

PLANNING THE KITCHEN

CIRCULAR SERIES

INDEX NUMBER **C5.3**



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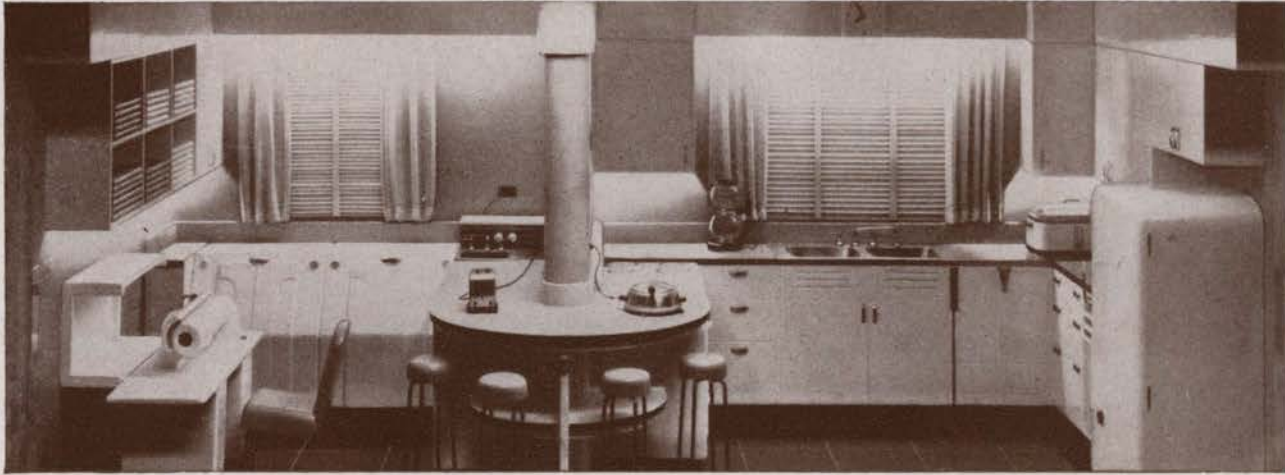


PLANNING THE KITCHEN
SMALL HOMES COUNCIL

C5.3

THE KITCHEN IS ALWAYS A CENTER OF ACTIVITY

in the home, and its design is of major interest to every family. Recent developments have made the kitchen a more efficient food production unit and at the same time a more pleasant, convenient and sanitary place to work. Improvement in kitchen design began in the 1930's. Although research in this field to date has been limited, in many homes it is already the best planned and most attractive room in the house—a good example of the benefit received from planning for use, with equipment which can be obtained in standard sizes.



NEW TRENDS in kitchen development show that it is again becoming a center for other household functions besides food preparation:

- As the house becomes more compact, it seems increasingly convenient to include space for informal dining in the kitchen. This also provides more service space for serving meals into a dining or living room.
- Another trend is the growing interest in utility rooms planned together with the kitchen area to contain laundry facilities, a sewing machine, a

work shop, a home freezer, a heating plant, etc. The discussion of such developments as these could fill many pages. This circular will serve only as an introduction to the subject, limited to planning the conventional kitchen as a *food production unit* for preparing and serving food and clearing away after meals. A well-planned kitchen may be a separate room in the house, or it may be combined with other areas without having its efficiency decreased (see *Small Homes Council Circular C2.1 — "Designing the Home"*).

PLANNING KITCHENS TODAY

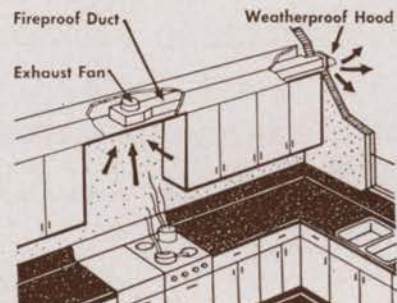
Although there will be a continuous advance in the design of kitchens and kitchen equipment, the basic plan of the area as a food production unit probably will not change materially for up-to-date urban homes. More foods may be purchased frozen or partially prepared, thus shortening the time spent in meal preparation. The major operations should remain very much the same, however, and will require consideration of the following factors:

SANITATION: As a food production center, the kitchen must be sanitary. Crevices and corners which collect dirt and are hard to clean must be eliminated. Materials for work surfaces and storage spaces should be durable and washable. Refrigeration of perishable food is essential, and closed cabinets for utensils and staple foods are desirable. Facilities for the sanitary disposal of garbage and waste paper are also important in this area. Many of the activities which are frequently carried on in the kitchen should be done in other parts of the house. A utility room might be better adapted to storing dust mops and other cleaning equipment, sorting soiled clothes and doing the laundry.

