
Kitchen Design: Cabinets, Appliances, and Fixtures

BASIC CONSIDERATIONS

Usually, the main reason to remodel a kitchen is to improve or expand its functionality. Although the original kitchen may have served well enough when the house was built, as lifestyles changed and more modern conveniences have become available, the room may no longer meet your client's needs (Figure 1). Yet with careful planning and attention to detail, you can create a more attractive and efficient room for your client.



FIGURE 1—An outdated kitchen may no longer be functional.

In this study unit, you'll have a chance to explore all the information you need to design a highly functional kitchen. You'll also have an opportunity to practice sketching out a kitchen plan and plugging in cabinets, appliances, and accessories. However, before beginning any kitchen remodeling job, you need to understand some of the basic principles of modern kitchen design.

The Work Triangle

In the 1950s, Cornell University conducted several studies in *ergonomics*, which may be simply defined as an analysis of the relationship between people and their work environments. The point of this type of study is to find new ways to adapt working conditions to suit the worker. Ergonomic principles

have been applied to contemporary kitchen layout in ways most people take for granted, particularly in the design and location of appliances used on a daily basis. However, the most important part of any kitchen design involves the location and function of areas where most activities are performed.

The Cornell University studies produced a concept known as the *work triangle*, which still serves today as the primary consideration of kitchen design plans. As you can see in [Figure 2](#), the work triangle connects the kitchen's three primary activity centers:

- The sink
- The refrigerator
- The stove

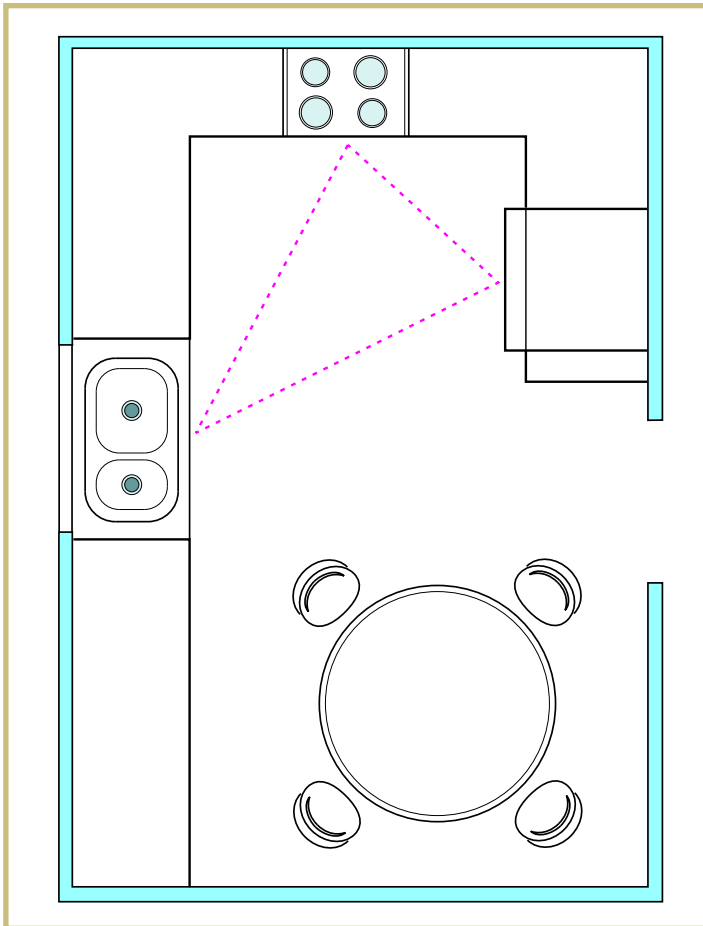


FIGURE 2—The work triangle effectively connects a kitchen's three main activity centers.

Each activity center represents one point of the work triangle. While the distance between any two points may vary from one design to another, the sum of all distances shouldn't be more than 22 feet. A larger area will require more frequent trips between work areas, which can dramatically reduce efficiency while increasing work fatigue (Figure 3).

Available space must be taken into account when planning any new kitchen. It's much easier to plan and install a new kitchen in a farmhouse that offers a lot of room than in a townhouse with limited space. Especially when working with limited space, you must take into consideration the work to be performed at each of the three primary workstations and allow sufficient room around each area for specific tasks to be performed.

