

*Food, Nutrition &
Wellness*

**Foods Activities &
Projects**

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Daily Values and RDAs

The Daily Values are standard values developed by the Food and Drug Administration (FDA) for use on food labels. For example, the Nutrition Facts panel on a carton of orange juice tells you that one serving provides 100% of the Daily Value of vitamin C. According to the chart below, how much vitamin C is this?

The Recommended Dietary Allowances (RDAs) are a set of nutrient standards established by the Committee on Dietary Allowances. RDAs give nutrient amounts for specific ages and genders and are used mainly by health professionals. Only the amounts recommended for teens are included here.

| | | Recommended Dietary Allowance (RDA) | | | | |
|-------------------------------|-------------------------|-------------------------------------|--------------------|----------------------|----------------------|-----------|
| | Daily Value | Males 11-14 | Males 15-18 | Females 11-14 | Females 15-18 | |
| Nutrient | Daily Value | Males 11-14 | Males 15-18 | Females 11-14 | Females 15-18 | |
| Protein | 50 g** | 45 g | 59 g | 46 g | 44 g | |
| Carbohydrate (total) | 300 g** | * | * | * | * | |
| Fiber | 25 g | * | * | * | * | |
| Fat (total) | 65 g** | * | * | * | * | |
| Saturated fat | 20 g** | * | * | * | * | |
| Cholesterol | 300 mg | * | * | * | * | |
| Fat-Soluble Vitamins | Vitamin A | 5,000 IU (875 µg RE) | 1,000 µg RE | 1,000 µg RE | 800 µg RE | 800 µg RE |
| | Vitamin D | 400 IU (6.5 µg) | 10 µg | 10 µg | 10 µg | 10 µg |
| | Vitamin E | 30 IU 9 mg α-TE | 10 mg α-TE | 10 mg α-TE | 8 mg α-TE | 8 mg α-TE |
| | Vitamin K | * | 45 µg | 65 µg | 45 µg | 55 µg |
| Water-Soluble Vitamins | Vitamin C | 60 mg | 50 mg | 60 mg | 50 mg | 60 mg |
| | Thiamin | 1.5 mg | 1.3 mg | 1.5 mg | 1.1 mg | 1.1 mg |
| | Riboflavin | 1.7 mg | 1.5 mg | 1.8 mg | 1.3 mg | 1.3 mg |
| | Niacin | 20 mg NE | 17 mg NE | 20 mg NE | 15 mg NE | 15 mg NE |
| | Vitamin B ₆ | 2 mg | 1.7 mg | 2 mg | 1.4 mg | 1.5 mg |
| | Folate | 0.4 mg | 150 µg | 200 µg | 150 µg | 180 µg |
| | Vitamin B ₁₂ | 6 µg | 2 µg | 2 µg | 2 µg | 2 µg |
| Minerals | Calcium | 1,000 mg | 1,200 mg | 1,200 mg | 1,200 mg | 1,200 mg |
| | Phosphorus | 1,000 mg | 1,200 mg | 1,200 mg | 1,200 mg | 1,200 mg |
| | Potassium | 3,500 mg | * | * | * | * |
| | Iron | 18 mg | 12 mg | 12 mg | 15 mg | 15 mg |
| | Zinc | * | 15 mg | 15 mg | 12 mg | 12 mg |
| | Sodium | 2,400 mg | * | * | * | * |

*No value established

**Based on a diet of 2,000 calories per day

Nutrient Measures

- g gram
- mg milligram
- µg microgram (1000 µg = 1 mg; 1,000,000 µg = 1 g)
- IU International Unit (a measure of vitamin activity)

- µg RE microgram retinol equivalents (a measure of vitamin A activity)
- mg α-TE milligrams alpha-tocopherol equivalents (a measure of vitamin E activity)
- mg NE milligrams niacin equivalents (a measure of niacin activity)

Nutrients in Milk, Yogurt, and Cheese

| | Serving | Calories | Protein (g) | Fat (g) | Calcium (mg) | Phosphorus (mg) | Vitamin A (µg RE) |
|--------------------------------------|---------|----------|-------------|---------|--------------|-----------------|-------------------|
| Milk | | | | | | | |
| Whole | 1 cup | 150 | 8 | 8 | 291 | 228 | 76 |
| Reduced-fat | 1 cup | 121 | 8 | 5 | 297 | 232 | 139 |
| Low-fat | 1 cup | 102 | 8 | 2.5 | 300 | 235 | 144 |
| Fat-free | 1 cup | 86 | 8 | Tr | 302 | 247 | 149 |
| Buttermilk, low-fat | 1 cup | 99 | 8 | 2 | 285 | 219 | 20 |
| Chocolate, whole | 1 cup | 208 | 8 | 8 | 280 | 251 | 73 |
| Chocolate, low-fat | 1 cup | 158 | 8 | 3 | 287 | 257 | 148 |
| Evaporated, whole | ½ cup | 169 | 9 | 10 | 329 | 255 | 68 |
| Evaporated, fat-free | ½ cup | 100 | 10 | Tr | 371 | 249 | 150 |
| Sweetened condensed | ½ cup | 491 | 12 | 13 | 434 | 388 | 124 |
| Ice cream, vanilla | ½ cup | 133 | 2 | 7 | 84 | 69 | 77 |
| Ice cream, chocolate | ½ cup | 143 | 3 | 7 | 72 | 71 | 79 |
| Yogurt | | | | | | | |
| Plain, whole milk | 1 cup | 150 | 9 | 8 | 296 | 233 | 74 |
| Plain, low-fat | 1 cup | 155 | 13 | 4 | 447 | 352 | 39 |
| Fruit flavored, nonfat | 1 cup | 137 | 14 | Tr | 488 | 383 | 5 |
| Fruit flavored, low-fat | 1 cup | 243 | 10 | 3 | 339 | 266 | 29 |
| Frozen yogurt, vanilla, soft-serve | ½ cup | 114 | 3 | 4 | 103 | 93 | 41 |
| Frozen yogurt, chocolate, soft-serve | ½ cup | 115 | 3 | 4 | 106 | 100 | 31 |
| Cheese | | | | | | | |
| American process | 2 oz. | 213 | 13 | 18 | 349 | 422 | 164 |
| Cheddar | 1½ oz. | 171 | 11 | 14 | 307 | 218 | 118 |
| Cheddar, low-fat | 1½ oz. | 74 | 10 | 3 | 176 | 201 | 27 |
| Cottage, low-fat | ½ cup | 82 | 14 | 1 | 69 | 151 | 12 |
| Cream | 1½ oz. | 148 | 3 | 15 | 34 | 44 | 162 |
| Mozzarella, part skim | 1½ oz. | 108 | 10 | 7 | 260 | 197 | 75 |
| Swiss | 1½ oz. | 160 | 12 | 12 | 409 | 257 | 108 |

Tr = trace amount

Adapted from: U.S. Department of Agriculture Nutrient Database for Standard Reference, Release 13

Nutrients in Grain Products

| | Serving | Calories | Protein (g) | Fat (g) | Carbohydrate (g) | Iron (mg) | Phosphorus (mg) | Fiber (g) |
|-------------------------------|-----------|----------|----------------|------------|---------------------|--------------|--------------------|--------------|
| Bagel, plain | ½ | 78 | 3 | Tr | 15 | 1.0 | 27 | 1 |
| Biscuit | 1 | 190 | 4 | 7 | 28 | 1.2 | 268 | 1 |
| Bread, pita (4-in.) | 1 | 74 | 3 | 1 | 15 | 0.9 | 50 | 2 |
| Bread, rye | 1 slice | 83 | 3 | 1 | 15 | 0.9 | 40 | 2 |
| Bread, white | 1 slice | 80 | 2 | 1 | 15 | 0.9 | 28 | 1 |
| Bread, whole wheat | 1 slice | 69 | 3 | 1 | 13 | 0.9 | 64 | 2 |
| Cereal, bran flakes | 1 oz. | 79 | 4 | 1 | 23 | 4.5 | 294 | 10 |
| Cereal, corn flakes | 1 oz. | 102 | 2 | 0 | 24 | 8.7 | 11 | 1 |
| Cereal, crispy rice | 1 oz. | 112 | 2 | 0 | 25 | 0.7 | 31 | Tr |
| Cereal, oatmeal | ½ cup | 69 | 3 | 1 | 12 | 4.2 | 88 | 2 |
| Cereal, oat rings | 1 oz. | 109 | 3 | 2 | 23 | 8.1 | 114 | 3 |
| Cookie, oatmeal | 1 | 67 | 1 | 3 | 10 | 0.4 | 25 | 0 |
| Cookie, peanut butter | 1 | 95 | 2 | 5 | 12 | 0.4 | 23 | 0 |
| Corn bread | 1 piece | 188 | 4 | 6 | 29 | 1.1 | 226 | 1 |
| Couscous | ½ cup | 88 | 3 | Tr | 18 | 0.3 | 17 | 1 |
| Crackers, graham | 1 oz. | 118 | 2 | 3 | 21 | 1.2 | 57 | 1 |
| Crackers, saltine | 1 oz. | 118 | 3 | 3 | 20 | 1.5 | 28 | 1 |
| Crackers, wheat | 1 oz. | 136 | 2 | 6 | 20 | 1.1 | 60 | 1 |
| Croissant | 1 small | 171 | 3 | 9 | 19 | 0.9 | 44 | 1 |
| English muffin | 1 | 134 | 4 | 1 | 26 | 1.4 | 76 | 2 |
| Macaroni | ½ cup | 99 | 3 | Tr | 20 | 1.0 | 38 | 1 |
| Muffin, plain | 1 | 169 | 4 | 6 | 24 | 1.4 | 87 | 2 |
| Noodles, egg | ½ cup | 106 | 4 | 1 | 20 | 1.3 | 55 | 1 |
| Pancake, plain (6-in.) | 1 | 175 | 5 | 7 | 22 | 1.4 | 122 | 0 |
| Popcorn, air popped, plain | 1 cup | 31 | 1 | 0 | 6 | 0.2 | 24 | 1 |
| Pretzels | 10 twists | 229 | 5 | 2 | 48 | 2.6 | 68 | 2 |
| Rice, brown, long-grain | ½ cup | 108 | 3 | Tr | 22 | 0.4 | 81 | 2 |
| Rice, white, instant | ½ cup | 81 | 2 | 0 | 18 | 0.5 | 12 | 1 |
| Rice, white, long grain | ½ cup | 103 | 2 | 0 | 22 | 1.0 | 34 | 1 |
| Spaghetti | ½ cup | 99 | 3 | Tr | 20 | 1.0 | 38 | 1 |
| Tortilla, corn (6-in.) | 1 | 58 | 1 | 1 | 12 | 0.4 | 82 | 1 |
| Waffle (7-in. round) | 1 | 218 | 6 | 11 | 25 | 1.7 | 143 | 0 |

Tr = Trace Amount

Adapted from: U.S. Department of Agriculture Nutrient Database for Standard Reference, Release 13

Nutrients in Fruit and Fruit Juices

| | Serving | Calories | Carbohydrate (g) | Vitamin A (μ g RE) | Vitamin C (mg) | Fiber (g) |
|------------------------------------|----------------------|----------|---------------------|----------------------------|-------------------|--------------|
| Apple, with skin | 1 medium | 80 | 21 | 7 | 8 | 4 |
| Apple juice, unsweetened | $\frac{3}{4}$ cup | 87 | 22 | 0 | 2 | 0 |
| Apricots | 3 | 51 | 12 | 273 | 11 | 2 |
| Apricots, canned in juice | $\frac{1}{2}$ cup | 47 | 12 | 250 | 5 | 2 |
| Apricots, dried | $\frac{1}{2}$ cup | 340 | 49 | 754 | 6 | 5 |
| Avocado | $\frac{1}{2}$ medium | 162 | 7 | 61 | 8 | 5 |
| Banana | 1 medium | 105 | 27 | 9 | 10 | 3 |
| Blueberries | $\frac{1}{2}$ cup | 40 | 10 | 8 | 9 | 2 |
| Cantaloupe | $\frac{1}{2}$ cup | 28 | 7 | 258 | 34 | 1 |
| Cherries, pitted | $\frac{1}{2}$ cup | 52 | 12 | 15 | 5 | 2 |
| Cranberry juice cocktail | $\frac{3}{4}$ cup | 108 | 27 | 0 | 67 | 0 |
| Fruit cocktail, canned in juice | $\frac{1}{2}$ cup | 46 | 12 | 185 | 37 | 1 |
| Grapefruit | $\frac{1}{2}$ medium | 40 | 10 | 1 | 41 | 1 |
| Grapefruit juice | $\frac{3}{4}$ cup | 70 | 16 | 13 | 54 | 0 |
| Grape juice | $\frac{3}{4}$ cup | 116 | 28 | 2 | 0 | 0 |
| Grapes, seedless | $\frac{1}{2}$ cup | 56 | 14 | 6 | 9 | 1 |
| Kiwi fruit | 1 medium | 45 | 11 | 13 | 74 | 3 |
| Mango | 1 medium | 135 | 35 | 806 | 57 | 4 |
| Orange | 1 medium | 60 | 15 | 27 | 70 | 3 |
| Orange juice | $\frac{3}{4}$ cup | 82 | 19 | 15 | 61 | Tr |
| Peach | 1 medium | 42 | 11 | 53 | 6 | 2 |
| Peaches, canned in juice | $\frac{1}{2}$ cup | 55 | 14 | 48 | 5 | 2 |
| Pear | 1 medium | 98 | 25 | 3 | 7 | 4 |
| Pears, canned in juice | $\frac{1}{2}$ cup | 62 | 16 | 1 | 2 | 2 |
| Pineapple, canned in juice | $\frac{1}{2}$ cup | 75 | 20 | 5 | 12 | 1 |
| Pumpkin, canned | $\frac{1}{2}$ cup | 42 | 10 | 2702 | 5 | 4 |
| Raisins | $\frac{1}{2}$ cup | 218 | 58 | Tr | 2 | 3 |
| Strawberries, sliced | $\frac{1}{2}$ cup | 25 | 6 | 3 | 47 | 2 |
| Watermelon | $\frac{1}{2}$ cup | 25 | 6 | 28 | 7 | Tr |

Tr = Trace amount

Adapted from: U.S. Department of Agriculture Nutrient Database for Standard Reference, Release 13

Nutrients in Vegetables and Vegetable Juices

| | Serving | Calories | Carbohydrate (g) | Calcium (mg) | Vitamin A (µg RE) | Vitamin C (mg) | Fiber (g) |
|-----------------------------|----------|----------|---------------------|-----------------|----------------------|-------------------|--------------|
| Asparagus, frozen | ½ cup | 25 | 4 | 21 | 74 | 22 | 3 |
| Green beans, fresh | ½ cup | 22 | 5 | 29 | 42 | 6 | 2 |
| Green beans, canned | ½ cup | 14 | 3 | 18 | 24 | 3 | 1 |
| Broccoli, raw | ½ cup | 12 | 2 | 21 | 68 | 41 | 1 |
| Brussels sprouts | ½ cup | 30 | 8 | 28 | 56 | 48 | 2 |
| Cabbage, raw | 1 cup | 22 | 5 | 42 | 12 | 29 | 2 |
| Carrots, raw | ½ cup | 28 | 6 | 17 | 1800 | 6 | 2 |
| Cauliflower, raw | ½ cup | 13 | 3 | 11 | 1 | 23 | 1 |
| Celery, raw | 1 stalk | 6 | 1 | 16 | 5 | 3 | 1 |
| Collards, raw | 1 cup | 11 | 2 | 52 | 138 | 13 | 1 |
| Corn, canned | ½ cup | 66 | 15 | 4 | 13 | 7 | 2 |
| Cucumber, raw | ½ cup | 7 | 1 | 7 | 11 | 3 | Tr |
| Hominy, canned | ½ cup | 59 | 12 | 8 | 0 | 0 | 2 |
| Kale | 1 cup | 36 | 7 | 94 | 962 | 53 | 3 |
| Lettuce, iceberg | 1 cup | 7 | 1 | 10 | 18 | 2 | 1 |
| Lettuce, romaine | 1 cup | 8 | 1 | 20 | 146 | 13 | 1 |
| Mushrooms, raw | ½ cup | 9 | 1 | 2 | 0 | 1 | Tr |
| Peas, canned | ½ cup | 59 | 11 | 17 | 65 | 8 | 3 |
| Pepper, green, raw | ½ cup | 20 | 5 | 7 | 47 | 67 | 1 |
| Pepper, red, raw | ½ cup | 20 | 5 | 7 | 4257 | 142 | 1 |
| Potato, baked w/skin | 1 medium | 220 | 51 | 20 | 0 | 26 | 5 |
| Spinach, raw | 1 cup | 7 | 1 | 30 | 202 | 8 | 1 |
| Sweet potato, baked | 1 medium | 117 | 28 | 32 | 2487 | 28 | 3 |
| Tomato, raw | 1 medium | 26 | 6 | 6 | 76 | 23 | 1 |
| Tomato, canned, whole | ½ cup | 23 | 5 | 36 | 72 | 17 | 2 |
| Tomato juice, canned | ¾ cup | 31 | 8 | 16 | 102 | 33 | 2 |
| Vegetable juice cocktail | ¾ cup | 34 | 8 | 16 | 160 | 38 | 1 |
| Zucchini | ½ cup | 19 | 5 | 16 | 29 | 6 | 2 |

Tr = Trace amount

Vegetables are cooked unless otherwise noted.

