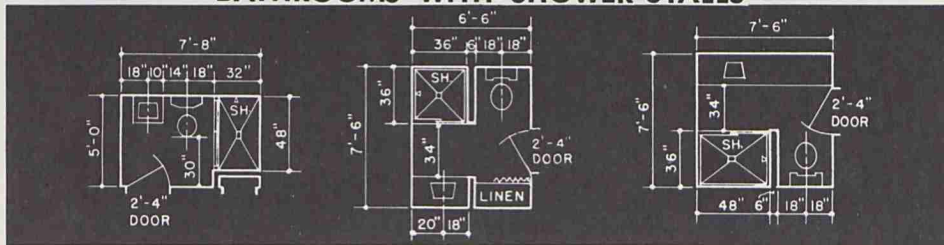


*Space provided at one location for a person to stand to help a child or elderly person.

DIVIDED BATHROOMS



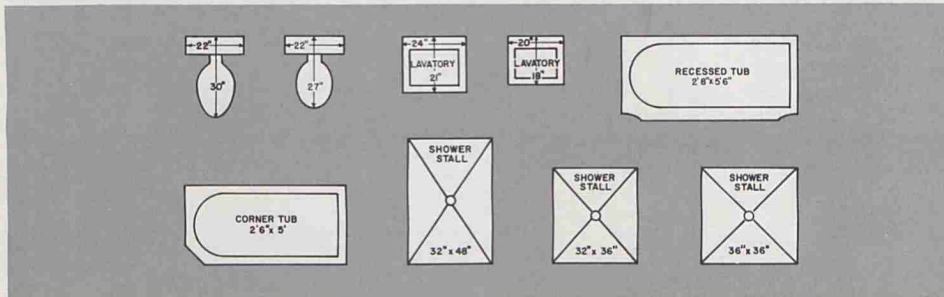
BATHROOMS WITH SHOWER STALLS



Divided bathrooms provide privacy for two or more people at the same time and require less space than two rooms. New or remodeled bathrooms can be divided with the use of hinged or

sliding doors, screens, or partitions. Shower stalls vary in size from 30 by 30 inches to 32 by 48 inches. Larger ones are of course more comfortable.

BATHROOM CUTOUTS

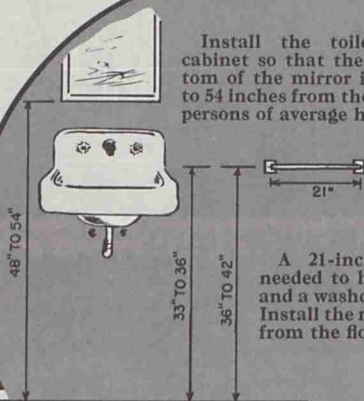


To plan bathroom arrangements different from those shown, as well as washup areas with lavatory and toilet, use cutouts traced from these scaled drawings of fixtures. Also bear in mind the recommended clearances. Use the cutout

drawings of fixtures that are the same size as those you plan to buy. Measure any other pieces of equipment—baby bathinette, hamper, etc.—you want in your bathroom, and draw them to scale, using $\frac{1}{4}$ inch for 1 foot.

MIRROR-LAVATORY-

TOWEL ROD



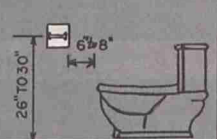
Install the toiletries cabinet so that the bottom of the mirror is from 48 to 54 inches from the floor, for persons of average height.

A 21-inch towel rod is needed to hang a bath towel and a washcloth folded once. Install the rod 36 to 42 inches from the floor.

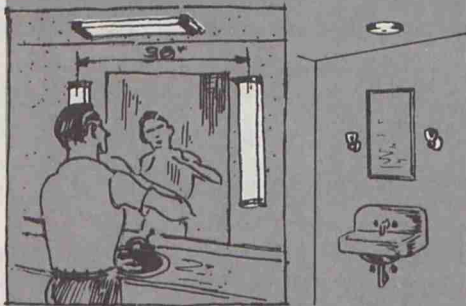
A lavatory installed at a height of 33 to 36 inches from the floor will be comfortable for adults. Provide a portable step stool for the youngsters.

TISSUE HOLDER

Locate the tissue holder 26 to 30 inches from the floor and 6 to 8 inches in front of the toilet.



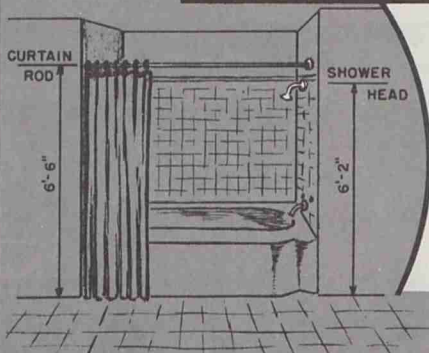
LIGHTING



The lights at the lavatory will light the small bathroom if proper fixtures are selected. Place lavatory side lights 30 inches apart, with the center of the light bulbs 60 inches from the floor. Center the ceiling light above the front edge of the lavatory. The location is the same for fluorescent and incandescent lights.

SHOWER HEAD-

CURTAIN ROD

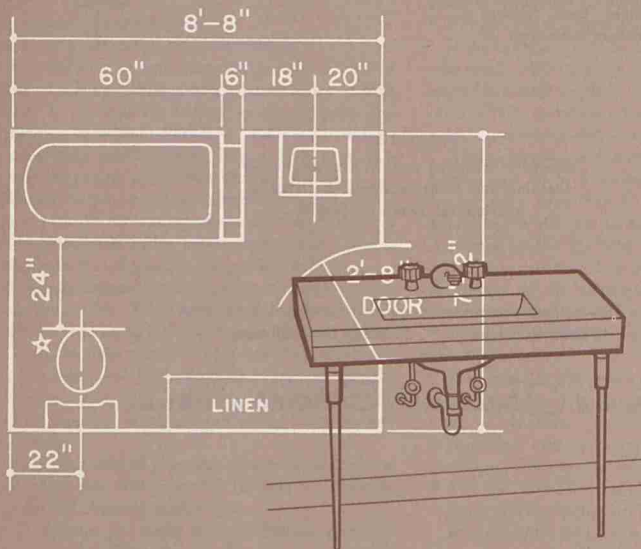


Install the shower head 6 feet 2 inches from the floor and the curtain rod 6 feet 6 inches, to insure head room for adults.

Prepared by Genevieve K. Tayloe, W. Russell Parker, and Mildred S. Howard
Clothing and Housing Research Division
Agricultural Research Service

Planning BATHROOMS

■ *for Today's Homes*



Home and Garden Bulletin No. 99

UNITED STATES DEPARTMENT OF AGRICULTURE

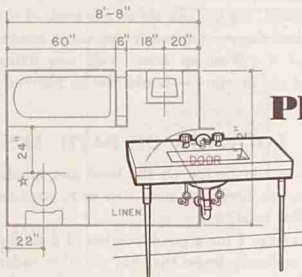
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Prepared by
Mildred S. Howard and W. Russell Parker
Clothing and Housing Research Division
Agricultural Research Service

This bulletin supersedes Home and Garden Bulletin 19,
"Your Farmhouse . . . Planning the Bathroom."

This is a *Consumer Service* of USDA



Planning BATHROOMS

for Today's Homes

You can have bathroom areas in your new or remodeled home that provide maximum family convenience and give satisfactory service for many years. They can be practical and pretty, too. It's all possible if you—

- Plan carefully.
- Insist on good workmanship.
- Use the best materials you can afford.

The right kind of bath areas add greatly to the livability of a home. Prospective homeowners give high priority to conveniently located, nicely equipped, and attractively decorated bathrooms. Adding a bathroom or converting existing space into a bath area is a remodeling project undertaken by many families.

Whether you are building or remodeling, it is a good idea to plan the decorating scheme for your bath areas early—before you order bathroom fixtures. This is particularly true if you are using color fixtures.

Bathroom fixtures, counters, cabinets, and floor coverings are costly. You want these permanent furnishings to be as pleasing in 5, 10, or even 20 years, as they are now. So take plenty of time and shop widely before you make your final selections. You can vary the decorative effect of a bathroom inexpensively from time to time by changing wall color, curtains, and accessories.

Begin your overall planning by considering all the ways a bath area will be used. The family bathroom, in particular, deserves careful study.

The answers you make to the following questions will help to determine the size, location, and arrangement of the family bathroom. You may decide you need a second bathroom or a separate wash-up area.

Will the family bathroom be used—

- As a wash-up area?

In the small house the family bathroom also serves as a wash-up area for men coming in from outdoor chores or sports and by children coming in from play. Locate it so it can be reached from the rear entrance without going through other rooms of the house.

- For the care of infants and small children?

If the bathroom is to be used for the care of infants and small children, make it spacious enough for the extra equipment needed. If you use a folding bath table to bathe and dress a baby, keep in mind that such a table is approximately 3 feet long and 20 inches wide.

A large lavatory with swing-away faucets or a small kitchen sink set in a counter will be more convenient for bathing a baby than a regular-sized lavatory. An adjoining counter can be used for dressing the baby. A storage cabinet for baby clothes and supplies is an added convenience. Use sliding doors or eliminate the doors on the cabinets above the lavatory and counter for safety and convenience.

- By several persons getting ready for school or work at the same time?

The large family with a number of individuals getting ready for school or work at the same time may want to consider the convenience of additional fixtures—an extra lavatory or water closet—a stall shower in addition to the tub.

- For the care of family members who are ill or feeble and need assistance?

If your household includes elderly or ill persons who need assistance in the bathroom, plan sufficient space for the person who is to help. If a family member is confined to a wheel chair, see that the door to the bathroom is wide enough so the wheel chair can be

IF YOU ARE INSTALLING A BATHROOM—

- Comply with plumbing codes, regulations, and guides that will insure a safe and satisfactory installation.
- Choose an experienced person to install your bathroom.
- Have an agreement in writing with whoever is installing your plumbing fixtures. This agreement should include price, general descriptions of fixtures and materials to be furnished, and a statement that places the liability for an unsatisfactory installation or damaged fixtures on the installer.

pushed through. The bathroom should be large enough to accommodate the wheel chair and to permit someone to help the invalid from the chair.

- For a dressing room?

Counter areas, generous mirrors, good lighting, and ample storage space are desirable appointments in the bathroom that is also used as a dressing center.

- For hand or machine laundering?

In the small home without a basement or separate workroom the most convenient location for laundry equipment may be in the bathroom.

SUGGESTED BATH ARRANGEMENTS

For help in planning a family bathroom or any bath area, study the arrangements on pages 5 and 6. The space allowances around fixtures in these plans are based on research¹ in which both the use and the cleaning of the bathroom were considered.

Dimensioned plans for each arrangement of family bathrooms give a choice of two sizes. The limited arrangements show one location where a mother can stand comfortably and help a child, or one adult can help another adult; the liberal arrangements show two such locations. In the one-person baths, clearance between, to the side of, and in front of fixtures, is held to a minimum.

In all family bathroom plans, doors are 2 feet 8 inches wide. Doors in the one-person or minimum baths are 2 feet 4 inches wide.

Five arrangements for compartmented baths are shown on page 6. Three of these areas have four fixtures; two of them have five fixtures. Three differ-

ent arrangements of bathrooms with water closet, lavatory, and shower stall are also shown on page 6.

To plan bathroom arrangements other than those suggested, use the cutouts on the back of this publication and the recommended clearances shown on pages 5 and 6. Wash-up areas with two fixtures—water closet and lavatory—should also be planned with these clearances.

LOCATION OF BATH AREAS

Once you decide on the kind and number of bath areas you need, the next step is to consider the best possible location for each.

See page 7 for a good location of a single bathroom in a one-story house that has no other toilet facilities. The bathroom can be reached from the back door without going through the work area of the kitchen and from the kitchen without going through the living room. It is located next to the utility room for a compact, economical plumbing arrangement that requires a short run of supply and waste pipes. The bathroom is accessible from all rooms through the hall. Another desirable feature is that the bathroom door is not visible from the living room or the front entrance.

Usually in a 1½- or 2-story house the bathroom is located on the second floor. But you might consider locating it on the first floor near the stairway for daytime convenience if there is no other wash-up area on the first floor.

For safety, avoid placing an upstairs bathroom at the head of the stairs or next to the stairs. If, however, this is the only possible location for the bathroom, install night lighting on the stairway, or a gate at the top of the stairs.

When more than one complete bathroom is planned for a home, the second frequently opens from the master bedroom. Such a bathroom can be located to serve a dual purpose. The sketch on page 7 illustrates an arrangement in which the master bathroom, located conveniently near the rear entrance, is also the wash-up area. Note how the family bathroom, master bathroom, and laundry area are grouped together for an economical installation of plumbing.

Compartmented baths are popular with families with growing children. The addition of one or two fixtures and the multiple use of others add convenience and flexibility. In remodeling, a compartmented bath often makes the best use of space, particularly if a large area is being converted into a bathroom.

A single lavatory installed in a bedroom is one way to add convenience at a nominal cost. The lavatory can be enclosed or shielded by a screen. See page 7.

¹For further information, see: Monroe, M. M. BATHROOM WORKING SPACES. Maine Agr. Expt. Sta. Misc. Rept. 82. 1959.

BATHROOM ARRANGEMENTS

FAMILY BATHROOMS		ONE PERSON MINIMUM BATHROOMS
LIMITED*	LIBERAL**	
THREE FIXTURES		

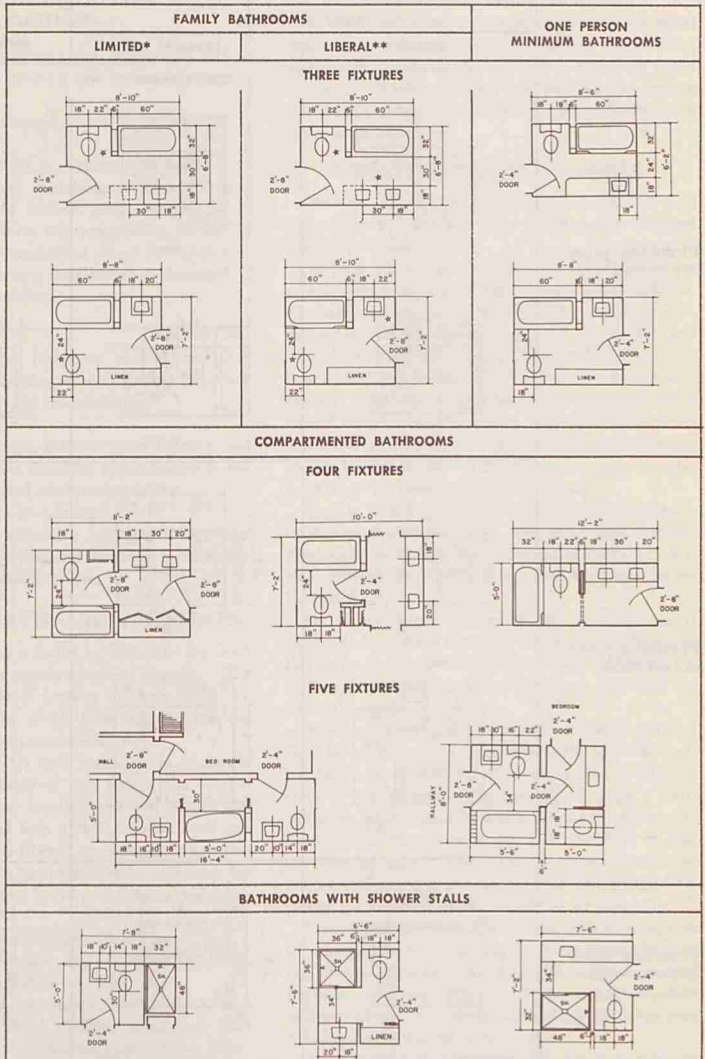
Plumbing pipes
in one wall

Plumbing pipes
in two walls

Plumbing pipes
in three walls

*Space provided at one location for adult to stand to help young child or elderly person.
**Space provided at two locations for adult to stand to help young child or elderly person.

BATHROOM ARRANGEMENTS



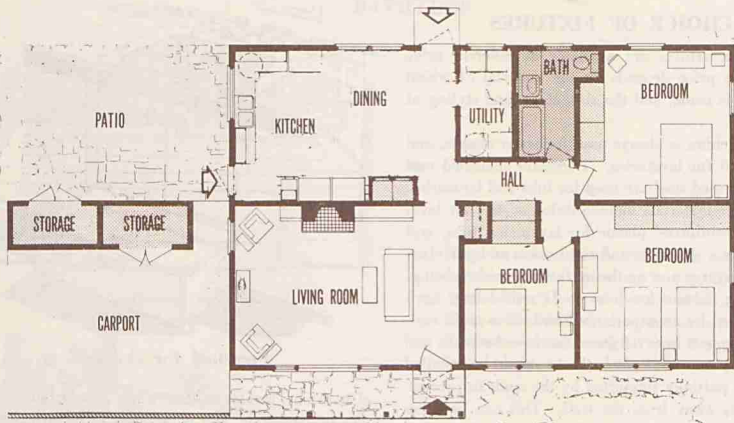
Plumbing pipes
in three walls

Two lavatories,
one tub, and
one water closet

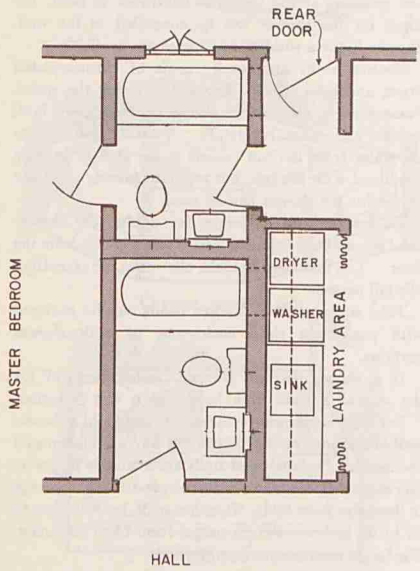
Two lavatories,
two water
closets, and
one tub

Water closet,
lavatory, and
shower stall

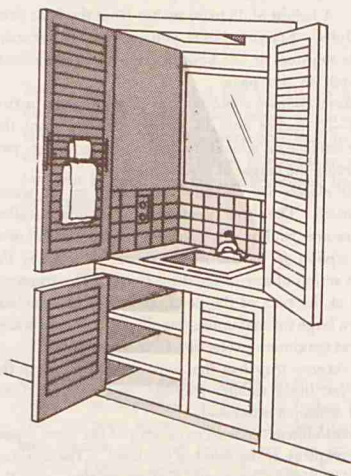
*Space provided at one location for adult to stand to help young child or elderly person.
**Space provided at two locations for adult to stand to help young child or elderly person.



Single bathroom location in one-story house.



Master bedroom bath arrangement.



Extra lavatory in bedroom.

CHOICE OF FIXTURES

Bathroom fixtures are available at different price levels. The price depends on the material of which the fixture is made, and the size, color, and styling of the fixture.

Vitreous china is always used for water closets, and may be used for lavatories. Porcelain enameled cast iron and pressed steel are used for tubs and lavatories. Other fixture materials include stainless steel for lavatories and reinforced plastic for lavatories, tubs, and shower stalls. All white and color china and porcelain enameled fixtures now on the market are acid resisting.

Plumbing fixtures are heavy. If remodeling, have joists checked by an experienced builder to make sure they will support heavy fixtures, such as bathtubs and shower receptors. *Built-in bathtubs* should be installed so they are partially supported by the studs to prevent their pulling away from the wall. This can be done either by hanging them on a 2- by 4-inch wood support secured to the studs or by using special tub hangers.

Wall-hung lavatories are supported by special brackets or hangers. China or metal legs can be added to some designs (see example on p. 10). Some legs have a degree of adjustability, but it is wise to find out whether legs can be adjusted enough to fit the desired heights of your lavatories before purchasing them.

Whatever type of lavatory you choose, be sure to install it at a comfortable height for the adults of the family. A height of 33 to 36 inches from the floor suits most adults. For youngsters, you can provide a sturdy, portable stepstool or one built into the lavatory cabinet. See sketch on this page.

Lavatory cabinet combinations usually come in two heights—31 inches and 34 inches. If you want the counter surface on a lavatory cabinet to be higher, you can increase the height of the toe space.

