



**Texas
Agricultural
Extension
Service**

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Kitchen Planning



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KITCHEN PLANNING

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Kitchen planning principles may be used to plan a new or remodeled kitchen or simply to identify small changes that will make a kitchen more efficient.

Kitchen planning begins with the people who will use the kitchen—now and in the years to come. Important considerations include family size, how many persons use the kitchen, the type of entertaining done and whether the family does a great deal of cooking, baking and food preservation.

After family needs have been determined, research-based standards will provide basic guidelines for planning an efficient kitchen.

A kitchen should have approximately 100 square feet of usable floor space. Some basic space requirements are outlined in the Minimum Property Standards (MPS) issued by the Department of Housing and Urban Development (HUD) for one- and two-family dwellings. Compliance is required (since 1973) whenever the loan on the property will be insured through a HUD-sponsored mortgage insurance program or when the property owner will benefit from one of the HUD subsidiary programs. In addition, meeting building standards is important for safety, comfort and resale value.

Location

When planning a new house or a major remodeling, consider the location of the kitchen in relation to where food will be served in the

home and outdoors. A second kitchen or partial kitchen in another part of the house is convenient for serving food in other areas such as recreation rooms.

The kitchen should be easily accessible with a direct route for bringing in groceries and taking out trash. Locate doors so traffic bypasses the meal preparation area. Limit doors to no more than two, including one 36 inches wide for moving large appliances and equipment.

The kitchen should be out of view of the guest entrance and living room but could provide a view of other areas—the children's play area, family room or driveway.

Kitchen Centers

A well-planned kitchen has centers designed for specific food preparation or clean-up tasks. An appliance alone does not make a center—it is satisfactory only if it is a complete center with storage and/or counter surface. Centers are best arranged so that the work moves continuously in one direction. Storage and counter space can serve two appliances and reduce the space required for separate centers.

To combine two centers, use the counter space required for the longer center plus 12 inches. Sink and refrigerator centers are commonly combined to provide counter space for the mix center. (See chart and illustrations, Figures 1-3).

Counter Space Required for Kitchen Centers

KITCHEN CENTER	Function	Counter Surface Recommended	Frontage: lineal inches	
			Minimum	Liberal
Sink Center	Water and drainage for food preparation and clean-up	Right side: stacking dishes Left side: placing washed items	24" 21"	32" 30"
Refrigerator Center	Refrigeration for perishable foods, space for setting out supplies	Next to latch side (more space for large quantities of chilled food)	15"	18"
Mix Center	Facilities for assembling and mixing food	Space for mixing, based on extent of cooking, baking, food preservation	36"	42"
Cooking Center	Heat for cooking (Oven can be a baking center out of main work area)	One side of the range One side of the oven	21" 15"	30" 18"
Serving Center	Equipment for serving and eating food	Ample work space for transferring dishes	24"	24"

Minimum and liberal figures meet the current Minimum Property Standards (MPS) for two- and four-bedroom dwellings.