Adapted from: U.S. Department of Agriculture Nutrient Database for Standard Reference, Release 13

Nutrients in Legumes, Nuts, and Seeds

| | Serving | Calories | Protein (g) | Fat (g) | Calcium (mg) | Iron (mg) | Phosphorus (mg) | Fiber (g) |
|--------------------------|---------|----------|----------------|------------|-----------------|--------------|--------------------|--------------|
| Legumes* | | | | | | | | |
| Black beans | ½ cup | 114 | 8 | 1 | 23 | 1.8 | 120 | 7 |
| Blackeye peas, canned | ½ cup | 92 | 6 | 1 | 24 | 1.2 | 168 | 4 |
| Chickpeas, canned | ½ cup | 143 | 6 | 1 | 38 | 1.6 | 108 | 5 |
| Kidney beans | ½ cup | 112 | 8 | Tr | 25 | 2.6 | 126 | 7 |
| Lentils | ½ cup | 115 | 9 | Tr | 19 | 3.3 | 178 | 8 |
| Lima beans, canned | ½ cup | 95 | 6 | Tr | 25 | 2.2 | 89 | 6 |
| Navy beans | ½ cup | 129 | 8 | 1 | 64 | 2.3 | 143 | 6 |
| Peanuts** | 1 oz. | 166 | 7 | 14 | 15 | 0.6 | 101 | 2 |
| Peanut butter, smooth | 2 Tbsp. | 190 | 8 | 16 | 12 | 0.6 | 118 | 2 |
| Peas, split | ½ cup | 116 | 8 | 1 | 14 | 1.3 | 97 | 8 |
| Pinto beans, canned | ½ cup | 103 | 6 | 1 | 52 | 1.8 | 110 | 6 |
| Soy nuts** | 1 oz. | 124 | 11 | 6 | 40 | 1.1 | 186 | 1 |
| Tofu, firm | 4 oz. | 97 | 10 | 6 | 204 | 1.8 | 185 | 1 |
| Nuts** | | | | | | | | |
| Almonds | 1 oz. | 169 | 6 | 15 | 75 | 1.3 | 139 | 3 |
| Cashews | 1 oz. | 163 | 4 | 13 | 13 | 1.7 | 139 | 1 |
| Pecans | 1 oz. | 201 | 3 | 21 | 20 | 0.8 | 83 | 3 |
| Pistachios | 1 oz. | 162 | 6 | 13 | 31 | 1.2 | 137 | 3 |
| Walnuts, black | 1 oz. | 172 | 7 | 16 | 16 | 0.9 | 132 | 1 |
| Seeds** | | | | | | | | |
| Pumpkin | 1 oz. | 148 | 9 | 12 | 12 | 4.2 | 332 | 1 |
| Sesame | 1 oz. | 160 | 5 | 14 | 37 | 2.2 | 219 | 5 |
| Sunflower | 1 oz. | 175 | 5 | 16 | 16 | 1.9 | 328 | 3 |

Tr = trace amount

* Cooked from dry form unless otherwise noted

** Shelled and dry roasted

Adapted from: U.S. Department of Agriculture Nutrient Database for Standard Reference, Release 13

Nutrients in Poultry and Poultry Products

| | Serving | Calories | Protein (g) | Fat (g) | Cholesterol (mg) | Iron (mg) | Phosphorus (mg) | Sodium (mg) |
|---|----------|----------|----------------|------------|---------------------|--------------|--------------------|----------------|
| Chicken breast, with skin, fried, batter-dipped | ½ breast | 364 | 34 | 11 | 119 | 1.8 | 259 | 385 |
| Chicken breast, with skin, fried in flour | ½ breast | 218 | 31 | 9 | 87 | 1.1 | 228 | 74 |
| Chicken breast, with skin, roasted | ½ breast | 193 | 29 | 8 | 82 | 1.0 | 210 | 70 |
| Chicken breast, no skin, roasted | ½ breast | 142 | 27 | 3 | 73 | 0.9 | 196 | 63 |
| Chicken drumstick, fried, batter-dipped | 1 piece | 193 | 16 | 11 | 62 | 1.0 | 106 | 194 |
| Chicken drumstick, fried in flour | 1 piece | 120 | 13 | 8 | 44 | 0.7 | 86 | 44 |
| Chicken drumstick, roasted | 1 piece | 112 | 14 | 6 | 47 | 0.7 | 91 | 47 |
| Chicken, canned | 2 oz. | 117 | 15 | 6 | 44 | 1.1 | 79 | 357 |
| Chicken nuggets, fast food | 6 pieces | 319 | 18 | 21 | 61 | 0.9 | 289 | 513 |
| Turkey bacon | 3 slices | 34 | 2 | 3 | 12 | 0.2 | 28 | 184 |
| Turkey breast, no skin, roasted | 3 oz. | 117 | 26 | 1 | 72 | 1.3 | 195 | 45 |
| Turkey breast, deli-style | 1 oz. | 23 | 4 | Tr | 9 | 0.3 | 65 | 334 |
| Turkey bologna | 1 oz. | 52 | 3 | 4 | 19 | 0.5 | 55 | 270 |
| Ground turkey, broiled | 3 oz. | 193 | 22 | 11 | 84 | 1.6 | 161 | 88 |
| Turkey ham | 1 oz. | 32 | 5 | 1 | 19 | 0.4 | 83 | 316 |
| Turkey hot dog | 1 link | 102 | 6 | 8 | 48 | 0.8 | 60 | 642 |
| Turkey sausage | 2 oz. | 90 | 8 | 5 | 36 | 0.8 | 114 | 515 |

Tr = Trace amount

Adapted from: U.S. Department of Agriculture Nutrient Database for Standard Reference, Release 13

Nutrients in Fish and Shellfish

| | Serving | Calories | Protein (g) | Fat (g) | Calcium (mg) | Iron (mg) | Vitamin A (μ g RE) |
|-----------------------------------|----------|----------|----------------|------------|-----------------|--------------|----------------------------|
| <i>Fish</i> | | | | | | | |
| Catfish, breaded and fried | 3 oz. | 195 | 15 | 11 | 37 | 1.2 | 7 |
| Cod fillet, baked | 3 oz. | 89 | 19 | 1 | 12 | 0.4 | 12 |
| Fish sticks | 3 sticks | 210 | 18 | 9 | 33 | 0.9 | 15 |
| Flounder, baked | 3 oz. | 80 | 17 | 1 | 13 | 0.3 | 10 |
| Halibut, broiled in butter | 3 oz. | 140 | 20 | 6 | 14 | 0.7 | 174 |
| Perch, breaded and fried | 3 oz. | 185 | 16 | 11 | 31 | 1.2 | 20 |
| Salmon, pink, canned | 3 oz. | 120 | 17 | 5 | 167* | 0.7 | 18 |
| Salmon steak, broiled | 3 oz. | 127 | 22 | 4 | 14 | 0.8 | 35 |
| Sardines, canned in oil | 3 oz. | 175 | 20 | 9 | 371* | 2.6 | 56 |
| Tuna, canned in water | 3 oz. | 135 | 30 | 1 | 17 | 0.6 | 32 |
| Tuna steak, broiled | 3 oz. | 156 | 25 | 5 | 9 | 1.1 | 643 |
| <i>Shellfish</i> | | | | | | | |
| Clams, canned | 3 oz. | 126 | 22 | 2 | 78 | 23.7 | 145 |
| Clams, breaded and fried | 3 oz. | 712 | 12 | 9 | 54 | 11.8 | 77 |
| Crab, canned | 3 oz. | 84 | 17 | 1 | 86 | 0.7 | 2 |
| Crab, imitation, made from surimi | 3 oz. | 87 | 10 | 1 | 11 | 0.3 | 17 |
| Oysters, canned | 3 oz. | 59 | 6 | 2 | 38 | 5.7 | 77 |
| Oysters, steamed | 3 oz. | 116 | 12 | 4 | 77 | 10.1 | 46 |
| Shrimp, canned | 3 oz. | 102 | 20 | 2 | 50 | 2.3 | 15 |
| Shrimp, breaded and fried | 3 oz. | 206 | 18 | 10 | 57 | 1.1 | 48 |

*Eaten with bones

Adapted from: U.S. Department of Agriculture Nutrient Database for Standard Reference, Release 13

Nutrients in Meats and Meat Products

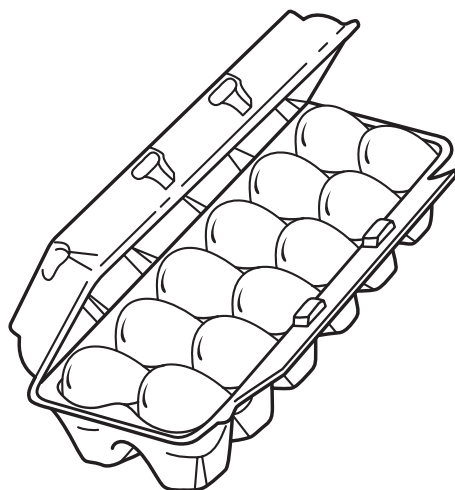
| | Serving | Calories | Protein (g) | Fat (g) | Cholesterol (mg) | Iron (mg) | Sodium (mg) |
|--------------------------------|----------|----------|----------------|------------|---------------------|--------------|----------------|
| Bacon, pork, broiled | 3 slices | 109 | 6 | 9 | 16 | 0.3 | 303 |
| Bacon, Canadian-style, grilled | 2 slices | 86 | 11 | 4 | 30 | 0.4 | 719 |
| Bologna, beef | 1 slice | 89 | 3 | 8 | 20 | 0.4 | 310 |
| Bratwurst, pork, grilled | 1 link | 256 | 12 | 22 | 51 | 1.1 | 473 |
| Chop, lamb loin, broiled | 3 oz. | 160 | 23 | 7 | 72 | 2.1 | 56 |
| Chop, pork loin, broiled | 3 oz. | 195 | 25 | 10 | 69 | 0.7 | 54 |
| Ground beef, lean, broiled | 3 oz. | 225 | 24 | 13 | 84 | 2.4 | 70 |
| Ground beef, regular, broiled | 3 oz. | 248 | 23 | 16 | 86 | 2.3 | 79 |
| Ground pork, broiled | 3 oz. | 252 | 22 | 18 | 80 | 1.1 | 62 |
| Ham, canned, roasted | 3 oz. | 192 | 17 | 13 | 53 | 1.2 | 800 |
| Ham, fresh, roasted | 3 oz. | 179 | 25 | 8 | 80 | 1.0 | 54 |
| Hot dog, beef | 1 link | 142 | 5 | 13 | 27 | 0.6 | 462 |
| Pepperoni | 1 oz. | 137 | 6 | 12 | 22 | 0.4 | 561 |
| Ribs, beef, roasted | 3 oz. | 304 | 19 | 25 | 71 | 2.0 | 54 |
| Ribs, pork, roasted | 3 oz. | 279 | 20 | 22 | 78 | 0.9 | 44 |
| Salami, beef | 1 oz. | 74 | 4 | 6 | 18 | 0.6 | 333 |
| Sausage, pork, broiled | 3 oz. | 99 | 5 | 8 | 22 | 0.3 | 349 |
| Sirloin steak, broiled | 3 oz. | 166 | 26 | 6 | 76 | 2.9 | 56 |
| Veal cutlet, broiled | 3 oz. | 184 | 21 | 10 | 88 | 0.7 | 79 |

Adapted from: U.S. Department of Agriculture Nutrient Database for Standard Reference, Release 13

Nutrients in Eggs

| | Serving | Calories | Protein (g) | Fat (g) | Cholesterol (mg) | Iron (mg) | Phosphorus (mg) | Vitamin A (μ g RE) |
|--------------------------|-------------------|----------|----------------|------------|---------------------|--------------|--------------------|----------------------------|
| Fried | 1 | 92 | 6 | 7 | 211 | 0.7 | 89 | 114 |
| Hard cooked | 1 | 78 | 6 | 5 | 212 | 0.6 | 86 | 84 |
| Poached | 1 | 75 | 6 | 5 | 212 | 0.7 | 89 | 95 |
| Scrambled (with milk) | 1 | 101 | 7 | 7 | 215 | 0.7 | 104 | 119 |
| Egg substitute | $\frac{1}{4}$ cup | 96 | 7 | 7 | 1 | 1.2 | 43 | 81 |

Adapted from: U.S. Department of Agriculture Nutrient Database for Standard Reference, Release 13



Aiming for Goals

A goal is something you want to work toward. Goals can serve several purposes.

- They help motivate you. Have you ever noticed that runners often finish a race with an extra burst of speed? They give their best effort because their goal—the finish line—is in sight. Setting goals can help you make your best effort, too.
- They can help you solve problems. Everyone faces problems sometimes—for example, feeling lonely in a new school. Try turning problems into goals, such as making a new friend. Then you can take action to meet your goal instead of worrying about your problem.
- Goals can guide the direction of your life. Think about what you'd like to accomplish or improve in your life. Base your goals on what you believe is good and right, for others as well as yourself. Then you can take steps to make your dreams a reality.

Reaching Your Goals

You have a better chance of reaching your goals if you keep these tips in mind.

Focus on what's important to you. If goals are based on something you value—such as your good health—you'll be more likely to follow through.

Break it down. Set short-term goals to work toward your long-term goal. If you want to improve your eating habits, don't try to change them all at once. Work on one area at a time—perhaps eating more fruit to start with.

Be specific. Just saying that you'll eat more fruit is too general, though. More than what? How will you know when you've reached your goal? Instead, you might say, "I'm going to have at least two servings of fruit every day."

Write it down. You might write your goal in your journal or post it where you'll see it every day.

Plan a strategy. Make a list of specific actions you can take that will help you meet your goal. Then get going!

Ask for support. Find someone to help and encourage you. You and a friend might work on a goal together.

Celebrate success. When you reach your goal, tell yourself what a great job you did! If your goal is to do something every day (like eating fruit), keep track of how many days in a row you're successful.

Stay positive. Reaching a goal is not usually a smooth, easy process. You'll probably make mistakes. Some days you may not feel like trying. Don't give up! Remind yourself of all the days you reached your goal. You can do it again!

Taking Action

Imagine that you and a friend have set the goal to eat at least two servings of fruit each day. What specific actions could you take that would help you meet this goal? How would you encourage your friend?

A Career for You

Choosing a career is one of the most important decisions you'll make. How can you choose a career that will make you happy and provide a good income? Here are some questions to think about.

What are your talents? A talent is a special ability. For instance, some people have an ability to organize well. Others are skilled at working with their hands. Think about your own abilities. Everyone has at least one ability that stands out.

What are your interests? How do you like to spend your leisure time? A hobby might someday lead to a career. Interests such as photography, athletics, food preparation, and music offer a wide variety of career choices.

Do you like to teach people? Teaching can be a highly rewarding career.

Do you prefer working with others or alone? Most jobs involve both at various times. However, if you usually prefer working alone, you might be unhappy as a salesperson.

How important is money in your life? Many careers offer a satisfying life, even though you may not make millions. If making money is your goal, you might be unhappy in a job that has an average salary.

Are you a leader or a follower? Do you prefer to let someone else make decisions and tell you what to do?

Are you willing to take risks or do you want security? If you are willing to take risks, you might consider starting your own business.

Would you enjoy a job that involves travel? Some jobs require being away from home frequently, others seldom or not at all.

Are you ambitious? Is your main goal to reach the top of the career ladder? Then look for a career with many chances for advancement.



Taking Action

Some people end up in careers that don't make them happy or satisfied. Why do you think this happens? Is it a problem? If so, what can be done to avoid it? Write a brief essay explaining your thoughts.

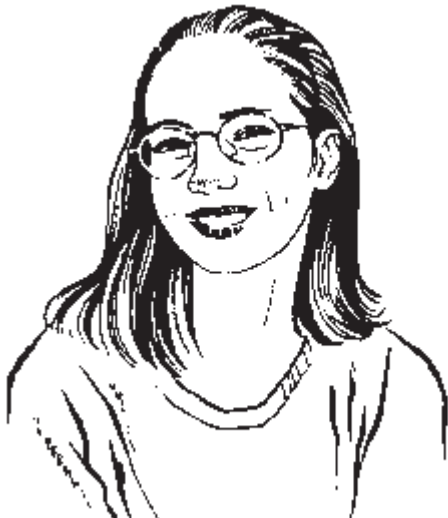
More Ways to Cope with Stress

As a student, you may experience stress at school, with your family, and with your friends. If you have a job, work may cause you stress. Your textbook has some suggestions to help you cope with the stress in your life. Here are some additional tips.

- Identify the major sources of stress in your life. Decide what changes to make and set goals. Celebrate your progress!
- Realize you can't change other people, but you can change the way you react to people and situations.
- Use good time management skills. Establish routines and set priorities. Tackle difficult tasks during the time of day you work best.
- Use positive "self-talk." Avoid negative thoughts such as, "I'll never be any good at this." Instead, tell yourself, "I've handled difficult tasks before, and I'll handle this too. It just takes time."
- Recognize the situations that create stress in your life. Think about how you can react to them in a more positive way.



- Make a list of the activities you find most rewarding. Try to spend some time each day or week doing something you enjoy.
- Emphasize the progress you're making, not the setbacks.
- Don't give up! Stress is a fact of life—there's no way to avoid it. The trick is to learn to manage stress rather than letting stress manage you!



Taking Action

Make a personal "stress kit." Write your own suggestions for coping with stress on index cards or slips of paper. Put them in a shoebox along with other items that could help you cope with stress. Examples might include photos of special friends, humorous cartoons, a magazine picture of a peaceful beach or forest, and so on. Write a paragraph explaining your choices. Keep your "stress kit" on hand to use when you need a lift.

Fiber Facts

A healthful diet includes plenty of fiber. You can get fiber from grains, dry beans and peas, vegetables, and fruits.

You can't digest fiber, so it passes basically unchanged through the body. Still, it affects how your body digests food and absorbs nutrients. It promotes a healthy digestive system and may have other health benefits.

Kinds of Fiber

There are two general kinds of fiber: insoluble and soluble. Most plants that contain fiber have both kinds.

Insoluble fiber will not dissolve in water. As it moves through the digestive tract, it absorbs up to 15 times its weight in water. It adds bulk to stools. This helps prevent digestive problems.

Soluble fiber can dissolve in water. It appears to help lower the amount of cholesterol in the blood. That may help reduce the risk of heart disease. Soluble fiber may also help the body control blood sugar levels. Soluble fiber is found in fruits, vegetables, whole grains, and legumes.

Eating More Fiber

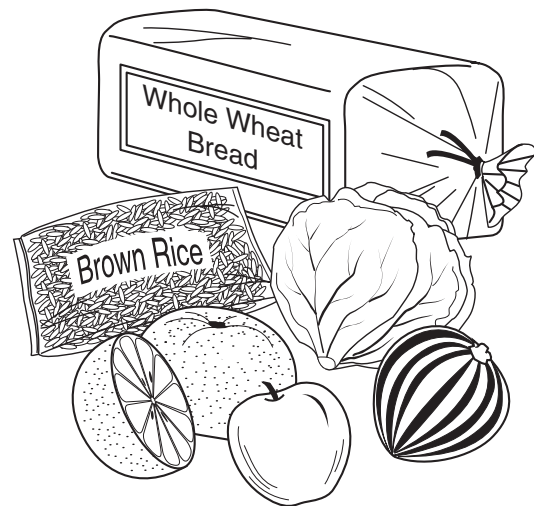
To include more fiber in your diet, try these suggestions:

- Eat a high-fiber cereal for breakfast.
- Start each day with a piece of fruit.
- Choose whole grains. Whole grain products are made with the entire grain kernel, including the fiber-rich bran.

Examples of whole grain products are whole wheat bread, whole wheat pasta, and brown rice.

- Eat legumes—dry beans and peas—at least several times a week. They're a great source of fiber and provide protein and other nutrients, too.
- Snack on fresh fruits and vegetables.
- Enjoy fresh fruit for dessert.

When increasing the amount of fiber in your diet, make the changes slowly. If you add too much fiber all at once, gas and digestive upsets may occur. Also be sure to drink lots of fluids.