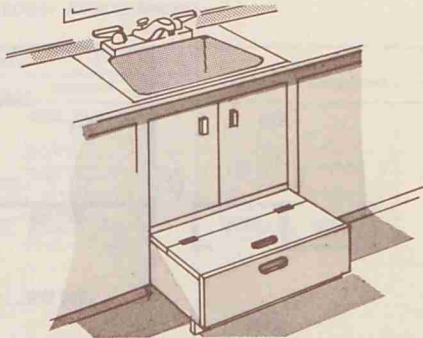
Water closets are classified according to the water action used. The three types most commonly installed in homes are: Siphon jet, reverse trap, and washdown.

The *siphon jet* is the most expensive, and has the quietest action of any of the three types. The trapway, located at the rear of the bowl, and the water surface are extra large for maximum cleanliness. A deep water seal gives maximum protection from sewer gases.

The *reverse trap* has the same water action as the siphon jet, but a smaller trapway, less water surface, and not as deep a water seal.

The *washdown*, the least expensive of the three types, has the trapway at the front of the bowl. The flushing action is noisier, the water surface smaller, and the water seal not as deep as in the other two types.

Sketches and brief descriptions of the various types



Stepstool for children.

of bathtubs, lavatories, and water closets follow. Details of size, style, and color need to be checked with your local dealer.

Showers and Fittings

The most economical way to provide a shower is to add a shower head over the tub. If the shower fittings are installed at the time the bathroom is built, the pipes for the shower can be concealed in the wall. Shower fixtures with exposed pipes are available.

Shower heads are usually made of chrome-plated brass, and have swivel joints for directing the spray. Some models also have volume regulators, or both volume and spray regulators. A fitting that diverts the water from the tub faucets to the shower head is combined with the tub, but separate faucets or mixer valves for the shower can be used.

To insure head clearance for adults, the shower head should be installed at least 6 feet 2 inches from the floor. You may need to make allowance for exceptionally tall persons.

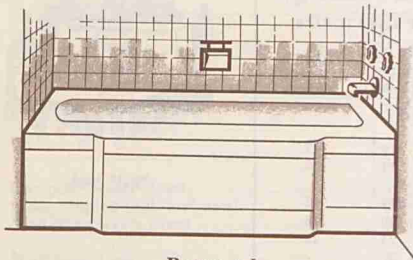
Tubs equipped with shower heads can be enclosed with permanent rigid enclosures, or with shower curtains.

If a shower curtain is used, install the rod for the shower curtain at a height of 6 feet 6 inches.

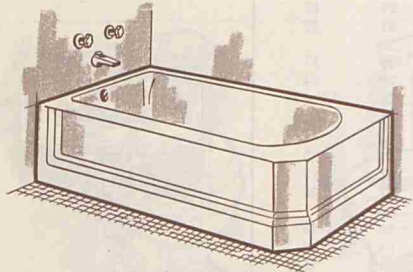
For separate shower facilities, you can build a shower stall of masonry or tile, or you can buy a prefabricated enclosure. Prefabricated stalls are available in porcelain enameled steel and reinforced plastic. They range in floor size from 30 by 30 inches to 36 by 36 inches to 34 by 48 inches. Height ranges from 74 to 80 inches. The larger ones are more comfortable.

Prefabricated bases or receptors are also available in sizes ranging from 32 by 32 inches to 32 by 48 inches.

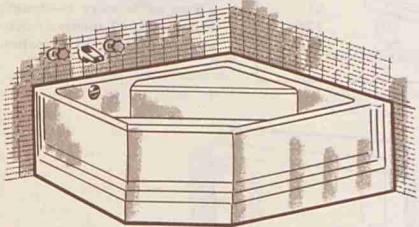
BATHTUBS



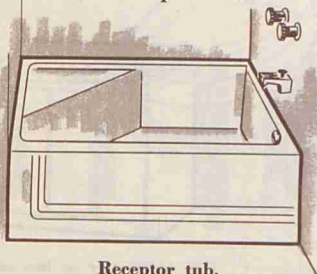
Recess tub.



Corner tub.



Corner square tub.



Receptor tub.

Tubs for recess (fit flush between two walls) or for corner installation are 4, 4½, 5, or 5½ feet long. The 5-foot tub is the most used length. Tubs with widened rims are usually 32 or 33 inches wide; tubs with straight fronts, 30 or 31 inches wide.

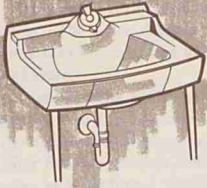
Square tubs are about 4 feet by 3½ or 4 feet, and are available for either recess or corner installation. Some styles have one built-in seat, others two. A square tub is heavier than a rectangular tub and may require additional framing for support.

Receptor tubs are approximately 36 to 38 inches long, 39 to 42 inches wide, and 12 inches high. They are most suitable for shower installations, but, because of lower height, are also convenient for bathing children and others who need assistance.

LAVATORIES

TYPICAL SIZES OF LAVATORIES

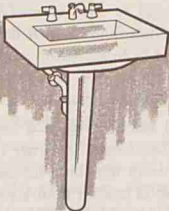
	Width (inches)	Front to back (inches)
Wall-hung:		
Ledge back.....	19	17
	24	20
Splash back.....	19	17
	20	18
	24	20
Slab.....	20	18
	24	20
	27	22
Shelf back.....	19	17
	20	14
	22	18 or 19
Set in or on cabinets:		
Rolled rim.....	20	18
	21	17
	27	20
Flat rim.....	20	18
	24	20
	19½	15½
Lavatory on cabinet.	27	21
	21½	17½
	36	18



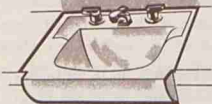
Ledge back.



Splash back.



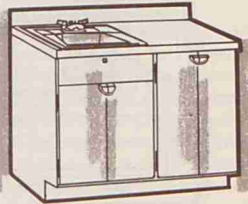
Slab with china leg.



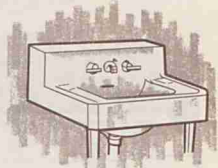
Lavatory-counter top with rolled rim basin.



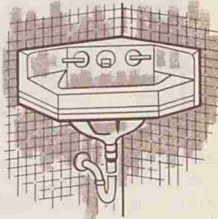
Lavatory-counter top set on cabinet.



Flat rim lavatory set into cabinet.



Shelf back.

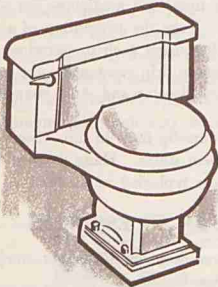


Corner. A typical size for a corner lavatory is—length along wall, 17 inches; extension from wall, 19½ inches.

WATER CLOSETS

Approximate Dimensions for Water Closets

	Tank		Extension of fixture into room (inches)
	Height (inches)	Width (inches)	
One-piece water closet.....	18½ to 25.....	26¼ to 29¼.....	26¼ to 29¼.
Close coupled tank and bowl.....	28½ to 30¾.....	20¾ to 22¼.....	27½ to 31¾.
Wall-hung water closet.....	27 to 29½.....	21 to 22¼.....	26 to 27½ (con- cealed tank 22).
Wall-hung tank.....	32 to 38.....	17¼ to 22.....	26¼ to 29½.
Corner water closet.....	28¾.....	19¼.....	31.



ONE-PIECE.

One-piece water closets are neat in appearance and easily cleaned, but are more expensive than two-piece models.



CLOSE-COUPLED TANK AND BOWL

The tank, a separate unit, is attached to the bowl.

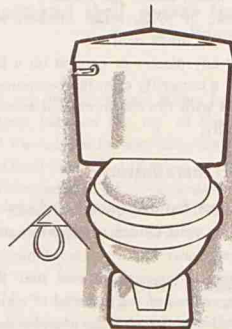


TWO-PIECE WITH WALL-HUNG TANK.



WALL-HUNG.

Completely wall-hung closets make it possible to clean the floor under and around the closet.



CORNER.

The corner water closet is a space saver. Note the triangular tank.

CARE OF FIXTURES

Bathroom fixtures that get proper care before, during, and after installation usually give satisfactory service for the lifetime of the house.

During Finishing and Installation

A careful workman protects bathroom fixtures from blows, scratches, falls, and other damage during delivery, room finishing, and installation. He sees that fixtures are well covered with suitable materials and that plaster, paints, and acids do not get on them.

The damaged surface of a porcelain fixture cannot be restored. The fixture will stain easily and be difficult to keep clean.

Here are some tips on fixture care during finishing and installation:

- Uncrate fixtures carefully. Leave protective wrappings on.
- If fixtures are not covered when delivered, cover them with several layers of strong wrapping paper held in place with tape; or cover them with corrugated board, or with one of the special coverings available from plumbing supply firms. Several satisfactory coatings that can be brushed or sprayed on are also on the market.
- Do not use newspaper or dyed paper next to enamel; they may leave permanent stains. Newspapers can be used for added protection if fixture is first covered with unprinted paper or plastic.
- Avoid using paste made with flour to attach covering. Do not use sawdust as a protective filler. Flour paste and sawdust ferment when wet and produce an acid which etches the enamel.
- Keep fixtures clear of tools, scrap lumber, wet paper or burlap, and other debris.
- Remove carefully any plaster or cement on a fixture with water or a nongritty cleaning compound.
- Soften paint drips with the recommended solvent and remove carefully.

After Installation

You can keep your new fixtures smooth and gleaming if you are careful in your choice of cleansers and do not abuse the fixtures in any way.

Harsh, gritty cleansers soon scratch and mar the surface of a fixture, regardless of the material of which a fixture is made. To test the abrasiveness of a cleanser, put a small amount between two pieces of glass and rub them together. If the glass is scratched, the cleanser is too harsh to use on fixtures.

Other precautions to observe in fixture care:

- Do not use bathtubs or lavatories for washing venetian blinds or sharp-edged articles. If it is necessary to stand in the bathtub or to place a stepladder in it when washing walls and windows, cover the bottom of the tub with a rug or mat with a nonskid backing.
- Do not develop photographic film in lavatories or bathtubs. Photo solutions are harmful to enamel surfaces.
- Do not allow strong solutions, including household and hair bleaches and vinegar to stand in porcelain enameled fixtures. If left for any length of time, these products will etch the enamel. Even acid-resisting enamel will be damaged by strong acids or by continued contact with any acid. Cosmetic lotions, hair tints, and medicines can also stain the lavatory. Take the precaution of rinsing the lavatory after using such preparations.
- Do not allow faucets to drip constantly—the minerals in some water discolor and stain enameled surfaces.
- Do not leave wet non-slip mats in tub. Some of them make permanent stains. Hang them to dry after each use before replacing in the tub.

STORAGE AND ACCESSORIES

Well-appointed bathrooms have convenient storage and functional accessories.

In planning any bath area, add storage units, either built-in or free-standing, whenever possible.

Toiletry Cabinets

Toiletries, such as toothpaste and shaving supplies, are conveniently stored in a cabinet above or within reach of the lavatory.

The toiletry cabinet is frequently called the medicine cabinet, but it is not wise to combine the storage of medicine and cosmetics. Preferably, medicine should be stored in a special place by itself so there is no danger of confusing it with other supplies.

In households where there are small children, provide a separate cabinet—one that can be locked—for medicines. Install it out of reach of the persons you wish to protect.

Toiletry cabinets can be wall hung (the least expensive type) or recessed. Recessed cabinets can be purchased ready for installation, or made on the job. Readymade cabinets usually have mirror doors.

Adjustable shelves permit the best use of cabinet space. Shelving should be made of plastic, glass, or

enameled metal that is not damaged by moisture or spilled cosmetics.

Place the toiletry cabinet at a convenient height for family needs. The top of the mirror is usually placed 69 to 74 inches from the floor. If you measure from the bottom of the mirror, a distance of 48 to 54 inches from the floor is satisfactory for the person of medium height.

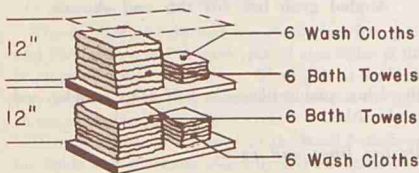
Towel Cabinets

You can save steps by storing some bath linens in the bathroom.

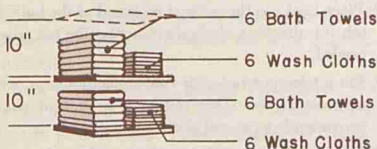
Regular-sized bath towels folded in thirds lengthwise fit on a shelf that is 12 inches deep; folded in half they fit on a shelf 16 inches deep.

Space dimensions for storing 12 washcloths and 12 bath towels and for storing 18 bath towels, 18 washcloths, and 8 hand towels are given on this page. If available space is deeper than 16 inches, drawers or pullout shelves are more satisfactory than fixed shelves.

The only available space for a towel cabinet in a minimum-sized bath may be above the water closet.

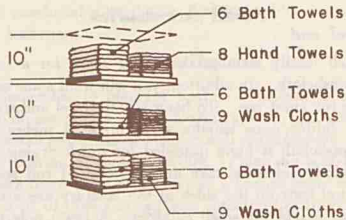


LIMITED SUPPLY
2 SHELVES
12" DEEP 18" WIDE

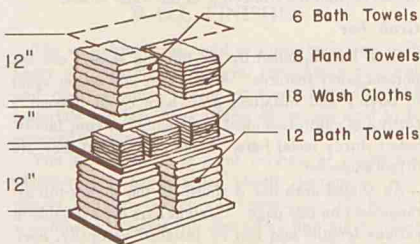


LIMITED SUPPLY
2 SHELVES
16" DEEP 18" WIDE

Suggested shelf storage for limited supply of bath linens.



LIBERAL SUPPLY
3 SHELVES
16" DEEP 18" WIDE



LIBERAL SUPPLY
3 SHELVES
12" DEEP 26" WIDE

Suggested shelf storage for liberal supply of bath linens.

If you put a cabinet there, be sure to leave enough space between the top of the tank and the bottom of the cabinet for servicing the tank. The cabinet can be built into the stud space to provide additional depth if the location of the soil stack permits.

Metal-pole-supported shelves are easily installed over a water closet and provide some shelf storage at a nominal cost.

Utility Cabinets

Plan some storage space in the bathroom for reserve supplies of tissues and soap and for cleaning tools and cleansers.

In a limited size bathroom make use of the space under the lavatory for storage.

Small Accessories

Towel rod

Each family member needs rod space for a towel and washcloth. In addition, you will want some extra space for guest use. To hang a bath towel and washcloth folded once lengthwise requires 21 inches. If the washcloth is hung unfolded for quick drying, the washcloth and towel take up 28 inches of rod space.

Towel rods on the sides of the lavatory are a convenient height for small children. A towel pole provides for extra towels in a minimum of space.

Paper holder

Paper holders of china or metal can be recessed in the wall or fastened to the wall.

Place the paper holder so that its bar is about 30 inches from the floor, and if on a sidewall, about 6 to 8 inches beyond the front edge of the water closet.

Grab bar

Grab bars installed by the tub and shower are important safety features. A little time and money spent in buying and installing grab bars could prevent a costly and painful accident to a member of your family. Select sturdy metal bars. Make certain that they are firmly anchored.

An angled grab bar is shown in the shower-tub arrangement on this page. Straight bars are available in various lengths and can be installed vertically, horizontally, or at an angle.

Soap holders and clothes hooks

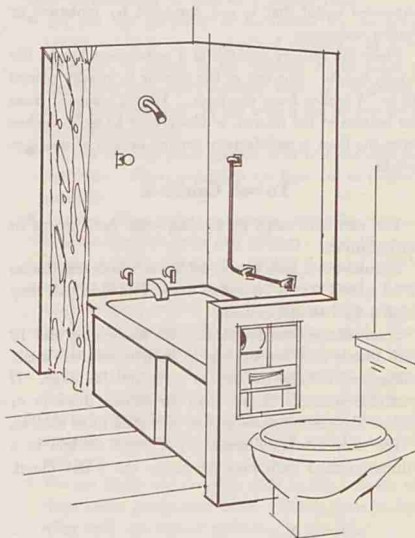
Soap holders for the tub and shower are usually recessed. Vitreous china and metal are commonly used materials. For tub use, place the soap holder at about the middle of the wall beside the tub and within easy reach from a sitting position in the tub.

In the shower stall, the soap holder is usually placed about shoulder height, and far enough forward so the shower spray does not reach it. Or, if you prefer, you can install a corner shelf in the shower stall for soaps, shampoos, and rinses.

Nonrusting hooks for hanging bathrobes and other clothing add convenience. Place the hooks from 5 feet 5 inches to 6 feet from the floor. They should be above eye level for safety.

Toothbrush and tumbler holder

These accessories are often combined, but can be bought separately. Those made of vitreous china are set into the tile wall. Metal holders may be recessed or wall mounted. Some of these accessories are stationary, others revolve and close flush with the wall.



Angled grab bar for tub and shower.

Revolving combination units hold soap, tumbler, and toothbrushes.

Drying lines and racks

If clothes—especially those made of drip-dry and wash-and-wear fabrics—are to be dried in the bathroom, it is best to make special provision for the job, rather than depending on towel rods for hanging space.

Here are suggested ways to provide bathroom drying:

- Place hooks in the walls at each end of the built-in tub for attaching clotheslines across the tub when needed.
- Put a telescope rod with rubber suction cups over a recessed tub. This rod may be left in place permanently or stored after each use.
- Mount a drying rack on which to hang hangers on the wall at one end or on the side of the tub. The rack will fold flat against the wall when not in use.
- Install a clothesline reel with retractable plastic line over the bathtub. Line is hooked to opposite wall for use.

VENTILATION, LIGHTING, AND HEATING

Ventilation

Every bathroom or wash-up area should be ventilated either by a window or an exhaust fan. Natural or forced ventilation is necessary to comply with local building codes and to meet requirements of lending agencies.

If your bathroom is ventilated by a window, avoid, if possible, locating the tub under the window. If there is no other location for the tub, a window that opens with a crank is easier to operate than a double-hung window.

To help prevent excessive humidity in the house, exhaust fans vented to the outside can be installed in all bathrooms whether or not they have windows. Fans are particularly necessary in humid climates. Exhaust fans in combination with lights and heater are good choices for small bathrooms. Lights and exhaust fans can be installed with one wall switch, but separate switches are preferred if such an installation is permitted by codes and ordinances.

Lighting

The well-lighted bathroom has good, glare-free, general illumination and properly placed area lights at the lavatory or dressing counters. The lights at the lavatory or dressing counter should be located so the light shines on the face, not on the mirror.

If proper fixtures are used in the small bathroom, the lights at the lavatory generally give enough illumination for the entire area. To provide good lighting for grooming at the mirror over the lavatory, place one light in the ceiling and one light on each side of the mirror.

Place the lavatory side lights 30 inches apart with the center of the light bulb 60 inches above the floor. Center the ceiling light above the front edge of the lavatory.

In a large bathroom general illumination will be needed in addition to area lights. You may need extra light in your shower. Select a vapor-proof fixture.

Because it is easy to touch water and metal while switching on lights in the bathroom, make certain that lights are controlled by wall switches out of reach of anyone in the bathtub or shower, or anyone using a water faucet. Defective wiring and frayed cords on electrical equipment can result in severe electrical shock. Locate a grounded convenience outlet near the lavatory

at a comfortable height for electrical appliances used in the bathroom.

Heating

Remember to plan for heat in your bathroom. If you do not have a central heating system, you will need to install either gas or electric wall space heaters. Plan the location of these carefully. Place the wall heater where there is no possibility of a person being burned on it or of towels or curtains catching fire from it.

Make certain that an electric heater is properly grounded and equipped with a thermostat, and that a gas heater is vented and has safety pilot shut-off features.

Portable heaters are not recommended as the general source of heat for the bathroom. For small areas, ceiling radiant heaters combined with a light or a fan or both are often used for general or for auxiliary heat.

WALL FINISHES

The varied materials used to finish bathroom walls today are pleasing to the eye, remarkably practical, and easily cleaned. Some of these decorative wall materials will last many years, others will need to be renewed from time to time.

You have a choice of paint, ceramic or plastic tile, plastic-coated hardboards, plastic laminates, wallpapers, or fabric-backed wall coverings. The kind of wall finish you select will depend on how much money you want to spend, your personal taste, and the way the bath area is used.