VENTILATION: One of the basic needs in the kitchen is for clean fresh air. Few small kitchens have the benefit of cross ventilation. Economical exhaust fans are available to provide adequate circulation of air. These fans expel air rapidly and remove odors and excess vapor or humidity. The fan can be located near the range as shown in the diagrams. It may be located elsewhere in the kitchen, but other places are not so well-adapted to removing hot air and vapors directly from their source at the range.



FAN INSTALLATION WHEN RANGE IS NEXT TO OUTSIDE WALL



FAN INSTALLATION WHEN RANGE IS NEXT TO INSIDE WALL; NOTE FIREPROOF DUCT FROM FAN TO OUTSIDE WALL

LIGHT: Light is important to the comfort, cheerfulness, and safety of a kitchen. There should be at least one sizeable window, preferably over the sink. Such a window will have a psychological value as well as benefits of good daylight.

Artificial light from fluorescent tubes or filament bulb fixtures should be provided by central ceiling fixtures for general illumination plus auxiliary local lighting on the wall or in the ceil-

ing directly above each work center such as the sink, range, counters, or other work areas. Recommended values of illumination in kitchens are as follows: General illumination, 10 footcandles; sink, range, work counters, 40 footcandles. Work is speeded up, is easier to do; fatigue is reduced, and many causes for accidents are eliminated in the well-lighted kitchen. Consult your power company about lighting.



General Lighting

WIRING: The central lighting fixture should be multiple-controlled by conveniently placed switches where important entrances are more than 10 feet apart. For the work centers, switches can be located at or near the fixtures themselves. Electric appliances used in the kitchen require adequate wiring on a separate circuit for safety and efficient operation. There should be at least one duplex convenience outlet for each 4 feet of work counter and one at the refrigerator. If an electric range is used, it will require a special heavy-duty outlet. Convenience outlets must be provided for an electric clock, fan, or dishwasher. Recommendations of the National Adequate Wiring Bureau should be followed, with competent advice from a power company. (See *Small Homes Council Circular G4.0, "Electricity in the Home."*)



Work Center Lighting

COLOR: The use of color in the kitchen adds to its cheerfulness and may help to make it a lighter room. It is easy to plan a color scheme for your kitchen because it contains mostly plain surfaces and few textures. The room is divided into well-defined areas of floor, walls, ceiling, work surfaces and cabinet fronts (making it more adaptable to simple color harmonies). Some materials used for covering the floor and counter tops are furnished in a variety of colors and offer a good starting point for planning a color scheme. A few points are worthy of note:

1. **Floors and counter**—variegated or marbelized patterns require less care than plain colors.
2. **Walls and cabinets**—colors may be decorative, but should reduce glare and be restful to the eyes.
3. **Ceilings**—avoid the use of strong, dark colors because they absorb more light than white or pastel tints.

There are innumerable satisfactory color combinations for kitchens. Colors which harmonize can be selected from samples of materials and paint color charts. Many excellent suggestions are made in popular home-making publications and in color aids furnished by manufacturers of kitchen equipment.

COVERINGS AND FINISHES should all be durable, non-absorbent, stain-resistant, and easily cleaned. The workcounter surface should be covered with a heat-resistant material. Mouldings for facing counter edges should not mark the worker's clothing. Since many tasks are done while the worker is in a standing position, a resilient floor covering will reduce fatigue. Remembering that the use of poor quality materials and unskilled labor represents a false economy, you should give careful study to the subject of kitchen finishes and acquaint yourself with the characteristics of various materials that are available.