Taking Action

Look at the labels of several different kinds of foods. Find where the amount of fiber is listed. Make a chart comparing the amounts. What combination of foods (one serving each) could give you the fiber you need each day?

Planning Heart-Healthy Meals

Does someone in your family have high levels of cholesterol? If so, he or she probably has been told to eat a low-fat, low-cholesterol diet. The challenge is to plan tasty, healthful meals that are also low in saturated fat, trans fats, and cholesterol. However, having some fat in your diet is essential for good health.

Reducing Saturated Fat

The body creates cholesterol from saturated fat. For most people, a diet high in saturated fat increases cholesterol in the blood. The first step in lowering cholesterol is to reduce the amount of saturated fat in the diet.

Saturated fat is found in butter, whole milk, cheese, ice cream, red meat, palm oil, coconut oil, cocoa butter, lard, and hydrogenated soybean and cottonseed oils. To reduce saturated fat in the diet:

- Read labels carefully.
- Choose nonfat or low-fat milk.
- Choose low-fat cheese such as low-fat cottage cheese or part-skim mozzarella.
- Choose lean beef, pork, or veal. Limit meat products high in fat, such as ground beef, bacon, and sausage.
- Remove skin from poultry before eating.
- Eat at least one meatless meal a week.
- Eat broiled or baked fish at least once per week.

Avoiding Trans Fats

Unsaturated fats are usually liquid at room temperature. Polyunsaturated and monounsaturated fats are the two types of

unsaturated fats. They're often found in oils from plants. Both polyunsaturated and monounsaturated fats may help lower your blood cholesterol levels when you use them in place of saturated fats in your diet.

The trans fats are created by heat (as in deep frying) and by hydrogenation, the process used to turn vegetable oils into solid shortening and margarine. They are also found in small amounts in animal products such as beef, pork, lamb, and the butterfat in butter and milk.

Trans fats tend to raise cholesterol levels. What can you do to regulate your intake of trans fats? The American Heart Association provides these tips:

- Use natural oils such as canola or olive oil in cooking and baking.
- Look for processed foods made with natural oils rather than hydrogenated or saturated fat.
- Use margarine instead of butter, and choose soft margarines (liquid and tub varieties) instead of harder stick forms.
- Avoid commercially fried foods and commercially baked goods. These foods are very high in fat, especially hydrogenated fat.

Reducing Cholesterol in the Diet

Avoiding or cutting back on foods that contain cholesterol does not always lower the amount of cholesterol in the blood. This is because the body makes cholesterol from saturated fat. For many people, however, reducing cholesterol in the diet can help.

Continued on next page

Planning Heart-Healthy Meals (Continued)

Cholesterol is found in eggs, meats, butter, and whole milk. To reduce dietary cholesterol:

- Eat more legumes, fruits, and vegetables.
- Use egg whites or cholesterol-free egg substitutes rather than whole eggs. (In recipes, two egg whites replace one whole egg.)
- Limit commercially prepared cookies, cakes, and pies.
- Eat no more than 6 ounces a day of meat, poultry, or fish—about the size of two decks of playing cards.

Researchers are looking at ways certain foods affect cholesterol. Oats and soy have been shown to affect cholesterol levels. Eating 3 grams of oats and 25 grams of soy as a regular part of the daily diet can help lower blood cholesterol levels. Research is currently being done on the potential benefits of flax seed and flax seed oil. Animal research has shown that these products may also lower cholesterol levels.

Including Essential Fatty Acids

Some fats, called *essential fatty acids*, must be included in your diet. The most common fatty acids are found in animal fats. Your body is able to create these fats. However, the body cannot manufacture the essential fatty acids. These must come from the food you eat.

Essential fatty acids fall into two groups: omega-3 and omega-6. Omega-6 fatty acids are common and are found in corn oil, sunflower oil, and soybean oil. Omega-3 fatty acids are less common. They are found in flax seeds, pumpkin seeds, and walnuts as well as in salmon, trout, and tuna.

Scientists believe that a balance of these two nutrients is needed in the diet. This can be done by supplementing your diet with omega-3 oils or by eating tuna, salmon, or trout two to three times a week. Current recommendations on fatty acids are as follows:

- Limit the fat in your diet to about 30 percent of total calories.
- Focus on monounsaturated fats like olive oil and canola oil, or on essential fatty acids.
- Try to balance the omega-6 and omega-3 fatty acids in your diet.

Taking Action

Suppose a family member on a low-fat, low-cholesterol diet has asked you to bake homemade muffins. Find a muffin recipe that's low in fat and cholesterol and contains ingredients that could help lower cholesterol. Explain why the recipe fits this description.

Functional Foods and Phytochemicals

In recent years, scientists have learned more about the natural, helpful chemicals in foods. In addition to nutrients, many foods contain other compounds that provide health benefits. A food that provides these health benefits is called a *functional food*.

The extra health benefits of functional foods come from special chemicals. These are called *phytochemicals* (FY-toe-KEM-ih-kuhls). They're found in many plant foods.

Scientists estimate there may be thousands of phytochemicals. Only several hundred have been discovered and researched. Eating functional foods on a regular basis is a smart choice.

NOTE: The term "functional food" also refers to foods such as Benecol[®] manufactured to fight certain diseases. Natural foods that have been identified as beneficial in disease prevention are just a small part of the large number of foods referred to as functional foods.

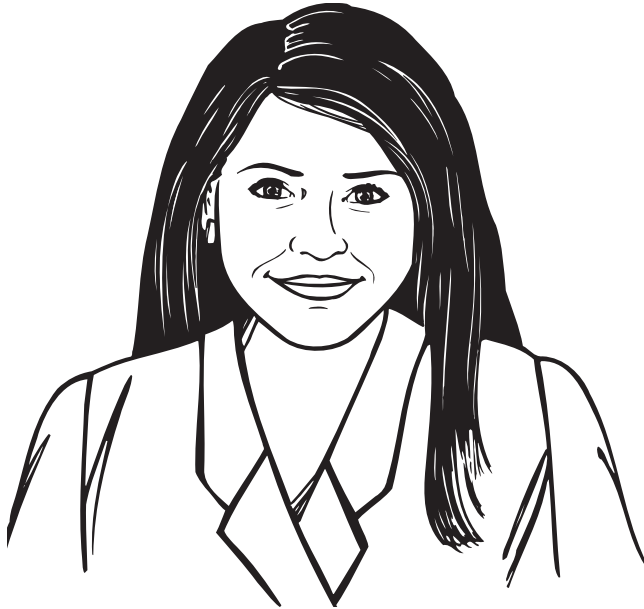
Taking Action

Read the chart below. Then plan a meal you'd enjoy that includes at least five functional foods.

Some Functional Foods

| Food | Possible Health Benefits | How Much to Eat or Drink | Ideas for Including in the Diet |
|---|---|------------------------------|--|
| Any fruits and vegetables | Reduce risk for cancer and heart disease | 5-9 servings a day | Eat as snacks or with meals |
| Broccoli, cauliflower, and Brussels sprouts | Reduce risk for cancer | Eat regularly | Have broccoli soup or a broccoli salad |
| Fish | Reduces risk for heart disease | 6 ounces per week | Prepare grilled tuna steaks or salmon loaf |
| Garlic | Reduces risk for cancer and heart disease | 1 clove per day | Mix with stir-fried vegetables |
| Oats and foods containing oats | Reduce cholesterol | 3 grams per day | Enjoy oatmeal for breakfast |
| Purple grape juice | Supports normal, healthy heart function | 8 to 16 fluid ounces per day | Drink with breakfast or for a snack |
| Soy foods | Reduce cholesterol | 25 grams per day | Snack on soy nuts |
| Tomatoes and tomato products | Reduce risk for cancer | Eat regularly | Serve tomato sauce with garlic and pasta |

How Many Calories Do You Need?



An average female teen needs about 2200 calories each day.



An average male teen needs about 2800 calories each day.

The actual number of calories needed each day depends on age, gender, physical condition, and activity level. For example:

- An active female teen may need 2500 calories a day.
- An active male teen may need 3200 calories a day.
- Teen athletes may need up to 3500 calories a day, depending on the sport played.

Taking Action

1. Explain what might make your calorie needs higher or lower than those of an average teen.
2. Describe how calorie needs would vary for a teen who plays basketball in the winter and tennis in the summer.

Using Calories Through Exercise

Calories are burned during exercise. How many are burned depends on several factors:

- The more you weigh, the more calories are burned.
- The harder you work during exercise, the more calories are burned.
- How effectively your body uses calories, or your basal metabolic rate, affects how many calories are burned.

The following chart shows the number of calories that would be burned during various types of activities for three different body weights.

Taking Action

Calculate the number of calories that would be burned in the following situations. Show your calculations.

1. 155-lb. person using a stationary bicycle for 15 minutes
2. 190-lb. person mowing the lawn for 1 hour
3. 130-lb. person walking for 20 minutes

| Activity | Calories burned in 30 minutes by someone who weighs... | | |
|------------------------------------|--|----------|----------|
| | 130 lbs. | 155 lbs. | 190 lbs. |
| Aerobics, low impact | 177 | 211 | 259 |
| Basketball | 133 | 159 | 194 |
| Bicycling | 118 | 141 | 173 |
| Bicycling, stationary | 148 | 176 | 216 |
| Boxing, punching bag | 89 | 106 | 130 |
| Canoeing, rowing | 89 | 106 | 130 |
| Carrying heavy load such as bricks | 104 | 123 | 151 |
| Cleaning house | 133 | 159 | 194 |
| Cricket (batting, bowling) | 74 | 88 | 108 |
| Croquet | 148 | 176 | 216 |
| Darts, wall or lawn | 133 | 159 | 194 |
| Fishing | 177 | 211 | 259 |
| Frisbee | 236 | 282 | 345 |
| Golf, carrying clubs | 148 | 176 | 216 |
| Gymnastics | 104 | 123 | 151 |

Continued on next page

Using Calories Through Exercise (Continued)

| Activity | Calories burned in 30 minutes by someone who weighs... | | |
|-------------------------------------|---|----------|----------|
| | 130 lbs. | 155 lbs. | 190 lbs. |
| Football or baseball, playing catch | 59 | 71 | 87 |
| Handball | 118 | 141 | 173 |
| Hiking, cross country | 163 | 194 | 237 |
| Hockey, field | 177 | 211 | 259 |
| Hockey, ice | 236 | 282 | 345 |
| Horseback riding | 236 | 282 | 345 |
| Jogging | 354 | 422 | 518 |
| Judo | 207 | 247 | 302 |
| Kickball | 148 | 176 | 216 |
| Marching band, playing instrument | 236 | 282 | 345 |
| Motorcross | 192 | 229 | 281 |
| Mowing lawn | 207 | 247 | 302 |
| Music playing, guitar | 118 | 141 | 173 |
| Racquetball | 192 | 229 | 281 |
| Rock climbing | 118 | 141 | 173 |
| Rope jumping | 295 | 352 | 432 |
| Sailing | 86 | 106 | 130 |
| Shoveling snow | 163 | 194 | 237 |
| Skateboarding | 74 | 88 | 108 |
| Skating, ice | 163 | 194 | 237 |
| Skating, in-line | 443 | 528 | 647 |
| Skiing, cross country | 413 | 493 | 604 |
| Skiing, downhill | 148 | 176 | 216 |
| Snorkeling | 207 | 247 | 302 |
| Soccer | 104 | 123 | 151 |
| Softball | 295 | 352 | 432 |
| Surfing | 118 | 141 | 173 |
| Swimming | 177 | 211 | 259 |
| Tae kwan do | 207 | 247 | 302 |
| Tai chi | 177 | 211 | 259 |
| Volleyball | 118 | 141 | 173 |
| Walking | 177 | 211 | 259 |
| Weight lifting | 148 | 176 | 216 |

Body Mass Index (BMI)

The Body Mass Index or BMI is a tool for evaluating a person's weight. It is based on a formula that takes into account the relationship (ratio) of the individual's height

and weight. The results are used to categorize the person's weight status. For adults over 20 years old, the BMI falls into one of these categories:

| BMI | Weight Status |
|--------------|---------------|
| Below 18.5 | Underweight |
| 18.5-24.9 | Normal |
| 25.0-29.9 | Overweight |
| 30 and Above | Obese |

Note: The BMI for children and teens is based on gender and age specific charts. These charts can be accessed at the Web site for the Centers for Disease Control.

BMI Formula

You can calculate your BMI using your height and weight. You can find your BMI by locating your height and weight on a BMI chart. Or, you can use a BMI calculator on the Internet. Each of these methods is based on the BMI Formula.

Body Mass Index can be calculated using your weight in pounds and your height in inches with the following formula:

$$\left(\frac{\text{Weight in pounds}}{(\text{Height in inches}) \times (\text{Height in inches})} \right) \times 703 = \text{BMI}$$

For example, a person who weighs 185 pounds and is 6 feet tall has a BMI of 25.09.

$$\left(\frac{185 \text{ lbs.}}{(72 \text{ in.}) \times (72 \text{ in.})} \right) \times 703 = 25.09$$

Body Mass Index can also be calculated using kilograms (kg) and meters (or centimeters):

$$\left(\frac{\text{Weight in kg}}{(\text{Height in cm}) \times (\text{Height in cm})} \right) \times 10,000 = \text{BMI}$$

For example, a person who weighs 83.8 kilograms and is 1.824 meters (180 centimeters) tall has a BMI of 25.9.

$$\left(\frac{83.8 \text{ kg}}{(180 \text{ cm}) \times (180 \text{ cm})} \right) \times 10,000 = 25.9$$

Continued on next page

Body Mass Index (BMI) (Continued)**BMI and Your Health**

The BMI ranges are based on the effect body weight has on risks for disease and death. As a person's BMI increases, his or her risk for some diseases increases. Common conditions related to being overweight and obesity include heart disease, high blood pressure, osteoarthritis, diabetes, some cancers, and premature death.

The BMI is only one tool used to predict risk for disease. It cannot show whether or not a person has a disease such as diabetes or cancer. Other factors used to assess risk for chronic disease include diet, physical activity, waist circumference, blood pressure, blood sugar level, cholesterol level, and family history of disease.

A person who is obese or who is overweight and has other risk factors should have a complete health assessment by a physician to determine what steps to take to reduce risk of disease. The doctor may recommend losing weight by changing eating habits and increasing physical activity.

Interpreting BMI Measures

The BMI does not distinguish between body fat and lean body mass. Two people can have the same BMI but different percentages of body fat. For example, a bodybuilder who has a low percent of body fat can have the same BMI as a person who has much more body fat. Remember, the BMI should be used as only one part of a person's health profile.

The BMI does not take into account the location of body fat. For example, men with a waist measurement greater than 40 inches and women whose waist measurement is greater than 35 inches may have excessive body fat in the abdomen. For most people, carrying extra weight around their middle increases health risks more than carrying extra weight around their hips or thighs.

The BMI cannot be used alone as a diagnostic tool. It is one of many risk factors to evaluate. However, as a person's BMI increases, the risk for many diseases increases as well.

Taking Action

Using the Internet, locate the Centers for Disease Control Web site. Use the appropriate chart to determine your BMI. Is your weight in an appropriate range for your height?

Developing Dietary Guidelines

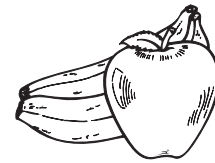
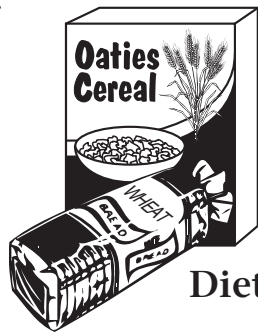
Have you wondered where the Dietary Guidelines for Americans come from? The guidelines are issued jointly by two offices of the federal government—the Department of Health and Human Services (HHS) and the Department of Agriculture (USDA). Back in the 1970s, HHS and USDA wanted to translate new findings about nutrition and health into advice that would be simple for people to follow. The result, in 1980, was the Dietary Guidelines for Americans.

However, it didn't end there. Because new discoveries about nutrition and health are constantly being made, the Dietary Guidelines must change to keep up. They have been updated about every five years since 1980.

The fifth version of the Dietary Guidelines was released in May 2000. It was developed by a committee of experts appointed by HHS and USDA. The experts reviewed the latest research on nutrition and health. Then they decided on the most important advice to give people and how best to communicate it.

Taking Action

Using print or Internet resources, research when the next revisions to the Dietary Guidelines will be made. What are some suggested changes? Why are these changes being suggested?



Dietary Guidelines for Americans Fifth Edition—2000

Aim for Fitness...

- ▲ Aim for a healthy weight.
- ▲ Be physically active each day.

Build a Healthy Base...

- Let the Pyramid guide your food choices.
- Choose a variety of grains daily, especially whole grains.
- Choose a variety of fruits and vegetables daily.
- Keep food safe to eat.

Choose Sensibly...

- Choose a diet that is low in saturated fat and cholesterol and moderate in total fat.
- Choose beverages and foods to moderate your intake of sugars.
- Choose and prepare foods with less salt.

The Skinny on Fat Substitutes

The Dietary Guidelines advise Americans to aim for a healthy weight and to choose a diet moderate in fat. Many people are interested in following this advice, but also enjoy the rich, creamy flavor and texture of foods high in fat. They have created a demand for low-fat and nonfat products that taste similar to ones made with fat.

To meet this demand, food scientists have developed fat substitutes. These products reduce a food's fat and calories. At the same time, they try to keep the flavor and texture provided by fat.

Achieving the right texture can be a challenge. The way fat feels in the mouth is called "mouth feel." It's what makes foods that contain fat satisfying to eat. It's not easy to get a good "mouth feel" with fat substitutes.

Fat Substitutes Made from Carbohydrate

The most widely used fat substitutes are made from carbohydrates. The first was developed in the mid-1960s. It was a cellulose gel. Another common product, made from tapioca, was introduced in the early 1980s.

The biggest problem with most of these fat substitutes is "mouth feel." The products don't always have the same creamy, satisfying texture as products made with fat.

In the early 1990s, a scientist working for the U.S. Department of Agriculture developed a fat substitute made from oat flour. It provides a better "mouth feel" than previous fat substitutes made from carbohydrates. Research is showing that the product may have added health benefits, such as helping to reduce the risk of heart disease.

Fat substitutes made from carbohydrate are used in a variety of foods today. They can be found in:

- Salad dressings
- Puddings
- Frostings
- Pie fillings
- Frozen desserts
- Spreads and dips
- Candy

These fat substitutes contain about 4 calories per gram, compared to 9 calories per gram for fat. The substitute made from oat flour, however, contains fiber, so it has only 1 calorie per gram.

Protein-Based Fat Substitutes

In the early 1990s, protein-based fat substitutes were developed. They're made from egg and milk proteins and have 4 calories per gram.