If you decide to *paint* the walls, choose a paint that is recommended for bathroom use—one that withstands moisture, is resistant to mildew, and is easy to clean. Gloss or semigloss enamel is usually recommended. Follow application directions carefully. Painted surfaces are not recommended for the interior of shower stalls because they do not withstand the constant wetting (for long periods) and are subject to wrinkling, blistering, and discoloration.

You may want to consider rigid wall coverings, such as *plastic-coated hardboards*. These are available in a nice assortment of colors, may have a plain finish or be scored to resemble tile. Rigid *plastic laminates*, familiar as counter coverings, are increasingly popular as bathroom wall coverings. *Sheet vinyl* with a moisture-resistant backing can also be used for bathroom walls and counters.

Washable wallpaper is practical for the bathroom and, if applied with a moisture-resistant or waterproof adhesive as recommended by the manufacturer, can be used successfully even on the wall around the tub. A satisfactory job of hanging paper can usually be done

by the home workman. However, it is wise to test a sample of the paper to make certain that the colors are fast and that it can be cleaned satisfactorily.

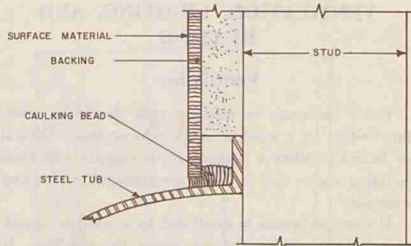
Coated fabric wall coverings are well suited to bathrooms. They are colorful and easy to apply. One type is made of paper stock bonded to rugged woven cloth, coated with a vinyl resin, and printed in various patterns and colors. Still others are fabrics to which pure vinyl has been applied by heat and pressure, or several coats of enamel have been baked on.

Ceramic tile and plastic tile are in wide demand as bathroom wall coverings. Ceramic tile is made from clay that has been fired; it comes glazed and unglazed. Glazed tile, the type commonly used for walls, has a white body with a vitreous glaze of the desired color on the face. Unglazed tile has a dense vitreous body and is the same color throughout.

Ceramic wall tiles come in a wide variety of colors and a number of sizes; a commonly used size for bathroom walls is approximately $4\frac{1}{4}$ by $4\frac{1}{4}$ inches. They can be ordered from the factory assembled in blocks on mesh or paper sheets. Tiles assembled in blocks can be installed in less time than it takes to install individual tiles.

Plastic wall tile is inexpensive, and comparatively easy for a home workman to install. Like ceramic tile, plastic tile is available in multiple colors that can be coordinated nicely into a decorating scheme.

The performance of any wall finish depends on the care with which it is installed and maintained. *Always follow the manufacturer's recommendations exactly for type of adhesive and backing material, and for the method of installation.* Backing material around tubs and showers should be thoroughly sealed with waterproofing materials prior to application of the wall



Recommended method of construction of the wall and tub joint. (Courtesy of Texas Agricultural Experiment Station, College Station, Tex.)

finish. For recommended construction of base joints around showers and tubs, see sketches on this page.

After installation, protect the beauty and durability of wall finishes by cleaning only with mild detergent solutions and nonabrasive cleaners. With periodic care—wiping with a damp cloth—all finishes can be kept in acceptable condition without the use of harsh cleansers. Abrasive cleansers cause color fading and loss of gloss, particularly on plastic materials. Grout lines between tiles tend to darken with age, but can be cleaned with a small brush and a slightly abrasive cleanser.

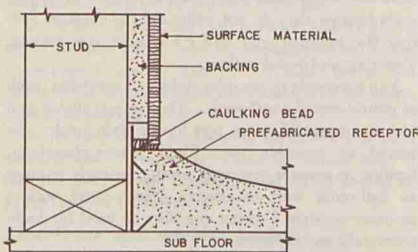
FLOOR FINISHES

Today's bathroom floor finishes are of two main types—(1) nonresilient floor finishes, such as ceramic tile and concrete, and (2) smooth-surface resilient floorings, such as linoleum, asphalt, and vinyl. Wood floors are rarely seen in bathrooms now. They will give satisfactory service, however, if they are refinished periodically with a water-resistant seal or varnish.

No one floor finish has all the properties desirable in a bathroom flooring; it is up to you to decide what properties you want most and choose accordingly. Necessarily, installation requirements and cost will help determine your choice. Other considerations include durability, appearance, ease of installation and upkeep, resistance to soil, moisture, and indentation, dimensional stability, and quietness.

Some flooring materials, including linoleum and cork, cannot be used on grade or below grade in a basement; others, such as asphalt and vinyl asbestos, can. Get the flooring and adhesive recommended for such installations.

If you plan to install the floor finish yourself, your



Recommended construction of a shower stall joint using a precast receptor. (Courtesy of Texas Agricultural Experiment Station, College Station, Tex.)

choice of materials may be limited by the skill required for a satisfactory job. Many flooring problems can be traced to faulty installation. *It is extremely important to follow the manufacturer's installation instructions and recommendations in working with any type of floor finish.* If a specific adhesive is recommended, use it; do not substitute.

Nonresilient Floor Finishes

Concrete

Concrete floors can be used for bathrooms and wash-up areas on or below grade, and are satisfactory if the concrete surface is hard, dense, and smooth. They can be made more attractive by the addition of color to the concrete or by painting with one of the special concrete-floor paints.

Ceramic tile

This widely used and popular finish for bathroom floors comes glazed or unglazed—with a bright or dull finish—and in multiple colors and shapes. Most ceramic tile sold today is factory assembled on paper or mesh. The traditional method of setting ceramic tile is in cement mortar. However, organic adhesives are extensively used today.

Ceramic tile floors are easy to keep clean. Washing with mild soap, powdered cleanser, or a synthetic detergent solution is usually sufficient. In areas where the water is hard, soap is less satisfactory than synthetic detergent or cleaning powder because of the insoluble film that forms from the reaction of the soap with salts in the water. If necessary, scouring powder can be used on heavily soiled areas. Ceramic floors should not be waxed.

Resilient Floor Coverings

Smooth-surface resilient floor coverings suitable for bathrooms include: Asphalt, homogeneous vinyl, and vinyl asbestos tiles; linoleum, backed vinyl, and rubber, in either sheet or tile form. Some companies also offer homogeneous vinyl in sheet form.

Inexpensive enameled or printed floor coverings are also available in sheet form. Some of these floorings now have a top layer of vinyl. The wear life of most printed and enameled floorings is limited, however. For this reason they are not recommended as a permanent installation in heavily used areas.

The home workman can usually do a more acceptable job of floor installation with tiles than with sheet goods. Sheet material has the advantage of fewer seams, however.

The 9- by 9-inch square is the most commonly used size of resilient tile, but tiles 6 by 6 inches and 12 by 12 inches are available in some materials. Oblong and diagonal tiles are also made by some manufacturers.

Backed vinyl or linoleum in sheet form is usually 6 feet wide; rubber, 36 or 45 inches wide; and homogeneous vinyl, 45 inches wide.

The thickness or gage of flooring materials varies. Linoleum is usually $\frac{1}{16}$ - or $\frac{1}{8}$ -inch thick. Asphalt and rubber tiles are $\frac{1}{8}$ -inch and $\frac{3}{16}$ -inch thick; vinyl floorings, $\frac{3}{32}$ -, $\frac{1}{8}$ -, and .080-inch thick. Feature strips, insets, and moldings are available for all these floorings.

Description

Following are descriptions of the various types of resilient floor coverings. Each description is in two parts—(1) basic material and (2) characteristics and use.

LINOLEUM.—(1) Ground cork or wood flour and linseed oil; pigment and binder pressed in burlap or felt backing. Tile or sheet form.

(2) Excellent resistance to grease; good recovery from indentation. Needs protection from continued dampness because backing may mold or rot. Not recommended for use on floors either below or on grade.

ASPHALT.—(1) Asbestos or other fibers, fillers, binder, and pigment formed under pressure. Little asphalt in any but dark tiles. Comes in regular and grease-proof types. Tiles only.

(2) Regular type has poor resistance to grease; both types have excellent resistance to surface alkali; fair recovery from indentation. Can be used anywhere. Some change in color with wear; dark colors change more than light.

RUBBER.—(1) Vulcanized rubber compound binder with reinforcing fibers, pigments, and fillers. Sheet or tile form.

(2) Good resistance to grease; good resistance to surface alkali; excellent recovery from indentation; quiet.

VINYL (homogeneous-unbacked).—(1) Vinyl resins, plasticizers, pigment, and fillers formed under pressure while hot. Usually in tile form, limited amount of sheet goods available.

(2) Excellent resistance to grease and surface alkali; excellent recovery from indentation. Use on or below grade if recommended by the manufacturer of the product selected.

VINYL (backed).—(1) Same formula as unbacked vinyls but applied to a backing of felt, cork, degraded

vinyl, or special alkali-resistant material. In tile or sheet form.

(2) Excellent resistance to grease and to surface alkali; good recovery from indentation. Sheet vinyl with felt or cork backing can be used only above grade; with alkali-resistant backing can be used on and below grade.

VINYL ASBESTOS.—(1) Asbestos added to vinyl formula, formed under pressure while hot. No backing. Tiles only.

(2) Excellent resistance to grease and to surface alkali; fair recovery from indentation. Can be used anywhere.

Wax to use

On linoleum, use either water-emulsion or solvent-type wax (needs buffing) or water-emulsion resins. Waxing improves the wearing quality of linoleum.

On asphalt and rubber, use only water-emulsion wax or resin.

On vinyl (homogeneous-unbacked), vinyl (backed), and vinyl asbestos, use water-emulsion or solvent-type waxes, or resins.

CAUTION.—Read the label on wax container. Confine use to floor covering indicated Water-emulsion resins do not adhere well to waxed surfaces. They give a hard tough coating with a high gloss, which tends to scratch rather than scuff, making this finish unsuitable for areas subjected to traffic associated with sand or gritty soil.

General care

Remove loose dirt with a dry mop (oil softens wax), soft broom, or a vacuum cleaner. If the floor covering

is protected by a good wax coating it can be satisfactorily spot cleaned. Buff after spot cleaning. Buffing helps to keep the finish in good condition and reduces the number of times a floor needs washing and waxing.

Wet clean only with mild soap or synthetic detergent solutions or a cleanser specifically recommended for the type of resilient floor covering. Avoid too frequent wet mopping or excessive use of water and cleaning solutions which may penetrate seams and cause a loosening of the adhesive. Floor should be rinsed well with clear water because any residue of soap, detergent, or cleanser prevents a satisfactory wax finish.

Periodic cleaning

Remove old wax once or twice a year. Then re wax. This helps keep resilient surface clean and colors bright. Use only special cleaner for stripping wax from flooring. Abrasive cleansers should not be used on resilient floorings except cautiously on deep-seated stains. Avoid strong alkalis because they may make the floor brittle, rough, or faded.

Protect clean resilient floorings with a suitable wax coating or water-emulsion resin finish to make cleaning easier, improve appearance, and prevent the damaging effects of abrasive soil. *Do not wax heavily* even in areas where a high gloss is desired. Two or even three thin coats are preferred to one heavy coat. Buff when dry for a higher gloss.

Do not use varnish, shellac, lacquer, or plastic finishes on resilient floor coverings. Solvents required for removing these finishes cannot be used on rubber or asphalt flooring and should be used only sparingly on other resilient materials.

MORE INFORMATION

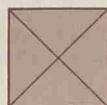
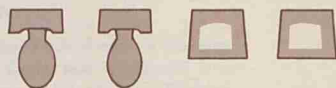
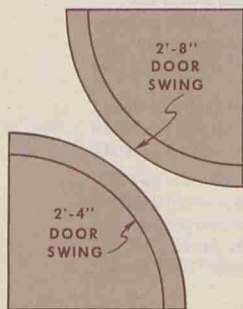
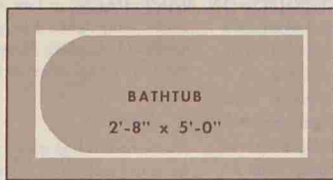
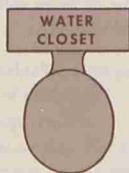
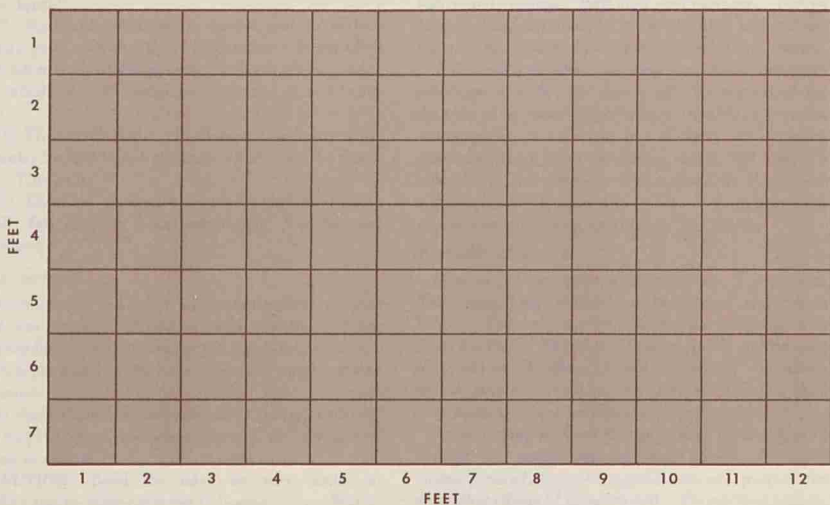
The USDA publications listed below contain additional information on planning, selecting, and installing individual plumbing systems. Copies may be obtained from your county extension office or from the U.S. Department of Agriculture, Washington, D.C., 20250.

	<i>Order No.</i>
Simple Plumbing Repairs for the Home and Farmstead.....	F 2202
Farmstead Sewage and Refuse Disposal.....	AB 274
Planning the Electric Water System and Plumbing for Your Farmstead....	MP 674

Two other publications, issued by the Public Health Service, U.S. Department of Health, Education, and Welfare, give more detailed information. They may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402, at 40 cents each. They are: "Manual of Individual Water Supply Systems" and "Manual of Septic-Tank Practice."

CUTOUTS ON NEXT PAGE

BATHROOM CUTOUTS



SCALE $\frac{1}{2}$ " = 1'-0"

SCALE $\frac{1}{4}$ " = 1'-0"

HOUSING: INTERIOR BUILDING MATERIALS

Concept:

The value system of an individual, family or society determines housing goals which materially affect one's choice of housing.

Housing is a compromise among location, tenure and dwelling, and a compromise within the dwelling among equipment, design, state of repairs and space, with cost the comparatively inflexible limiting factor which makes the other choice necessary.

Teaching Objective:

To provide information to help families invest wisely in interior building materials.

Suggested Use of Materials: This material would be most effectively handled by the agent for:

Organized clubs	Radio
Special interest groups	TV
Home builders	News release

Supporting Teaching Aids:

1. "Interior Building Materials" (mimeographed)
2. Slides and script or kit
3. List of references
4. Suggestions for evaluation

Lesson Planner: Charlotte Womble

REFERENCES

Consumers All, the Yearbook of Agriculture, 1965. U. S. Government Printing
Office, Washington, D. C. 20402

House Construction Details. Nelson Burbank and Oscar Shaftel. Simmons-
Boardman Publishing Corporation, 30 Church Street, New York, N. Y. 10007

The House: Principles/Resources/Dynamics. Tessie Agan and Elaine Luchsinger.
J. B. Lippincott Co., New York, N. Y.

Inside Today's Home. Faulkner and Faulkner. Henry Holt and Co., New York, N. Y.

The Modern House, U.S.A. Kate Ellen Rogers. Harper & Row, New York, N. Y.

"Resilient Floor Coverings," H.E. 5, N. C. State University, Raleigh, N. C. 27607

INTERIOR BUILDING MATERIALS

Today there are many interior building materials from which to choose. The type material selected should be determined by the home owner. There are materials in price ranges which are suitable for houses of all costs.

When you begin planning to build or remodel a house, you are confronted with many decisions regarding selection of building materials for the interior as well as the exterior of the house. These decisions should be those of the home owner because the material and finish will give the personal feeling desired by the family.

Some important areas for which you will need to make early decisions are the walls, floors, ceilings, counter tops, etc. The wide choice of materials for each area can be confusing if you do not have some understanding of the materials available and the serviceability of each.

Some materials are more suitable than others for certain activities of your family. The living area, working areas, sleeping and bathing areas need special materials which are suitable for the activities to be performed in each.

If you study the different types of materials and consider their cost, durability, and suitability, together with appearance, usually it is not too difficult to decide on a material and finish best suited for a specific use.

Cost is often the limiting factor. If so, there is a wide range in prices of various materials. Often an inexpensive material, if properly installed and finished, will look attractive and will give satisfactory service. The cheapest material, however, may not be the least expensive over a period of years. The initial cost, the cost of installation, and the number of years that the material will give satisfactory service are the main items in figuring the cost of building materials.

WALL MATERIALS

Let's consider the walls and ceilings for the various areas of the house. Dry-wall construction is the most popular wall finish being used today.

Plasterboard

Gypsum board--sometimes called plasterboard--is a widely used material for walls and ceiling finishes.

This is a material made of preformed plaster bonded between two layers of heavy paper. Gypsum board is available in 3/8-, 1/2-, or 5/8-inch thickness in 4 x 8-foot or larger sheets. The cost is low as compared with other wall materials. Gypsum board is non-combustible.

One occasional defect of plasterboard construction is that nails may pop. This is most often caused by improper moisture content of the studs. Also, for a long time home builders did not know how to do a good job concealing the joints and nails. This problem has caused the material to be objectionable to many home owners.

Today we have new compounds to fill the joints and cover the nails, special tapes are available, and new methods are used. Workmen have become better trained and the finished jobs are much superior to old methods. Manufacturing companies are anxious to have satisfied customers, so they have sponsored training schools to teach workmen the correct installation methods. It pays to get a trained person to do the work. He will have the tools and the "know-how" to save time as well as produce a better finished job.

A method known as lamination is used to install plasterboard in the more expensive jobs. One layer is nailed to the studs. Sheets are installed in vertical position.

A second layer of board is glued to the first layer. The sheets are applied with the seams running horizontally. The seams are then taped and sanded. There are no nail heads to be covered.

Gypsum board is suitable for all inside walls except in the very high-moisture areas. It is also used for ceilings in all areas of the home.

Gypsum board can be finished with either an oil or latex paint. Wallpaper can also be applied if desired. Lovely rooms in low-, medium-, and high-priced homes are finished with plasterboard.

Prefinished gypsum board is available in a variety of finishes and textures. It is made to look like wood paneling by the application of paper in a number of wood finishes, such as mahogany, walnut, or pine. Vinyl-surfaced gypsum wallboard, washable with soap and water, is also available in several colors.

Fiberboard

A very inexpensive wallboard is a cellulose fiberboard often called "Celotex." Fiberboard is not very strong, but it may sometimes be used over old walls. Prefinished fiberboard is available in limited colors.

Fiberboard is made in square and rectangular tiles, commonly called "ceiling tiles." These tiles may be painted and used in any area of the house.

Acoustical tiles are also made of fiberboard material. Small perforations in circular or irregular shapes made into the tile boards absorb up to 70 percent of the noise that enters. Acoustical tiles may be purchased in the same finishes as the plain fiberboard tiles. Acoustical ceiling tiles are suitable for family rooms, living areas, or recreation areas.

Hardboard

Another wallboard which is not too expensive is hardboard. This is a material made from wood fibers bonded together with an adhesive material under high pressure. It is commonly referred to by the trade name "Masonite." It is available in 40-inch sheets in natural color, dark brown, and light tones. It is also available in a prefinished, simulated wood grain.

Tempered hardboard is quite moisture-proof and can be painted. It is suitable for use in any room and is resistant to moisture.

A variation of the hardboard is achieved by addition of perforations in interesting arrangements. Commercial hooks are available to fit the perforations. This type board is useful for storage areas in children's rooms, workrooms, or storage closets. It may be purchased prefinished or painted any desired color.

Plastic-finished hardboard (trade names--Marlite, AFCO, etc.) is available in plain colors, tile patterns, wood grain, and marbelized patterns. This is especially good in areas where moisture or grease is a problem, such as the kitchen and bathroom.

