# HOUSING

## Kitchen planning basics II no. 9.521

*by C. Birdsong*[1]

Quick Facts...

Good kitchen lighting consists of a balanced combination of general illumination throughout the room and localized (task) lighting for work areas.

Ventilation should be as close to the cooking surface as possible, preferably directly over and 24 to 30 inches above it.

Adequate wiring in a kitchen means outlets at all major appliance locations, at work areas where small appliances will be used, and sufficient capacity for the lighting system.

Walls, floors and countertops tend to receive much wear in the kitchen; it is important that their surface coverings be durable, easy to clean, and consistent with the purpose for which they are intended.

As one of the busiest and most expensive rooms in the home, the kitchen should be well planned to save time and energy, to prevent hazards that may cause or contribute to accidents, and to provide a pleasant atmosphere for family members.

In addition to the amount and arrangement of space discussed in fact sheet 9.520, *Kitchen planning basics I*, lighting, ventilation, wiring and surface materials are important components of the well-planned kitchen.

## Lighting

Good kitchen lighting consists of a balanced combination of general illumination throughout the room and localized (task) lighting over counters and specific activity centers, such as sink and cooking units.

Natural light contributes both brightness and lightness. A window area equivalent to 10 percent to 20 percent of the floor area is desirable. Artificial light then complements natural light.

General lighting illuminates the entire room and provides a soft flow throughout, reducing the contrast in brightness between task lighting and other surfaces in the room. Lighting of this type may come from such sources as hanging fixtures, recessed fixtures mounted in the ceiling or from light that flows through an entire translucent suspended ceiling.

A general formula for kitchen lighting is to allow 80 lumens of light per square foot of area. Lumens (or the amount of light output) are indicated on packages of bulbs and tubes. Since a 75-watt incandescent bulb averages 1,190 lumens and a 40-watt deluxe fluorescent tube averages 2,200 lumens, a kitchen with 100 square feet would require approximately seven 75-watt bulbs or four 40-watt deluxe fluorescent tubes for general lighting.

In order to eliminate the problem of working in one's own shadows, activity centers or work areas need localized or task lighting in addition to general illumination. Recessed or surface mounted ceiling fixtures, wall brackets or under-cabinet fixtures are available in various sizes and styles, for temporary or permanent installation. Kitchen task lighting should provide 400 to 500 lumens for each specialized location (approximately one 40-watt incandescent or one 15-watt fluorescent).

Fluorescent lighting often is recommended for kitchen use. These tubes dispense light more evenly than incandescent bulbs, use less energy by providing more lumens per watt, and last longer. "Deluxe Cool" fluorescents are a good choice for kitchen lighting. Though not as energy efficient as some other fluorescents, "Deluxe Cool" tubes neither suppress nor intensify reflected colors. This makes all colors, including those of foods, appear more natural.

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## Ventilation

Ventilation should be as close to the cooking surface as possible, preferably directly over and 24 to 30 inches above it.

***Range hoods*** are available in either vented or ductless models. Vented range hoods are vented directly to the outdoors and remove heat and moisture as well as odors, smoke and grease. Ductless range hoods are useful where venting outdoors is not feasible. Some of these types contain charcoal filters that trap odors as well as smoke and grease. Others contain aluminum-mesh filters. Ductless hoods do not reduce heat or moisture.

***Exhaust fans*** are effective in removing cooking odors and smoke. They also contribute to a cooler, less humid room. If wall-mounted, the fan should be directly behind the cooking surface and about 12 to 24 inches above it. Ceiling mounted installations should be directly over the center of the cooking surface.

## Wiring

Adequate wiring means outlets at all major appliance locations, at work areas where small appliances will be used, and sufficient capacity for the lighting systems. An electric range requires an individual circuit. Almost all gas ranges require a 115-volt circuit for the clock, light and rotisserie. A freezer should have its own 115-volt circuit, as should a refrigerator and dishwasher.

A sufficient number of wall outlets should be planned for small appliances: one separate 20-ampere, 115-volt circuit for a toaster, blender, coffeemaker, mixer, can opener, knife sharpener, radio and other appliances. Several circuits may be needed depending upon the number of appliances. A 20-ampere circuit requires heavier wiring throughout. Many new small appliances are now provided with grounded three-prong plugs. Outlets should have grounded three-prong receptacles for small appliances as well as major ones.

Plan enough circuits and switches to handle the selected type of lighting system. Three-way switches allow lights to be turned on and off from two different points. Also consider dimmer switches to regulate light intensity and save energy.

## Surface Materials

Walls, floors and countertops tend to receive much wear in the kitchen. For this reason, it is important that their surface coverings be durable, easy to clean and consistent with the purpose for which they are intended.

Since the characteristics of a family vary and because each family will want to design the appearance of the kitchen in accordance with its style of living, the advantages and disadvantages of various surface materials are provided in Table 1.

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## Table 1: Materials for kitchen surfaces.•

| Materials | Advantages | Disadvantages |
|---|---|---|
| | **Walls** | |
| Paint | Inexpensive, easy to apply, wide color selection (be sure it's washable) | Not available in wide variety of textures |
| Wallpaper | Adds texture, adds patterns; wide range of materials: paper, plastic, fabric | Can be expensive; hanging can be tricky; should have protective coating of polyurethane if paper or fabric for cleaning ease. |
| Ceramic tile | Resistant to food, acids, grease and scratches; never needs painting or waxing; is fire and water resistant | Expensive |
| Brick & stone | Beautiful texture | Too porous for a kitchen unless has protective coating; extremely heavy |
| Wood | Practical if treated with sealer; attractive | |
| | **Countertops** | |
| Ceramic tiles | Wide selection of colors/patterns; non-absorbent, scratch resistant; easy-to clean; stands up to chopping and cutting | Noisy, costly |
| Plastic laminates | Easy to care for; widest selection of colors/patterns; available in marble-look, brick-look, and leather-look | Cannot withstand heat or cutting |
| Butcher block | Ideal cutting surface; best as an insert for cutting area | Burns, cuts, stains; needs occasional sanding and refinishing |
| Metal | Moisture and heat resistant | Surfaces cut and scratch easily |
| | **Floors** | |
| Hard surfaces (brick, wood, slate, cement) | Beautiful looking; durable | Are often fatiguing and uncomfortable for long periods of time; much heavier than other flooring |
| Resilient floors (sheet vinyl, vinyl tile, linoleum, cork & rubber tile) | Most popular; variety of colors, textures, patterns | Cork and rubber tiles can be expensive and they tend to stain |
| Soft floors | Comfortable under foot; available in wide variety of colors/patterns; easy to install | Burns, stains; tiles tend to pull up in heavy traffic areas; not water resistant |

**•Courtesy of Rubbermaid Incorporated, Wooster, Ohio.**