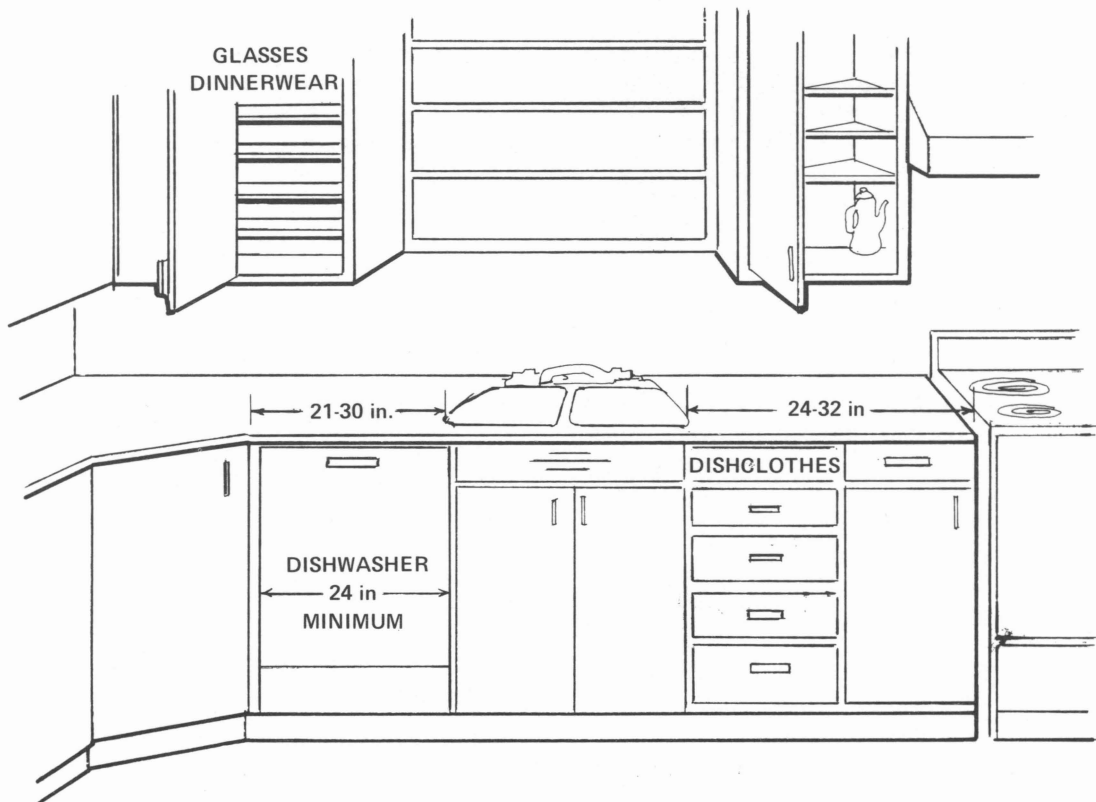


Figure 1. Sink center.