Wood Paneling

Living can be made so much easier and more pleasant by using wall finishes which last a lifetime and need little or no care for years and years. Wood panel walls, if chosen, will always be in good taste and always in style because naturally beautiful wood is ageless. Wood panels are easily installed--you may even be able to do it yourself!

You have a wide choice of natural colors, grain patterns, and textures stocked by lumber dealers in many standard shapes and sizes and in different price ranges.

Solid Wood Paneling. This comes in a number of ways and in a large variety of woods. Some popular kinds of paneling on the market today include pine, cypress, gum, oak, willow, birch, poplar, and redwood. Other hardwoods, such as cherry, walnut, and pecan, are available in solid wood but are very expensive.

Plywood Paneling. This is extremely popular at the present time. Numerous companies manufacture it in a large variety of woods and in different panel sizes and thicknesses.

Prefinished plywoods are very popular and economical. Labor is so high in most areas that the cost of prefinished plywood is many times lower than the unfinished plus the cost of finishing. The panels may be smooth or V-grooved.

Plywood, either unfinished or prefinished, is one of the most popular wall and cabinet materials being used today. Both hard woods and soft woods are used in making plywood. Being a structural material, plywood can be used to equal advantage in new homes and old ones.

The wood face of plywood is made of many woods and various finishes. The face may be elm, mahogany, oak, birch, pine, walnut, or others. There are over 25 woods or finishes used on prefinished plywoods. The price will vary with the wood.

Interesting textured finishes are also available in finished or unfinished plywoods. Textured finishes are available in striated, combed, sea-swirl, surface-wood, and surf-plank patterns.

When you use paneling, you need to select the doors and wood trim to match. Some companies make a trim to match the prefinished plywood. It will be more expensive and the design choice may not suit you, but there is a large selection from which to choose.

If the prefinished trims are not available, you will find a large range of color stains to choose from. With some care these can be mixed and a finish to match any hardwood may be developed.

Plastic Laminates

Plastic laminates are rigid sheets, such as formica, panelyte, consoweld, and others. It is available in a wide range of solid colors and marbelized or wood grain patterns.

For surfaces where beauty must be combined with extra resistance to hard wear, plastic laminate surfacing is especially suitable and inexpensive. It is made in many handsome colors and patterns. Laminated plastic is available in panels mounted on 4 x 8-foot plywood. This is easily installed as wall covering. Instructions for sawing, drilling, and working with laminated panels should be obtained from the dealer who stocks the material. This is suitable for areas of a great deal of soil, moisture, or grease.

Laminated plastic is unequalled as tops for kitchen counters and bathroom cabinets, as well as cabinet tops for all other areas of the house.

Glass

Glass is used as structural as well as a decorative part of the house. In interior wall finishes built-in mirrors are due to good effect; glass block is frequently featured; large picture windows or sliding doors, outside walls, and interior partitions with open-beam or sloping ceiling above the 8-foot level account for increasing use of glass in modern construction.

Fiberglass

Fiberglass in both translucent and opaque panels is available. This is made with corrugated or flat surface in a large variety of colors. It is used for walls, room dividers, and luminous ceilings, shower and tub enclosures, etc.

Plaster

Wet-wall (plaster) construction has decreased in popularity in many areas. This is due to the growing popularity of dry-wall construction. However, wet-wall construction may be desired by some families. New methods and materials make this process much faster. Metal and gypsum board have replaced wood laths, and new methods of applying plaster are being used.

Plaster may be finished with a smooth or rough texture and painted or papared.

Concrete Blocks

Very expensive and attractive houses are built using blocks for interior walls. Attractive designs can be worked out to fit the family needs as well as the aesthetic values desired in the house.

Blocks are made in several soft colors and different sizes and shapes. Laying blocks requires skill. We have seen so many poorly done jobs in cheap houses that we often associate poor workmanship with block houses.

If the workmanship is good, the block house can be very attractive inside as well as outside. The blocks may be exposed for inside finish, or the interior walls may be furred and covered with plasterboard or plywood. Two important things needed are good workmanship and interesting architectural design.

Brick

Brick is rather inexpensive in many areas. Often we use brick for interior walls or areas of accent. Brick is available in many colors and textures. It is important to consider texture and color of brick as you plan interior decor.

Stone

Stone is also used for interior walls. The cost of stone will depend on the availability. The labor required to cut and fit stone often makes this an expensive material. However, very interesting effects are created with stone.

Ceramic Tile

Ceramic tile is a very durable and practical wall and floor surfacing material. It is easy to clean and never dents, stains or fades. Tiles are made in many colors, varied sizes, and new textures. Ceramic tile is water- and grease-proof and is recommended for bathrooms, kitchens, and other rooms where moisture is a problem. Ceramic tile is expensive but one of the most durable materials. Sometimes it is used for counter tops.

FLOOR MATERIALS

Wood

Hardwood floors are one of the oldest materials used for floors. Red oak and white oak are the most used hard woods. It is durable and easy to keep if a good finishing job is done. In many areas good oak floors can be installed and finished for 45¢ a square foot. We find oak floors used in all price houses. Other woods such as pine, cherry, pecan, and walnut, may be used. Prefinished hardwood flooring is also available, usually at a higher price.

Resilient Floor Coverings

Resilient floor coverings are available in many materials and at various prices. Vinyl, vinyl-asbestos, rubber, asphalt, linoleum, and other materials are used. These may be installed over old floors or new floors. A smooth surface is required for a good job. There is a wide range of color and patterns in each material. Careful study of the characteristics of each should be made before a selection is decided upon.

Brick

Sometimes bricks are used for floors. They create an informal atmosphere and are easy to care for if properly installed and finished. Bricks are porous and absorb grease and soil unless a hard finish is applied to the surface to seal the open pores.

Terra Cotta

Terra cotta, or colored concrete, is also sometimes used for flooring in some areas of the house. These may be installed in squares or rectangles or as broken tiles. Terra cotta tiles are made in glazed and unglazed finishes.

Flagstone

Flagstone is another stone being used for interior flooring materials. It makes a very interesting floor for the foyer or family room. Stones are often used on the outside in the patio area and the same material carried into the adjoining inside area. Flagstones may be cut in square or rectangular shapes or installed in irregular shapes.

Terrazzo

Terrazzo is a very popular flooring material in many areas. It will last a lifetime and requires little care. This is very good for the home built with a concrete slab type construction or for basement rooms. Colors will vary and sizes of stones will vary. Black, brown, beige, white, and mixed colors are available.

Seamless Covering

A seamless floor covering of liquid glaze and colored chips is used to cover old or new floors of wood or concrete. The materials are troweled on by factory-trained installers. "Torgnal" is a trade name for one company's product. The finish can be applied to exterior as well as interior areas. It has been used on floors, walls, and counter tops. It is recommended as being extremely tough, not attacked by most acids, alkalies, or solvents. The seamless flooring will not collect dirt, moisture, or germs and will resist wear and abrasion.

Today the builder has a wide choice of interior building materials. New materials are being developed and are being made of older materials. It is easy for taste to go astray in combining these materials.

Prepared by Charlotte Womble, Housing & House Furnishings Specialist, N. C. Agricultural Extension Service and U. S. Department of Agriculture, Cooperating, N. C. State University at Raleigh, Raleigh, N. C. 27607. Sept. 1968

EVALUATION FOR: INTERIOR BUILDING MATERIALS

(This form is designed to determine to some extent the consumer's understanding of use and cost of interior building materials.)

Mary and John Martin live three miles from a town of 6,000 population. John farms about 50 acres and has a job with the town as his main source of income. There are three children, two boys and one girl. The Martins have selected a plan for a three-bedroom house and are in the process of filling out the specifications for the \$10,000 house.

Underscore the material you think is the more suitable for the space indicated and in the price range allowed for the house:

- | | | |
|----------------------------------|----------------------|--------------------------|
| 1. Walls for living rooms | <u>Gypsum board</u> | Walnut plywood |
| 2. Walls for kitchen-dining area | <u>Birch plywood</u> | Ceramic tile |
| 3. Walls for boys' bedroom | Fiberboard | <u>Oak plywood</u> |
| 4. Walls for master bedroom | <u>Gypsum board</u> | Fiberglass |
| 5. Walls for bathroom | Fiberboard | <u>Laminated plastic</u> |
| 6. Ceiling for entire house | <u>Celotex</u> | Gypsum board |
| 7. Floor for kitchen | <u>Linoleum</u> | Brick |
| 8. Floor for bathroom | <u>Sheet vinyl</u> | Ceramic tile |
| 9. Floor for bedrooms | <u>Oak</u> | Concrete blocks |
| 10. Floor for living room | Terrazzo | <u>Oak</u> |

(NOTE: The key to correct answers are indicated on this copy. Please omit such symbols when reproducing this evaluation sheet.)

SUMMARY

- Number of persons returning evaluation _____
- Number who correctly answered 7 or more _____
- Number of programs conducted with organized groups _____
- Number of special interest programs held _____
- Number of radio programs given _____
- Number of news articles published _____
- Number of TV programs given _____

HOUSING: RESILIENT FLOOR COVERINGS

Concept:

The value system of an individual, family or society determines to a large measure housing goals which materially affect one's choice of housing.

Housing is a compromise among location, tenure and dwelling, and a compromise within the dwelling among equipment, design, state of repairs and space, with cost the comparatively inflexible limiting factor which makes the other choice necessary.

Teaching Objective:

To provide consumer information to help families make wise decisions when selecting resilient floor coverings.

Use of Materials: Material is adaptable for agent or leader to use for:

Organized groups	Radio
Special interest meetings	TV
Home builders	News release

Supporting Teaching Aids:

1. Bulletin "Resilient Floor Coverings" (revised)
2. Kit of materials
3. Suggestions for evaluation

Lesson Planner: Charlotte Womble

September 1963

(OVER)

REFERENCES

Inside Today's Home. Faulkner and Faulkner. Henry Holt and Company, New York.

The House: Principles/Resources/Dynamics. Tessie Agan and Elaine Luchsinger.
J. B. Lippincott Co., New York, N. Y.

"Floors: Technical Data for Interior Designers." Armstrong Cork Company,
Floor Division, Lancaster, Pa.

SUGGESTIONS FOR EVALUATION: RESILIENT FLOOR COVERINGS

Read the statements below and check yes if you agree, no if you disagree.

	<u>Yes</u>	<u>No</u>
1. Resilient floors are widely used in homes today because they are easy to keep, economical and hard-wearing.	X	
2. All resilient flooring material is made in both sheet and tile form.		X
3. Sheet material requires more skill to install.	X	
4. Linoleum will give satisfactory service when installed below grade.		X
5. Sheet vinyl is made in several thicknesses.	X	
6. The thicker the vinyl, the more it costs per square foot.	X	
7. Vinyl asbestos tile would be a good selection for a family to make if they plan to install the floor themselves.	X	
8. Lightweight sheet vinyl and linoleum are about the same price.	X	
9. Color and design are often limiting factors when selecting resilient floor covering.	X	
10. There is a resilient floor covering suitable for an open porch or patio.	X	

(NOTE: The key to correct answers are indicated on this copy. Please omit such symbols when reproducing this evaluation sheet.)

SUMMARY

- Number of programs presented _____
- Number of persons attending meetings _____
- Number of persons completing form _____
- Percent of statements answered correctly _____
- Do you think those attending the meeting understand the material presented? _____
- Based on the summary evaluation outcomes of all participants, write a brief summary indicating the highlights and implications for future programming.

HOUSING: SELECTION AND USE OF HOME VENTILATING FANS

Concept:

The value system of an individual, family or society to a large measure determines housing goals which materially affect one's choice of housing.

Housing is a compromise among location, tenure and dwelling, and a compromise within the dwelling among equipment, design, state of repairs and space, with cost the comparatively inflexible limiting factor which makes the other choices necessary.

Teaching Objective:

To provide information which will assist home owners and others with selection and use of proper exhaust fans for home ventilation.

Use of Materials: Materials are adaptable for agent or leader to use with:

Organized clubs	Cabinet makers
Kitchen planning workshops	Radio
Home builders	TV
Carpenters	News release

Teaching Aids:

1. Bulletin "Selection and Use of Home Ventilating Fans"
2. Flip chart
3. Teaching outline
4. List of references
5. Suggestions for evaluation

Lesson Planner: Charlotte Womble

September 1968

(OVER)

REFERENCES

"Home Kitchens," Southern Regional Publication, H. E. 2

"Planning Bathrooms for Today's Home and Garden Bulletin No. 99

"Home Ventilating Guide." Home Ventilating Institute, 1108 Standard Building,
Cleveland, Ohio 44113

Consumers All, the Yearbook of Agriculture, 1965. Superintendent of Documents,
U. S. Government Printing Office, Washington, D. C. 20402

TEACHING OUTLINE: SELECTION AND USE OF HOME VENTILATING FANS

Suggestions for Planning Lesson

Begin early to make plans.

Contact local dealers and study types of fans available.

Write to supply houses for brochures, such as:

Nutone Inc., Cincinnati, Ohio

Phillip Carey Corporation, Cincinnati, Ohio 45215

Berns Air King Corporation, 3050 No. Rockwell St., Chicago, Ill. 60618

Broan Manufacturing Co., Inc., Hartford, Wisconsin 53027

Sears, Roebuck & Company (Kenmore Range Hoods)

Make a flip chart of points to be emphasized.

Outline of Subject Material

- A. Ventilating fans are used to make housekeeping easier and more pleasant by removing
 1. Odors
 2. Moisture
 3. Smoke
 4. Heat
- B. Fans should be located in certain areas of the home for specific purposes.
 1. Kitchen
 2. Utility room
 3. Bathrooms
 4. Basement
 5. Recreation room
- C. Fan capacity must meet needs of area to be vented.
 1. C.F.M. = Cubic feet of air movement per minute
 2. Capacity of fan depends on
 - a. Room size
 - b. Amount of ducting and design of fan
 3. Labels on fans are important.
- D. Types of fans determine efficiency of air movement.
 1. Propeller type
 2. Centrifugal blower, single or double
 3. Mixed flow impellers
 4. Axial flow type

(OVER)

E. Types of kitchen fans available

1. Wall or ceiling type
2. Hood-mounted fan-ducted
3. Non-ducted

F. Installation procedures for kitchen fans

1. Methods of ducting
2. Height from floor
3. Materials needed for ducting

G. Fans for other rooms--baths, etc.

1. Single exhaust
2. Fan and light
3. Fan, light and heat

H. Care of fans

I. Summary

SUGGESTIONS FOR EVALUATION OF: HOME VENTILATING FANS

Complete the statements below with one or more words:

1. Ventilating fans are used to remove _____, _____, _____.
2. Fans are especially needed in _____ and _____.
3. Fan capacity is rated in cubic feet of air movement per minute; the letters _____ are used on labels.
4. Mary Jones has moved into a first floor apartment in which there is no fan. Which type would you suggest she install? _____
5. Kitchen fans should be vented to the _____ of the house.
6. Hoods are available in several lengths, such as _____, _____, _____ and _____ inches.
7. The cheapest ventilating fans cost about _____ dollars.
8. The most desirable fixtures for ventilating a kitchen range is the _____ fan.
9. Cities and local governments have regulations for installing fans in a house; these are for the home owner's _____.
10. Fan filters and housing walls should be cleaned with _____.

KEY: 1. odor, smoke, moisture or heat 6. 24, 30, 36, 42, or 48 (inches)
2. kitchen and bath 7. \$14.00 (more or less)
3. C.F.M. 8. hood, ducted fan
4. non-ducted hood fan 9. protection
5. outside 10. soap and water

SUMMARY

1. Number of programs presented _____
2. Number of persons attending meeting _____
3. Number of persons completing form _____
4. Percent of blanks answered correctly _____
5. Do you think that those attending the meeting understand the material presented? _____
6. Based on the summary evaluation outcomes of all participants, write a brief summary indicating the highlights and implication for future programming.

SELECTION AND USE OF

HOME VENTILATING FANS

A ventilating fan can make housekeeping easier and more pleasant. Odors, grease, smoke, moisture and heat are the worst enemies in the house. These problems can be easily overcome by installing a good ventilating fan. A well-insulated house holds the moisture and odors inside the house.

Odors. The open design of many new homes makes it more necessary than ever to keep cooking odors from spreading throughout the home.

Moisture. Removal of moisture from kitchens, bathrooms, and laundries saves the homeowner hundreds of dollars in cleaning and refinishing.

Smoke. Grease-filled smoke not only damages kitchen walls and cabinets, but other walls, draperies and furniture all over the house.

Heat. Instant removal of heat over ranges, ovens, washers and dryers is important for comfort and to protect cabinet walls.

Location in Home

Kitchens

During cooking, droplets of grease, carried by steam, must be removed before they settle on walls, ceilings--or even furniture in other rooms. University tests have found that as much as 200 pounds of such grease-laden moisture are given off every year in the average kitchen.

Utility Rooms

Modern, step-saving room arrangements frequently place utility areas on the first floor. This makes removal of heat and moisture especially important. Studies have shown that almost 5 pounds of water vapor are given off during the washing cycle on a standard washer.

Bathrooms

It is desirable to remove odors from bathrooms; also it is especially important to eliminate excess moisture before it loosens wall coverings and corrodes plated finishes.

Basements

Stale, moist air in a basement is annoying and encourages mildew and structural rot. An average weekly washing in the basement adds 26 pounds of water to the air.

Recreation Rooms

During a party, recreation rooms are often smoke-filled and stuffy. An exhaust fan eliminates this. Basement recreation rooms would be subject to stale moist air and more subject to mildew.

Fan Capacity

Fan capacity is rated in cubic feet of air movement per minute (CFM). The capacity of the fan needed depends on the room size, amount of ducting and design of fan. Architects, builders and home owners need accurate information on the performance of ventilating fans and hoods. For this reason the Home Ventilating Institute has established a guide for individual room requirements. Equipment which meets this requirement will carry a tag, which should be left on the grill, to assure the home owner that the fan meets H.V.I. specifications.

Selection of Fans

The efficiency of any ventilating equipment is dependent upon the ability of the fan to deliver a specific quantity of air through a standard duct system vented to the outside. If the fan delivers less than the rated capacity, full value has not been received and the home owner will be dissatisfied.

The following blades are generally used in exhaust fans and hood fans:

Propeller Type. The propeller type is usually a stamped impeller disc with three or more blades set at an angle ('pitch') to deliver a maximum amount of air against relatively low resistance.

Centrifugal Blower. These are commonly called "squirrel cage" fans. Air is sucked into the center of a revolving wheel and discharged at right angles into an expanding scroll. This has maximum ability to overcome resistance. Twin centrifugal blowers are also available.

Mixed Flow Impellers. These combine the best features of both the propeller and the blower. The blades are set at a pitch at the intake and are like a blower at the discharge end. Consequently, less motor power is required than for a centrifugal blower.

Axial Flow Type. This is an improved version of the propeller blade which overcomes resistance by driving air at high speed through a close-fitting tube.

Types of Fans for Kitchens

Wall-Mounted Fan. This fan is the least expensive. Prices range from \$13.95 to \$25.00. Air is discharged into a weatherproof hood projecting beyond the outside face of the wall. This protects against the entrance of rain, snow and intemperate air into the home. These are available for 8- or 10-inch-thick walls. The units can be controlled by a single or multispeed wall switch or by an inside chain pull.

Ceiling Fan. This fan can be flush-mounted in the ceiling. Hanger bars are used for mounting between joists. It can also be mounted in the kitchen

cabinet. A minimum of duct work is needed. Air is discharged directly through the room. Control is by a wall switch. The wall or the ceiling exhaust may be installed as an integral part of a range hood.

Hood-Mounted Fan-Ducted. The hood-mounted fan is the most effective type for kitchen use because it traps and prevents the escape of grease, smoke and odors to other areas. A hood-fan for a built-in oven removes the odors, heat and smoke from baking and broiling. Prefabricated metal hoods are installed under the wall cabinet and over the cooking units and ducted to the outside of the house. The hood has a removable grease filter and a built-in light. The fan types and prices vary with manufacturers. The fan can be ducted through the ceiling or wall and sometimes down beneath the floor and out through the foundation. The type of fan used depends upon the length of the hood, type and size of duct work and cooking requirements. It is not necessary to consider the room size since the hood, not the room, is used as the collection area.