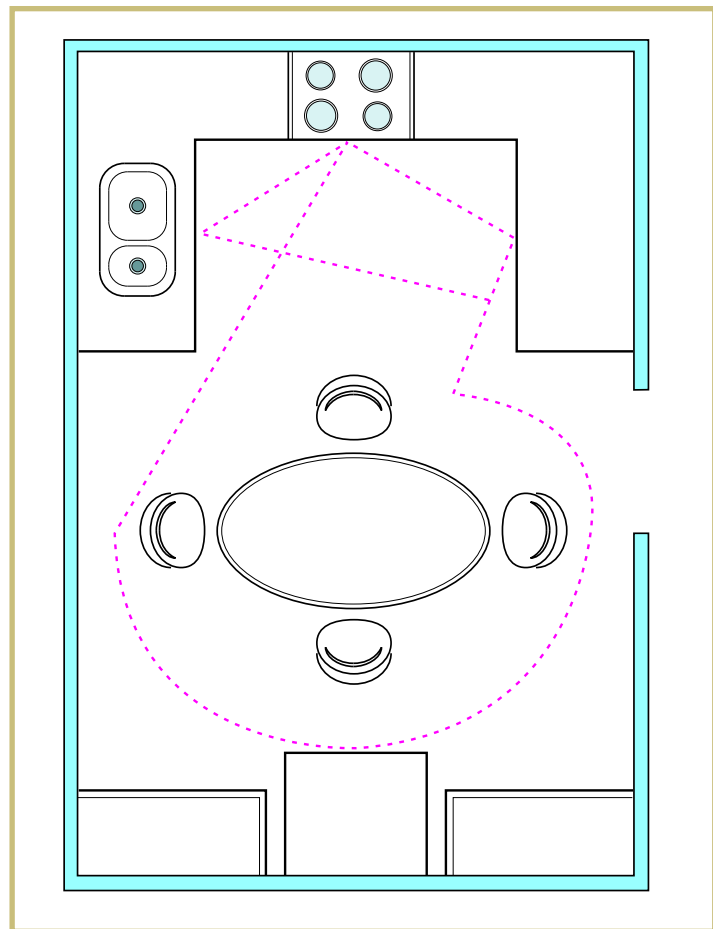


FIGURE 3—A poorly planned kitchen increases the distance between primary work areas.

The Sink

In general, the area around the sink is used for cleaning dishes and cooking utensils and for preparing food. Vegetables are often taken from the refrigerator to be washed and then placed next to the sink for chopping or some other type of preparation. Scraps may be deposited directly from the work area into a disposer in the sink. Because the work area must be large enough to accommodate several different chores at one time, the size of the sink will often be determined by its relation to the functional countertop work space. In other words, if you have a small kitchen with very little work space, you don't want the sink to take up all the room.

The Refrigerator

The choice of refrigerator can be influenced by many factors. While the refrigerator is usually the most used appliance in the kitchen, the size and lifestyle of the household will often determine the most appropriate type of unit. If you're designing for a large family, you may need to plan for a big refrigerator that offers plenty of freezer space. If you're designing for a couple who usually dine out and have only limited space available, you may need to consider a smaller unit. Regardless of size, however, the refrigerator should be placed nearer the sink than the stove, since so many activities involve transferring food from the refrigerator to the sink area prior to cooking. In addition, you need to allot space next to the refrigerator for unloading groceries and setting food items in a convenient location prior to preparation.

The Stove

As with the other major appliances, the size of the stove should be determined by available space, budget, and expected use. Today's stoves offer many different options including indoor, cooktop grilling with downdraft systems. You need to allow space on one or both sides of the unit for moving pans to and from the stove. Location should also be given consideration. Because the likelihood of spills and burns increases in high traffic areas, it's not a good idea to place a stove either near a door, or in an island frequently passed by members of the household.

Countertops and Other Work Areas

Work space used on a regular basis should be carefully designed. All the modern gadgets available won't make food preparation any easier if adequate work space isn't provided. Striking the right balance between appliances and work space may sometimes require a good deal of planning. When space isn't a factor, an island with a separate small sink for vegetable and other preparation work can free up valuable counter space in other parts of the kitchen, so that many cooking tasks can be performed with ease.

Basic Designs

The first order of business when planning a kitchen is to determine the amount of space you have to work with. Sometimes, walls, windows, and doors can be moved; other times, you'll have to work with the existing space as it is. Once you define the space, you need to determine the best uses for existing cabinets and accessories. You'll need to take into account drawers for utensils and towels, as well as storage for canned goods, packaged foods, pots, pans, dishes, and glasses. Then use the work triangle to come up with the most efficient layout. Let's take a look at the four most basic types of kitchen design.