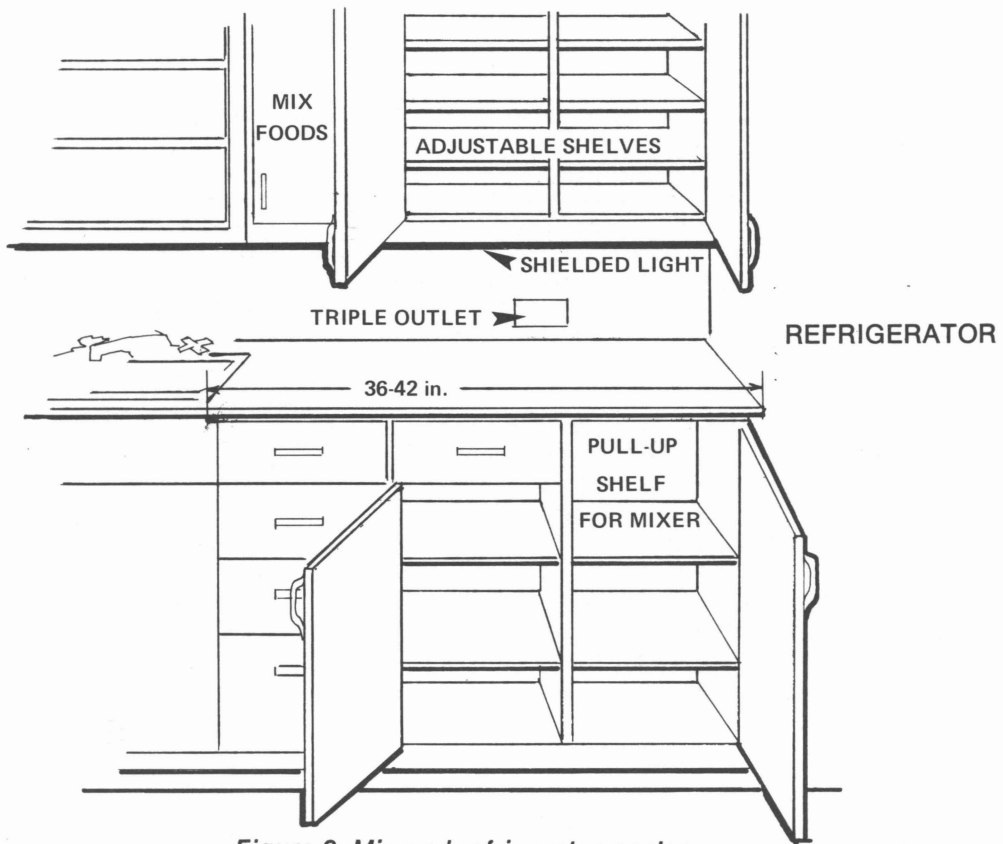


Figure 2. Mix and refrigerator center.