The process of making these fat substitutes creates microscopic round particles. These particles roll easily over one another, resulting in a "mouth feel" similar to fat.

This type of fat substitute is used in ice cream, sherbet, and frozen desserts. It can't be used to fry or bake foods because it loses its creaminess in cooking.

Fat Substitutes Made from Fat

A fat-based fat substitute, called olestra, is made from a combination of fat and sugar. Olestra has no calories. This is because it passes through the digestive tract without being digested.

The Skinny on Fat Substitutes (Continued)

Because it doesn't break down when heated, olestra can be used in cooking, baking, and frying. It's often used in fried snack foods such as potato chips and cheese puffs.

Olestra has a better "mouth feel" than fat substitutes made from carbohydrates or proteins. However, it has disadvantages. It can carry fat-soluble vitamins out of the body. Some studies have shown that it can cause abdominal cramps and diarrhea in some people.

Olestra has undergone many research tests and studies. This is because people were worried about the changes in the fat as olestra is manufactured. The Food and Drug Administration has approved olestra as safe for use.

Read the Label

You can tell what type of fat substitute has been used in a product by reading the label.

- Carbohydrate-based fat substitutes are listed as dextrins, maltodextrins, modified food starches, polydextrose, cellulose, or gums. The type made from oats may be listed as hydrolyzed oat flour or Oatrim.
- Protein-based fat substitutes may be listed as whey protein concentrate or albumin.
- Fat-based fat substitutes are listed as olestra or sucrose polyester.

Using Fat Substitutes

Using fat substitutes reduces the number of calories from fat in the diet. It does not, however, always reduce total calories.

- When calories from fat are reduced, calories from protein and carbohydrates are often increased. Eating low-fat or fat-free products, therefore, does not always mean lower total calories.

- People often increase the amount they eat when eating low-fat or fat-free products. They may see "fat-free" and believe the food is low in calories, when it may not be.
- Because low-fat or fat-free foods often have less flavor, consumers may eat more to satisfy their hunger for that flavor.

It's safe to eat products containing fat substitutes. They should, however, be eaten in moderation and as a part of a well-balanced diet.

Do Fat Substitutes Aid in Weight Control?

Fat substitutes have gained popularity in recent years. Unfortunately, they may not actually help prevent people from gaining extra pounds. This was the conclusion of a report from the American Heart Association.

About 90 percent of the U.S. population consumes low-fat food products containing fat substitutes. However, the obesity rate continues to rise among both adults and children. About 60 percent of all Americans are now considered overweight or obese.

Taking Action

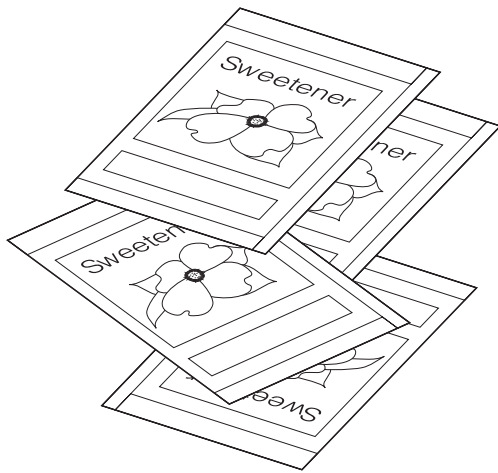
Take a survey of your kitchen at home or at school. How many products, if any, contain fat substitutes? Make a chart organizing the products you found according to type of product and type of fat substitute. Compile your results as a class. What conclusions can you draw?

Sugar Substitutes

The Dietary Guidelines suggest that people moderate their intake of sugars. Because most people enjoy sweet foods, they resist giving up sweet desserts and snacks.

Some people turn to sugar substitutes. These are created in the laboratory. They're made from synthetic or natural substances to provide sweetness to foods. They have few, if any, calories.

Sugar substitutes benefit people with diabetes who must limit the amount of sugar eaten. Scientists are not sure whether there is a weight loss benefit from using sugar substitutes.



Aspartame

Aspartame (AS-pur-tame) is one of the most widely used sugar substitutes.

Aspartame is:

- About 180 times sweeter than sugar.
- Approved for use in more than 95 countries around the world.
- Made from amino acids found in protein.

- Used by the body just like any other protein. It's digested and broken down into its parts, then goes into the blood.
- Not usually used in cooking or baking. It breaks down when heated over time and loses sweetness. It's sometimes added at the end of cooking.

The U.S. Food and Drug Administration (FDA) regulates the use of aspartame in the United States. Aspartame was approved for limited use in 1981. In 1996, it was approved for use in all foods and beverages.

Before it was approved, aspartame was thoroughly tested. In fact, it's one of the most widely tested ingredients in the food supply. In addition to the FDA, other health groups, such as the American Medical Association and the American Dietetic Association, have approved its use as safe.

Aspartame is safe for the general public. However, people with one rare disease, called PKU, should avoid it. Those who have PKU are diagnosed at birth by a blood test given to all babies. People with PKU need to avoid phenylalanine, one of the amino acids in aspartame. Products sweetened with aspartame say on the label that they contain phenylalanine.

Acesulfame Potassium

This sweetener is also called acesulfame K (ay-see-SULL-fame KAY). It is:

- 200 times sweeter than sugar and has no calories.
- Used in a wide variety of foods in the United States and around the world.

Sugar Substitutes (*Continued*)

- Not digested by or stored in the body. Instead, it's excreted unchanged by the kidneys.
- Used in cooking or baking because it keeps its sweetness at normal baking temperatures.
- Often blended with other low-calorie sweeteners. This gives a more sugar-like taste than any of the low-calorie sweeteners used alone.

Like aspartame, acesulfame K has been widely studied. The FDA approves it for use because the scientific research has shown that it's safe to eat.

Sucralose

Another sugar substitute is sucralose (SOO-krah-los). Sucralose is:

- About 600 times sweeter than sugar.
- Made from sugar.
- Not digested by the body as sugar. Instead, it passes through the body unchanged.
- Stable in high or low temperatures. This means it can be used in processed or baked goods as well as ice cream.

Sucralose was discovered in 1976. Over the next 20 years, more than 100 studies were done to discover if it was safe to use. It was approved by the FDA in 1991.

Saccharin

Saccharin (SACK-uh-ruhn) was one of the first sugar substitutes. Saccharin is:

- 300 times sweeter than sugar.
- Removed unchanged from the body by the kidneys.
- Used in both hot and cold foods to make them sweeter.

- Less commonly used today because it has a slight aftertaste.

Saccharin was banned from 1977 to 1991 because it caused cancer in laboratory animals. Further studies were done during the ban, which showed that saccharin does not cause cancer in humans. Pregnant women, however, are advised to avoid saccharin.

Neotame

Neotame (NEE-oh-tame) is a no-calorie sweetener. Neotame is:

- 30-40 times sweeter than aspartame and 7,000-13,000 times sweeter than sugar.
- Quickly metabolized and fully eliminated by the body by normal processes.
- Useful for chewing gum, carbonated soft drinks, beverages, tabletop sweetener, frozen desserts, puddings and fillings, yogurt products, baked goods, and candies. It can be used in both cooking and baking.

The Food and Drug Administration approved neotame as a general-purpose sweetener in 2002. The FDA reviewed over 100 scientific studies before approving neotame.

Taking Action

Examine the labels of several foods that contain sugar substitutes. What type(s) does each contain? What special statements relating to the sweeteners appear on the labels? Compare the calorie and sugar content of each product to a similar one that contains sugar. What conclusions can you draw?

Vegetarian Choices

A well-chosen vegetarian diet is a healthful one. With wise choices, vegetarians can get all the nutrients they need.

Using the Food Guide Pyramid

All types of vegetarians can use the Food Guide Pyramid to guide their food choices. That's because the food groups in the Pyramid offer a variety of flexible choices. Vegetarians simply adjust their selection of foods from each group when necessary.

Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts Group. Products made from soy—such as soy burgers and tofu—fit in this group. So do dry beans, dry peas, lentils, peanut butter, nuts, and seeds. Lacto-ovo vegetarians can choose eggs as well.

Milk, Yogurt, and Cheese Group. Lacto- and lacto-ovo vegetarians can choose the dairy products in this group. Vegans can substitute soy-based beverages with added calcium. Another alternative is to select calcium-rich foods when making choices from other food groups.

Getting Enough Nutrients

Some people wonder how vegetarians can get enough nutrients without eating meat, poultry, or fish. Actually, it's not that difficult. However, vegetarians do need to pay special attention to certain nutrients. That's especially true of vegans, who eat only foods from plants.

Protein. Plant foods—such as grains, dry beans and peas, nuts, and seeds—supply incomplete protein. Over the course of a

day, however, eating a variety of foods with incomplete proteins can provide the complete protein that the body needs.

Calcium. Dry beans and dark green, leafy vegetables are good plant sources of calcium. Examples include pinto beans, spinach, kale, and mustard greens. Drinking soy milk with added calcium is another way to get enough of this important mineral.

Iron. Breads and cereals, dry beans and peas, dried fruits, and some dark green, leafy vegetables supply iron. Eating these foods with foods that are good sources of vitamin C will help the body use the iron in plant foods.

Vitamins B₁₂ and D. Vegetarians who eat dairy products and eggs have no trouble getting these nutrients. Vegans should be sure to get them from other sources. These might include fortified cereals and fortified soy beverages.

Fats. Lacto- and lacto-ovo vegetarians may find themselves gaining weight. The eggs, cheese, nuts, and seeds they eat are high in fat. Like anyone, vegetarians should get 30% or less of their calories from fat. A meal plan that emphasizes grain products, fruits, and vegetables will help them reach this goal.

Taking Action

Find recipes for three vegetarian main dishes. For each, estimate the number of Food Guide Pyramid servings that one serving of the recipe would provide.

Can Fast Food Be Nutritious?

For many people, eating in fast-food restaurants is a way of life. Like any food, fast food provides you with energy and nutrients. It's a convenient way to have a meal when you're busy or traveling.

What might happen, however, if you don't pay attention to your fast food choices? You may end up getting more fat, sodium, and sugar than you need. You may lack essential nutrients such as vitamins A and C, folate, and fiber.

Here are some guidelines to help you make smart choices when eating in a fast food restaurant.

Checking Out the Menu

- Look at the whole menu, not just the part you usually order from. You might find some choices you hadn't noticed before.
- Scan the menu to see if certain items are labeled "low-fat" or "heart-healthy."
- See how many food groups you can spot. Are there salads made with vegetables? Are there fruits or fruit juices?
- If you're not sure about the calories or nutrients in an item, ask for a brochure that gives nutrition information.

Choosing a Main Dish

- Having a sandwich? Ask if it can be made with whole-grain bread.
- Think twice about items listed as "double," "jumbo," or "super." They have more fat, sodium, and calories. Also, they won't give you as much variety as choosing several smaller items, such as a regular sandwich plus a salad.

- For less fat, look for choices such as lean roast beef, grilled chicken, or baked fish.
- What if the only chicken or fish available is fried? You can still order it without going over your fat budget. Just remove the breading and skin before eating.

Would You Like Fries with That?

- Break out of the french fry rut! Many fast-food places offer other side dish choices. Try a salad, baked potato, cup of soup, or corn on the cob.
- If you do want french fries, order a small size or share with a friend.
- Watch out for high-fat toppings. Does the baked potato come with sour cream? Ask for it "on the side" and use just a little bit, or skip it. Choose a low-fat salad dressing.

Beverages and Extras

- Choose fruit juices and low-fat milk more often. They have more nutrients than a soda and less fat than a shake.
- Water is a good beverage, too—and the price is right!
- Try fresh fruit or low-fat frozen yogurt for dessert.

Taking Action

Try these guidelines the next time you visit a fast-food restaurant. Report on your experience. How do you rate the menu for variety and nutrition? What did you choose and why?

Food, Feelings, and You

These questions will give you something to think about. You might want to discuss them with friends or family members.

Why Do So Many People...

...ignore their body's natural signals? A healthy body knows when it needs food—and it will tell you. Feeling hungry means it's time to eat. Feeling full and satisfied means you've had enough for now. For many reasons, people sometimes ignore these natural signals or try to override them.

...think of certain foods as "bad" or "forbidden"? Unless you have a food allergy, there's really no such thing as a food you shouldn't eat if you want to. All food provides energy and nutrients that you need to live, grow, and be healthy. (Yes, that includes french fries and chocolate chip cookies!) Just balance your choices and don't overdo.

Why Don't More People...

...look for beauty in the right places? We all want to live in a world where people are admired for what they do, say, and believe—not the size and shape of their bodies. How about you? Do you base your opinion of yourself on what you do well, or on how you look?

...question media images? TV ads, magazine photos, billboards—all are full of images that send the message "thin is in." Most of the models in these ads are unnaturally skinny. To get and stay that way, many must resort to unhealthy

means. What effect does this have on the average person? What can be done?

How Can You...

...accept your body shape? It's not healthy to base decisions about eating (or not eating) on trying to achieve a certain shape. Your body is unique. It doesn't have to look like anyone else's. As you mature, its shape naturally changes. That's part of growing up.

...recognize unhealthy extremes? There's a difference between normal variations in eating and going to extremes. Eating less some days because you don't feel as hungry—that's normal. Denying yourself food even when you do feel hungry—that's extreme. So is working out until you drop, or eating until you feel sick because you can't stop yourself. What would you do if you saw a friend going to extremes?

...be a role model? Think about how your words and actions may affect other people—especially younger ones who look up to you. How often do you make negative comments about your weight? About other people's weight? Do you ever say or imply that people shouldn't eat certain foods? Do you take pride in pointing out how little or how much you eat? What messages might you be sending?

Taking Action

Choose one of the questions raised above.
Write an essay explaining your opinion.

Coping with Food Allergies or Intolerances

Does your mouth start to itch when you eat peanuts? Do you suffer an upset stomach after drinking milk? You may have a food allergy or intolerance.

Identifying Food Problems

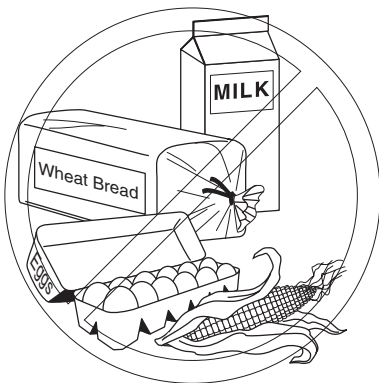
Coping with food problems isn't easy, but it can be done. The first step is to identify the specific problem.

- Keep a food diary. For a one- to two-week period, write down what you've eaten and describe the reactions you've had. This will help you or your doctor figure out what causes the problem.
- Consult a doctor. Many family doctors treat patients with simple allergies or intolerances. For more complex problems, it's best to see a doctor who is trained in this specialty.

Managing Your Diet

There is no cure for allergies and intolerances. However, careful food choices can prevent or minimize reactions.

Follow the doctor's advice about avoiding foods. With an intolerance, you may still be able to eat problem foods if you take certain steps. With allergies, you may need to



avoid problem foods completely. If so, you'll have to find another way to get the nutrients they provide. A dietitian can help.

If you have a food allergy or intolerance, here are some general suggestions:

- Accept the problem. Having to be so careful about what you eat isn't fun, but it may be essential for your good health.
- Take responsibility for your own eating habits. Only you can control what you eat and drink.
- Read food labels carefully. That's the only way to know what's in the processed foods you eat.
- Be especially careful when eating out. The menu description may not be complete. Talk to the server, cook, or manager to learn what's in the foods you wish to order.

If you don't have a food allergy or intolerance, consider yourself lucky—and be considerate of those who do. For example, they may feel excluded when they can't eat the same foods as everyone else. Don't encourage others to eat a food that causes them problems. Most important, NEVER try to secretly give someone a food they shouldn't eat. You could cause them serious problems—and that's no joke.

Taking Action

With a classmate, act out a situation in which a person with a food allergy is a dinner guest at a friend's home. Take turns playing the role of the guest and the host. Discuss the best way for each to handle the situation.

Stretching Your Food Dollars

In most families, money spent on food takes up a large part of the budget. How can you keep food costs under control while getting the most for your money? Here are some tips.

Planning Menus

- Plan menus for a week at a time. Then you won't spend more to eat out just because you're too tired or busy to think of something to cook each day.
- When planning menus, take advantage of low-cost foods such as pasta, rice, and dry beans.
- Plan to have meatless meals at least several times a week. Meat, poultry, and fish are usually the most expensive foods in a menu.
- Prepare more homemade foods. Buy fewer convenience foods.
- Try ethnic dishes made with inexpensive ingredients for variety.
- Make your own mixes, such as baking mix, sauce mixes, and seasoning mixes. Contact the local Cooperative Extension Service for ideas and recipes.
- Plan ways to use leftovers instead of throwing them away.

Planning Your Shopping Trip

- Make one shopping trip a week, if possible, to cut down on impulse buying.
- Make a shopping list.

- Don't wait until you run out of an essential item to put it on your shopping list. Instead, watch for sales.
- If there are several food stores in your area, compare the prices of items you buy most often. Shop at a store that provides the best value for your money.
- Check newspaper ads and flyers for coupons and sales.



- Be aware that not all advertised items are really on sale. Get to know the regular prices of items you buy often so that you can spot true bargains.

At the Store

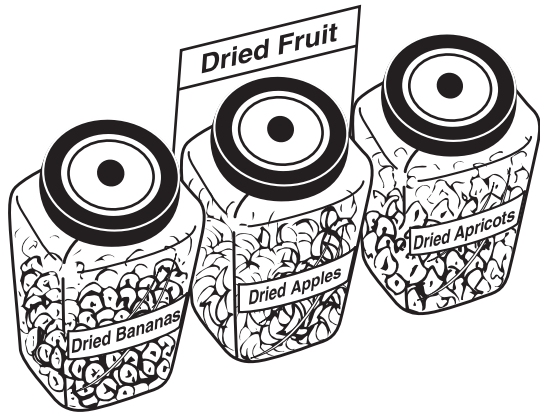
- Look for unadvertised sales.
- Stick to your shopping list, unless you find you can substitute a better bargain.
- Avoid buying items just because they're on sale or you have a coupon. Make sure that you really need and will use the items.
- Use unit prices to compare sizes and brands.

| Compare Prices & Save | |
|-------------------------|-----|
| National Brand ... | 99¢ |
| Store Brand ... | 89¢ |
| YOU SAVE EVERY DAY! ... | 10¢ |

Continued on next page

Stretching Your Food Dollars (*Continued*)

- Before buying a name brand item—even if it’s on sale or you have a coupon—compare the price of generic, store brand, and bulk items. They may be a better buy.



- Buy good quality food. Poor quality food is never a bargain, no matter how low the price.
- If you shop only once per week, choose foods that store well.