THE WORK CENTERS

Each division of appliances, cabinets and work surfaces in the kitchen is called a "Work Center." The most important factor in planning the kitchen area is the basic arrangement of the three major work centers—the Sink Center, the Range Center and the Mixing Center. These three units, properly arranged and outfitted with utensils, dishes, equipment, etc., should be related to each other so that work flows conven-

iently from one center to another. The basic plan of the kitchen is formed around these three centers, but in actual practice they will merge with each other and overlap. The organization of each center is just as important as its relation to the other two. Unless food supplies, utensils, dishes, etc., are grouped and arranged conveniently in each center, the kitchen will lose much of its step-saving efficiency.

THE SINK CENTER

Note: The equipment in the sink center should be organized for efficient work by the homemaker. The normal procedure for a right-handed person is as follows: soiled dishes to the right of the sink, clean dishes ready for drying on a drainboard to the left, and a wall cabinet for storing dishes also to the left of the sink.

However, a left-handed person may find it desirable to reverse the procedure. The best rule to follow is the system most natural and efficient for the homemaker. All the following description of the sink center is based on the usual "right-handed system."

1. FUNCTION: Since water is essential to cleaning, dishwashing, food preparation, and cooking, the sink is the axis around which all kitchen work revolves. The sink center is used for:

- a. Cleaning vegetables and fruits.
- b. Preparing foods for surface cooking.
- c. Serving ready-prepared foods.
- d. Washing dishes and kitchen utensils.
- e. Storing glassware, china, silver and kitchen linens (unless stored at point of use).
- f. Disposing garbage and refuse.

2. LOCATION: The sink area should be located centrally both to the mixing and to the range centers.

The sink may be located beneath a window, overlooking a pleasant view or the children's play area. (A large window is less likely to produce glare than a small one.) Be sure that the kitchen plan indicates a window sill of sufficient height to accommodate a sink.

3. SPACE AND EQUIPMENT

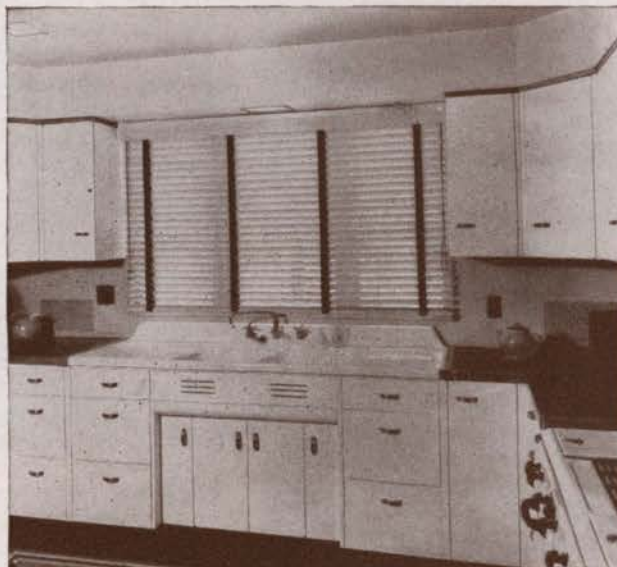
a. The sink may be either double or single, with a drainboard at the left. The sink should be sufficiently shallow to provide a comfortable working height, but should not be shallower than 6". (See "Working Heights," on page 7.)

b. **Work surfaces** should be provided on each side of the sink. A space about 36" by 24" is usually adequate for stacking soiled dishes at the right of the sink. A surface about 32" by 24" at the left of the sink will furnish room to place clean dishes for drying. Both of these counters may be used in serving or preparing food.

c. **Backsplash:** Many sinks and counter tops are manufactured with a backsplash of the same material 3" to 8" high. When the sink is built into the counter and the counter surface is applied on the job, the backsplash should be a continuation of the surfacing material. It is desirable to have a rounded cove at the wall-counter corner and to extend the backsplash up the wall to the under side of the window sill and the wall cabinets.

d. **Extra work surface** can be provided here by a sturdy pull-out board 26" to 30" above the floor, for the homemaker to work at while seated.

e. **Wall cabinets:** At the left (always on the same side as the drainboard) wall cabinets should provide storage space for dishes used every day. This will enable them to be put away immediately upon drying. Shelves should be as close



together as possible to conserve space. If adjustable, they can be arranged to accommodate glasses and stacks of six plates; or if cups are to be stored, the shelves can be put even closer together. Small pieces of china that require handling in stacks (cups, saucers and butter plates) should be kept at the bottom of the cabinet; large bowls and pitchers at the top. If there are wall cabinets at the right of the sink, they may hold less frequently used dishes. When the work counter to the right of the sink is to be used for mixing, cabinets will have to be 16" above the counter for an electric mixer, otherwise, the wall cabinets can be installed lower.

f. **Base cabinets:** At the left of the sink, the following facilities are desirable: shallow partitioned drawers for silver, drawers for dish towels, and a partitioned space for trays.