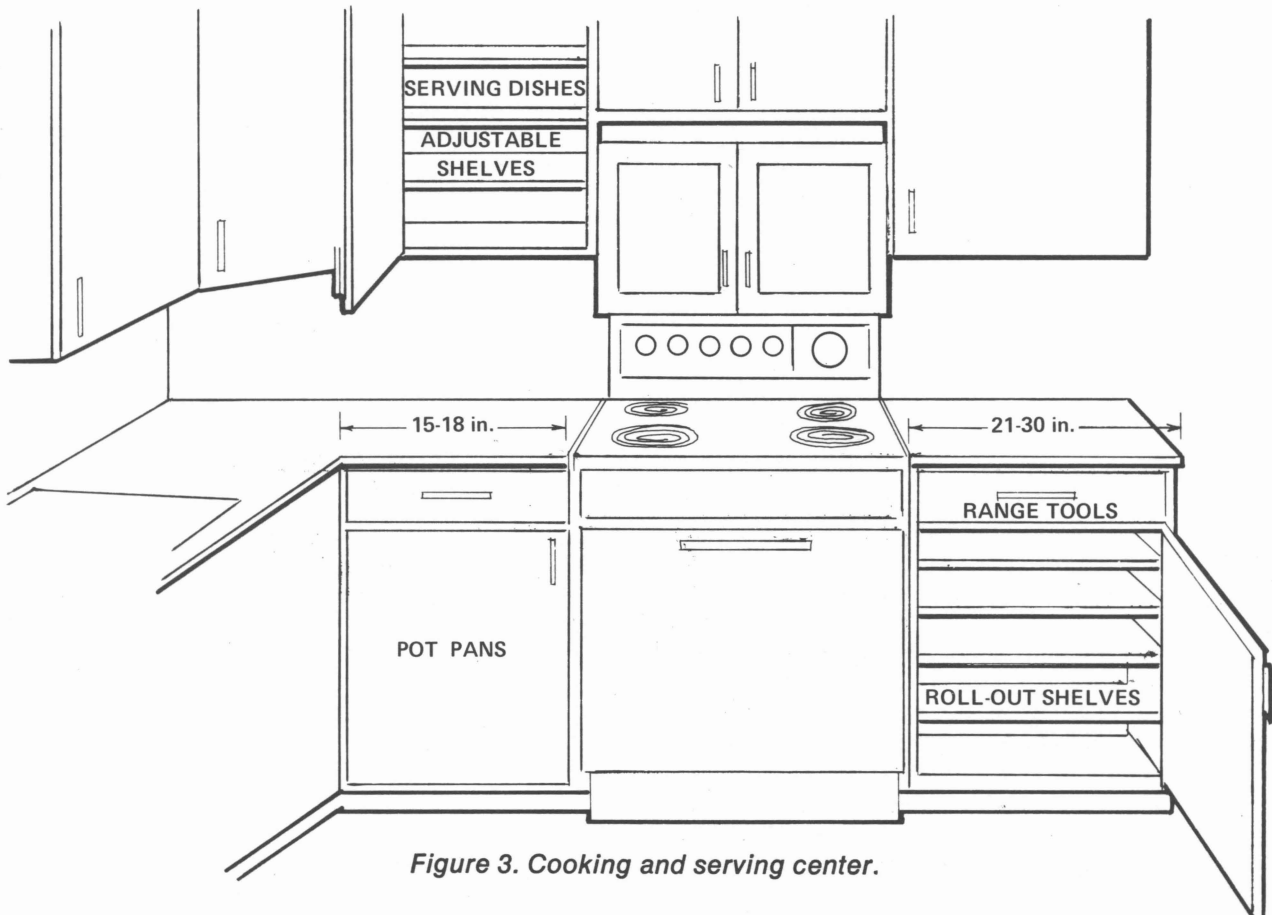


Figure 3. Cooking and serving center.

The Dining Area

Serving some or all family meals in the kitchen is a time and energy saving practice and is popular whenever space permits. For this purpose, a suitable table and chairs usually are 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 the size of the table. Space required between the table and a wall or furniture for ease in being seated and for serving is 32 inches to 44 inches. Width of the table space needed for each person is 21 inches to 24 inches (Figure 4).

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.

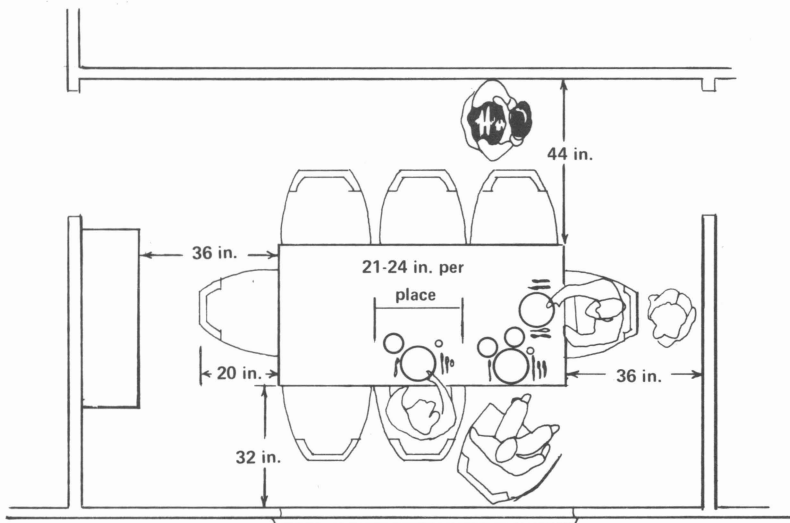


Figure 4. Dining area.

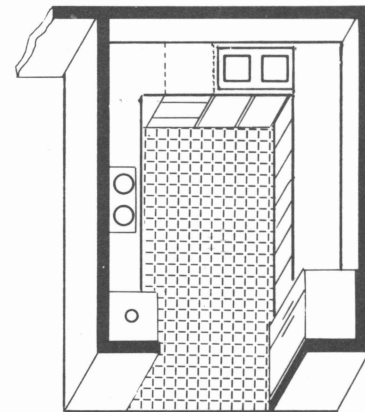
Kitchen Shapes

The arrangement of centers within the floor plan usually takes a basic kitchen shape: the U-shape; the broken U, or island; the L-shape; the two-wall or corridor; or the one-wall or pullman shape. The basic kitchen shapes have interesting variations. The U-shape, for example, can become a round or octagonal kitchen.

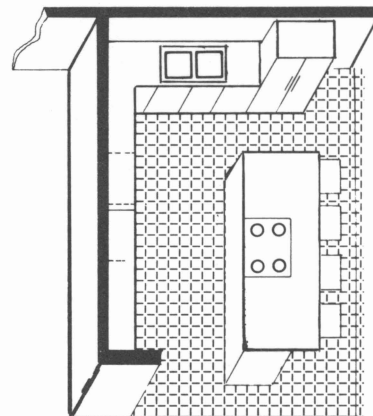
The sink area should receive careful consideration in kitchen arrangements, as this is the most used center in the kitchen.