Tips for Specific Foods

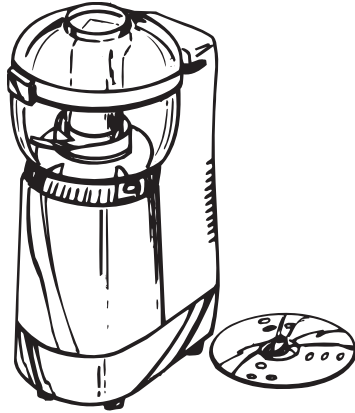
- Buy less tender cuts of meat. They cost less than tender cuts and can be delicious when cooked properly. (You’ll learn more about this in Chapter 35.)
- Buy fresh fruits and vegetables when they’re in season. Otherwise, choose less expensive canned or frozen products.
- Use dried and canned milks in cooking. They’re easy to store and usually cost less than fresh milk.

Taking Action

Compare newspaper ads from several food stores. Do any of the same or similar items appear in ads for more than one store? If so, how do the unit prices compare? How can you tell whether the prices in the ad are sale prices? What kinds of coupons are included in the ads? Based on the ads, which store do you think offers the best overall prices? Why? Compare your findings with those of your classmates.

Saving Time with a Food Processor

Food preparation can often be done more quickly with the help of a food processor. Consider a few of the tasks most food processors can do.



- **Chopping.** Vegetables, nuts, and meat may be chopped with the S-shaped blade. The same blade may also be used for making crumbs from bread and crackers.
- **Slicing.** The slicing blade is often used for vegetables and fruits. Potatoes and cooked meats may be sliced thin.
- **Shredding.** A food processor quickly converts a block of cheese to shredded cheese. The shredding blade can be used to shred cabbage for coleslaw or carrots for carrot cake or muffins.
- **Grating.** Cheeses such as Parmesan and Romano may be grated. Vegetables such as onions, carrots, and potatoes may also be grated successfully.
- **Blending and mixing.** Useful for salad dressings, sauces, and dips, a food processor may also be used for mixing batters.

- **Beating.** Eggs and butter may be beaten. Cooked potatoes can be mashed.
- **Kneading.** Some food processors are capable of kneading dough.

Using a Food Processor

As with most kitchen appliances, it's important to follow safety precautions.

- **Know the food processor.** Before using a food processor, read the owner's manual or have an adult who is familiar with that model show you how to use it. There are three types of food processors: full-size, compact, and mini. All operate somewhat differently.
- **Be careful with blades.** While handling, washing, or drying the blades, use caution. They are very sharp.
- **Use the food plunger correctly.** Use it to add solid foods to be grated, sliced, or shredded.
- **Wait until the blade stops.** When your task is complete, turn off the processor. Allow the blade to stop rotating completely before you remove the food.

Taking Action

Analyze the pros and cons of using a food processor for the tasks listed. How do they compare to using hand tools, such as a knife, grater, or wire whisk? In what situations might someone prefer the food processor? The hand tools?

Buying and Using a Convection Oven

For years, restaurants, commercial bakeries, and professional chefs have used convection ovens for their speed and efficiency. Now convection features are becoming popular in home kitchens.

How Convection Ovens Work

How are convection ovens different from conventional ovens? The convection oven uses electricity to heat the air in the oven. A fan circulates warm air continuously so the air heats faster than in a conventional oven. Food is heated more efficiently resulting in cooking times one-third faster than in traditional ovens. With some foods, the convection oven cooks at a lower temperature than a regular oven, for about the same time. This results in electricity savings when compared with a regular oven.

The oven cavity of the convection oven will cook more food per cubic inch than a traditional oven. The convection oven requires only an inch of space for the air to circulate between the food and the oven walls. As a result, convection ovens are frequently smaller than traditional ovens. This makes the convection oven an efficient choice because there is less air in the oven to heat.

In the regular oven, air is warmest closest to the heating element. In addition, because hot air rises, hot air collects at the top of the oven cavity. This makes placement of the food critical for best results. In the regular electric oven, food must be placed in the center of the oven for even baking and roasting. The convection oven moves cool air away from the food. As hot air flows around the food, the cool air is recirculated past the source of heat.

Convection ovens provide more uniform heat than regular ovens by moving the oven air away from both the heat source and the top of the oven cavity. Circulating hot air seals in natural juices from the start of cooking. With a convection oven, food cooks faster or at a lower temperature than it does in a regular oven.

Buying a Convection Oven

Convection features are now available in electric wall ovens, microwave ovens, and toaster-oven/broilers. Before choosing an oven with convection features, consider types and quantities of food you will prepare.

Electric wall ovens often include a convection mode as well as traditional baking and broiling modes. The convection feature adds up to \$400 to the cost of a similar non-convection oven. The convection-fan casing typically reduces the oven capacity, but the oven can still handle a 20-pound turkey or bake two large casseroles.

For faster cooking, manufacturers may combine microwave technology with convection or halogen heating or both (speed cooking). These combinations are available in both over-the-counter and countertop models. The speed cooking features complement microwave technology by browning and crisping food in a hurry. The combination units are good for roasting meats and heating frozen foods, but are not as good as a conventional oven for baking. The over-the-range models cost about \$600 to \$1,300.

Some toaster-oven/broilers also function as convection ovens. However, the convection feature increases their size and may not be worth the added cost.

Continued on next page

Buying and Using a Convection Oven (*Continued*)**Using the Convection Oven**

The convection option is most useful for roasting, cutting cooking time, and improving browning. Specific results may vary from oven to oven, however. Convection baking is also very effective for preparing large quantities, since the fan helps circulate the hot air.

The choice of when to use a convection oven and when to use a conventional oven often depends on the cooking container rather than the food. Convection cooking works best when heat freely circulates around the food. Use the conventional oven for anything covered and for deep roasting pans. The containers that work best in a convection oven are cookie sheets and shallow pans.

To use a convection oven most efficiently, follow these tips:

- Always preheat the convection oven before putting food in the oven (unless your recipe directs otherwise).
- Keep the oven door closed as much as possible to maintain airflow.
- Remember that longer cooking time will be needed when larger quantities of food are placed in the oven at one time.
- Remember that the shape of food affects convection cooking. A long thin piece of meat cooks faster than a bulky one of the same weight because more surface area is exposed to moving hot air.
- Consider the size of pan. The same quantity of food cooks faster in two small pans than it does in one large pan since air can circulate more freely.
- As with any recipe, check the food about 5-10 minutes before the expected finish time. Cooking times may vary due to the

temperature of the food when placed in the oven, the quantity of food, or personal preferences.

Recipe Conversion Guides

The following are general guidelines for converting conventional recipes for use in a convection oven:

- Bake at the same temperature recommended in a conventional recipe, but for less time, usually about 25-30 percent less. For example if a recipe recommends baking a cake at 350°F for 30 minutes in a conventional oven, it should be ready in 21-23 minutes in a convection oven.
- Bake for the same amount of time recommended in a conventional recipe, but reduce the temperature of the oven by about 25-30°F. For example, you can bake the above cake in a convection oven at 320-325°F for 30 minutes.
- Bake for a little less time than the conventional recipe recommends, and also reduce the temperature of the oven. This method often produces the best results.

There is one exception to these guidelines, If the original conventional recipe recommends baking time of less than 15 minutes, keep the original baking time but reduce the temperature by 25-30°F.

Taking Action

Visit a local appliance store to compare features and costs of ovens, microwave ovens, and toaster-oven/broilers. Compare conventional units with ones that include convection features. How did the convection feature affect the oven capacity, the size of the unit, and the cost? Write a report summarizing your findings.

Cookware Care

Taking good care of cookware will make it last longer. Cleaning cookware properly after each use will keep it looking attractive.

General Cleaning Instructions

- Let cookware cool before cleaning it.
- If necessary, soak the cookware to loosen stuck-on food.
- Wash cookware in hot, soapy water.
- If food is still stuck, you may need a special cleanser or cleaning pad. Some

cleaning pads and cleansers are abrasive (uh-BRAY-sihv). They will scratch some cookware materials. Nonabrasive pads and cleansers are available for cookware that scratches easily. Read labels on cleaning pads and cleansers to find out which materials they will clean safely.

Cookware can be made of a variety of materials. The following chart describes some common ones.

| Type of Cookware | Characteristics | Cleaning and Care Tips |
|--------------------------|---|---|
| Aluminum | <ul style="list-style-type: none"> • Durable. • Turns dark from dishwasher detergents and from minerals in water. | <ul style="list-style-type: none"> • Can use abrasive scouring pads and cleansers. • To avoid pitting, do not use to store salty or acid foods. |
| Anodized Aluminum | <ul style="list-style-type: none"> • Durable. • Will not peel, chip, or crack. • Resists sticking and scratching. | <ul style="list-style-type: none"> • If necessary, use a nonabrasive pad or cleanser. |
| Copper | <ul style="list-style-type: none"> • Good heat conductor. • Discolors easily. • Inside must be lined with tin or stainless steel. | <ul style="list-style-type: none"> • Dry after washing. • Polish with copper cleaner or a mixture of flour and vinegar. |
| Enamel | <ul style="list-style-type: none"> • Glass baked on metal. • Chips easily. Handle with care. • Attractive—can be used to cook and serve. | <ul style="list-style-type: none"> • If necessary, use a nonabrasive pad or cleanser that is safe for glass. |

Cookware Care (Continued)

| Type of Cookware | Characteristics | Cleaning and Care Tips |
|-------------------------------|--|---|
| Glass | <ul style="list-style-type: none"> • Attractive—can be used to cook and serve. • Chips and breaks easily. Some are more durable than others. | <ul style="list-style-type: none"> • If necessary, use a nonabrasive pad or cleanser that is safe for glass. • Avoid extreme temperature changes. |
| Glass-Ceramic | <ul style="list-style-type: none"> • Durable. • Goes from freezer to oven. • Attractive—can be used to cook and serve. | <ul style="list-style-type: none"> • If necessary, use a nonabrasive pad or cleanser. • Dishwasher safe. |
| Microwave-safe Plastic | <ul style="list-style-type: none"> • Durable. • Stain-resistant. • Easy to clean. | <ul style="list-style-type: none"> • If necessary, use a nonabrasive pad or cleanser. • Dishwasher safe. |
| Nonstick Finish | <ul style="list-style-type: none"> • Finish keeps food from sticking to pan. • May be damaged by metal cooking tools. Use plastic or plastic-coated tools. | <ul style="list-style-type: none"> • If necessary, use a nonabrasive pad or cleanser. • Some cannot be washed in dishwasher. Follow manufacturer’s use and care instructions. |
| Stainless Steel | <ul style="list-style-type: none"> • Conducts heat evenly. • May develop hot spots. • Stains when overheated. | <ul style="list-style-type: none"> • If necessary, use a nonabrasive pad or cleanser. • Use stainless steel cleaner to remove stains. • To avoid pitting, do not use to store salty or acid foods. |

Taking Action

Learn about two other types of materials used for cookware. Summarize your findings in a chart similar to the one on this handout.

Knife Care and Safety

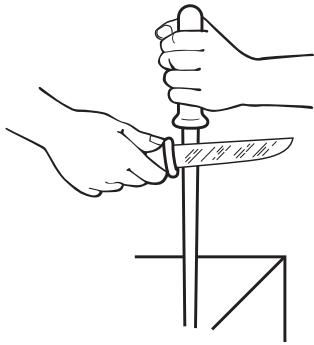
Knives are valuable tools in the kitchen. Most cooks use them every day. Learn how to use knives properly so you won't damage them or cause an injury.

Sharpening Knives

Keeping knives sharp can actually help prevent accidents. That's because dull knives are more likely to slip when you're using them. If the knife slips, you could cut yourself.

Read and follow the manufacturer's instructions for keeping knives sharp. Some knives have a special type of blade that never needs sharpening.

Many knives can be sharpened with a sharpening steel. Here's how.



1. Hold the knife blade against the steel at a 20° angle. The blade and steel should touch near the handles.
2. Draw the knife down the steel and toward you. Use gentle pressure.
3. Repeat several times on each side of the blade.

Using Knives

Here are some tips for handling knives safely while you're preparing food.

- Choose the correct type and size of knife for the task.

- Always use a cutting board.
- Don't cut toward yourself or toward other people.
- Don't point a knife at anyone.
- If you drop a knife, step aside and let it fall. Don't try to catch it.
- Use knives only for cutting food.
- When you've finished using a knife, set it down with its point and blade away from you. Don't set it near the edge of the counter.

Cleaning and Storing Knives

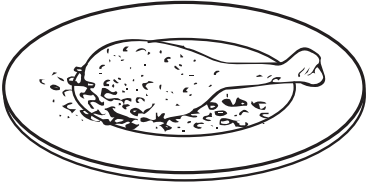
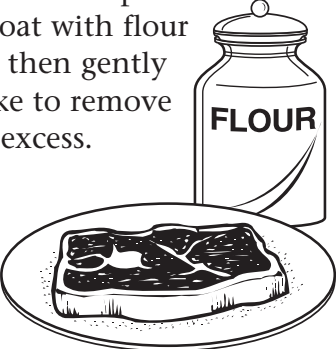
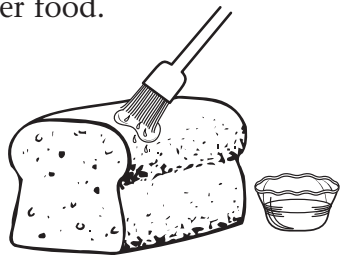
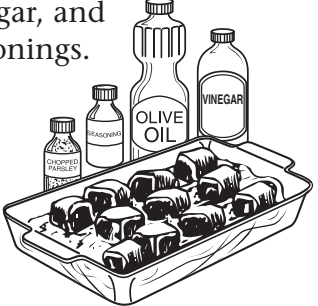
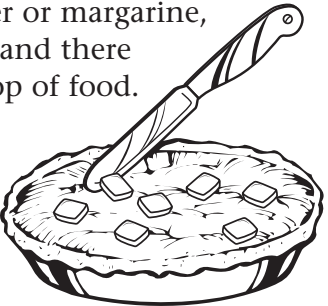

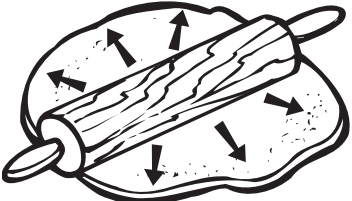

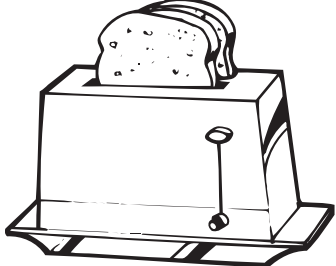
After using a knife, clean and store it carefully.

- Don't wash sharp knives in a dishwasher. The detergent may damage the blade. Wooden handles will dry out and crack.
- Don't put knives into a sink full of soapy water to soak. You could cut yourself as you reach into the sink.
- Hold each knife by the handle as you carefully wash and dry it. Wipe from the back of the blade to the sharp edge, not from the heel to the tip.
- Store knives separately from other kitchen equipment. Use drawer dividers or a knife rack.

Taking Action

Demonstrate knife safety skills using a table knife. Treat it just as if it were a sharp knife. "Sharpen" the knife using the core from a roll of paper towels as the sharpening steel.

More Food Preparation Terms

| | | |
|--|--|--|
| <p>BREAD: To coat a food, such as chicken, with fine bread, cereal, or cracker crumbs.</p>  | <p>FLOUR: To sprinkle or coat with flour and then gently shake to remove the excess.</p>  | <p>BRUSH: To use a brush to spread a liquid, such as beaten egg white or melted fat, over food.</p>  |
| <p>MARINATE: To soak food in a mixture such as oil, vinegar, and seasonings.</p>  | <p>DOT: To place small particles of an ingredient, such as butter or margarine, here and there on top of food.</p>  | <p>GRIND: To put food through a food grinder or food processor.</p>  |
| <p>ROLL OUT: To roll dough out with a rolling pin to the thickness specified in the recipe.</p>  | <p>SCORE: To make shallow straight cuts in the surface of a food, such as ham or flank steak.</p>  | <p>TOAST: To brown a food, such as bread, by direct heat in a toaster or broiler.</p>  |

Taking Action

For each of these terms, give an example of a type of recipe in which that technique might be used. Use a cookbook to help you, if needed.

Ounces and Fluid Ounces— What’s the Difference?

When working with food, keep in mind that ounces and *fluid ounces* are not the same.

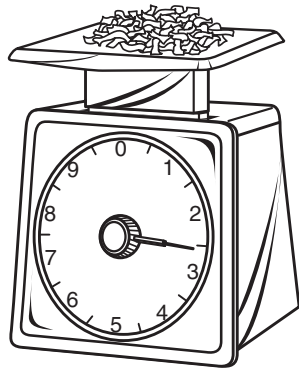
- *Ounces* measure weight—how heavy the food is.
- *Fluid ounces* measure volume—how much space the food takes up.

Here’s an example. Suppose you measure a cup of noodles. One cup is 8 *fluid ounces*.



1 cup noodles: 8 fluid ounces in volume

If you poured the noodles out of the measuring cup and weighed them on a scale, they would weigh about 2.6 *ounces*.



1 cup noodles: 2.6 ounces in weight

What would happen if you tried this with other foods, such as dry beans or sugar? The weight would vary. Some foods might weigh less than 2.6 ounces. Others would weigh more.

Remember—just because one cup of food measures eight fluid ounces in *volume* doesn’t mean it’s also eight ounces in *weight*.

When you read recipes, make sure you notice which type of ounces is being used. If the recipe says *fluid ounces*, use a measuring cup to measure the volume. If the recipe says *ounces*, you may need to use a scale or check the weight on the package of food.

Taking Action

Measure one cup (8 fluid ounces) of three different foods. Weigh each cup of food on a scale. (Be sure to subtract the weight of the measuring cup in each case.) Make a chart of your findings. What can you conclude?

Metric Measuring

The metric system is used in measuring throughout the world. It's based on multiples of ten, which makes it easy to use.

The units of measure used in the metric system are combinations of common units and prefixes. *Common units* tell the type of measure being used. Three common units used in recipes are:

- gram—measures weight or mass.
- liter (LEE-tuhr)—measures volume.
- meter (MEE-tuhr)—measures length.

Prefixes are used to change the amount of the common unit. Each prefix increases or decreases the common unit by a multiple of ten. Some common prefixes are:

- centi—1/100 of a common unit.
- milli—1/1000 of a common unit.
- kilo—1,000 common units.

Prefixes can be linked to common units in any combination. Here are some examples.

- milliliter (mL)—1/1000 of a liter.
- milligram (mg)—1/1000 of a gram.
- centimeter (cm)—1/100 of a meter.
- kilogram (kg)—1000 grams.