The minimum requirements established by F.H.A. and H.V.I is 40 CFM per lineal foot of range-hood. The peninsula or island hood minimum requirement is 50 CFM per lineal foot. The larger the CFM rating the greater will be the air delivery and performance of the hood-fan.

Hoods are available in 24-, 30-, 36-, 42-, or 48-inch lengths. The hood should be the full length of the surface unit and at least 17 inches deep. The hood should be installed at a height that will allow a clear view of the back burners. A hood 17 inches or less in depth should be installed at a distance of 56 inches from floor to bottom of hood. If the depth of the hood is 18 inches or more, the distance from floor to the bottom of hood should be 60 inches. Styles and colors are available to fit the decor of the kitchen, whether it is traditional or modern. Prices of hood and fan units range from \$35.00 up. This does not include installation cost or materials for duct work.

Non-Ducted Hood-Fans

In houses where it is impossible to exhaust kitchen air to the outside, a no-ducted hood may be used.

Non-ducted hoods use a system of filters to clean the air and return it to the room. As the air is not discharged to the outside, no duct work is needed. They may be hung on the wall above the range, either with or without cabinets. Non-ducted hoods have installation advantages in apartments or for remodeling, but are less desirable than hood-fans that duct to the outside because they do not remove heat and moisture.

Exhaust Fans for Other Rooms

Exhaust fans installed in walls or ceiling of the bathroom and utility room eliminate moisture and odors. Replacement air, generally supplied from space under the door, is essential for satisfactory results. The duct work should go to the outside for best results.

Exhaust Fan for Wall or Ceiling. Mounted on the side wall, this fan discharges vertically. In the ceiling, discharge may be horizontal or vertical. Wall or timer switch may be used. The exhaust fan is mounted to the side wall studding by means of brackets.

Fan and Light Combination. This dual-purpose unit provides ventilation plus a ceiling light. It can be discharged horizontally or vertically with proper duct.

Fan, Light and Heat Combination. This triple-purpose unit provides light, heat and ventilation. It may be discharged horizontally or vertically with proper duct.

Care of Fans

Mesh filters on exhaust fans help prevent grease and vapor-laden deposits from settling on the motor and sides of the fan housing and duct work. These filters are easily removed and washed in hot, sudsy water. Filters must be kept clean to avoid blocking the air stream. How often the filter needs cleaning will depend on the amount of use the fan is given.

The less expensive wall-mounted fans do not have filters. The housing and blades should be cleaned often with hot, sudsy water.

Read carefully the manufacturer's instructions for cleaning all types of fans.

Remember:

For top performance the following points should be followed:

Location--Place the fan in the correct location in the room.

Selection--Choose the proper fan for the room.

Duct Work--Plan the shortest possible run to the outside.

Know Local Regulations--Consult local city or county authorities for codes and regulations.

Keep Clean--Fans and filters must be cleaned periodically.

Acknowledgements

"Home Ventilation Guide." The Home Ventilating Institute, 1108 Standard Building, Cleveland, Ohio 44113

Prepared by Charlotte Womble, Housing and House Furnishings Specialist, North Carolina Extension Service and U. S. Department of Agriculture, Cooperating, North Carolina State University at Raleigh, Raleigh, N. C. 27607

August 1968

HOUSING: HEATING AND COOLING YOUR HOME

Concept:

The value system of an individual, family or society to a large measure determines housing goals which materially affect one's choice of housing.

Housing is a compromise among location, tenure and dwelling, and a compromise within the dwelling among equipment, design, state of repairs and space, with cost the comparatively inflexible limiting factor which makes the other choice necessary.

Teaching Objective:

To provide information to assist families in making wise selections when purchasing equipment for heating and cooling the home.

Suggested Use of Materials: Materials should be used by home economics agent or farm agents for:

Special interest groups	Radio
Families who are building or remodeling	TV
Home builders and designers	News release

Teaching Aids:

1. Bulletin "Heating and Cooling Your Home" (mimeographed)
2. Slides and script
3. List of references
4. Suggestions for evaluation

Lesson Planners: Charlotte Womble and W. C. Warrick

September 1968

(OVER)

REFERENCES

Books

ASHRAE Guide and Data Book. American Society Heating, Refrigerating and Air Conditioning Engineers, 345 E. 47th Street, New York, N. Y. 10017

Farm Building Design. Neubauer and Walker. Printice-Hall Publishing Company. 1961

House Construction Details. Nelson L. Burbank and Oscar Shaftel. Simmons-Boardman Publishing Corp., 30 Church Street, New York, N. Y. 10007

Inside Today's Home. Henry Holt and Company, New York, N. Y.

Bulletins

U. S. Department of Agriculture Bulletins. Order from: Superintendent of Documents, Government Printing Office, Washington, D. C. 20402

"Control of Direct Sunlight for Comfort," Misc. Publication No. 995. 5¢

"Electric House Heating," Rural Electrification Administration. 5¢

"Equipment for Cooling Your Home," Home & Garden Bulletin No. 1000. 5¢

"Farm Home Design and Equipment for Summer Comfort," Agriculture Information Bulletin No. 241.

"Heat Pumps for Heating and Cooling Homes," Agriculture Information Bul.No.306.10¢

"Your Farmhouse--Heating," Misc. Publication No. 689, 1962.

"Your Farmhouse--Insulation and Weatherproofing," Misc. Publication No. 995. 5¢

Other Bulletins:

"Heating the Home," Circular Series G3.1, Small Homes Council, University of Illinois, Urbana, Illinois 61801. 15¢

"How to Stretch Your Oil-Heat Dollar." Institute for Business Research, Inc., New York, N. Y.

"How to Insulate Your Home for Electric Heating," National Mineral Wood Insulation Association, Rockefeller Center, 1270 Sixth Avenue, New York, N. Y. 10020 (First 10 copies free for educational purposes. Additional copies 25¢ each)

"Summer Comfort," Circular Series G6.0. Small Homes Council, University of Illinois, Urbana, Illinois 61801. 15¢

"The Total Comfort System Story." National Warm Air Heating and Air Conditioning Association, 640 Engineers Building, Cleveland, Ohio 44114

Total Home Comfort Planning Series: "Book I. Heating"

"Book II. Air Conditioning

"Book III. Humidity Control and Air Cleaning"

Honeywell Merchandising Division, Dept. #118, 2701 Fourth Ave., South Minneapolis, Minnesota 55408

HEATING AND COOLING YOUR HOME

Human Comfort Requirements

You can have good heating and cooling in your home. First, however, you should have an understanding of your body needs for heating and cooling and the characteristics of good house heating and cooling

Your body is the source of problems in heating and cooling. It constantly generates heat which is liberated to maintain a body temperature of 98.6°F. When in a sitting position at rest, your body generates about 400 BTU's of heat per hour, or approximately that produced by a 100-watt light bulb. When actively working or angry, your body may produce as much as 1200 BTU's of heat. One BTU (British thermal unit) is about the amount of heat produced by an old-fashioned wooden match.

Your body loses heat through the skin and through respiration. If it leaves the body too fast, you feel cold; if it leaves too slowly, you feel hot. In summer the problem is to keep the air cool around the body so that it will lose heat fast enough for comfort. In winter the problem is to keep the air warm enough for comfort. In planning good home heating and cooling, you must take into account the three main ways heat is lost from the body.

Heat is lost by the process of radiation known as radiant heat transfer. Your body always radiates heat to a colder surface. Radiant heat is the type of heat you feel if you hold your hand near a light bulb. Heat is always radiated from a warm to a colder surface. Radiant heat loss from the body can be controlled by keeping walls and windows warm or by adjusting the air temperature to compensate for heat lost to cold walls.

Body heat also escapes through the evaporation of moisture from the skin surface. In the evaporation of a liquid, heat is lost. Evaporation can be controlled by adding water vapor to the air in a house in winter. The greater the degree of saturation of the air with water, the less evaporation of moisture from the skin surface. In summer, moisture can be removed from the air which will result in greater evaporation of skin moisture.

Heat is lost by convection. Air moving around the body carries heat away or brings it to the body. Some heat is lost by conduction. For example, your feet will lose heat to a cold floor. Regulation of air temperature and rate of movement over the body will control convected heat, and warm floors will keep feet warm.

Body comfort is affected by air temperature, relative humidity, wall surface temperature, floor temperature, and air flow. Most healthy people working or slightly active, normally clothed, and in a uniform environment with air velocities of 25 feet per minute are thermally comfortable the year round when the air temperature is in the range of 71°F. to 77°F., and the relative humidity is in the range of 25 to 60 percent. For people working, the temperature needs to vary with the rate of work and type of clothing worn.

Your house has some human characteristics. It breathes when outside air comes in one side and goes out the other. This process is continuous unless the outside air is completely calm. Your house also "sweats" in cold weather when there is more moisture inside than outside. Moisture inside the house tries to escape to the outside. Often it will condense on cold surfaces inside the house. Your house loses heat in cold weather and gains heat from outdoor temperatures in summer.

All these house characteristics affect your comfort and your budget. All the heat lost in winter must be replaced, and heat that enters in summer must be removed. Condensation on walls and windows can be damaging to your house and furnishings. The degree to which you control these factors will determine your comfort as well as protect your house and furnishings.

Insulating the Home

The main purpose of house insulation is to provide resistance to the flow of heat--whether it is heat escaping from a house in winter or entering the house in summer and to maintain a desired temperature economically. Savings of around one-third of heating or cooling costs can be obtained in both summer and winter in a properly insulated home.

Insulation is a substance or material used to slow down the transfer of heat. Such materials are usually lightweight and are available in various forms--loose fill material, batts, blankets, or rigid.

Loose fill type insulation is most commonly used to insulate buildings already constructed. It is usually blown into the attic and sometimes into side walls. When used in side walls, careful attention must be given to fill all spaces and a moisture barrier should be provided on the inside wall. If a moisture barrier was not installed when the house was built, it may be best to leave the walls uninsulated or use a vapor-proof interior paint.

The loose fill type insulation needs to be carefully installed to eliminate as much settlement as possible.

The common materials used for loose fill insulation are glass wool, expanded vermiculite, treated wood shavings (fire resistant), and loose mineral wool.

Batt or blanket type insulation is normally used during initial construction. The batts or blankets can be fitted in between the studs or ceiling and floor joists to insulate the side walls, ceilings, and floors and securely fastened in place by stapling the paper tab along the inside face of the stud or joist. This eliminates any shifting or settlement. Both batts and rolls are available to fit between a 12", 16" or 24" joist or stud spacing.

The insulation batts or blankets are usually held together by an impervious asphalt-impregnated paper on one side, and either a permeable paper or no paper on the other side. The impregnated paper covering acts as a moisture barrier. Batt and blanket insulation with reflective covering on one or both surfaces is also available. If there is a moisture barrier on one side of the batt or blanket, it should be placed next to the warm side of the wall. Care should be taken to see that this barrier gives a complete seal and that all holes and tears are patched.

You can purchase batt or blanket insulation made from mineral or cellulose fiber. They are available in 1", 1½", 2", 3", 4", and 6" thicknesses. You should always check to determine exactly how many inches of insulation you are buying.

Rigid type insulation, commonly referred to as insulation boards, has many uses. Its rigidity and strength have advantages which the other types of insulation do not have. Some of the rigid type insulation boards are used on the outside of the studs in place of wood sheathing or inside of the studs in place of plaster.

Because of its rigidity, insulation board is more dense and less effective as an insulator than most batt or blanket types. It must not be assumed that because the home is constructed with insulation sheathing or an insulating board interior that it is fully insulated. The rigid boards will help, but will not give you the amount of protection against heat loss and gain that is usually needed.

Other types of rigid insulation are cork, cellular glass, and foamed plastic.

These type insulations are commonly used to insulate perimeter foundation walls, slab floors, and similar areas where batts or blankets are not practical.

To determine the location of the insulation, imagine the insulation as a blanket surrounding the living area of the home. This includes all areas that are to be heated in winter and cooled in summer. This means that side walls, ceilings, and floors should be insulated.

The best rule is to always keep the insulation directly between you and the area that is not to be heated or cooled. Remember the windows should have insulation in the form of weather stripping, double glazing, or storm windows.

In the winter, approximately 24 percent of the heat loss goes out through the side walls. About 30 percent goes through or around the doors and windows. Another 33 percent goes up through the ceiling.

A moisture barrier is an essential part of the insulation system. The reason for this can be explained by observing the condensation on the sides of a glass of ice water in a warm room. The moisture that condenses on the glass is present in the air in varying amounts at all times, and it needs only a cold surface on which to condense. If the walls of a home are not insulated, it is probable that they will become sufficiently cold during the winter to condense this moisture at some point within the wall or on the wall surface producing a damp, clammy, or "sweating" wall.

When walls are insulated, the inside surfaces are protected against excessive heat loss and are kept warm so there is no cold surface on which moisture can condense. The moisture vapor then penetrates the wall and works through all warm layers until it strikes something cold which in most cases is the sheathing or siding of the building. Condensation occurs. The result of this "in-the-wall condensation" is rotting of wood, insulation deterioration, paint blisters, and paint peeling on the exterior wall. These problems caused from condensation can be stopped by a properly installed moisture barrier.

Most batt and blanket insulations have an interior surface of water vapor impermeable material that blocks the moisture vapor from penetrating the wall.

It is often a good practice to cover the studs from the ceiling to the floor with 4 mil plastic, after the batt insulation is installed and before the dry inside wall is erected. This plastic layer forms a tight moisture barrier sealing all cracks and tears in the paper moisture barrier on the insulation batts.

The attic in your house must be vented if the insulation is to function properly. It is as important to provide ventilation in the attic in the winter as in the summer. Do not close the vents in the winter in an insulated house. Insulation will keep the heat in the house while the open vents let unwanted moisture vapor escape.

It is necessary to provide more than one vent opening. It is best to plan your openings so that cross ventilation will occur.

The ratio of square feet of vent area to square feet of insulated area recommended is: one square foot of net free vent area for each 150 square feet of floor space.

Crawl space ventilation is as necessary in winter as it is in summer. Do not close all vents in winter. If it is necessary to close part of the vents to avoid pipe freezing, close all the vents except one on the north and west sides leaving all the vents open on the south and east sides.

The ratio of square feet of vent area to the square feet of crawl space area is one square foot of net vent area for each 150 square feet of crawl space.

It is recommended that a ground moisture seal (normally 4 mil plastic) be placed over the bare earth to assist in keeping the crawl space humidity at a safe level.

The purpose of housing insulation is to provide resistance to the flow of heat--the more the resistance the less heat lost. The recommended amount of resistance in a home is: Ceiling--R-19; Wall--R-11, and Floor--R-13. The greater the "R" value the greater the insulating value. In certain applications more insulation is needed than those recommendations listed here.

Most insulation materials have the "R" number printed on the moisture barrier or on the outside wrapping of the package. This "R" number indicates the installed resistance if installed according to the manufacturer's recommendations. It has taken into account the thickness, density, and the part of the house in which the insulation is to be installed.

Heating Systems

In pioneer days, fireplaces were used as primary sources of heat. Fireplaces are still being built in houses today, but they are not generally the only means of heating even a single room. Fireplaces are not an economical means of heating. At best, they are only about 15% efficient. However, a well-designed fireplace can: (1) provide supplemental heat, (2) enhance the appearance and comfort of a room, (3) provide emergency heat when furnace fails.

Dampers should always be installed in fireplaces. A damper consists of a cast-iron frame with hinged lid that opens or closes to vary the fireplace throat opening. This provides a means of regulating the draft and closing the flue to prevent loss of heat from the room when there is no fire in the fireplace.

Home heating systems may be classified in two general categories. First, the area units: with this type, the heating unit is installed in the room or area to be heated. Ducts and pipes are not used. The units used are stoves, circulator heaters, floor furnaces, and portable electric heaters. The first cost of these units is comparatively low, but they cannot be classified as

economical and efficient home heating systems.

With proper arrangement of rooms in a small house, the ductless heating units may do a fair job of heating 4 or 5 rooms. The distance from the heater to the center of each room to be heated should not be more than 18 feet.

The second general method of home heating is by a central system. In this case, the heat is produced by one unit installed in either a basement, utility room, or crawl space and then distributed throughout the house through pipes or ducts. Practically all central heating systems, which have a furnace as the source of heat, are either forced hot water systems, forced hot air systems, or a combination of the two.

Forced circulating warm air systems are more popular today. These systems use a fan to circulate air through ducts to the rooms. This system can provide heating, ventilation, air circulation, air cleaning, humidification, and air cooling, with little or no change in the systems themselves. They may use one of three kinds of furnaces--conventional upflow, downflow, or horizontal. All of them use pipes or ducts to distribute warm air to the rooms and return cold air from them.

Warm air is supplied by the ducts to warm air registers placed in or near outside walls.

Return air registers may be in the wall, floor or ceiling. Overhead type air distribution is sometimes used in one-story, basementless houses, and sometimes furnaces are installed in the attics. Forced hot air systems can be oil fired, gas fired, or have electric resistance heating elements.

Up-flow furnaces discharge warm air from the top. They are usually installed in a basement or on the first floor of a house without a basement.

Down-flow furnaces discharge warm air at the bottom and take in cool air at the top. They are for houses without a basement or for houses with concrete slab floors on grade.

Horizontal furnaces lie on their sides. The cold return air enters at one end, and warm air is discharged from the other. They can be used in the crawl space with warm air registers in the floor. They can also be installed in the attic to supply warm air to registers at the floor or ceiling.

Advantages of forced warm air:

- (1) Possibility of positively providing fresh air through the heating system.
- (2) Filtering air.
- (3) Humidification or moisturizing may be easily incorporated into the system.
- (4) Air conditioning may be easily and economically included as part of the same system.
- (5) Installation cost is usually attractive.

Disadvantages of forced warm air:

- (1) Competitive pricing and poorly trained mechanics may result in poor installation.
- (2) Some noise is associated.

- (3) Ducts and registers can be a nuisance.
- (4) Mechanical failures are not uncommon.
- (5) At least one service annually is recommended.

Forced hot water systems require use of a boiler instead of a furnace. Boilers are made of cast iron or steel and are designed for burning different fuels. A small circulating pump aids the movement of water so that temperature changes in the house are faster.

Radiators or convectors distribute heat in the rooms. Radiators are usually located under windows. Painting radiators with metallic paint such as aluminum makes them less effective. Baseboard radiators or baseboard convectors are designed to look like a baseboard. They heat a room uniformly with little difference in temperature between floor and ceiling. Baseboard convectors are popular in residential heating today.

With heating coils installed in the boiler, year round domestic hot water is available.

Advantages of forced hot water systems:

- (1) No possibility of drafts since air circulation is not forced.
- (2) High degree of comfort: Units produce quality radiant heat, draftless.
- (3) Ease of pipe installation and concealment in basements, attics, walls.
- (4) By using a number of thermostats and circulating pumps, the house may be zoned for area temperature differences.
- (5) Possibility of year-round faucet hot water by using tankless coil.
- (6) Most system components have very long life.
- (7) No forced room-to-room air circulation.

Disadvantages of forced hot water systems:

- (1) Usually more expensive to install than hot air.
- (2) Possibility of water leaks.
- (3) Air conditioning added will be more expensive than with hot air systems.
- (4) More difficult to add humidification.
- (5) No forced air movement to facilitate air filtration.
- (6) Yearly service is recommended.

Electric heating is the latest development in house heating systems or methods. Most installations employ some type of electric resistance elements.

There are several types of electric resistance heaters, including radiant wall panels, cable in the ceiling, and baseboard.

Resistance ceiling heat is popular because of ease of installation and low cost. It provides a large warm area from which heat radiates to the rest of the room.

Electric baseboard heaters, like hot water baseboard units, are characterized by their long, low, and narrow physical dimensions. They are usually installed at the base of outside walls and under windows. In most convection-resistance baseboard units, the cool air enters the heater at the bottom, is heated by the electric element, rises and leaves the unit at the top. Most of the heat is delivered by convection rather than radiation.

Another type of electric heating requires a heat pump, which is just the reverse of a large refrigerator. This system provides heat mainly by taking heat from the outside air and discharging this heat into a duct system like that of a warm air furnace. It also uses all of the heat that is given off by the motors and compressor. In addition, it may have supplemental resistance heating coils that function in severe weather. This system automatically changes itself for cooling.