Kitchens should not have too little or too much counter space. Too little space leads to confusion and fatigue. Too much adds unnecessary steps and wastes energy. Tall appliances should be placed at the end of a counter to avoid blocking the flow of work and to keep the shape of the kitchen.

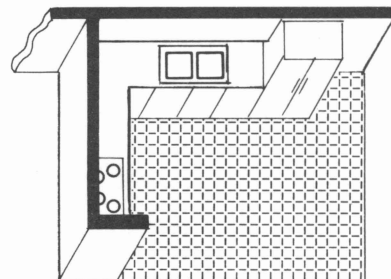
A too-large kitchen can be made more efficient by keeping the work area compact and using the extra space for a table or desk. A too-small kitchen can be uncramped by adding pantry storage for extra staples and seldom-used equipment.



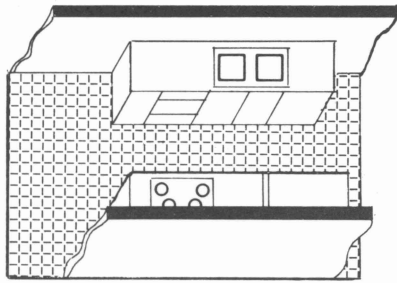
U-Shape



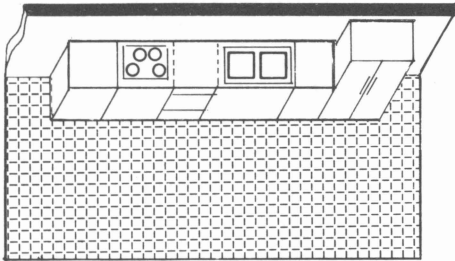
Broken U



L-Shape



Two-Wall or Corridor



One-Wall or Pullman

The Work Triangle

The work triangle 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 to 23 feet, but not less than 12 feet nor more than 26 feet.

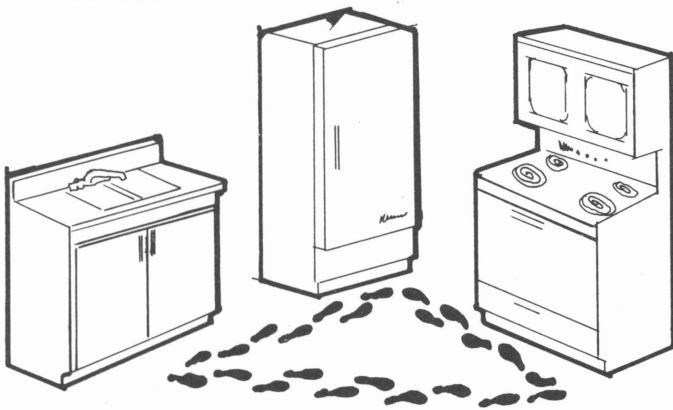


Figure 6. Work triangle.

Choosing New Cabinets

Taking an inventory of kitchen items will assure that ample storage space is provided. A kitchen should have at least 50 square feet of storage in wall and base cabinets. This requirement can be met with 6 linear feet of base cabinets with wall cabinets aligned above.

Four drawers, or 11 square feet of drawer space, is a minimum requirement. The total should include at least one shallow drawer.

Cabinets may be stock or custom. Stock refers to manufactured units in standard heights, depths and widths. Custom units are made to order by a cabinetmaker or as a do-it-yourself project.

Most cabinets are mass-produced, or stock, and most manufacturers offer a wide variety of special cabinets and accessories in addition to the basic styles. Cabinets are made of wood, metal, plastics and combinations of materials.

Cabinets should be well made with adjustable shelves to meet individual storage needs. Other points to check are: acoustical quality; finishes used; hardware; drawer construction; and door type. Cabinets are sold in 3-inch increments (modular) with fillers available to close space completely for sanitation and maintenance.