Preparing a metric recipe is easy if you have metric measuring equipment. Scales and liquid measuring cups are often marked with both customary and metric units.

Measuring volume requires a set of metric dry measuring cups and spoons, which are not the same size as a customary set.

If you don't have metric measuring equipment, you can convert the recipe to customary measurements. The chart below can help. If necessary, round off the result to an amount that's easy to measure with customary equipment.

Example: Suppose a recipe calls for 250 mL of milk.

$$250 \text{ mL} \times 0.034 = 8.5 \text{ fluid ounces}$$

Round this off to 8 fluid ounces, or 1 cup.

Taking Action

You want to share your grandmother's muffin recipe with a friend. The recipe calls for 500 g flour, 60 g sugar, 60 mL vegetable oil, and 250 mL milk. How much of each ingredient will your friend need in customary units?

Metric to Customary Conversions (Approximate)

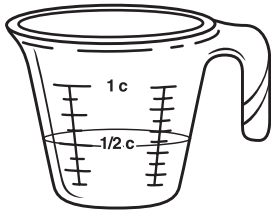
| | Multiply This Metric Unit... | By This Number... | To Get This Customary Unit |
|--------|------------------------------|-------------------|----------------------------|
| Volume | milliliters (mL) | 0.034 | fluid ounces |
| | liters (L) | 0.26 | gallons |
| | liters (L) | 1.06 | quarts |
| Weight | grams (g) | 0.035 | ounces |
| | kilograms (kg) | 2.19 | pounds |
| Length | millimeters (mm) | 0.04 | inches |
| | centimeters (cm) | 0.4 | inches |

Measuring Fats— Water Displacement Method

Solid fats, such as butter, margarine, or shortening, can be measured using several methods. You can use the wrapper markings on sticks of butter or margarine to cut off the amount you need. You can measure shortening and other solid fats by packing them in a dry measuring cup.

A third method for measuring solid fats is called the *water displacement method*. Here's how to use it.

1. Subtract the amount of fat needed from 1 cup. For example, suppose you need $\frac{1}{2}$ cup shortening. One cup minus $\frac{1}{2}$ cup equals $\frac{1}{2}$ cup.
2. Place a liquid measuring cup on a level surface. Pour in the amount of *cold* water you calculated in step 1. In this example, you would add $\frac{1}{2}$ cup water. Be sure to check the measurement at eye level.



3. Spoon shortening into the cup, a little at a time. Gently push the shortening below the surface of the water. This will cause the water to rise.
4. Repeat step 3 until the water level reaches the 1 cup mark.
5. Pour off the water, draining well. Spoon out the shortening.



How Does It Work?

As you add shortening to the cup, the shortening takes up some of the space that had been occupied by the water. In other words, the shortening pushes aside, or *displaces*, the water. That's why the water level rises.

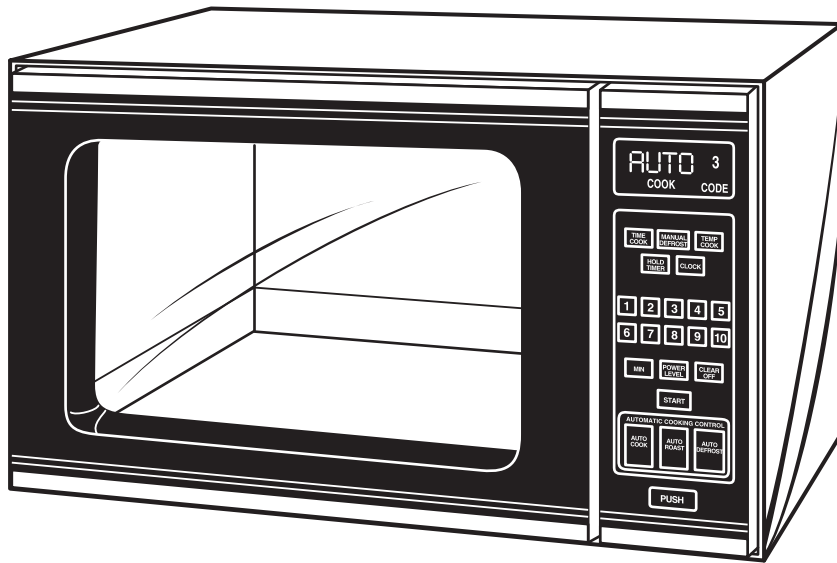
When the water reaches the 1 cup mark, that means the total volume of the shortening plus the water is 1 cup. Since you know that (in this case) you started out with $\frac{1}{2}$ cup water, that means you must have added exactly $\frac{1}{2}$ cup of shortening. When you drain the water, that's what you have left!

Taking Action

Use the water displacement method to measure $\frac{1}{3}$ cup of shortening. Check your measurement by packing the shortening into a $\frac{1}{3}$ cup dry measure. How accurate were you? Which method do you prefer and why?

Tips for Buying a Microwave Oven

When it's time to shop for a microwave oven, you'll find many options. Here are some guidelines to help you choose the microwave oven that's right for you and your family. Microwave ovens typically come in three size ranges, as shown in the chart below.



| Size | Characteristics |
|---|---|
| Full-size models—1.0 to 1.6 cubic feet of space inside. | <ul style="list-style-type: none"> • Often have 900 to 1100 watts of cooking power. • Require the most counter space. • Best suited for people who do a lot of microwave cooking. |
| Mid-size models—0.8 to 1.0 cubic feet inside. | <ul style="list-style-type: none"> • Usually offer 700 to 900 watts of cooking power. • Take less space on the counter than full-size models. • Offer almost as much size and power as full-size models. |
| Compact models—0.3 to 0.7 cubic feet inside. | <ul style="list-style-type: none"> • Most produce only 600 to 700 watts of cooking power. • Fit into small spaces. • Are best suited for heating, reheating, and defrosting. |

Continued on next page

Tips for Buying a Microwave Oven (Continued)**Features**

Many features are available on microwave ovens. Choose those features best suited to your family's needs. Here are some features you may find.

- **Electronic controls** can be set to the exact second, which may mean the difference between well-cooked and overcooked food.
- **Power levels** vary between microwave ovens. Most have several power levels. Six power levels are enough for almost any cooking task. Too many power levels make operating the oven more complex.
- **Turntables** automatically rotate food during cooking. Turntables are supposed to make food cook more evenly, but tests have shown they don't always accomplish this goal. Turntables limit the usable space in the oven since the corners can't be used.
- **Temperature probes** measure the temperature of food as it cooks. The probe shuts off the oven when food reaches a pre-selected temperature. This feature helps prevent overcooking when cooking meats and casseroles.
- **Automatic defrosting** uses special controls to help thaw frozen foods evenly. Some ovens automatically lower the power as food thaws. This helps food from starting to cook. Other ovens automatically defrost according to the weight of the food.
- **Shortcut keys** cook certain foods automatically. They are usually for heating, reheating, or defrosting. A one-minute or 30-second shortcut key runs the oven at full power or extends the current cooking time.
- **Multistage cooking** features allow the microwave oven to cook on various power levels in sequence. The controls are set before cooking begins.
- **Moisture sensors** calculate cooking times and power levels. As the food cooks, it gives off moisture. When the sensor detects a certain amount of moisture, cooking stops. The feature helps prevent foods from becoming too dry.

Choosing an Oven

Before you buy, consider the kind of cooking you'll do in your microwave oven. A compact or mid-size oven is fine for people who use the microwave for simple chores like thawing leftovers or cooking a frozen dinner. A full-size oven may be more appropriate for people who cook more extensively in the microwave. Then choose the microwave oven that has the features to fill your needs and that fits in your budget.

Taking Action

Identify the features that you think would be most helpful in preventing food from being overcooked. Would you use these features if you had them on a microwave oven? Why or why not?

Using a Fire Extinguisher

Four out of five house fires start in the kitchen. Every kitchen, at home or at school, should have a fire extinguisher within easy reach. Everyone who cooks should know how to use one.



The letters on fire extinguishers tell the classes of fires they should be used for:

- A. Paper, cloth, wood, rubber, and plastics.
- B. Grease, oil, gasoline, cleaning fluids, and other flammable liquids.
- C. Electrical fires.
- K. Cooking appliances, combustible vegetable oil, and animal fats.

Many extinguishers can be used with more than one type of fire. Fire extinguishers labeled “ABC” can be used on the first three classes of fires.

If You Have a Fire

- Alert others to get out of the building.
- Call the fire department.

- Stay a safe distance away from the fire.
- Identify a safe way out of the building in case you can’t put out the fire with an extinguisher.

Using a Fire Extinguisher

- Remove the extinguisher from its holder.
- Point the nozzle of the extinguisher at the base of the flames.
- Follow the directions printed on the extinguisher to start the spray.
- Sweep the spray from side to side until the fire is out.

Note: The first burst from the fire extinguisher may not be enough to put out the fire. If the fire is not completely out, the flames may come back.

Maintaining Fire Extinguishers

Fire extinguishers have pressure gauges that indicate whether there’s enough pressure in the extinguisher to force the chemical out. Check the pressure monthly to be sure the extinguisher is ready to use.

After use, a fire extinguisher must be recharged. With small models, it may be less costly and easier to replace the extinguisher than to recharge it.

Taking Action

Find the fire extinguisher nearest to the foods lab area. What types of fires can it extinguish? Read the label to learn how to start the spray. Check the pressure gauge. Is the extinguisher ready to use?

Safer Alternatives to Household Chemicals

Commercial cleaning supplies often contain harsh or dangerous chemicals. Using them safely may require taking special precautions. There may be a risk of breathing in dangerous fumes or getting a chemical burn. Accidental poisoning is also a danger, especially if there are young children in the house.

Did you know that often you can do the same job with safer products? Several common household products can be used for cleaning. Not only are these safer, they're usually more economical and kinder to the environment. The following chart gives some examples.

| Cleaning Job | Household Product(s) | Preparation | Directions |
|--------------------------|-------------------------|---|---|
| Cleaning pots and pans | Baking soda | | Shake baking soda directly on cooked-on food. Add hot water and dishwashing soap. Soak for 15 minutes. Wash as usual. |
| Cleaning drains | Baking soda, vinegar | Add ½ cup baking soda and ½ cup vinegar to 2 qt. boiling water. | Pour solution into drain. Rinse with cool water. |
| Cleaning floors | White vinegar | Add ½ cup vinegar to 1 gallon water. | Mop floor. |
| Polishing brass | Worcestershire sauce | | Sprinkle Worcestershire sauce on brass item. Scrub and rinse. |
| Polishing chrome faucets | Cider vinegar, baby oil | | Sprinkle with vinegar. Scrub. Rinse. Polish with baby oil and soft rag. |
| Removing mildew | Vinegar, salt | Mix equal amounts of vinegar and salt. | Apply solution to mildew. Scrub and rinse. |
| Cleaning windows | Vinegar | Mix 1 qt. water and 2 Tbsp. vinegar. | Spray on window. Wipe dry. |

Taking Action

1. Try one or more of the cleaning methods listed above. How well did it work? Would you use it on a regular basis? Explain.
2. Research other ways in which common household products can be used in place of harsher chemicals. Report to the class.

Bacteria That Can Bug You

Several types of bacteria cause foodborne illness. In some cases, it's the poisons the bacteria produce that cause the sickness, rather than the bacteria themselves.

Here are descriptions of several of the bacteria that cause foodborne illness.

E. coli. These bacteria may be found in raw or rare ground beef, contaminated water, and milk and apple juice that haven't been pasteurized. (*Pasteurized* products have been heat-treated to kill harmful bacteria.) *E. coli* causes severe abdominal cramps, diarrhea, nausea, and vomiting.

Salmonella. Foods that contain undercooked or raw eggs, poultry, or meat are possible carriers of *salmonella*. Unpasteurized milk may also carry the bacteria. A person suffering from salmonella poisoning often has flu-like symptoms, including severe headache and fever.

Campylobacter. These bacteria may be found in unpasteurized milk, bad water, and meat and poultry that weren't cooked long enough. Bacteria from a person's skin, nose, or throat may also contaminate food—for instance, if an infected person coughs or sneezes on food. Symptoms are diarrhea, abdominal cramps, fever, and possibly bloody stools.

C. botulinum. These deadly bacteria can grow in environments with little or no air. Foods that weren't canned correctly, garlic in oils, and contaminated foods that were tightly wrapped or vacuum packed are possible sources. The illness,

called *botulism* (BAH-choo-lizm), may start with double vision and difficulty swallowing. The most serious cases result in death.

Listeria. These bacteria may be found in contaminated water or soil. In some cases, *Listeria* may be present in raw foods such as meats and vegetables, as well as in processed foods such as soft cheeses and deli meats. Unpasteurized (raw) milk and foods made from unpasteurized milk may contain the bacteria. Symptoms of illness include fever, muscle aches, nausea, and diarrhea. More serious symptoms include headache, confusion, and convulsions.

Staphylococcus. "Staph" bacteria are found on a carrier's skin or in the nose or throat. Improper food handling causes the spread of the bacteria. Fatigue, vomiting, diarrhea, and abdominal cramps are possible symptoms of this illness.

C. perfringens. These bacteria form spores that resist heat. They grow in food that's kept at the wrong temperature. An outbreak often involves food served to a large group. Victims experience diarrhea and nausea without vomiting.

Taking Action

Research a recent outbreak of foodborne illness. What bacteria caused it? What was the source of the bacteria? How many people were affected? What steps, if any, were taken to control the outbreak? Report to the class.

Food Safety for Special Occasions

Are you planning a special event? Food safety can be critical to having a good time at parties, holiday dinners, picnics, and other special times with family and friends.

Buffets

Special events such as parties and holiday celebrations often include a food buffet. Serving dishes of food are set out on a table for people to help themselves. While this is an efficient way to serve many people, it also can create a risk of foodborne illness. To keep food safe:

- Set out small amounts at a time. Keep extra amounts in the refrigerator or a hot oven until they're needed.
- To keep cold foods cold on the buffet table, nest serving dishes in bowls of ice.
- To keep hot foods hot on the buffet table, it's best to use an electric appliance such as a slow cooker, warming tray, or buffet range. (A buffet range is a tabletop unit with one or two electric burners.) You can borrow or rent these appliances if you don't own them.
- Keep track of how long food has been on the buffet table. After two hours, discard the food.
- When a dish of food on the buffet table runs low or has been out too long, take it away. Put out fresh food in a clean dish. Don't add more food to a dish that has been sitting out.

Picnics

Having an outdoor meal at a park, beach, or other picnic spot is fun. The challenge is keeping food at the right temperatures until you arrive and are ready to eat. To keep food safe at picnics:

- Plan a menu that's easier to keep safe. The most dangerous foods on picnics are meat, poultry, seafood, eggs, and milk. Dry and high-sugar foods are the safest. Examples include breads, fresh fruits and vegetables, crackers, cookies, and dried foods such as granola and raisins.
- Buy or pack food in single-serving portions. This cuts down on the number of people who may touch the food.
- Keep hot foods hot and cold foods cold while you travel. Package hot foods in insulated containers or wrap them in layers of foil and towels. Place cold foods in an insulated cooler with ice or frozen gel packs.
- When you arrive, put cold foods in a shady spot or cover them. Keep them out of the sun.
- Eat as soon as possible after arriving.
- Remember, don't leave food sitting out for more than two hours. If the temperature is above 85°F, don't leave food out for more than one hour.

Taking Action

Plan a picnic menu that will be tasty yet safe to eat three hours after it is packed.

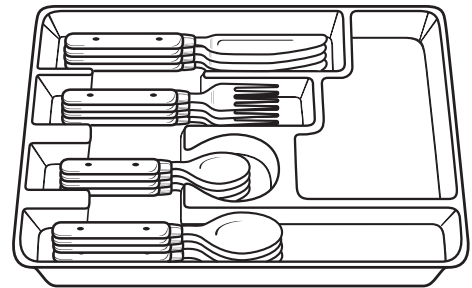
Buying and Caring for Tableware

The pleasure you get from a meal depends a great deal on how it's served. Selecting attractive, durable tableware and keeping it in good condition can add to the enjoyment of meals.

Buying Tableware

When you buy dishes, glasses, flatware, and table linens, follow these guidelines.

- Select colors and patterns that harmonize. If you choose items you can mix and match, you can change your table settings for variety.
- Choose durable pieces that stand up to daily use. Materials such as stoneware and glass-ceramic resist chipping and cracking.
- If you plan to use a dishwasher, buy dishes, glasses, and flatware labeled dishwasher-safe.
- Select cups and glasses that are well balanced so they won't tip over easily.
- Look for table linens made of easy-care fabric. Some people prefer plastic tablecloths and place mats for everyday use, since they can be wiped clean with a damp cloth.
- Don't put cold glassware into hot water. The sudden temperature change could crack the glass.
- Avoid cleaning products that may scratch or harm the finish, such as scouring powder or abrasive pads.
- Store dishes carefully to avoid chips and cracks. You may want to store fragile dishes in racks or with layers of paper towels between stacked items.
- Store flatware in a tray that has compartments for similar pieces.
- Launder soiled table linens as soon as possible. Follow the directions on the care label.



Taking Action

Make a list of basic tableware items needed by two college students sharing an apartment. By visiting stores or using catalogs, estimate the cost of buying these items. What are some ways to save money in this situation?

Caring for Tableware

- Be careful not to hit dishes and glasses against each other or against a hard surface. Some may break easily.
- Rinse or wash tableware as soon as possible after the meal. Dried, hardened food is difficult to remove.

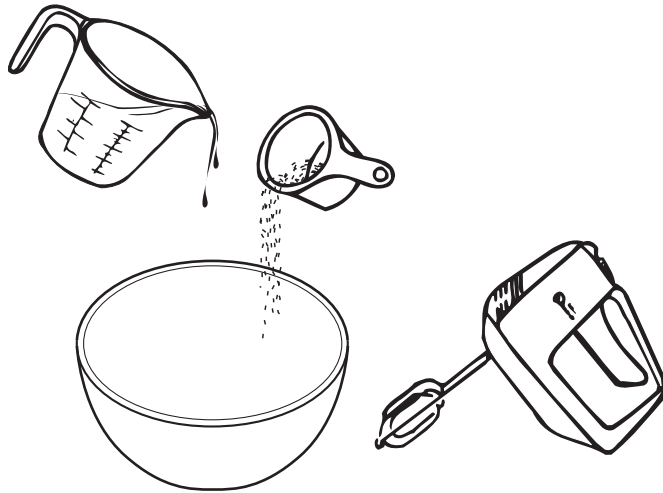


Low-Fat Whipped Toppings

Many people enjoy whipped toppings on desserts and hot beverages such as cocoa. Here are two ways you can make low-fat whipped toppings.