Advantages of electric resistance heating:

- (1) High efficiency.
- (2) Comparatively low installation cost.
- (3) Clean and noiseless.
- (4) Low maintenance.
- (5) Flexible--individual room controls.
- (6) Provides more freedom in house design and furnishings arrangement.
- (7) Safe and odorless.

Disadvantages of electric resistance heating:

- (1) Requires extra insulation.
- (2) Some types are very difficult to install in existing homes.
- (3) With radiant ceiling panel, there may be cold spots under tables and desks.
- (4) Fresh air infiltration and circulation are at a minimum.

Automatic controls serve around the clock to operate your heating and cooling system for economy and comfort.

A gas burner has a small flame, or pilot light, that burns continuously. It lights the gas when the valve is open. If the pilot light goes out the safety control will cut off the gas inlet valve.

In an oil burner operation there is no flame except when the thermostat calls for heat. When heat is called for, the oil burner immediately delivers a mixture of oil and air that is ignited instantly by a heavy electric spark. Controls on the burner function to cut off the oil flow if the fuel fails to ignite within a specified number of seconds.

The thermostat is your messenger that cares for heating or cooling. When you set the dial, the thermostat will regulate the temperature so evenly that you will not notice any change in temperature. Large houses may need more than one thermostat, or zoning, to maintain desired temperature levels. Install your thermostat on an inside wall in the most lived-in-room. If possible, put it on an inside wall about 18 inches from the outside wall, about 4 feet above the floor. No heat-producing equipment should be within 3 feet of the thermostat.

It is just as desirable to have a comfortable home during the hot summer months as it is during the winter. This is accomplished in varying degrees by three general methods. These are: (1) keeping the summer heat out of the house as much as possible, (2) removing heat which is absorbed and trapped in the house, (3) use of mechanical air conditioning equipment.

Keeping heat out of the house is an important step toward summer comfort. If the sun's rays can be kept off the walls, glass areas, and the roof, and if the hot outdoor air penetration can be limited, the inside temperature can be held in check.

When possible, houses should be designed and located to keep the summer sun out, and yet allow the winter sun to shine in. Fundamentally, this means the use of wide roof overhang, and locating most of the large glassed areas on the south side so that when the sun is directly above in summer, it will not shine directly on the glassed areas. On the other hand, when the sun is low in the southern sky in winter, it will shine on the large windows and make the house more comfortable.

Various shading devices such as awnings, blinds, louvertype screens, and shade trees on the east, south and west sides of the house are effective means of controlling the sun rays.

The fact that light colors reflect solar heat should be remembered when choosing building material such as roofing and siding, and when choosing such things as shades, venetian blinds, and drapes for use inside the house.

If heat does get into the house, the problem becomes one of removing the hot air through natural or forced ventilation when the outdoor air is relatively cooler.

Because air continues to flow within the rooms in the same direction as it enters, the placement of the ventilation openings is very important. The most effective air movement is obtained when ventilation openings are on opposite walls and the air flows across the room at the "breathing" level or within the height of human occupancy.

By operating fans--either attic or window--during the night, larger quantities of cooler night air can be circulated through the house, and the indoor temperature can be decreased more rapidly.

Where the house cannot be made comfortable by design, ventilation, and orientation, some type of air conditioning may be used. A summer air conditioner of the refrigeration type performs four basic functions. It cools, dehumidifies, cleans, and circulates conditioned air in the enclosed space, room, or zone.

There are two general types of refrigeration air conditioners. These are the window and through-the-wall units, and the central air conditioning systems.

In climates with low relative humidity evaporative coolers are often used. Here, heat in the air is used to evaporate water thus causing a lower air temperature.

Some features of window and through-the-wall units are:

- (1) Models are available for double-hung, casement, and awning type windows, or can be installed through the wall.
- (2) Window units are easily installed. Some carpentry work is required to install through-the-wall conditioners in existing homes.
- (3) Can be used by persons renting apartments and homes who cannot justify making permanent improvements.
- (4) Window units do not require ducts and are readily portable.
- (5) If the space being cooled is too large, the circulating fan on the unit may not provide even distribution of the cool air throughout the area.
- (6) Use of multiple units provides desired temperature control in various rooms.

Some features of the central air conditioning system are:

- (1) Cools and dehumidifies living space throughout the house.
- (2) An air distribution system is necessary to move the cooled, dehumidified air to all parts of the house.
- (3) With some heating systems a central air conditioning installation can utilize the same air ducts as the furnace.
- (4) The air conditioner can be located in the basement, utility room, crawl space, attic, or any other adequate space, depending on the construction, size, and arrangement of the house.

In this lesson an attempt has been made to point out in general terms the human comfort requirements, the need and use of heat-retardant materials--insulation, the types of heating systems and their advantages and disadvantages, and some basic methods of house cooling. While each topic covered can be greatly expanded for complete understanding, it is hoped that you have been given a basic understanding of methods of home heating and cooling.

Script prepared by the Housing Section of the Southern Region Plan Exchange Committee, composed of Cecil Wheary, Extension Agricultural Engineer, Virginia Polytechnic Institute, Chairman; Dr. Kathryn Philson, Home Economist from Virginia Polytechnic Institute; and Woodley Warrick, Extension Agricultural Engineer from North Carolina State University. December 1966.

North Carolina Agricultural Extension Service and U. S. Department of Agriculture, Cooperating, North Carolina State University at Raleigh, Raleigh, N. C. 27607
September 1968

SUGGESTIONS FOR EVALUATION: FOR HEATING AND COOLING YOUR HOME

Read the statement and write your answer, yes or no, in the right-hand space:

	<u>Yes</u>	<u>No</u>
1. Most healthy people are comfortable in a house when the temperature is 71°F to 77°.	X	
2. The relative humidity has no effect on one's comfort when the temperature is 72°F.		X
3. Insulation is important for controlling temperature in the house both winter and summer.	X	
4. Houses can be insulated after they are built.	X	
5. Good insulation jobs are recommended regardless of the type of heating system used.	X	
6. Shade trees have some effect on cooling or heating a house.	X	
7. The thermostat is the messenger boy that controls a heating system.	X	
8. All heating systems have a thermostat in each room.		X
9. All air conditioning units are designed to be used in a window.		X
10. Central air conditioning requires a ducting system.	X	

(NOTE: The key to correct answers are indicated on this copy. Please omit such symbols when reproducing this evaluation sheet.)

There are several types of heating systems. Each system should be studied carefully to determine which system meets the individual family needs. Write three advantages of each system listed below.

<u>System</u>	<u>Advantages</u>
A. Circulating heater	1. _____ 2. _____ 3. _____
B. Forced warm air	1. _____ 2. _____ 3. _____

(OVER)

SystemAdvantages

- | | |
|-----------------------------|----------|
| C. Forced hot water | 1. _____ |
| | 2. _____ |
| | 3. _____ |
| D. Electric resistance heat | 1. _____ |
| | 2. _____ |
| | 3. _____ |
| E. Electric heat pump | 1. _____ |
| | 2. _____ |
| | 3. _____ |

SUMMARY

1. Number of programs presented _____
2. Number of persons attending meeting _____
3. Number of persons completing the form _____
4. Percent of questions answered correctly _____
5. Do you feel those attending the meeting understand the material covered? _____
6. Based on the summary evaluation outcomes of all participants, write a brief summary indicating the highlights and implications for future programming.

HOUSING: HOUSE PAINTS--PROBLEMS AND SOLUTIONS

Concept:

The value system of an individual, family or society determines housing goals which materially affect one's choice of housing.

Housing is a compromise among location, tenure and dwelling, and a compromise within the dwelling among equipment, design, state of repairs and space, with cost the comparatively inflexible limiting factor which makes the other choices necessary.

Teaching Objective:

To provide information to help families extend their painting budget by more careful selection and use of products, also aids for doing the painting job.

Materials: The materials are designed to help families solve their painting problems for both exterior and interior areas of the house. Copies in moderate quantities are available on request of the following:

Indoor Painting
Painting Outside Wood Surfaces
Mildew on House Paint
Cross-Grain Cracking of Oil-Base House Paints
Temperature Blistering of House Paints
Weathering of Wood
Intercoat Peeling of House Paint
Discoloration of House Paint by Blue Stain
Discoloration of House Paints by Water-Soluble Extractives in Western Redcedar and Redwood

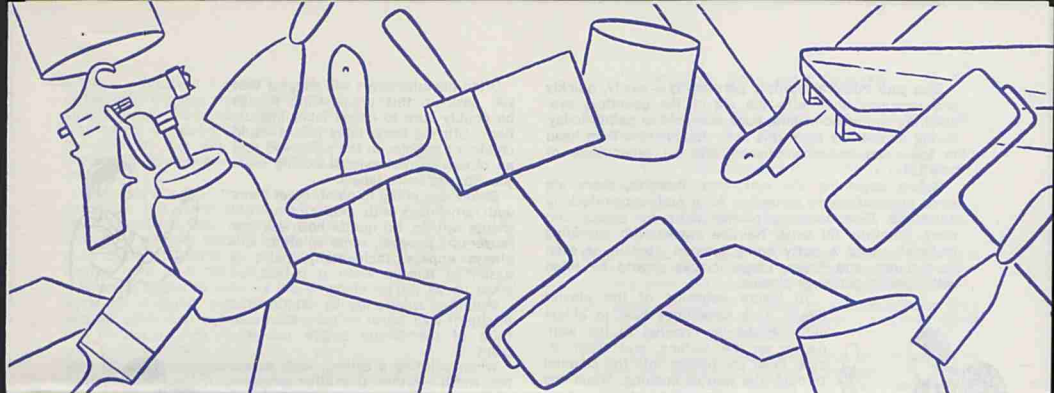
Suggestions for Using the Information:

1. Personal home improvement.
2. Reference material.
3. Resource material for news articles, radio and TV programs.
4. Resource material for special interest meetings.
5. Paint sheets may be made available to paint stores.
6. "Do-your-own-painting" training schools.
7. Club programs for selected groups.

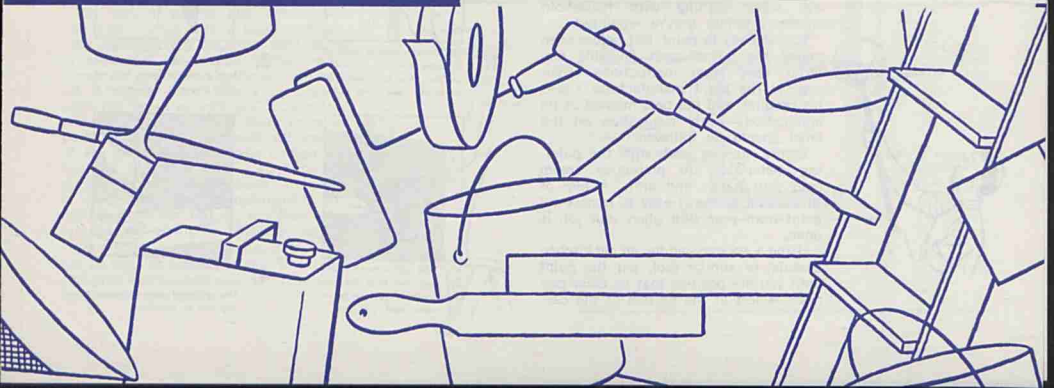
Other Sources of Information:

All local paint stores
Paint manufacturing companies

Program Planners: Charlotte Womble and W. C. Warrick



INDOOR PAINTING



Give your home a multiple personality—easily, quickly and inexpensively—with the aid of the countless eye-catching and mood-making hues available in paints today. Giving almost any room this color treatment—from head to toe—can be accomplished with an expenditure of only \$10.

Before beginning the make-over, however, there are some preparations to remember for a professional-looking paint job. First, examine plaster walls for cracks and mars. Carefully fill small hairline cracks with spackling material, using a putty knife, kitchen utensil, or even your thumb and finger. Larger cracks should be filled with special patching plaster.

To insure adhesion of the plaster fillers, it is sometimes best to chisel out a triangular channel in the wall, narrow on the surface, and wider inside. Feed the plaster into the channel through the narrow opening. When the patching is thoroughly dried simply sand the surface smooth, and you're ready to apply undercoating or primer.

If your ceiling is quite high, it will be necessary to rig a raised platform from which you can easily reach its surface. Two sturdy ladders and a wide plank will serve your purpose. Always place your plank so it extends at least a foot beyond the step of the ladder on which it rests. Always make sure that the side spreaders of the ladders are completely open and locked in position.

Next, remove all hardware from doors and windows, loosen your lighting fixtures, or cover these areas with masking tape and scraps of paper or cloth. This will make your painting job easier and will give you a chance to clean and polish the metal until it looks like new.

Dust your walls thoroughly with a dry mop, except in the kitchen or bathroom, where walls are likely to have grease, or steamed-on dirt. These walls will need washing with household cleansers before they're repainted.

You're ready to paint, but before even prying the lid off your finishing material, read label instructions—thoroughly. The paint manufacturer knows his product, and the best method of its application—every suggestion on the label should be followed.

Before starting work with the painting materials, rub protective cream onto your hands and arms. A film of this cream makes it easy to remove all paint from your skin when your job is done.

Using a wooden paddle, an old kitchen spatula, or similar tool, stir the paint until you are positive that no color pigment is left at the bottom of the can.

Often manufacturers will suggest that you pass up this pre-painting stir so be doubly sure to check label instructions. Stirring some latex paints could create air bubbles in the paint and ruin an otherwise professional-looking paint job. So read those labels.

Before beginning to paint, cover floors and furnishings with drop cloths—old sheets will do. No matter how well you "cover-up" however, some splatters will always appear. Incidentally, paint is easier to remove when it is wet, so clean up as you go along.

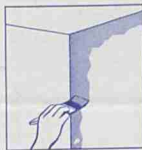
Minimize splattering by dipping the bristle of your brush no more than one-third of the bristle length into the paint.

When painting a ceiling, work across the width—rather than the length—of the room. This enables you to begin a second lap before the first has completely dried. Never try to paint a strip more than two feet wide both for lapping, and for safety purposes. And don't be tempted to try and move ladders with paint, brush or roller aboard or you may find yourself painting the floor as well.

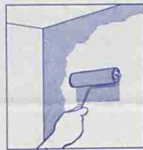
The painting of acoustical tile on ceilings can be done successfully with



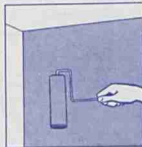
When using a roller:



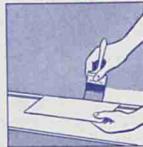
1. First, brush a strip of color just below the ceiling line for width of two feet. Also paint next to corner at left—from ceiling to floor.



2. With a newly loaded roller, always begin by rolling upward. Start a short distance from finished area and work toward it.



3. After area about two feet wide and three feet deep has been coated with up and down strokes, roll coater back and forth.



4. At bottom of wall, brush paint onto areas roller couldn't reach. Use cardboard guard when brushing next to woodwork.

a roller, a brush or a spray gun. If any of the cells become clogged with paint, simply prick them open with a pin. Flat paint, somewhat thinned, should be used for this job but be sure to check with your dealer for thinning instructions.

When you begin on the walls, start at an upper left hand corner and work down toward the floor. Follow this same procedure whether using a brush, roller—or both. If you're a southpaw of course, work from right to left.

When it comes to tackling the woodwork use a round, one-inch brush for window sash, and a two or three-inch one for the balance of the trim. When you paint panelled doors, it's a good idea to coat the panels first, then the center rail. The top and bottom rails come next—then the verticle stiles, painting the edges last.

A beautifully painted room deserves a gleaming, well-kept floor. The treatment it should be given depends on its condition and on the type of finish it has previously had. If it's in excellent shape, for instance, just clean and re-wax. If it's in comparatively good condition, but has some worn spots to be retouched, remove all traces of wax before patching it up.

If the floor has been finished in a penetrating sealer, it's a simple matter to touch up the worn areas in the same color. Shellac, also, may be patched successfully. Worn areas in varnished floors, however, sometimes require the removal of all of the old coating.

When you decide to renew an entire floor coating, you'll find that it's not at all difficult to do the job with a rented sanding machine. Such a machine is easy to operate, but remember to sand with the grain of the wood until you have a clean, smooth surface.

You can, of course, also remove the old floor coating with a paint and varnish remover, but be sure ventilation is good and keep open flames away. Brush the remover onto the surface and let it stand about twenty minutes—until the finish is softened. Scrape the residue off with a broad putty knife or paint scraper. Then banish all traces of any wax the remover may contain by washing the floor with turpentine or mineral spirits. Pay special attention to cracks and crevices during this operation. Remover left on the floor may prevent the drying of finishing coats.

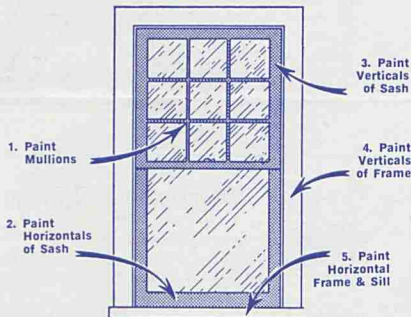
Your floors redone—apply a layer or two of wax for protection and beauty—and your room, or your entire home, is fresh and new again.



COLOR DO'S AND DON'TS

- DO** use light colors in a small room to create an impression of size.
- DON'T** use a bright color in a large area or the walls will detract from otherwise decorative furnishings and accent pieces.
- DO** have continuing color flow through your home—from room to room—using harmonious colors in adjoining areas.
- DON'T** paint woodwork and trim of a small room in a color which is different from the background color or the room will appear cluttered, and even smaller.
- DO** paint ceilings of a room in a deeper color than walls, if you want it to appear lower—and in a lighter shade for the opposite effect.
- DON'T** paint unfortunate architectural features—such as radiators, pipes and similar projections—in a color which contrasts with walls or they will be emphasized.
- DO** study color swatches in both daylight and night-light, because colors often change under artificial lighting.
- DON'T** choose neutral, negative or “non-colors,” just because they are safe, or you may forfeit attractive decorating.
- DO** emphasize horizontal lines in a room that is too tall, and emphasize vertical lines in a room with a low ceiling.
- DON'T** use glossy paints on walls or ceilings of living areas since such a surface creates glare.

When painting windows:



What to use . . . and where

PLASTER WALLS & CEILING	✓	✓	✓	✓	✓															✓
WALL BOARD	✓	✓	✓	✓	✓															✓
WOOD PANELING	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
KITCHEN & BATHROOM WALLS	✓	✓	✓	✓	✓															✓
WOOD FLOORS						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
CONCRETE FLOORS							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
VINYL & RUBBER TILE FLOORS								✓	✓	✓	✓	✓	✓	✓	✓	✓				
ASPHALT TILE FLOORS									✓	✓	✓	✓	✓	✓	✓	✓				
LINOLEUM							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
STAIR TREADS							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
STAIR RISERS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
WOOD TRIM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓
STEEL WINDOWS	✓	✓	✓	✓	✓															✓
ALUMINUM WINDOWS	✓	✓	✓	✓	✓															✓
WINDOW SILLS				✓			✓													
STEEL CABINETS	✓	✓	✓	✓	✓															✓
HEATING DUCTS	✓	✓	✓	✓	✓															✓
RADIATORS & HEATING PIPES	✓	✓	✓	✓	✓															✓
OLD MASONRY	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NEW MASONRY	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓



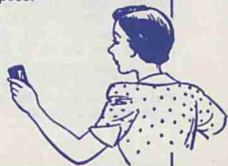
Black dot indicates that a primer or sealer may be necessary before the finishing coat (unless surface has been previously finished.)

PLAT PAINT
 SEMI-GLOSS PAINT
 ENAMEL
 RUBBER BASE PAINT
 CASEIN
 EMULSION PAINT
 INTERIOR VARNISH
 SHELLAC
 WAX (LIQUID OR PASTE)
 STAIN
 WOOD SEALER
 FLOOR VARNISH
 FLOOR PAINT OF ENAMEL
 CEMENT PAINT OF ENAMEL
 ALUMINUM PAINT
 SEALER OR UNDERCOATER
 METAL PRIMER

The Light Reflectance of Various Colors

Do you wish to make the most of the natural and artificial light within a room? Or—do you wish to soften the skylare that sometimes enters through large glass areas? Remember, dark colors absorb light while light ones reflect it. This chart will help you determine the colors that will best serve your purpose.