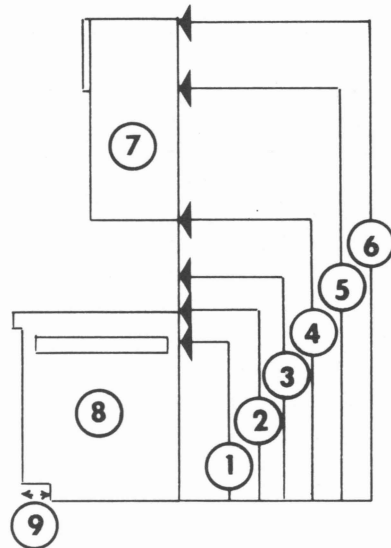
Corner units are available in base, wall and tall cabinets to make full use of corner space. Look for rotating shelf (lazy susan) or swing-out shelf units.

Finished cabinets with doors on both sides are available as divider units in open arrangements. Often cabinets are chosen to meet the needs of a unique corner, kitchen shape or space available. It is wise to know the shape of the kitchen and the space available before visiting cabinet dealers.

Today's wide range of choices in cabinets allows individuality, but a family planning to sell a home should consider resale value if they depart from standards in building or remodeling.

Kitchen Requirements

Wall Cabinets: The usual wall cabinet has three shelves, including the bottom. The most common models have a front-to-back depth of 12 inches, although some are 15 inches deep. The most popular height is 30 inches, but heights range from 12 to 36 inches. The correct cabinet height depends largely on the space between the counter surface and the bottom of



Work Heights and Cabinet Dimensions

1. Counter height for planning area or sit down area, 30 inches.
2. Standard countertop, 36 inches.
3. Wall switches and outlets, 44 inches.
4. Bottom of wall cabinet, 54 inches.
5. Top of wall cabinet, 84 inches.
6. Ceiling.
7. Depth of wall cabinet, 13 inches.
8. Depth of base cabinet, 24 inches.
9. Depth of toe space, 3 inches.

the cabinet (15 or 18 inches) and on the height of the top of the door trim or ceiling. Wall cabinets usually are sold in widths of 9, 12, 15, 18, 21 and 24 inches. Double-door cabinets range from 24 to 27 inches wide.

When wall and base cabinets are used, wall cabinets are aligned with base cabinets and appliances.

Soffits and over-the-refrigerator cabinets can provide storage for seldom-used items, but should not be considered accessible storage for daily use.

Tall Cabinets: These storage units are 81 to 84 inches high, and are usually 15, 18 or 24 inches wide. They can be built into a space 12, 18 or 24 inches deep.

Wiring: Adequate wiring in a kitchen includes general purpose circuits for lighting, branch circuits for small appliances and individual circuits for major appliances. The recommendations may vary from city to city.

Ventilation: The range should have an exhaust fan to remove excess heat, smoke, moisture and odors. When construction permits, a hood that is vented to the outside is preferred over one that recirculates the same air after filtering it. Wall and ceiling fans are less effective. (NOTE: Exhaust fans vented to the outside will remove heated or cooled air while in operation.)

Plumbing: The economics of plumbing require either a horizontal core or a vertical stack arrangement for all rooms requiring plumbing. The goal is to use the least number and shortest length of pipes. The water heater should be

located to use the shortest pipe length to the faucet and dishwasher for energy efficiency.

Lighting: No kitchen is complete without adequate lighting, including general overhead lighting and lighting for each work surface. Soft, overall general illumination will reduce the brightness contrast between work centers and surrounding areas and provide light inside cabinets. Use ceiling-mounted or suspended fixtures; or for a rich custom effect at modest cost, use fluorescent, built-in lighting around the perimeter of the kitchen. Fluorescent units can be installed under wall cabinets to light counter surfaces.

Noise Insulation: Kitchens can be planned to minimize noise. Quality appliances offer sound-reducing features and adequate sound insulation. Proper installation of appliances by a trained expert also helps minimize noise.