At the right of the sink, dish cloths, cutting boards, cutlery and other small utensils may be stored in drawers designed for the purpose. On either side of the sink there should be ventilated storage space for less perishable fruits and vegetables. On the side nearer the dining area, metal-lined drawers for bread and cakes are desirable. On either side or under the sink, cabinet space should be provided for garbage disposal and for cleaning and dishwashing equipment. This might include sliding racks for currently used dish towels and cloths. A heat unit under the sink will accelerate air circulation in this area.

Dishwashers and garbage disposal equipment as part of the sink are designed to increase the efficiency of this area, and should be considered.

Note: Photographs used to illustrate this circular may not be entirely consistent in detail with the text. They are, however, good examples of kitchen design using equipment available today.

THE RANGE CENTER

- 1. FUNCTION:** This center is for:
 - a. Surface cooking, baking, broiling, etc.
 - b. Serving hot foods.
- 2. LOCATION:** The range center should be located:
 - a. Near the mixing center.
 - b. Adjacent to the sink center.
 - c. Convenient to the dining area.
- 3. SPACE AND EQUIPMENT**
 - a. **Range.** The kind and size will depend upon the amount of cooking done in the home, and the type and cost of fuel obtainable.
 - b. **Work counter** should be on either or both sides of the range for placing food when it is removed from the oven or surface burners, and for serving this food while still hot. (A heat-resistant counter surface is desirable.)
 - c. **Storage space** should be located so that the utensils and supplies used at the range can be reached easily. Special drawers or hooks will be needed for small utensils. If the range is adjacent to the dining area, glassware, serving dishes and silver can be stored here at point of use.
 - d. **Wall cabinets** should provide space for small utensils, condiments and staples used at the range, and perhaps serving dishes for hot foods.



- e. **Base cabinets** should include drawers or sliding shelves for utensils used in cooking. Adequate space and partitioning should be provided to avoid noise and inconvenience of stacking pans.
- f. **A full height cabinet** (from floor to top of wall cabinets) is useful for storing many articles related to cooking, especially appliances and utensils which are too large for standard wall cabinets. Shelves may be included here for pans and supplies used in cooking which does not require water. Hooks can be placed on the doors for hanging skillets and other flat utensils. The pressure cooker and other less frequently used equipment may be stored in this cabinet during seasonal use.