White	80%	Light Buff	56%	Light Green	41%
Ivory (Light)	71%	Peach	53%	Pale Blue	41%
Apricot-beige	66%	Salmon	53%	Deep Rose	12%
Lemon Yellow	65%	Pale Apple Green	51%	Dark Green	9%
Ivory	59%	Medium Gray	43%		



WOOD FINISHING: PAINTING OUTSIDE WOOD SURFACES

By following a few simple, tried-and-tested procedures, the average homeowner can do a good job of painting his house--or repainting it. When painting a wood house there are three recommended steps:

Step 1 - Water-Repellent Preservative Treatment

Protect wood against the entrance of rain and heavy dew by applying a water-repellent preservative solution before painting. The solutions are available from most paint and building supply dealers. There are two ways of providing this protection:

1. In a new house, use lumber treated by the manufacturer and re-treat cut ends on the job by brushing on the solution. It is especially important that window sash and trim be treated.
2. Apply to untreated wood on the job by brushing. Care should be taken to brush well into lap and butt joints of trim and siding. Old houses can be treated effectively after paint has been removed. Allow 2 warm, sunny days for adequate drying of the treatment before painting.

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Step 2 - Priming

The first or prime coat is the most important coat of paint to be applied to wood. For the prime coat, and for spot priming bare wood areas when repainting, use a linseed oil-base paint with pigments that do not contain zinc oxide. Federal Specification TTP-25a describes such a primer. Apply to a thickness of 1.5 to 2 mils or 0.0015 to 0.002 inch. One should not be able to see the grain of the wood after priming. Beginning painters tend to thin and spread paint too thinly. Follow the spreading rates recommended by the manufacturer. This rate should be approximately 400 to 450 square feet per gallon with a paint that is at least 85 percent solids by weight. The prime coat should not be porous, which would permit capillary flow of dew and rain through the paint film.

If the second coat is to be an exterior emulsion or latex paint, priming is necessary also over new wood or overpainted surfaces that are badly weathered.

Step 3 - Finish Coats Over Primer

The following points should be kept in mind for best results:

1. Use a high-quality paint. Finish coats can contain zinc oxide pigment and can be of the linseed oil, alkyd, or latex type.
2. Apply two topcoats, particularly to areas that are fully exposed to the weather such as the south side of the house. A total of three coats (primer and two topcoats) should result in an optimum thickness of 4-1/2 to 5 mils. A two-coat job of low-quality paint may last only 3 years, but a three-coat job with good-quality paint may last as long as 10 years.
3. To avoid intercoat peeling of paint, apply topcoats within 2 weeks after the primer. Do not prime in the fall and delay topcoats until spring. It is better to treat with water-repellent preservative and delay all painting until spring.
4. To avoid temperature blistering, do not apply oil-base paints on a cool surface that will be heated by the sun within a few hours. Follow the sun around the house.
5. To reduce the wrinkling and flattening of oil-base paint and watermarks on latex paint, do not paint late in the evenings of cool spring and fall days when heavy dews frequently form.

WOOD FINISHING: MILDEW ON HOUSE PAINTS

Description of Mildew

Mildew, a discoloration on the surface of house paint, is caused by certain stain fungi (small forms of plant life). The commonest species are black, but some are red, green, or other colors. Mildew fungi grow most extensively in warm humid climates. They grow on paint on both sunny and shaded sides of buildings, but particularly on walls behind trees or shrubs where movement of air is restricted.



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Mildew fungi can be distinguished from dirt by examination under a magnifying glass. In the growing stage, when the paint surface is damp or wet, the fungus is characterized by its threadlike growth. In its dormant stage, when the surface is dry, it has numerous egg-shaped spores; by contrast, granular particles of dirt are irregular in size and shape.

How Paint Makeup Affects Mildew

Some paints are more vulnerable than others to attack by mildew fungi. Zinc oxide, a common paint pigment in top coats, mildly inhibits the growth of these fungi, thus paints that contain an appreciable amount of zinc oxide are not so vulnerable to mildew. Lead pigments have a lesser inhibiting effect, and titanium pigments have very little inhibiting effect.

Mildew develops on soft paints more readily than on hard ones; for example, it progresses more readily on exterior house paint than on exterior enamel. Paints containing linseed oil without zinc oxide pigment or a fungicide are very susceptible to mildew. Porous latex paints without fungicide applied over a primer with linseed oil will develop severe mildew in warm, damp climates.

Prevention and Cure

1. In warm damp climates where mildew occurs frequently, use a paint containing zinc oxide for top coats over the primer coat.
2. For mild cases of mildew, use a paint containing mildewcide (a poison for mildew fungi). Frequently mildewcide can be purchased at a paint store and mixed into the paint.
3. Ideally, to cure mildew, remove the mildew from the old paint surface and apply a paint that contains mildewcide.
4. To kill the fungi and clean areas for repainting, scrub the paint surface with the following solution:

3 ounces (2/3 cup) trisodium phosphate
1 ounce (1/3 cup) household detergent
1 quart (5 percent) sodium hypochlorite (household bleach)
3 quarts warm water or enough to make 1 gallon

Scrub with a fairly soft brush. When clean, rinse thoroughly with fresh water from a hose. Avoid splashing the solution on shrubbery or grass; it may have harmful effects. (This treatment should be effective except for the most stubborn cases).

5. After removing the mildew, and before contamination occurs, repaint with a zinc oxide paint or a paint containing a fungicide.

WOOD FINISHING: CROSS-GRAIN CRACKING OF OIL-BASE HOUSE PAINTS

The Problem of Cross-Grain Cracking

House paints applied by brush have a grain that runs in the direction of the brush strokes. Usually paint cracks in this direction. Cross-grain cracks, however, run across the grain of the paint. This defect results from paint coatings that are too thick. Usually thick paint films result from too frequent or too heavy paint applications. Cross-grain cracking is a serious problem. It not only leads to unsightly scaling, but to remedy it requires the complete removal of the old paint.

Since removal of paint is costly and slow, it is much better to avoid cross-grain cracking than have to repair it. Cross-grain cracking can be avoided by adhering to a practical paint-maintenance schedule.

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Prevention

From research at the Forest Products Laboratory, the following procedures are suggested to help eliminate cross-grain cracking caused by excessive paint thickness:

1. Paints containing zinc oxide pigment are usually more subject to cross-grain cracking because they wear at a slower rate and tend to crack across the grain in thinner coatings than paints that do not contain zinc pigments.
2. Follow the paint manufacturer's recommendations for spreading rates when applying paint.
3. Do not repaint unweathered, protected areas, such as porch ceilings, as often as weathered areas. Instead, include them in every other repaint job. However, if repainting, wash these unweathered areas to remove the water-soluble matter that collects and interferes with the adhesion of freshly applied paint. Then rinse after washing and allow to dry before painting.



WOOD FINISHING: TEMPERATURE BLISTERING OF HOUSE PAINTS

What Is Temperature Blistering

Paint blisters are bubble-like swellings that occur on the surface of paint film. They can be temperature blisters, moisture blisters, or glossy-back blisters. Their causes and cures are not the same.

Temperature blisters do not contain water as do moisture blisters. Glossy-back blisters, as their name implies, have a glossy material on their backs; temperature blisters do not. Temperature blisters occur within a few hours or 1 or 2 days after painting, and, only in the last coat of paint; glossy-back blisters occur after a longer period and between layers of old paint.

Causes

Temperature blistering is usually caused by pressure that results when liquid thinners in the fresh paint change to vapors. If a thin dry skin has formed on the outer surface of the fresh paint film, the vapors are trapped in the film. A rapid rise in temperature, as when the direct rays of the sun fall on freshly painted siding, will cause the vapors to expand and produce blisters.

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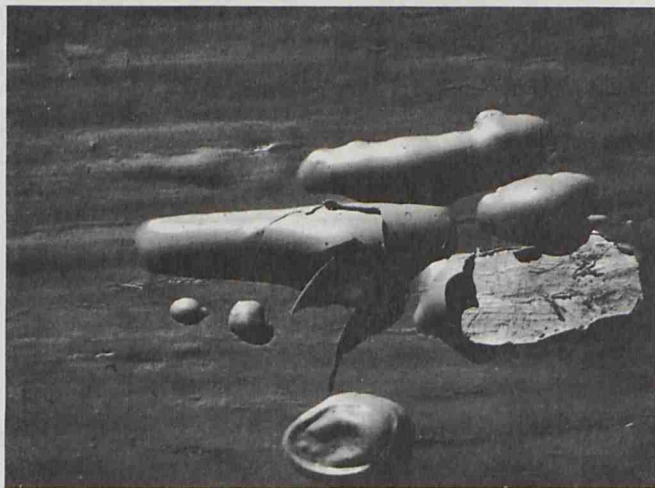
Paints of a dark color absorb more heat; thus they are more subject to temperature blistering than white paints. Thick coats are more likely to blister than thin coats. Painting in early spring or late fall at relatively low temperatures when the paint is quite viscous frequently produces a thick coat of paint.

Avoiding Temperature Blistering

Paint should not be applied to a surface that is shortly to become warmer. "Follow the sun around the house," is wise procedure. Thus the north side of the building should be painted early in the morning, the east side late in the morning, the south side well after noon, and the west side later in the afternoon. When painting in cold weather, apply the paint as thin as possible.

First Aid for Blisters

But what if blistering still occurs? What can you do? About the only remedy for surfaces with temperature blisters is--let the paint dry for a few days, scrape off the blisters (by this time they will probably have collapsed), smooth the edges with sandpaper, and spot paint the area.



Repainting

A repaint job is only as good as the old paint beneath it. Here are some general rules concerning repainting:

1. Before repainting, wash old, glossy, and unweathered surfaces or roughen well with steel wool to remove contaminants which may interfere with adhesion of the next coat. Failure to do this is a common cause of intercoat peeling.

2. Repaint only when the old paint has weathered to the extent that it no longer covers or protects the wood. Where paint is peeling and wood surfaces are exposed, remove loose paint from adjacent areas. Treat with WRP and spot prime with the zinc-free house-paint primer. Remove excessive chalk or old paint with steel wool. The paint in protected areas may need only cleaning by washing.

3. For the topcoats, use a good-quality exterior paint, vinyl or acrylic latex or oil-base, known to give good service.

WOOD FINISHING: WEATHERING OF WOOD

How Wood Weathers

Weathering of wood involves changes in color, roughening and checking of the surfaces, loss of surface fibers, and warping. Without paint or treatment, wood exposed outdoors, such as siding and trim on buildings, changes materially in appearance in a few months or years. Then it stays almost unaltered for a long time.

The time required to produce a fully weathered appearance will depend on the severity of exposure to sun and rain. Attack of wood surfaces by micro-organisms is recognized also as a factor contributing to the degradation process of weathering.

The color of wood is affected very soon by exposure to weather. Generally dark-colored woods become lighter and light-colored woods become a little darker. As the weathering continues, all woods become a gray color. Only the

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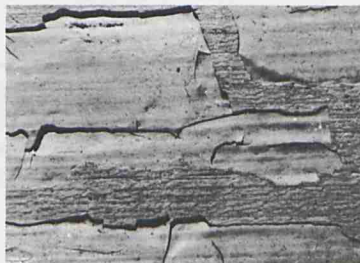
PART II.--Photochemical Degradation of Wood, by Martin A. Kalnins. Available from the U.S. Forest Products Laboratory, Madison, Wis., 53705.

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WOOD FINISHING: INTERCOAT PEELING OF HOUSE PAINTS

Description

Intercoat peeling is the peeling of paint between coats rather than down to the bare wood. It may develop shortly after paint is applied, after several months, or even a year after application. Intercoat peeling usually involves only the last coat of paint, or the last two coats, if two coats were used in repainting.



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Causes

The following conditions may lead to intercoat peeling:

1. Allowing too much time between coats of paint in a new paint job. Applying a primer coat in the fall and the finish coat the following spring or summer is a frequent cause of intercoat peeling.
2. Inadequate cleaning and removal of natural degradation products of paint from surfaces that are protected from rain and sun, such as overhang areas and porches.

Prevention

To prevent intercoat peeling:

1. Do not delay longer than 2 weeks between coats of paint.
2. Areas protected from sun and rain, such as sidewalls protected by overhang and porches, tend to collect water-soluble materials that interfere with the adhesion of the new paint. These areas should be thoroughly washed or sanded before painting to remove the gloss and degradation products. Frequently, paint in protected areas does not need repainting, but should only be washed.

Cure

Armed with a knowledge of the causes of intercoat peeling, the homeowner can easily avoid the problem. But what can be done with paint that has peeled between coats? Applying another coat of paint will not solve the problem. The paint layer that is peeling must be removed, the surface cleaned well, and then repainted. This is the only reliable cure for intercoat peeling.

WOOD FINISHING: DISCOLORATION OF HOUSE PAINT BY BLUE STAIN

The Problem of Blue Stain

Blue stain is a blue-black discoloration of wood that may discolor paint applied over it. Blue stain is caused by certain fungi (small forms of plant life) that grow in sapwood and use parts of the sapwood for their food. It is not decay, although the conditions that favor growth of blue stain fungi very often lead to infection by decay-producing fungi. Fungi need moisture to live. Although wood normally contains some moisture, tests have shown that blue stain fungi can live in wood only if it contains at least 20 percent moisture.

Wood in service with proper design and maintained correctly will not normally reach a moisture content of 20 percent. If the wood surfaces are exposed to water constantly, such as rain, dew, or water vapor condensation, moisture content may become high enough to support blue stain fungi. The same may be true if wood is in contact with the ground.

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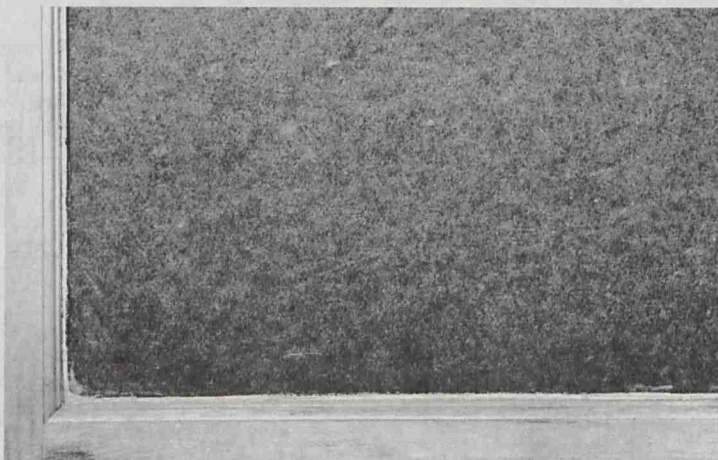
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Prevention and Cure

1. If lumber contains blue stain, but in use its moisture content will not exceed 20 percent, it can be painted without danger of further staining. If moisture content exceeds 20 percent, blue stain may resume growth and discolor new paint.
2. Keep moisture out of wood. Treat unpainted wood with a water-repellent preservative (WRP).
3. In building, provide for adequate roof overhang, eave troughs, and downspouts. In the already built house, check eave troughs and downspouts for leaks, and repair or replace if needed.
4. Prevent condensation by providing a vapor barrier on the interior side of exterior walls.
5. Remove paint from the joints on wood siding or window sash that have blue stain. Treat the wood at the joints with a WRP before repainting.
6. Treat with a 5 percent sodium hypochlorite solution (ordinary household bleach). While this may remove the discoloration of the blue stain fungi, it is not a permanent cure.
7. Blue stain can be removed by sanding if the stain does not penetrate too deeply into the wood.



WOOD FINISHING: DISCOLORATION OF HOUSE PAINTS BY WATER-SOLUBLE EXTRACTIVES IN WESTERN REDCEDAR AND REDWOOD

What Are Extractives

Water-soluble extractives are substances that occur naturally in western redcedar and redwood. It is to these substances that the heartwood of these species owes its attractive color, good stability, and natural decay resistance. These are the very factors that make redcedar and redwood desirable for house siding.

How Extractives Discolor Paint

The first step in discoloration occurs when the extractives are dissolved and leached from the wood by water. After the solution of extractives reaches the painted surface, the water evaporates and deposits the extractives as a reddish-brown stain.

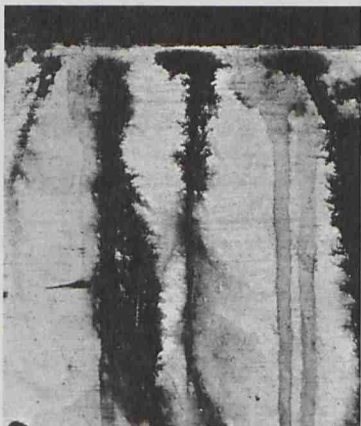
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Extractives can be brought to the paint surface from behind the siding by water, which frequently runs out from the lap joint between boards. Also, rain and dew will penetrate thin porous paint coatings, dissolving the extractives and bringing them to the surface when drying. When wetting occurs from the back of the siding, the discoloration is usually a streaked pattern formed by the solution of extractives running down the face of the painted board from the lap joint. The discoloration produced by rain or dew penetrating the thin porous paint, instead of the streaked pattern, is usually overall or diffused, and follows the pattern of dew on the siding.



Rundown or streaky discoloration produced by water entering from the back of siding.



Diffused discoloration caused by rain and dew penetrating a thin porous paint film.

Some Sources of Water That Move Extractives

Water from the back of painted siding can be:

1. Water vapor from within the house that condenses in the exterior walls and attics during cold weather. The vapor might be from
 - a. Cooking
 - b. Humidifiers
 - c. Unvented clothes dryers
 - d. Bathing
 - e. People

2. Water draining into exterior walls from

- a. Roof leaks
- b. Faulty eave troughs
- c. Ice dams
- d. Wind-driven rain and snow at louvers

Water from the front of painted siding can be:

1. Rain and dew that penetrates porous or thin paint
2. Rain and dew that penetrates joints in the siding
3. Water from faulty roof drainage and eave troughs
4. Water from melting ice dams

Preventing Discoloration

Discoloration caused by extractives can best be prevented by keeping water from getting into wood siding. The following measures should be taken:

1. Reduce condensation of water in side walls by blocking movement of water vapor through the walls.
 - a. Exterior walls and ceilings of houses without a vapor barrier should be painted on the inside with a vapor-resistant paint, such as aluminum paint.
 - b. New houses should be constructed to include effective vapor barriers, such as aluminum foil, polyethylene film, or heavily asphalted paper.
2. Maintain a uniform layer of paint 4 to 5 mills thick on wood surfaces. This is difficult to attain on rough surfaces such as machine-grooved shakes. When porous latex or low-luster alkyd paints are used, they should be applied over a nonporous coat of primer paint with a linseed oil base.
3. Repair faulty roof drainage and eave troughs.
4. Apply water-repellent preservative at lap and butt joints in wood siding.
5. Reduce formation of ice dams by cutting down heat loss with increased insulation in ceilings and by removing snow from edges of roofs.
6. Reduce water vapor in the house by using exhaust fans in bathroom and kitchen.
7. Vent clothes dryer to outdoors.
8. Limit use of humidifiers during cold weather.
9. Provide adequate ventilation for attic spaces.

Removing Discoloration and Repainting

Find the source of the water that is causing the discoloration and take the necessary protective or repair measures. Usually the discolorations will then weather away in a few months. If the stains are allowed to remain in protected areas, however, they will become darker and more difficult to remove.

Wash discolored areas soon after they appear either with water or a mild detergent solution. Paint cleaners, trisodium phosphate solution, and household cleansing products can also be used effectively for darker stains.

Repaint only when needed for adequate protection and cover for the wood. Do not allow excessively thick layers of paint to build up by applying new paint to conceal discoloration.

STORAGE: MAKE YOUR OWN KITCHEN CABINET

Teaching Objective:

Low-income families to learn to use skills, time and energy in making storage cabinets for the kitchen.

Suggested Use of Material:

Workshops for low-income people
Individual home improvement

Teaching Aids:

1. Bulletin: "Make Your Own Kitchen Cabinet" (mimeographed)
2. Evaluation sheet

Lesson Planner: Genevieve K. Greenlee

MAKE YOUR OWN KITCHEN CABINETS

The purpose of this leaflet is:

1. To help North Carolina homemakers have a more convenient kitchen with adequate space to store utensils and other equipment.
2. To provide simple clear-cut directions on how to develop the skill to build your own kitchen cabinets.
3. To help homemakers to save money and provide the know how to make better use of storage space to help keep the kitchen orderly and efficient.