Acoustical tile ceilings, now available in vinyl-coated patterns for kitchen use, as well as kitchen carpeting, curtains and fabric on walls, also can help reduce sound levels.

Remodeling vs. Rearranging

A careful analysis of space available and storage needs may suggest that a good cleaning and reorganizing is needed rather than major structural changes.

A kitchen can easily be improved with storage space savers, new paint for cabinets, new curtains, improved lighting and perhaps a new floor covering or countertop. New cabinet door fronts can be installed on structurally sound cabinets.

Kitchen Standards

Traffic Lanes:

- Provide traffic lanes at least 36 inches wide.
- Allow at least 4 feet between cabinets and appliances opposite each other.
- Avoid traffic lanes through work areas, or allow 5 feet between cabinets and appliances.
- Limit doors, and have one door wide enough for moving equipment.

Counter Surfaces:

- Provide space beside the refrigerator, the range and on each side of the sink.
- Plan one continuous counter surface for working.
- Allow at least 6 feet of total counter surface.

Cabinets:

- Provide a clearance of 15 to 18 inches above the countertop. Provide 24 inches above a sink, a range with a hood and a top-loading dishwasher or washer.
- Measure accurately for major appliances.
- Plan storage for small appliances at the point of first use.

Work Areas:

- The following are recommended distances from center front to center front:
sink to refrigerator—4 to 7 feet
refrigerator to range top—4 to 9 feet
range top to sink—4 to 6 feet

Corner Clearances:

- Between range and corner—9 to 12 inches
- Between sink and corner—12 inches
- Between tall appliances and corner—15 inches
- Between cabinet drawers and corner—3 inches

Planning Tips:

- Place the refrigerator to allow for a 90-degree door swing to permit removal of drawers or storage of larger items.
- Remember that only one person can work at a corner sink.
- Locate a garbage disposal under the side of the sink nearest the dishwasher.
- A dishwasher is placed to the left of the sink when the right-to-left work sequence is being planned.
- Avoid locating cooktop or range at the end of the counter.
- A trash compactor can be installed in the kitchen or another area where trash accumulates.

- Round off countertops to avoid bumps and bruises.
- Mobile units or carts can stretch work and serving surfaces and save steps.
- A range should not be located under a window nor within 12 inches of a window.

Space Savers:

- A 24-inch sink is acceptable if there is a dishwasher.
- Choose a 30-inch range instead of separate oven and cooktop.

Standard Dimensions:

- **Appliances (24 inches deep)**

	Width (inches)
Refrigerator, upright freezer	30 to 42
Dishwasher	24 to 27
Range, built-in cooking surface	30 to 48
Built-in oven, food warmer	24 to 30
Compactor	14 to 18
Ice maker	15 to 18
- **Sinks (24-inch deep cabinet)**

Single bowl	24 to 30
Double bowl	33 to 42
- **Cabinets (standard base cabinets—24 inches deep; standard wall cabinets—12 inches deep)**

Single door	9 to 24
Double door	24 to 48
Corner base (some companies allow a 6- to 7-inch cutoff on one side)	33 to 36
Corner wall	24 to 33

Drawing a Plan

Kitchen planning requires an accurate record of the space available. In existing kitchens, measure the walls at the 36-inch cabinet height. For a new house, the work drawing can be used.

1. Record the measurements accurately on a sketch. Figure 5 shows how to mark measurements. Show location and size of all windows and doors (including trim) as well as all obstructions such as pipes, radiators, chimneys, offsets, stairways, etc. Indicate where doors lead. Indicate north (N) direction. Show location of all plumbing, gas and electrical outlets that will affect the new kitchen.

2. Use ¼-inch graph paper, and scale the plan. Figure 6 shows a floor and wall elevation plan ready to use.

3. Work with a tissue overlay, so a number of layouts can be sketched.

4. Basic cabinets and equipment standards are on the preceding pages. As you work, check that your plans meet accepted kitchen standards.