THE MIXING CENTER

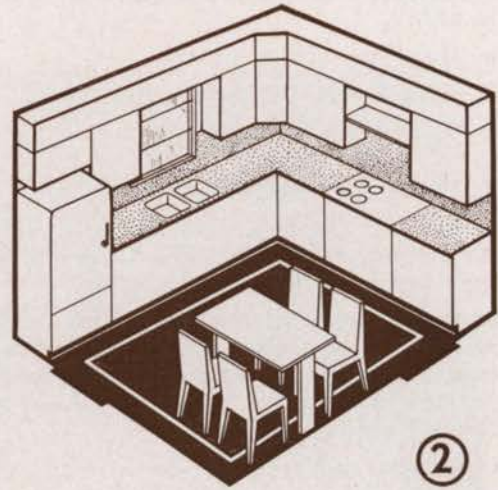
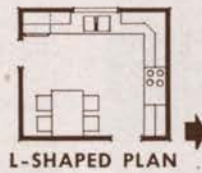
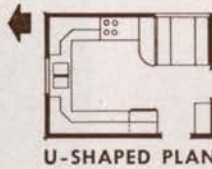
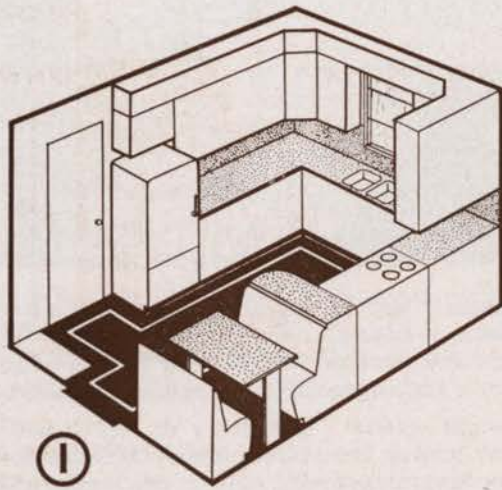
- 1. FUNCTION:** This center is for:
 - a. Preparing pastries and bakery foods.
 - b. Preparing salads and uncooked foods.
 - c. Storing staples and perishable foods.
- 2. LOCATION:** The mixing center should be:
 - a. Near the service door.
 - b. Accessible to the sink.
 - c. Accessible to the range.
- 3. SPACE AND EQUIPMENT:**
 - a. **The refrigerator** should be located in this center in such a way that it will be convenient to the sink and range centers. Be sure that the refrigerator door opens away from the mixing counter. The size of the refrigerator will be determined by the family's needs, and space allowance should be made if the family is growing.
 - b. **Work counters** at least 36" long should be provided. This is the center where a lower counter, or a sturdy pull-out shelf or table is desirable. (See "Working Heights," on page 7.)
 - c. **Wall cabinets** should be placed 16" above the working surface if an electric mixer is to be used here. In these cabinets, condiments may be placed on shallow, step-type shelves. Shallow



- d. **Base cabinets** should provide drawers for measuring cups, spoons, spatulas and other small utensils. Metal-lined drawers for flour and sugar are convenient when these staples are bought in large quantities. Other drawers and shelves may be used for mixer attachments and deep baking utensils. Recipe books and homemaking guides may be kept here if no other space is provided for them.

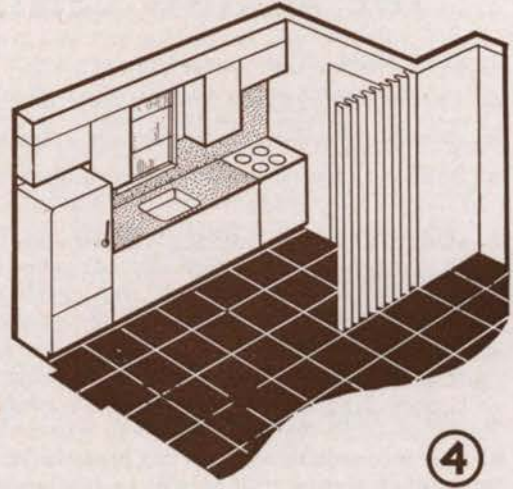
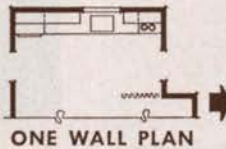
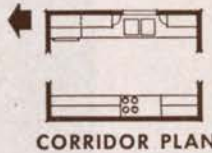
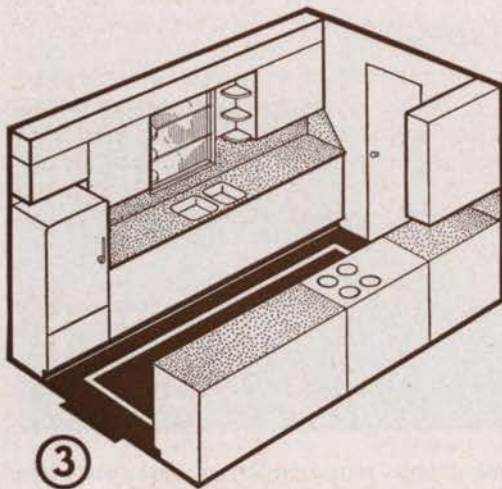
ARRANGING THE WORK CENTERS

Besides being organized in themselves, the work centers should be arranged to provide greatest convenience in operation and efficiency. There are five basic arrangements recommended for the kitchen working area. The arrangement of the work center depends upon the plan of the home and may take one of the usual forms illustrated below:



1. THE U-SHAPED KITCHEN is an ideal arrangement from the standpoint of food preparation. The work surface is continuous around three sides of the room, and the kitchen unit is kept free of traffic. The sink usually is placed at the bottom of the U with the refrigerator and range centers forming the two wings.