Single Line

Normally, the least expensive—and least efficient—type of kitchen you can install is known as a *single line*, often found in apartments and small houses (Figure 4). As the name implies, all three major work areas are laid out in a straight line. The best plan for a single line kitchen is to place the sink between the stove and refrigerator. Such an arrangement will reduce the amount of time spent walking between one end of the kitchen and the other. Some drawbacks of the single line kitchen include a lack of storage space, and inadequate countertop space for small appliances and food preparation. The food preparation problem can be minimized if you have room to install an island in the kitchen. Storage may be increased through converting a closet into a pantry by adding additional shelves.

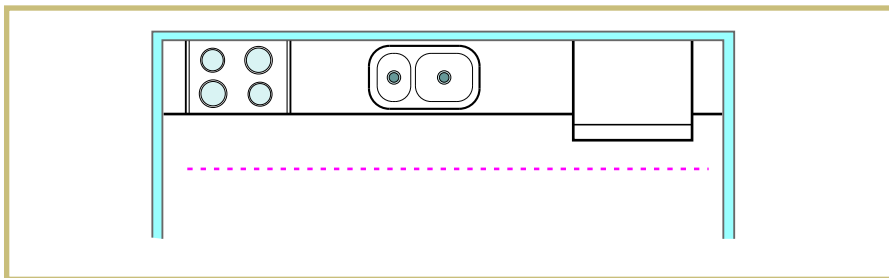
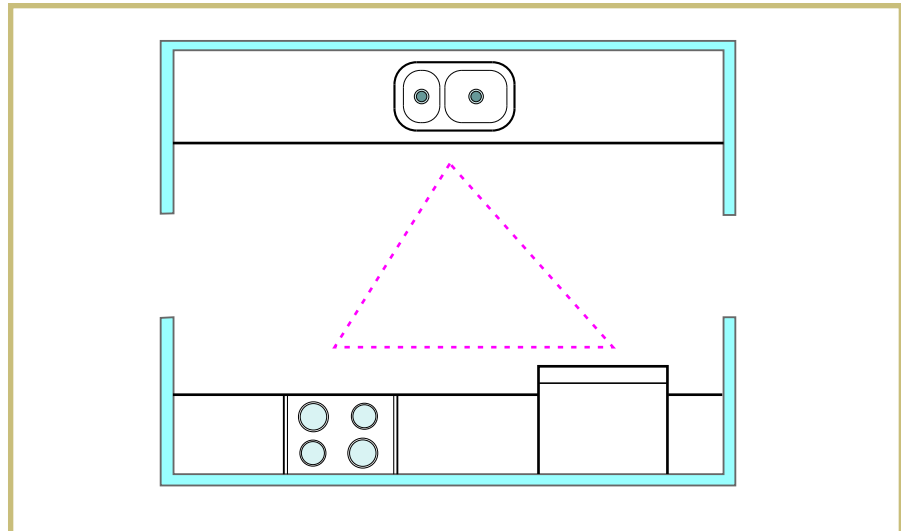


FIGURE 4—A single line kitchen is usually the least functional design.

The Galley

A long, narrow kitchen built along two facing walls is commonly known as a *galley* kitchen. Even a small galley offers considerably more work and storage space than a single line kitchen. Though on a somewhat smaller scale than most full-sized kitchens, a galley design can effectively utilize the work triangle concept (Figure 5). For maximum efficiency, you'll need to allow at least four feet between countertops. More space will be needed to accommodate more than one cook at a time. In general, a galley kitchen is best suited to singles or couples. A large family moving around at meal-times can easily make a galley kitchen look like Grand Central Station.

FIGURE 5—The galley uses the work triangle concept on a small scale.



The U-Shape

A design that includes three separate work areas is commonly referred to as a *U-shaped* kitchen (Figure 6). Each work area may either be built into a wall or free-standing. As long as the maximum area of the work triangle doesn't exceed 22 feet, a U-shape design easily provides functionality with no sacrifice of versatility. However, in large rooms, hiking from one work area to another can be tiring. You can reduce the overall size of the work triangle, and add a sense of proportion to the room, by incorporating an island. The U-shape design lends itself well to adaptations, such as raised counters at the open end for casual dining or a table for family dining.