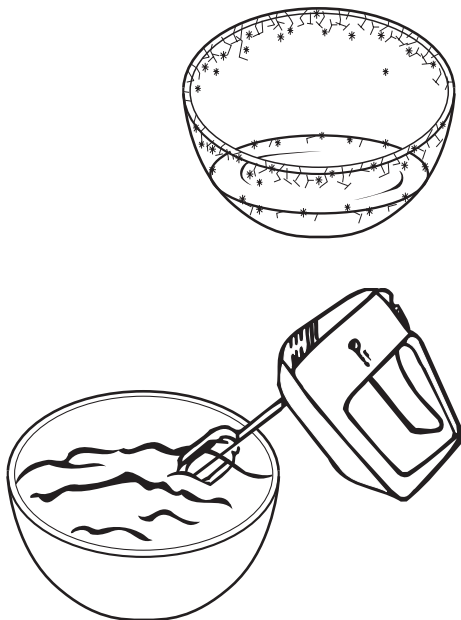
Whipped Topping from Nonfat Dry Milk

- Chill beaters and mixing bowl in the freezer.
- Mix equal parts of nonfat dry milk and *very cold* water.
- Pour mixture into chilled bowl.
- Beat with electric mixer and chilled beaters until soft peaks form. Add 1 Tbsp. sugar gradually, if desired.



Whipped Topping from Evaporated Milk

- Pour evaporated milk into a bowl. Chill in the freezer until ice crystals form around the edges. Also chill the beaters you will use.
- Beat with electric mixer and chilled beaters until soft peaks form. Add 1 Tbsp. sugar gradually, if desired.

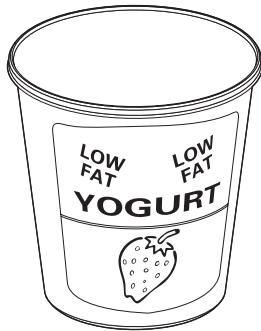


Taking Action

Explain why a cook might use one of these whipped toppings instead of whipped cream.

Yogurt Choices

The next time you're in a supermarket, check out how many kinds of yogurt are in the dairy case. It may look like there are hundreds of choices! Here's a guide to help you sort them out.



How Much Fat?

Some people assume that all yogurt has little or no fat. That's not the case. The fat content of yogurt depends on the fat content of the milk from which it was made—whole, low-fat, or nonfat.

A yogurt that has less fat may also have fewer calories. However, that's not always true. The calorie content is affected by not only the fat content, but the amount of added sugar.

How Sweet It Is

Yogurt makers have worked hard to encourage Americans to eat more yogurt. One of the main ways they've done this is to sweeten and flavor their products.

Fruit-flavored yogurts are popular. The amount of actual fruit in them varies widely. Some yogurts contain fruit juice, chunks of fruit, or both. Many, however, are flavored with jam and are high in sugar.

Some yogurt makers have introduced "dessert" flavors, such as cherry cheesecake or banana cream pie. These, too, can be high in sugar.

You may prefer yogurts that are sweetened with sugar substitutes. This reduces the number of calories in a serving. Choosing these yogurts is one way to moderate your sugar intake.

Plain yogurt has no added sweeteners or flavoring. It's great to use in dips or as a topping in place of sour cream. You can also mix in fruit or other ingredients to make your own flavors.

"Styles" of Yogurt

Yogurts vary in texture and how they're blended. That's especially true of fruit-flavored types. Some common types are:

- "Sundae style"—the fruit is at the bottom of the cup.
- "Swiss style"—the fruit is mixed throughout.
- "Custard style"—the yogurt is thicker and firmer than usual, with a uniformly blended texture.

Making Your Choice

The bottom line? Read the label. The Nutrition Facts panel shows the amount of fat and sugar in grams, so it's easy to compare different brands and flavors. Also check the ingredients list and the description of the product. Whatever you choose, enjoy yogurt's benefits—including calcium, protein, vitamins, and great taste!

Taking Action

Compare the fat and sugar content of ten different types of yogurt. Choose a variety of brands, flavors, and styles. Include regular, low-fat, and nonfat yogurt, and at least one made with sugar substitutes. Make a chart of your findings.

Have You Tried These Grains?

When you think of grains, you may automatically think of wheat, rice, corn, and oats. While these are the most popular grains in this part of the world, they're not the only ones you can enjoy. How many of the following grains have you tried?

Amaranth is a small herb seed with a nutty taste. It's an ancient grain that the Aztecs and Incas used. Amaranth can be toasted and used on salad for a crunchy topping. The cooked grain can also be added to muffin or pancake batters.

Barley can be made into flour, but is seldom used in baking. The grain is often sold as pearl barley, which means the outer layers have been removed. You can use pearl barley in soups and stews.

Buckwheat—also called kasha—is actually a fruit. Lightly flavored, it's a distant cousin of rhubarb. As a flour, it's used to make buckwheat pancakes. As a grain, it's used in side dishes and may also be processed into grits.

Bulgur is made from wheat kernels. The kernels are parched, steamed, and dried. Bulgur is used in salads, stews, and as a side dish.

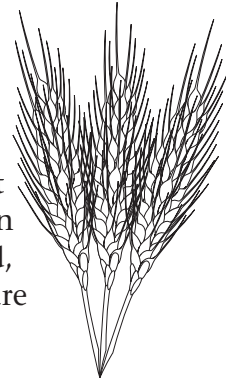
Couscous is tiny pellets of pasta made from wheat. Couscous cooks quickly and is often used as a side dish. It can also be used in soups and stews.

Millet is a small yellow grain widely eaten in Asia, Africa, and India. It has a delicate, nutty flavor. You can use it in side dishes or as a cooked cereal.

Quinoa (KEEN-wah) is a staple for South Americans living in the Andes. It has a

distinctive nutty taste and a crunchy texture. Americans use it as a side dish or in soups.

Wheat berries are wheat kernels that haven't been processed. When cooked, they have a chewy texture and strong, nutty flavor.



Unusual Rice

Brown, white, long-grain, short-grain—there are many types of rice. Here are some that can add variety to your menus.

Arborio rice (ar-BOH-ree-oh) from Italy is used to make a creamy-textured dish called *risotto*.

Basmati rice (bahs-MAH-tee) is a long-grain rice with a perfume-like aroma. It originated in India but is also grown in California.

Jasmine rice from Thailand has a floral aroma. It's sometimes substituted for basmati rice because it costs less.

Patna rice is a mild rice from India.

Popcorn rice is a cross between basmati and American long-grain rice. The name comes from its aroma.

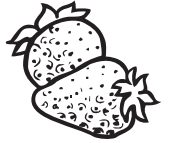
Taking Action

Choose one of the grains on this page. Locate a recipe using this grain. If possible, prepare the recipe. How did you like the flavor and texture as compared to other grains that you have tasted?

Berry Buying Basics

Berries are a good source of nutrients and phytochemicals—the natural plant chemicals that may offer health benefits. Because berries can be simply washed and eaten, they're one of nature's convenience foods. They make nutritious, flavorful snacks.

Berries are generally sold fresh or frozen. Some canned and dried berries are also available. Generally, fresh berries are stored in the refrigerator and are washed just before being used. Berries are picked ripe, so they need to be used promptly.



| Kind of Berry | In Season | Look For... | Storage Tips |
|---------------|--------------------------------|--|--|
| Blackberries | July | Blackberries that are dry and unblemished with a shiny black color. | Store unwashed and uncovered in a shallow pan lined with paper towels. |
| Blueberries | Mid June to mid August | Blueberries that are firm, plump, and free from leaves and stems. Fruit should be dry; moisture causes mold. | Blueberries can be stored covered in the refrigerator longer than most other berries. Those stored too long look wrinkled due to loss of water. |
| Cranberries | Mid September through December | Cranberries that are uniform in size, a deep red color, and firm to the touch. Avoid those that have brown spots or are mushy. | Cranberries can be stored just as you bought them for up to two weeks in the refrigerator. When frozen, they can be stored for up to a year if they are double wrapped in plastic. |
| Raspberries | Mid June to mid July | Raspberries that are red, unblemished, and in a dry, unstained container. | Store unwashed and uncovered in a shallow pan lined with paper towels. |
| Strawberries | Mid June to mid July | Strawberries that are plump with a natural shine. They should be a rich red color with bright green caps. | Loosely cover fresh strawberries with plastic wrap and refrigerate. Strawberries have the best flavor at room temperature. |

Taking Action

Describe five different ideas for using fresh berries. Suggest a different berry or combination of berries for each idea.

Vegetables: Nutrition Stars

Vegetables are nutrition stars. Besides offering valuable nutrients, they're one of the sources of phytochemicals. These natural plant chemicals have many possible health benefits that scientists are just beginning to discover.

Here are some examples of vegetables that are good sources of both nutrients and phytochemicals. Remember, however, that no single food is the key to good health—you need a variety of nutritious foods every day.

Sweet Potatoes

A medium sweet potato provides over 500 percent of the daily requirement for Vitamin A. It also provides about 50 percent of the daily requirement for Vitamin C.

Sweet potatoes are also a source of valuable phytochemicals. The best-known is beta carotene. Beta carotene helps make vitamin A. It may also play a role in fighting cancer.

Tomatoes

One medium tomato provides 35 percent of the daily requirement for vitamin C. It's also a good source of vitamin A.

Tomatoes are a major source of *lycopene* (LIKE-o-peen). This phytochemical may decrease the risk of certain types of cancer. The deeper red the color, the more lycopene there is in the tomato. Lycopene is changed to vitamin A in the body.

Cooked tomatoes provide more lycopene than fresh ones. Scientists think that cooking changes lycopene so the body can more easily use it. Lycopene is absorbed better if it's eaten with a little fat.

Broccoli

Broccoli is one of the best sources of calcium among vegetables. It contains about 200 percent of the daily requirement for vitamin C. It also provides vitamin A.

Broccoli is considered one of the best vegetable cancer fighters. The phytochemicals in broccoli help the body make special proteins called enzymes that protect against cancer.

Peppers

Peppers range from sweet to very hot. Bell peppers tend to be sweet. Other types of peppers—such as serrano, jalapeño, and habanero—are hot. Eating them causes the eyes to water and the nose to run.

Peppers are good sources of vitamin C. The amount varies according to the kind of pepper. Most, however, contain more than 100 percent of the daily requirement of vitamin C. Many peppers are also a good source of vitamin A.

Peppers contain a phytochemical called *capsaicin* (cap-SAY-ih-sin). It helps prevent blood clots. It may, therefore, help prevent heart attacks or strokes.

Taking Action

Choose one of the vegetables described above. Identify three specific ways you could include that vegetable in your diet more often.

Getting the Benefits of Soy

Like other legumes, soybeans are nutritious. They're a good source of protein, complex carbohydrates, fiber, vitamins such as folate, and minerals such as iron and phosphorus.

Soybeans and products made from them may also help prevent or treat certain diseases. Researchers are studying a number of possible health benefits:

- Foods containing soy protein have been shown to help protect against heart disease.
- Soy protein may help prevent or slow bone loss.
- Soy foods may help control diabetes.
- Soybeans are rich in *isoflavones*—phytochemicals that appear to reduce the risk of cancer.

Soy Products to Try

There are many ways to get the nutritional benefits of soy. How many of these products have you tried?

Soy nuts—Whole soybeans that have been soaked in water and roasted. Can be eaten as a snack. Similar in flavor and texture to peanuts.

Soy nut butter—Made from crushed soy nuts blended with soy oil and other ingredients. Has less fat than peanut butter.

Soy milk—Made from soybeans that have been soaked, ground, and strained. Use as a beverage or in cooking. Sometimes fortified with calcium.

Soy cheese and soy yogurt—Made from soy milk. Either can be used in place of sour cream or cream cheese.

Soy protein powder—Can be mixed with skim milk or soy milk.

Soy flour—Made from finely ground roasted soybeans. Can replace $\frac{1}{4}$ to $\frac{1}{3}$ of the all-purpose flour in recipes for quick breads, cookies, and cakes.

Soy grits—Made from soybeans that have been toasted and cracked into pieces. Can be used in ways similar to cooked cereal or grains.

Tempeh—A soybean cake with a smoky, nutty flavor. Can be marinated and grilled, or used in soups and casseroles.

Tofu—A custard-like product made from soy milk. Has a bland flavor that blends well with other foods. Comes in various textures.

Whole soybeans—Come in yellow and black varieties. Can be cooked and used in soups, stews, and sauces.

Green vegetable soybeans—Also called *edamame* (eh-dah-MAH-meh). Harvested while beans are still green. Can be eaten as a snack or cooked and served as a vegetable.

Meat alternatives—Soy products that resemble meats such as burgers, hot dogs, sausage, or bacon.

Taking Action

Look for soy products the next time you shop for food. Which ones can you find? How might you use them in meals and snacks?

Using Tofu

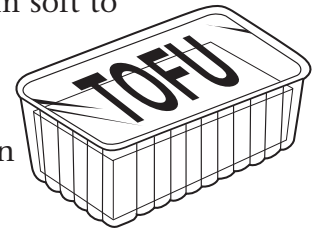
Tofu can be a nutritious addition to a healthful diet. Are you familiar with the many different ways you can use tofu in cooking?

A good comparison for tofu is the potato. Potatoes can be baked, boiled, broiled, grilled, or fried. So can tofu. Potatoes can be eaten whole, mashed, cubed, sliced, or mixed with other ingredients. So can tofu. Both plain potatoes and plain tofu are bland foods that can take on the flavors of the foods with which they're eaten.

Tofu comes in two basic textures:

- Silken tofu is like custard or gelatin.
- Regular tofu is simply called tofu. Its texture is fibrous and spongy.

These two textures come in various degrees of firmness, from soft to extra firm. The chart below shows some of the ways in which each texture and firmness can be used.



| Texture | Firmness | Substitute for... | Use in... |
|---------|------------|--|---|
| Silken | Firm | Heavy cream | Cream soups |
| | Extra Firm | Meat, chicken, and fish Yogurt | Desserts Pie fillings |
| Regular | Soft | Light cream Eggs Mayonnaise Milk | Puddings Salad dressings Sauces Spreads Toppings White sauce |
| | Firm | Meats such as cold cuts or hamburger | Meatballs, sloppy joes |
| Regular | Extra Firm | Hard scrambled eggs | Sandwiches Shish kebabs |
| | Soft | Cottage cheese Soft cheeses such as feta, Parmesan, ricotta Heavy cream Soft scrambled eggs | Stir-fries Soups and stews White sauces Salad dressings |

Taking Action

Use cookbooks or other sources, look for recipes that include tofu. Summarize the ways different types of tofu are used in the recipes you find. What uses can you add to the chart above? Compare results with your classmates.

Do You Know Shellfish?

There are two basic kinds of shellfish.

Crustaceans (kruss-TAY-shuns) have long bodies with joined limbs. Their shells are hard on the topside and soft on the underside. The shell is divided into sections. Examples of crustaceans include crabs, lobster, and shrimp.



Mollusks have two solid shells hinged together. The bodies inside the shells are soft. Mollusks may be available only at certain times of the year. Examples of mollusks include clams, oysters, and scallops.



Crustaceans

| Type | Forms Available | Preparation Ideas |
|----------------|--|--|
| Crab | <ul style="list-style-type: none"> • Live (soft- or hard-shell) • Cooked, whole or meat only • Frozen whole • Frozen legs or claws • Canned | <ul style="list-style-type: none"> • Poached (“boiled”), steamed, broiled, deep-fat fried • Crab salad • Crab cakes • <i>Crab Louis</i>—cold dish of crab, mayonnaise, chilies, cream, lemon juice, and seasonings, garnished with tomatoes and hard-cooked eggs • <i>She-Crab Soup</i>—cream soup made with the meat and roe (eggs) of a female crab |
| Lobster | <ul style="list-style-type: none"> • Live • Frozen tail | <ul style="list-style-type: none"> • Poached (“boiled”), broiled, grilled • Lobster salad • Tail served with lemon and melted butter • <i>Lobster Newberg</i>—lobster meat heated in a cream sauce • <i>Lobster Thermidor</i>—meat mixed with cream sauce and seasonings, served in the shell |

Do You Know Shellfish? (Continued)**Crustaceans continued**

| Type | Forms Available | Preparation Ideas |
|---------------|--|--|
| Shrimp | <ul style="list-style-type: none"> • Fresh • Whole frozen • Frozen without tails • Shelled • Cooked • Canned | <ul style="list-style-type: none"> • Poached and chilled, broiled, stir-fried, deep-fat fried • In salads • “Peel and eat” shrimp—cold cooked shell-on shrimp served with lemon wedges and cocktail sauce • <i>Shrimp Scampi</i>—broiled with garlic, butter, and lemon • <i>Shrimp Étouffée</i> (ay-too-FAY)—shrimp stewed in a spicy sauce and served over rice |

Mollusks

| Type | Forms Available | Preparation Ideas |
|-----------------|--|---|
| Clams | <ul style="list-style-type: none"> • Live in shells • Shucked (removed from shell) • Canned • Smoked | <ul style="list-style-type: none"> • Broiled, steamed, deep-fat fried • Baked in an outdoor pit (clambake) • <i>Manhattan Clam Chowder</i>—soup made with tomatoes • <i>New England Clam Chowder</i>—soup made with milk and potatoes • <i>Clams Casino</i>—clams served hot on the half shell with seasoned butter and crisp bacon |
| Oysters | <ul style="list-style-type: none"> • Live in shells • Shucked • Canned • Smoked | <ul style="list-style-type: none"> • Broiled, steamed, deep-fat fried • Scalloped (baked in a cream sauce topped with crumbs) • <i>Oyster Loaf or Po’ Boy</i>—fried oysters on a small loaf of French or Italian bread • <i>Oysters Rockefeller</i>—oysters served hot on the half shell with spinach, bread crumbs, and seasonings • <i>Angels on Horseback</i>—oysters wrapped in bacon, broiled, and served on toast • <i>Hangtown Fry</i>—omelet with fried oysters and bacon |
| Scallops | <ul style="list-style-type: none"> • Fresh or frozen out of the shell | <ul style="list-style-type: none"> • Broiled, grilled, deep-fat fried, stir-fried • Skewered and grilled or broiled • <i>Coquilles St. Jacques</i>—scallops broiled with garlic, butter, seasonings; topped with bread crumbs • <i>Scallops Mornay</i> (mor-NAY)—scallops broiled in cheese sauce |

Taking Action

Using print or Internet resources, investigate fish and shellfish allergies and intolerances. What are the symptoms of these allergies or intolerances? What foods may contain hidden sources of fish products?

More Ways to Cook Fish and Shellfish

When they think of preparing fish or shellfish, many people think of frying or deep-fat frying. These cooking methods not only add fat, but can create safety and cleanup problems. Besides, shellfish have light, delicate flavor that frying often covers up.