2. THE L-SHAPED PLAN has a continuous work surface along two sides of the room, and the grouping of the refrigerator, range, and sink should be made as compact as possible. The remaining two walls may be used for door openings and other windows and for convenient location of a dining space.



3. THE CORRIDOR-TYPE KITCHEN is best adapted to a narrow room with a door at each end. The sink center should be located on the outside wall, with the range center on the opposite side. The refrigerator may be satisfactorily placed on either side. The plan is often used for small home and apartment kitchens.

4. ONE-WALL KITCHENS are adaptable to living room-kitchen combinations. The one-wall plan may be located in an alcove off the living room, separated by a folding wall or screen. A continuous work surface may be obtained by locating the refrigerator and range at opposite ends of the assembly.

5. THE INDIVIDUAL-CENTER KITCHEN (not illustrated) is often encountered in remodeling, although in new construction it is sometimes necessary to locate three doors on different sides of the room, with the work centers separated to fit the plan. This type may be satisfactory if each work center is well planned. The chief inconvenience is the lack of a continuous work surface.

CABINETS AND ACCESSORIES

STORAGE SPACE: The cabinets which provide storage space in the kitchen should meet the following requirements:

- Sturdy construction; finish which is durable, easily cleaned.
- Doors and drawers which close easily, tightly and quietly.
- Shelves adjustable for utensils of various heights.
- Drawers properly sized for equipment and supplies.
- Cabinets which can be arranged to conform to work center requirements.

CAPACITY: The desired capacity of cabinet storage space depends upon several factors:

- Number of persons in the family.
- Availability of shopping facilities (which determines the amount of food bought and stored at one time).
- Extra space for articles required for entertaining.
- Extra space for unassigned articles. ("c" and "d" are each equivalent to the space required for one person.)

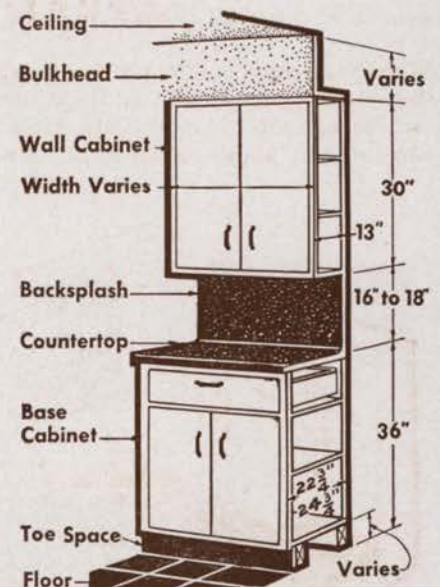
Wall cabinet capacity is based on *square feet of shelf space* with an allowance of six square feet per adult in the family. Base cabinet capacity is based on *linear front feet* of cabinet, not including the range and refrigerator. The following size-relationships are recommended by some authorities:

No. of bedrooms	No. of persons	Shelf space in wall cabinets	Shelf space in base cabinets
2	3	30 sq. ft.	4½-6 lin. ft.
3	4	36 sq. ft.	6-7½ lin. ft.
4	5	42 sq. ft.	7½-9 lin. ft.

The information above furnishes a preliminary yardstick for determining the amount of cabinet storage space needed. Special family requirements such as an unusual amount of entertaining should be considered.

WORKING HEIGHTS: This is another factor which demands careful consideration if the kitchen is to be completely satisfactory. Although present practice in kitchen design allows for only one standard height of working surfaces, much study is being devoted to the subject of comfortable working heights for each center. These studies consider human proportions in relation to the particular tasks being carried on.