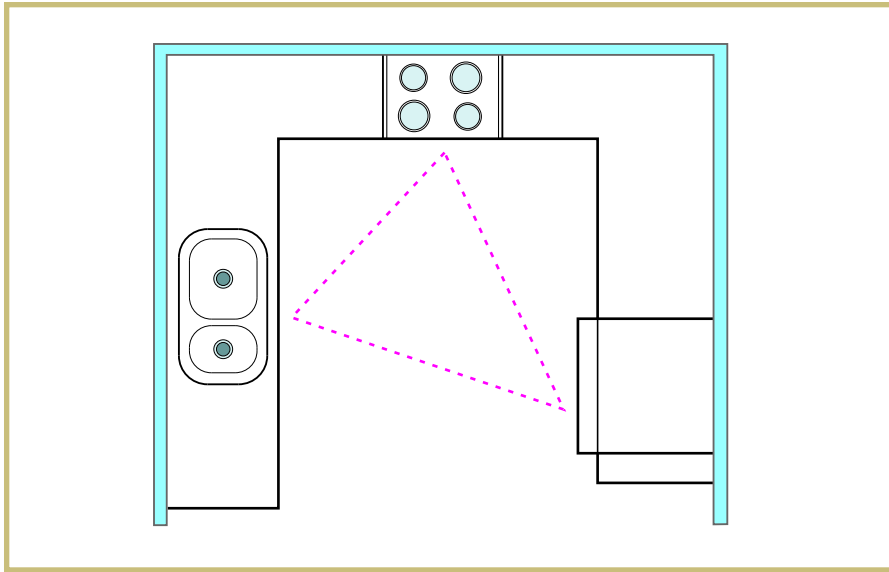


FIGURE 6—The U-shape is a versatile and efficient design.

The L-Shape

A design incorporating two work areas joined at right-angles is commonly referred to as an *L-shape* kitchen. Provided work areas aren't located at the far ends of the work triangle, an L-shape design can be very efficient. The best designs maintain a compact triangle, with plenty of work space between each station. A well-placed table or an island can often significantly enhance efficiency (Figure 7).

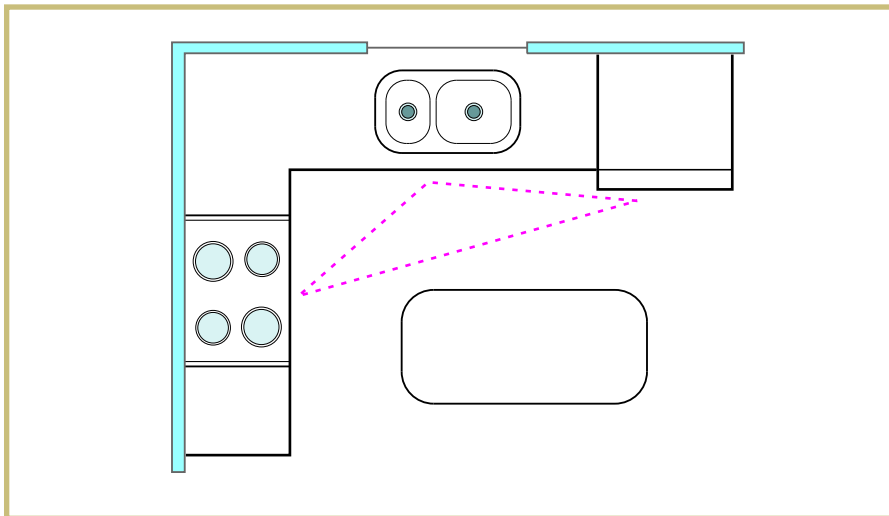


FIGURE 7—An island can enhance the efficiency of the L-shape design.

The amount of planning that goes into kitchen design right from the beginning can seem a little overwhelming at first. A thorough understanding of basic principles can save you much time and effort later on. The next section will introduce you to the wide variety of elements that need to be fitted into a basic design. Before going on, though, please take a moment to check your understanding of what you've already learned by completing *Self-Check 1*.



Self-Check 1

At the end of each section of *Kitchen Design: Cabinets, Appliances, and Fixtures*, you'll be asked to pause and check your understanding of what you've just read by completing a "Self-Check" exercise. Answering these questions will help you review what you've studied so far. Please complete *Self-Check 1* now.

1. What are the two primary reasons for keeping the total maximum distance of the work triangle below 22 feet?

2. List three considerations when planning for major appliances.

3. *True or False?* When planning a kitchen with limited space, priority should be given to a large sink rather than more preparation area.

4. Name the four basic kitchen designs.

5. When designing a kitchen in a large room, how can you reduce the work triangle area?

Check your answers with those on page 67.