The Job

After the basic aspects of a kitchen are planned, the big decisions lie ahead. Preliminary planning enables you to discuss your preferences with all of the professionals who could be involved, and also to show them, on the floor plan and wall elevations, what you want in the kitchen. The drawings can help you get cost estimates on materials.

Alternates for getting the job done include:

1. Turning the job over to an architect or kitchen modernization specialist. One charge covers the entire project: translating plans into workable blueprints; writing specifications for materials; contracting the suppliers and tradesmen; and obtaining the necessary permits. Check locally for this service, the fee charged, and how much consultation is given before a fee is charged. Some company consultants charge a flat fee while others charge a percentage of the total cost of the project with no charge for consultation.

2. Drawing your own blueprints or having them drawn and turning the job over to a contractor. Blueprints can be obtained from kitchen designers (for a flat fee), from a blueprint drawing service, from cabinet dealers or from an architect. Draw up your own plans and exact specifications for each tradesman.

To choose an architect, contractor or kitchen designer, visit several firms and narrow your choice to two or three reputable companies. Sign a contract that states specifications and plans for the kitchen as well as the approximate completion date, procedures for breaking the contract or making changes or corrections, lines of payment and the terms of the guarantee on the work.

3. Act as your own contractor. Persons skilled in do-it-yourself projects find satisfaction in acting as contractor, doing some of the labor and subcontracting the more difficult jobs. To handle this job yourself, draw the plans and write up the exact specifications for each tradesman. Send a set of blueprints to each prospective subcontractor. Obtain local permits and schedule inspections as the work is completed.

Construction usually proceeds in this order:

- Remove old cabinets.
- Make structural changes.
- Install new plumbing and wiring.
- Install cabinets.
- Install appliances.
- Install counter tops.
- Install wall and floor coverings.

Sources of Help

Ask your county Extension agent—home economics about activities to develop your skills in kitchen planning.

Designers who draw up kitchen plans include architects, home designers, the designer who does only kitchens, contractors who do their own drawings or have them done and remodeling firms that may have someone specializing in kitchens.

Contractors who build new homes and remodel existing homes have much experience to share on what is possible and feasible in kitchens. They know building codes and the cost of various construction alternatives.

Kitchen cabinet dealers who sell stock cabinets (lumber yards, building material firms, mail order companies, etc.) have information on their products. Custom cabinetmakers can show materials and construction. Ideas for special storage features can come from visiting several firms and examining their cabinet models.

Magazines and books devoted to kitchen planning are a good source of ideas. Check the local library for reference materials.

Plumbing firms can advise on sinks, waste disposers, ventilating fans and built-in appliance centers. They have brochures and price lists. Ask about "gauge" (thickness) of stainless steel sinks and noise ratings on ventilating fans and waste disposers.

Paint and wallpaper stores carry counter surfacing materials as well. Many also carry resilient floor covering and kitchen carpeting.

Electrical contractors carry lighting fixtures and can give costs on built-in lighting. They can also bid on the wiring for a remodeling job. They know building requirements for size of wire, placement of outlets and switches and number of circuits.

Appliance dealers have brochures on new kitchen appliances which detail dimensions and installation requirements. Check the energy efficiency of appliances you are considering.

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This publication was adapted from:

Tucker, Mary E., "Kitchen Planning," Cooperative Extension Service, Kansas State University, Manhattan, Kansas, June, 1978.

Illustrations were adapted from:

Southern Regional Publication HE-2, "Home Kitchens," Cooperative Extension Service, September, 1966.

Educational programs conducted by the Texas Agricultural Extension Service serve people of all ages regardless of socio-economic level, race, color, sex, religion or national origin.

Cooperative Extension Work in Agriculture and Home Economics, The Texas A&M University System and the United States Department of Agriculture cooperating. Distributed in furtherance of the Acts of Congress of May 8, 1914, as amended, and June 30, 1914.

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