The results of a study made in Oregon¹ show that the working height preferred by the average woman for the mixing surface is 32"; for the bottom of the sink — 32.5" (see illustration). If the bottom of the sink is 32.5" from the floor the side counters will be at least 38.5" in height. Although this is too high for most operations, especially that of mixing, it is acceptable for stacking dishes and serving foods. The mixing counter height should be lower than the average present-day counter height (about 36"), although, as mentioned before, a sturdy pull-out board or table can furnish a comfortable working surface for these operations. The variation of heights at different work centers presents some difficulties for the designer when applied to continuous work surfaces (see illustration). As design problems are solved, the results of such studies

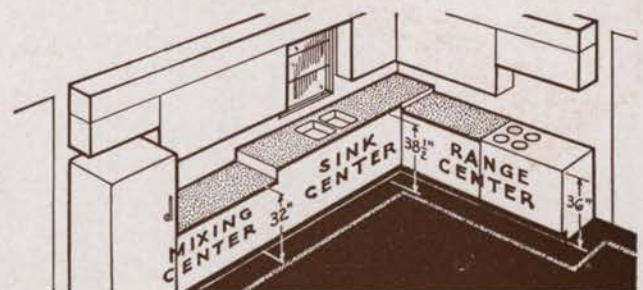


on work heights probably will appear in standard equipment on the market. At the present time a small variation (about 2") in the counter height can be had by reducing the height of "toe space" under the cabinets (see illustrations).

CABINET DIMENSIONS: There are many good manufactured and mill-made "stock" kitchen cabinets, both in wood and metal, available on the market. They are furnished assembled or ready-to-assemble, and usually provide more economical storage space of good quality than can be built to special design on an individual job.

Dimensions of "stock" cabinets have been standardized within narrow variations. The diagram above shows the more important standard dimensions.

Improvements in kitchen design will depend, in a practical sense, upon the application of research to continued improvement of cabinet construction and dimensioning by the manufacturers. The home owner should select cabinets which best meet the latest standards set by research in home economics.



Counter Heights Recommended for Work Centers

¹ According to research done at Oregon State College in a study of body measurements and preferred working heights of 562 women, a variation in counter heights was found desirable. Although there was a 12.6" variation in the height of the women who cooperated in the experiments, the working heights desired by the majority of women varied only from 1½" lower to 1" higher than the figures given here.

(Evelyn Roberts, Maude Wilson, Ruth Thayer, "Standards for Working Surface Heights and Other Space Units of Dwelling." Oregon State Agricultural Experiment Station Bulletin No. 348, June, 1937.)

ACCESSORIES: The accessories and equipment shown on this page add to the convenience of the kitchen. Accessories are *secondary* in importance, however, to the basic kitchen plans described on the previous pages. The items shown here are to give a general idea of available equipment for use in standard size cabinets and are not necessarily recommended in every detail. It should be noted that the cost of many accessories is not included as a rule in the cost of cabinetwork and the home owner should investigate prices.

FOR THE SINK CENTER



Partitioned Space for Trays



Metal-Lined Drawer for Bread and Cakes



Partitioned Drawer for Cutlery



Sliding Dish Towel Rack



Cutting Board in Drawer



Ventilated Storage Bin

FOR THE RANGE CENTER



Sliding Shelf for Pots and Pans



Full Height Cabinet Beside Range

FOR THE MIXING CENTER



Partitioned Drawer for Tins and Lids



Step Shelf for Condiments



Pull-Out Shelf or Table



Flour and Sugar Storage

A PLANNING CENTER: In larger homes there may be a fourth work center, called the "planning center." It would be useful, if possible, to set aside space for a small desk with drawers for recipe files and books, grocery accounts and records relating to kitchen management. A telephone and radio are desirable additions to this "planning center."

A sturdy and easily-cleaned table which could be placed on wheels or casters may serve a variety of purposes. Besides being kept under a telephone-radio bookshelf for planning, it could be used to facilitate



such tasks as mixing, preparing vegetables at the sink, sorting groceries near the service door, or serving beverages and snacks.

An alternative to such planning centers in small homes would be to use the mixing center cabinets for storing recipe books and to use the kitchen table for planning. A telephone and radio may be located nearby. Some definite provision similar to those above should be made for a space to plan housekeeping activities. The homemaker will find that meals can then be planned more easily and efficiently.

The SMALL HOMES COUNCIL acknowledges with appreciation the cooperation of the following manufacturers who assisted in the preparation of this circular with photographs and information.

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