The average North Carolina homemaker with a limited income may find it profitable to take advantage of the opportunity to make her kitchen more convenient through the use of minimum standards for comfortable living by making adequate storage cabinets.

The kitchen is one of the most used rooms in the house. Homemakers use the kitchen for preparing foods, dining, entertaining, serving, child care, laundry, business for planning and keeping records and many other activities.

The major functions of the kitchen have not changed; therefore, it is still the room where you should find the refrigerator, sink and the range. Activities that are performed at these places have been conveniently arranged in four "areas or centers" to help the homemaker to save time, steps, and work.

The basic requirements for a convenient kitchen is to have four "areas or centers". The kitchen "areas or centers" are:

The refrigerator and food preparation center

This center includes a special place to store foods. It also serves as a working place to mix foods and store cookware.

The sink and clean-up center

This center includes a place to wash dishes, pots, pans, and other cooking equipment. It is a convenient place to wash, peel, scrape and prepare foods to be cooked. This center supplies hot and cold water for kitchen and other household use.

The range and cooking center

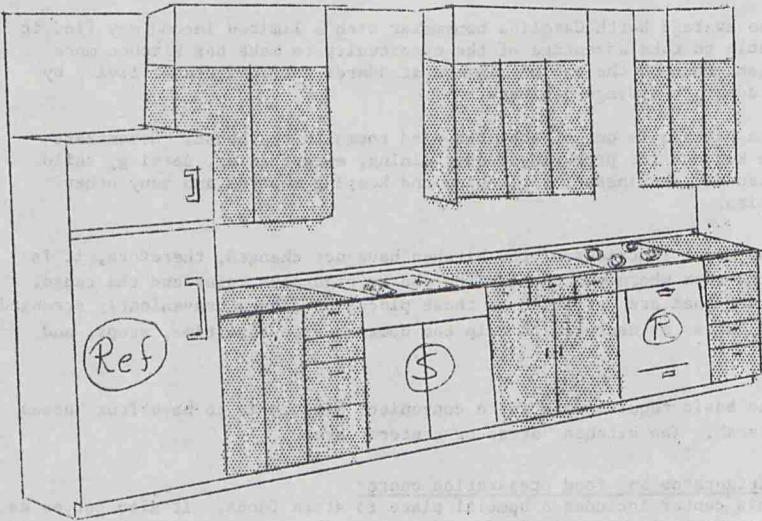
This center includes the stove, work counter, and storage space for things used at the stove, such as: coffee pot, toaster, serving trays, dishes, kitchen tools and other utensils.

The serving and eating center

This center is where the family enjoys eating and socializing.

Here are several arrangements of well planned kitchens with work areas or centers that you may use as a guide to help make your kitchen more convenient and orderly.

ONE WALL KITCHEN ARRANGEMENT

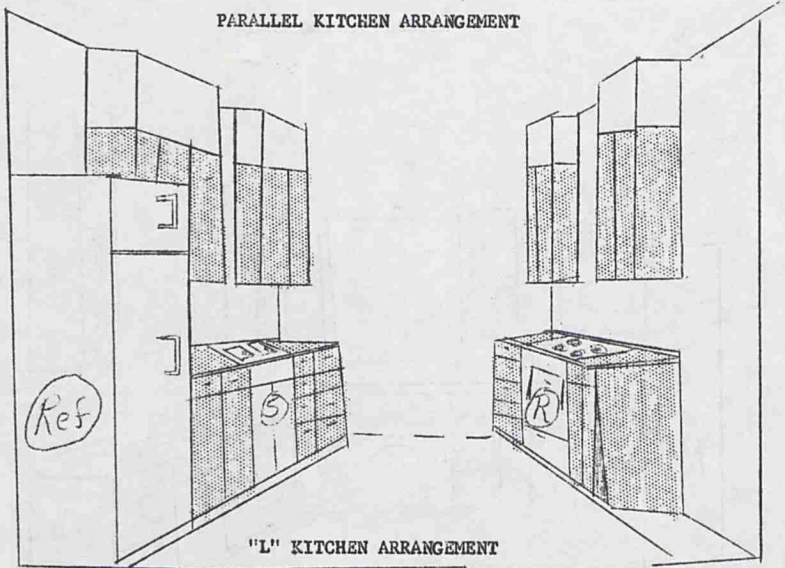


Ref - Refrigerator

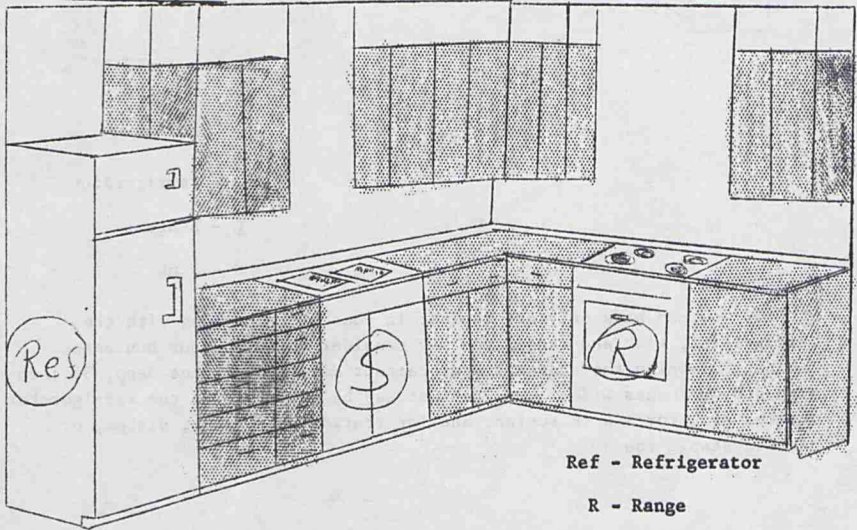
R - Range

S - Sink

PARALLEL KITCHEN ARRANGEMENT



"L" KITCHEN ARRANGEMENT

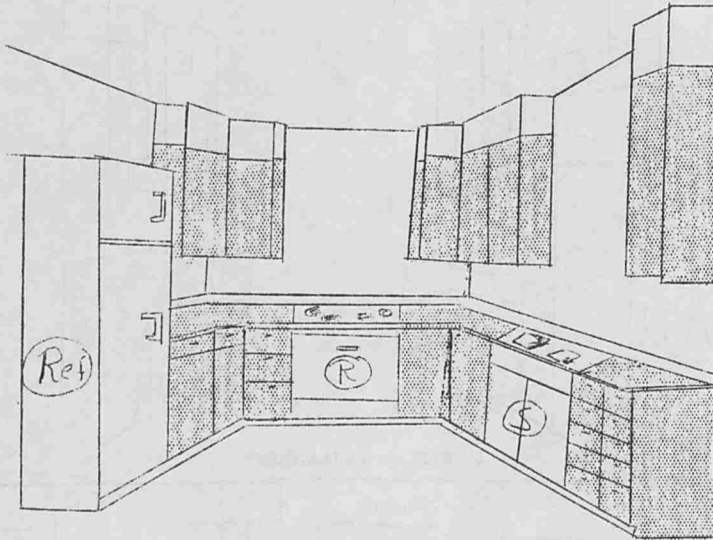


Ref - Refrigerator

R - Range

S - Sink

' U' KITCHEN ARRANGEMENT



Ref - Refrigerator

R - Range

S - Sink

If you can have only one cabinet in your kitchen along with the refrigerator, sink and range, you may consider building your own base cabinet, of which the standard measurements may be 24 inches deep, 36 inches high and 48 inches wide. This cabinet may be used between the refrigerator and the sink for a work surface and for storing pots, pans, dishes, or certain staple foods.

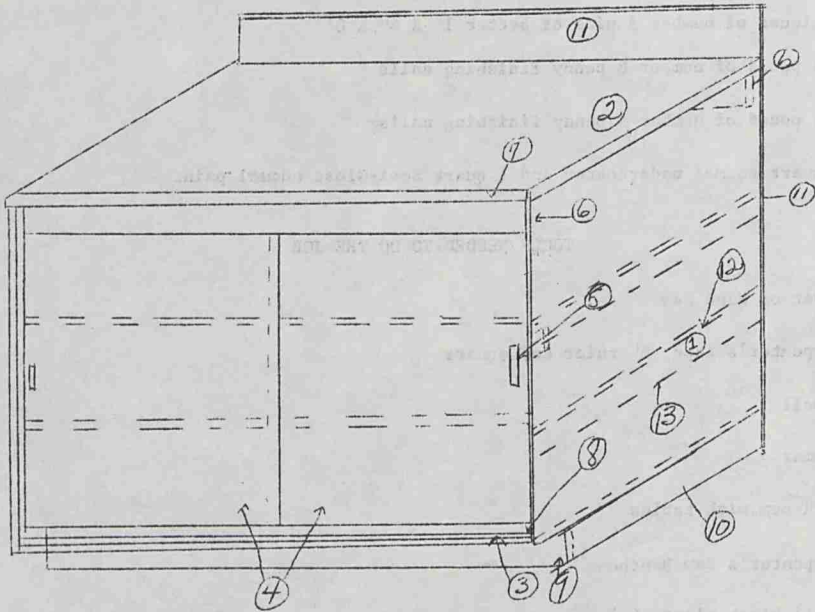
INEXPENSIVE BUILDING MATERIALS NEEDED

- 2 pieces of "Particle board Underlayment" or plywood sheathing 4' X 8' X 5/8"
- 3 pieces of number 3 pine or better 1" X 4" X 8"
- 1/4 pound of number 6 penny finishing nails
- 1/4 pound of number 3 penny finishing nails
- 1 quart enamel undercoater and 1 quart Semi-Gloss enamel paint

TOOLS NEEDED TO DO THE JOB

- Power or Hand Saw
- Carpenter's tape, 6' ruler and square
- Pencil
- Hammer
- Workroom with tables
- Carpenter's Saw Benches
- Small block plane (6")
- Plastic wood and putty knife
- Carpenter's Work Benches
- Nail Set
- Screwdriver
- Paint brushes
- Turpentine for paint brushes
- Sandpaper (2 sheets each of medium and fine)

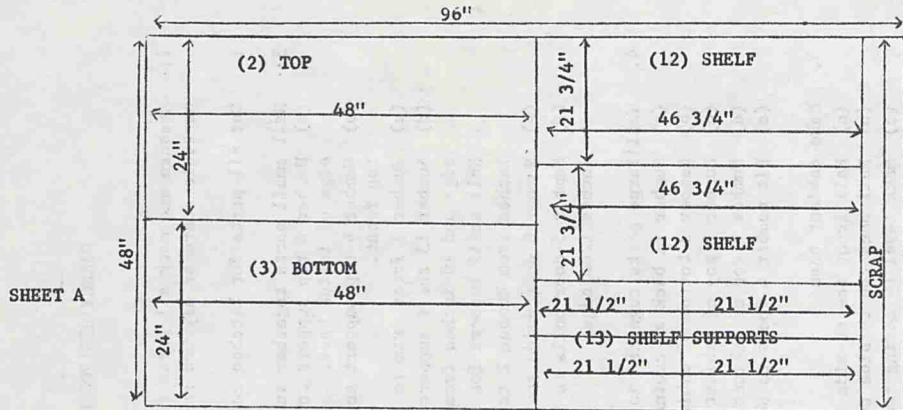
STORAGE CABINET FOR KITCHEN UTENSILS



NUMBER OF PARTS

NAME OF PARTS

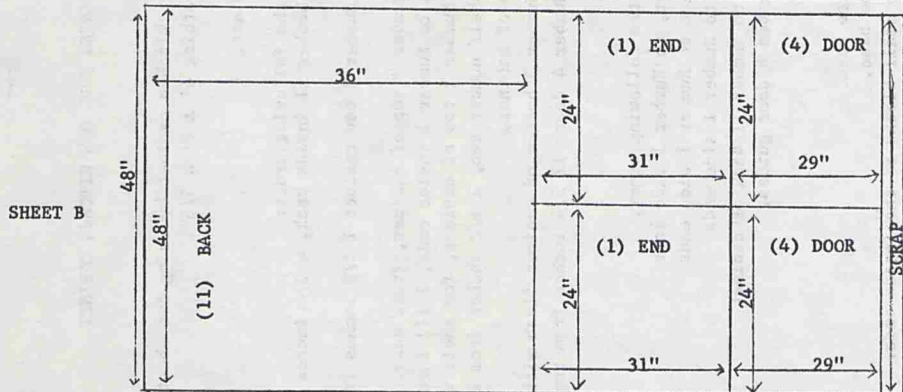
1	Ends (2) 24 X 31"
2	Top (1) 24 X 48"
3	Bottom (1) 24 X 48"
4	Door (2) 24 X 29"
11	Back (1) 36 X 48 X 5/8"
12	Shelves (2) 21 3/4 X 46 3/4"
13	Shelf Supports (4) 3/4 X 2 1/4 X 21 1/2"
	<u>Base</u>
5	Pulls (2) 3/4 X 3/4 X 3"
6	Support Top (2) 1 X 4 X 46 3/4"
7	Front Trim (1) 1 1/2 X 3/4 X 48"
8	Door Guide (1) 3/4 X 3/4 X 46 3/4"
9	Front Toe (2) 1 X 4 X 48"
10	Side Toe Base (2) 1 X 4 X 19 1/2"



CUT THE FOLLOWING PIECES:

SHEET A:

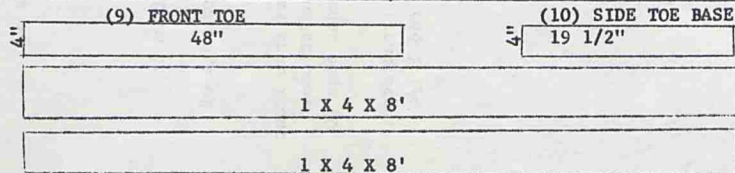
- (2) TOP 24 X 48"
- (3) BOTTOM 24 X 48"
- (12) SHELVES (2)
21 3/4 X 46 3/4"
- (13) SHELF SUPPORTS (4)
3/4 X 2 1/4 X 21 1/2"



SHEET B:

- (11) BACK 36 X 48 X 5/8"
- (1) SIDES OR ENDS (2)
24 X 31"
- (4) DOORS (2) 24 X 29"

BASE LUMBER:
9, 10, 6, 7,
8, 5.



BASE LUMBER:

- (9) FRONT TOE 1 X 4 X 48"
- (10) SIDE TOE BASE
1 X 4 X 19 1/2"
- (6) TOP SUPPORTS (2)
1 X 4 X 46 3/4"
- (7) FRONT TRIM
1 1/2 X 3/4 X 48"
- (8) DOOR GUIDE
3/4 X 3/4 X 48"
- (5) PULLS (2)
3/4 X 3/4 X 3"

DIRECTIONS FOR MAKING YOUR OWN KITCHEN CABINET

1. Measure and mark all parts for kitchen cabinet by using two sheets of particle board or plywood sheathing 4' X 8' X 5/8".
2. Cut all parts for kitchen cabinet.
3. Nail small parts together in the following order:
 - (a) Number 6 top support to Number 11 inside back, 4 3/4 inches from top edge of inside back.
 - (b) Number 6 top support to Number 2 top cabinet 1 5/8 inches from edge of top front.
 - (c) Number 7 front trim to Number 2 top of cabinet, front edge.
 - (d) Number 13 shelf supports to Number 1 inside ends, 2 1/2 inches from front edge and 10 inches from Number 2 top of cabinet, for shelf number one. Nail shelf support for shelf number two, 2 1/2 inches from front edge 20 inches from Number 2 top of cabinet.
 - (e) Number 8 door guide to Number 3 bottom of cabinet flush with front edge.
 - (f) Number 5 door pulls to Number 4 doors 12 3/4 inches from top and 1 1/4 inches from edge.
4. Nail large parts together in the following order:
 - (a) Number 11 back of cabinet, to Number 1 side ends
 - (b) Number 3 bottom of cabinet to Number 1 side ends
 - (c) Number 2 top of cabinet to Number 1 side ends
 - (d) Number 2 top of cabinet to Number 11 back of cabinet
 - (e) Fit number 4 doors to Number 8 door guides.
5. Make cabinet base:
 - (a) Nail front toe to side toe base.
 - (b) Nail back toe to side toe base.
 - (c) Make level by adding two small blocks to the inside ends.
 - (d) Set cabinet on base and nail securely.
6. Paint
 - (a) Use one coat of enamel undercoat.
 - (b) Fill all cracks with plastic wood, allow to dry and sand with grain of wood.
 - (c) Use one or more coats of semi-gloss enamel paint.
 - (d) Top of cabinet may be covered with linoleum, sheet vinyl, laminated plastic, or painted.

EVALUATION FOR: MAKE YOUR OWN KITCHEN CABINET

1. Read and check (X) the following statements, in the column which best expresses your feelings:

	<u>Yes</u>	<u>No</u>
a. Adequate storage space in the kitchen will help the homemaker to keep the kitchen orderly and efficient.	X	
b. A homemaker can save time and energy if she uses kitchen cabinets for storing wood and coal.		X
c. A homemaker will save money if she takes advantage of the opportunity to learn the skill involved in making her own kitchen cabinets.	X	
d. Planned storage for kitchen utensils will help to make the homemaker happy.	X	
e. The kitchen is used only for formal parties.		X

2. Check (X) the basic requirements for a convenient kitchen:

- a. The refrigerator and food preparation center serve as a place to
 Wash dishes, pots and pans.
 Store foods, mix foods and store cookware.
 Cook foods.
- b. The serving and eating center serve as a place to
 Store kitchen tools.
 Supply hot and cold water for household use.
 The family to enjoy eating and socializing.

3. Circle the basic measurements for height, depth and width of a standard kitchen cabinet:

The standard measurements for the height of a base kitchen cabinet should be 24", (36"), 48".

The standard measurement for the depth of a base kitchen cabinet should be 36", 48", (24").

The standard measurement for the width of a base kitchen cabinet should be (48"), 24", 36".

4. A well-arranged kitchen may be planned around three main work areas, or centers. Fill in the correct kitchen equipment for these areas, or centers:

REFRIGERATOR RANGE SINK

(OVER)

(OVER)

5. To determine if the kitchen cabinet you have constructed is a good one and suitable for your kitchen, check (X) the blanks preceding the requirements, which follow:

- a. Cabinet is made of durable building materials.
- b. Materials were measured, cut and fitted together.
- c. Building materials were substantially fastened together.
- d. Cabinet fits neatly into the kitchen.
- e. Cabinet was finished with a good coat of enamel paint, which is washable.

SUGGESTIONS FOR SCORING AND SUMMARIZING

In order to get a complete picture of how each participant feels about the lesson and workshop, it is suggested that the staff member responsible for the lesson prepare a county summary, using the original evaluation form as a guide and including the information listed below:

1. Name of agent and county.
2. Total number of persons receiving the lesson and participating in the workshop.
3. Record the number and percent of persons who answered each question in the appropriate columns. For example: 50% or 25%.
4. Write a brief summary indicating the highlights and implications for further programming.
5. Send one copy of county summary on a questionnaire form to the specific specialist involved in order that the district and state summary may be tabulated.

CREATIVE CRAFTS, HOUSING AND HOUSE FURNISHINGS

This Packet Contains Teaching Materials For:

- * Buying Crafts
- * Buying Upholstered Furniture
- * Buying Case Goods
- * Furnishing Your Home: Periods and Styles
- * Arranging Furniture
- * Selection of Rugs and Carpets
- * Bedding Buymanship
- * Designed For Dining
- * Linens For Bed and Bath
- * Order and Comfort: Bedding
- * Fibers, Fabrics and Finishes
- * Your Guide For Making Draperies
- * Reupholstering Overstuffed and Occasional Chairs
- * Home Furnishings Pen Pal Letter No. 2
- * Home Kitchens
- * Planning Bathrooms For Today's Homes
- * Interior Building Materials
- * Resilient Floor Coverings
- * Home Exhaust Fans
- * Heating and Cooling Your Home
- * Wall Finishes: Paints
- * Order and Comfort: Storage

EXT.
Home
Economics