Your textbook explains how to broil and microwave fish. Here are several other delicious ways to prepare fish and shellfish.

Steaming Shellfish

Shellfish can be steamed over boiling water. Clams, crabs, and mussels are often steamed.

1. Place the shellfish close together in a steamer basket or rack that will fit in a stock pot.
2. Put about $\frac{1}{2}$ inch of water in the bottom of the pot. Be sure the water won't touch the steamer basket or the rack.
3. Bring the water to a boil. Lower the heat, add the shellfish in their basket or rack, and cover tightly.
4. Steam clams or mussels until they open, about 5 to 10 minutes. Steam crabs about 30 minutes.

Be careful not to overcook, as that toughens the shellfish. Steamed shellfish are usually served with individual dishes of melted butter for dipping.

Poaching Fish and Shellfish

To *poach* is to simmer whole foods in a small amount of liquid. Whole fish, fish fillets, fish steaks, shrimp, crayfish, and lobster are often poached.

Fish. Many kinds of fish can be poached. The cooking liquid may be plain water, water with lemon or grapefruit juice, fish or vegetable stock, or milk. To add flavor, you can season the liquid with herbs, spices, or sautéed vegetables.

Shrimp. Shrimp are often poached with spices or herbs. Carefully put fresh shrimp into boiling stock or water. Reduce the heat at once. Simmer for 3 to 4 minutes or until the shrimp turn pink. Be sure to remove them before they begin to curl up. Drain at once.

Crayfish. Carefully place the crayfish into boiling water. Keep the water boiling as the crayfish are added. Cook about 5 to 7 minutes or until the shells turn red. Serve with melted butter.

Lobster. To poach a lobster, put a folded towel on the bottom of a large, heavy pot. Place a live lobster on the towel. Cover the lobster with cold water. Bring the water to a boil and cook for 5 minutes. Reduce the heat, then simmer for 10 to 15 minutes until the shell is red. Drain and serve at once with melted butter and lemon wedges.

Baking Fish

Fish should be baked in a lightly oiled, shallow dish. Fillets should be placed skin side down. This will let you test for doneness.

Fish dries out easily in the oven. There are several ways to prevent this. You can brush the fish with melted fat or sauce. You can also use a marinade (see the next page).

More Ways to Cook Fish and Shellfish (Continued)

Breading the fish is another way to keep it moist. You can use bread or cracker crumbs, flour, or cornmeal. Seasonings will add flavor to the breading.

The oven doesn't have to be preheated to bake fish. Fish generally don't need to be turned during baking.

Grilling Fish

Thick fillets, steaks, and whole fish can be grilled. Make sure the grill is clean and the fire is hot. Place fillets skin side down. To prevent sticking, brush a little oil or butter on the fish. Don't use too much—the fat can cause the fire to flare up. If you prefer, you can use a marinade to grill fish. Another method is to wrap fish in foil along with a sauce or vegetables before placing it on the grill.

Fish cooks very quickly on the grill. Grilling time will vary depending on the thickness of the fish. Fish needs to be turned only if it is whole or a very thick fillet or steak. Keep a close watch on the fish. Test for doneness 1 to 2 minutes before the recommended cooking time is up.

Using Marinades

Fish and shellfish may be marinated before cooking. *Marinating* means steeping food in a liquid. The liquid, called *marinade*, adds flavor. It can also be used to add tenderness—for example, when marinating tough cuts of meat.

Most marinades contain two to three basic types of ingredients.

- Acids tenderize the food. Examples of acids are flavored vinegars, citrus juices, and plain fat-free yogurt. Since fish and shellfish are naturally tender, an acid isn't needed for tenderizing. However, it can add flavor.
- Seasonings also add flavor. Herbs, spices, or vegetables such as onions or peppers can be used.
- Some marinades contain oil. It coats the outside of the food to help keep it from drying out during cooking.

Marinades may be used before fish is to be grilled, broiled, or panbroiled. To make the marinade, shake the ingredients together in a large container. Put the food in a glass or plastic container. Pour the marinade over the food. Cover and refrigerate. Periodically turn or stir the food so that it marinates evenly.

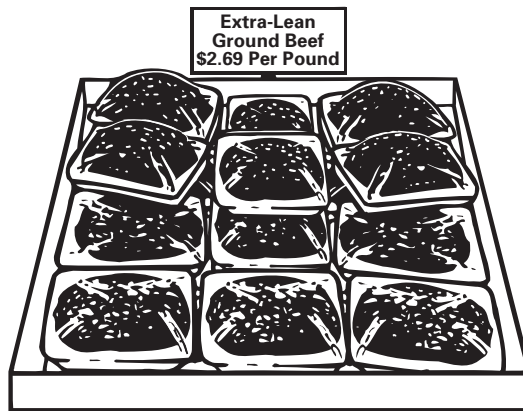
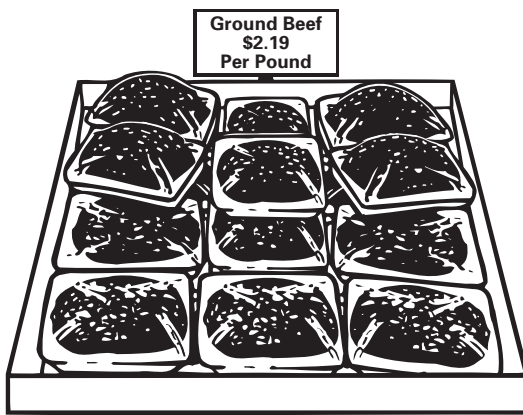
Since fish and shellfish are tender foods, marinate them only for an hour or less. If you leave them in an acid marinade too long, they'll get mushy. Drain well before cooking. Throw the used marinade away. It may contain harmful bacteria from the raw food.

Taking Action

Using a cookbook or other reference, suggest at least three seasonings or combinations of seasonings that you might use when poaching or marinating fish or shellfish.

Which Ground Beef Should You Buy?

Most stores carry several kinds of ground beef. Each has a different amount of fat. As a general rule, the least expensive ground beef has the most fat. The most expensive generally has the least fat. How can you choose which type to buy?



To help answer this question, think about what will happen to the fat when you cook the meat. This depends on what cooking method you use.

With some dishes, such as meatloaf or stuffed peppers, the fat can't be drained off during cooking. It stays in the food. From a health standpoint, selecting the leanest ground beef would be the best choice.

On the other hand, suppose you're broiling hamburgers. Some of the fat will drain off as the meat cooks. For this reason, you might think that buying the higher-fat ground beef is a good choice. You won't eat the extra fat, and since the price is lower, you'll save money—or will you?

Keep in mind that you pay for ground beef by the pound. Fat is included in the weight of the package. Even though the higher-fat beef costs less per pound, you're paying for fat that you'll end up throwing away.

You may do just as well to buy the leaner beef. It will give you more usable meat per pound. You could buy a smaller package of the leaner beef and still end up with the same amount of cooked meat.

Taking Action

Conduct a ground beef experiment. Make two ground beef patties—one from extra-lean ground beef, the other from regular ground beef. Be sure they are exactly the same size and weight. Broil them in separate pans for the same amount of time. After cooking, collect and measure the fat that drained off. Weigh and measure the cooked patties. What conclusions can you draw?

Eggs and Food Safety

Like any raw animal food—such as meat, poultry, or fish—raw eggs may carry harmful bacteria. It used to be thought that such bacteria could only come from outside the egg. The inside, it was thought, was sterile as long as the shell had no cracks or breaks. Now scientists know that's not always true. It's possible for the inside of an unbroken egg to be contaminated with bacteria that can cause foodborne illness.

The Culprit—Salmonella

The type of bacteria involved is called *Salmonella enteritidis*. These bacteria can be found in other foods, not just eggs. They cause a foodborne illness called *salmonellosis* (SAL-muh-neh-LO-suhs).

Symptoms include headache, nausea, vomiting, diarrhea, and fever. They can strike from 5 to 72 hours after eating contaminated food. Infants, elderly people, and people with weakened immune systems are at the greatest risk of salmonellosis.

Solutions for Food Safety

Fortunately, you can safely enjoy eggs by following a few simple guidelines.

- Buy and use only clean, uncracked eggs that have been refrigerated at 45°F or below.
- Store eggs in the refrigerator in the original carton. Don't use the egg shelf in the refrigerator door. The changing temperature can lead to bacteria growth.

- Limit time out of the refrigerator to a maximum of two hours, including preparation time.
- Once you break an egg, avoid mixing the shell with the yolk or white. If a bit of shell falls into the egg, remove it with a clean spoon.
- If you need to separate the yolk from the white, use a clean egg separator tool. Don't use the eggshell or your hands.
- Wash all surfaces that come in contact with eggs—including your hands—with hot, soapy water.
- Don't eat raw eggs or foods that contain raw eggs.
- Cook eggs until both the yolks and whites are firm and no visible liquid egg remains.
- Cook casseroles and other dishes containing eggs to an internal temperature of 160°F.
- Serve foods containing eggs promptly.
- Refrigerate leftovers right away. Use within a few days.

Taking Action

Some foods have traditionally been made with raw or lightly cooked eggs. Examples include eggnog, homemade ice cream, and meringue. Research current advice from food safety experts for preparing these dishes safely. Report to the class.

Selecting Salad Greens

Whether you buy greens individually or as part of a packaged convenience mix, it's helpful to recognize the different varieties of greens. Being familiar with them can help you add variety to your diet.



Mixing at least two types of lettuce in a tossed salad is a good practice. A mixture of greens not only looks and tastes better, it can also add nutrients.

Most greens have a high concentration of water, making them low in calories. They provide carbohydrates and fiber. Most have some vitamin A. The darker the color, the more vitamin A the greens contain.

Scratch and Sniff Test

Some greens—such as butterhead, leaf lettuce, and romaine—can be bitter. To check, scratch the stalk and smell it. If it smells bitter, it will taste bitter.

| Type of Salad Greens | Description | Selection Tips |
|----------------------|---|--|
| Butterhead lettuce | <ul style="list-style-type: none"> Comes in several varieties—Boston, bibb, buttercrunch. Has round, green head, smaller than many other types of lettuce. | <ul style="list-style-type: none"> Select a head with loose, thick leaves and an even green color. Avoid heads with thin, wilted leaves or brown spots near the stalk end. |
| Chinese cabbage | <ul style="list-style-type: none"> Also called celery cabbage. Has a long, oval head. Leaves are pale green to white. Provides a mild cabbage flavor and crispness to tossed salads. | <ul style="list-style-type: none"> Choose a head that's heavy for its size. Avoid very large heads and those with bruised or ragged leaves. |
| Curly endive | <ul style="list-style-type: none"> Also called chicory. Frippy, bright green leaves blend toward white near the base. Has small amounts of calcium and iron. | <ul style="list-style-type: none"> Leaves should be crisp but tender. |
| Escarole | <ul style="list-style-type: none"> Bright green leaves. Tastes best when served with a thick, creamy salad dressing. | <ul style="list-style-type: none"> Leaves should be even-colored. Avoid heads with patches of slime or brownish tips on the leaves. |

Continued on next page

Selecting Salad Greens (*Continued*)

| Type of Salad Greens | Description | Selection Tips |
|----------------------------|--|--|
| Iceberg lettuce | <ul style="list-style-type: none"> • The most widely used, although it contains few nutrients. • Leaves are medium to light green in color, blending toward white near the ribs. | <ul style="list-style-type: none"> • Should have a fairly large, firm head that will give to gentle pressure. • Rock solid heads may be overmature and lack flavor. |
| Leaf lettuce | <ul style="list-style-type: none"> • Green leaf lettuce: medium to dark green in color. • Red leaf lettuce: has dark red leaves that blend to green near the stalk. | <ul style="list-style-type: none"> • Should have a large, loose head with thick, crumpled-looking leaves. |
| Radicchio (rah-DEE-kee-oh) | <ul style="list-style-type: none"> • Deep red to purple leaves with white veins or ribs. | <ul style="list-style-type: none"> • Edges of the leaves should be thick and crisp. |
| Romaine lettuce | <ul style="list-style-type: none"> • Long head with thick leaves. • Medium to dark green in color with nearly white ribs. • Adds a sharp, nutlike flavor to salads. | <ul style="list-style-type: none"> • Choose a large, even-shaped head with broad, fairly loose leaves. • A light-colored head that feels solid probably won't be very tasty. |
| Spinach | <ul style="list-style-type: none"> • Dark green leaves. • A good source of vitamin A, vitamin C, and iron. • Wash by swishing in cold water to remove sand. | <ul style="list-style-type: none"> • Leaves should be broad, thick, and crisp. Stems should be unblemished. • Avoid very large leaves—they may taste bitter. |

Taking Action

Describe how you might introduce new greens to someone who has always eaten iceberg lettuce.

How to Make Stock

Stock is the basis of many soups. It's a seasoned clear liquid in which meat, poultry, fish, or vegetables have been cooked. Stocks vary in color depending on the type of meat, poultry, or fish used as a base.

To make stock, follow these steps:

1. Cut meat, poultry, or fish—including bones—into large pieces.
2. If desired, brown meat or poultry in the oven at 450°F for 30 to 40 minutes. This adds richness to the color and flavor of the stock.
3. Cut vegetables such as carrots, celery, and onion into large pieces.
4. Put meat and vegetables in a large pan and cover them with water. If desired, add seasonings such as bay leaf, peppercorns, or thyme.
5. Bring the liquid to a boil, then reduce heat to low. Simmer until the meat, poultry, or fish is tender.
6. Remove the meat from the liquid. Save the meat for later use.
7. Strain the stock, removing and discarding pieces of overcooked vegetables.
8. Refrigerate the stock. When it's chilled, remove the layer of fat from the surface.

You can serve the stock as broth or use it as a base for soup. To make soup, add cooked meat and cooked vegetables. If desired, add noodles or barley and cook until done. Follow package directions for the amount of noodles or barley to use.



Taking Action

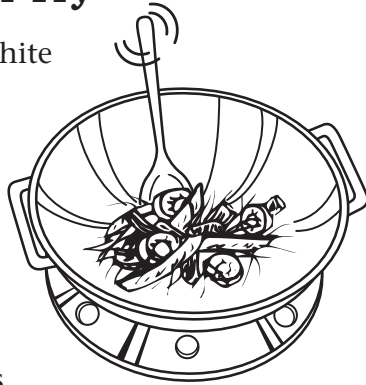
Analyze the advantages and disadvantages of making your own stock. When might a person choose to make homemade stock instead of using canned broth or convenience soup?

It's a Stir-Fry

Many ingredients can be combined to make delicious stir-fry recipes. Here are some ideas.

Fruity Fish Stir-Fry

- Cubed, cooked white fish fillets
- Pineapple juice
- Fresh ginger and garlic
- Red and green pepper strips
- Pineapple chunks
- Snow peas
- Water chestnuts
- Tamari sauce



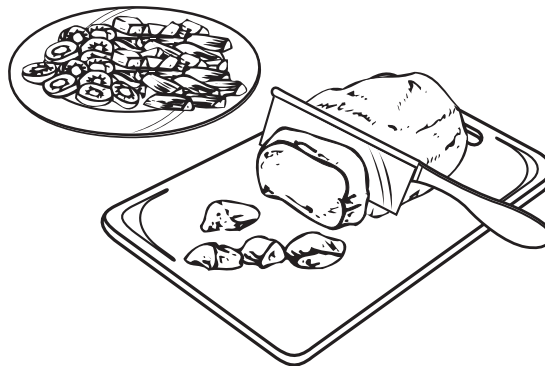
Colorful Chicken Stir-Fry

- Cubed, cooked chicken
- Chicken broth
- Sliced carrots
- Cauliflower florets
- Pea pods
- Whole-kernel corn
- Sliced onions
- Sliced mushrooms
- Fresh ginger
- Soy sauce



Hearty Beef Stir-Fry

- Sliced raw beef
- Beef bouillon
- Sliced Chinese cabbage
- Fresh spinach
- Sliced green onions
- Sliced mushrooms
- Tofu cubes
- Canned bean sprouts



Taking Action

Invent an original stir-fry combination that you would enjoy. Describe the ingredients in your stir-fry and how you would prepare it.

How to Thicken with Starch

Many one-dish meals require a thickening agent to help bind ingredients together. Two commonly used thickening agents are flour and cornstarch.

All-purpose flour thickens the liquid and makes it opaque or cloudy. It's used to thicken foods such as sauces, gravies, soups, and stews.

Cornstarch is a fine, white, starchy flour made from corn. It's a much stronger thickener than flour. You need only half as much cornstarch as flour to thicken the same amount of liquid. Liquid thickened with cornstarch remains as clear as it was before it was thickened.



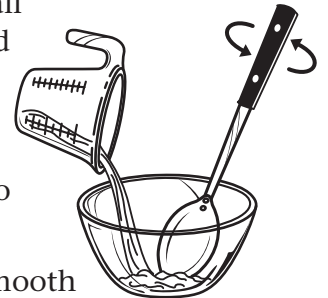
Cornstarch-thickened liquids are more likely to thin if overheated or cooked too long. Cornstarch is often used to thicken stir-fry recipes.

Steps to Lump-Free Thickening

Whether you use flour or cornstarch, your goal is to blend the starch and the liquid smoothly. Don't add the starch directly to the liquid—lumps will form that are difficult to break up. Here's one method you can use to avoid lumps.

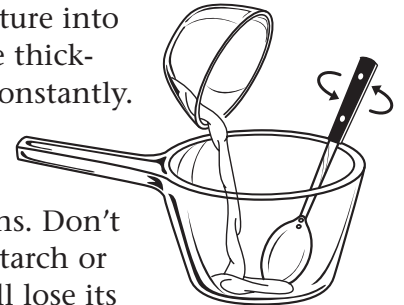
1. Measure the flour or cornstarch into a small bowl.

2. Gradually pour a small amount of cold liquid into the flour or cornstarch, stirring constantly. Pour in only enough liquid to make a thin mixture.



3. Stir well to make a smooth paste.

4. Slowly pour the flour or cornstarch mixture into the liquid to be thickened, stirring constantly.



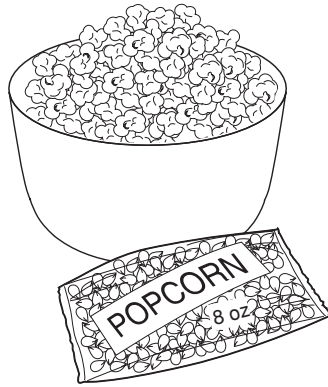
5. Cook, stirring gently, until mixture thickens. Don't overcook cornstarch or the mixture will lose its thickness.

Taking Action

Suppose you're out of cornstarch, so you decide to substitute flour in the pudding you're making. The recipe calls for 3 Tbsp. cornstarch. How much flour will you use? Why?

Popcorn Fun

Popcorn can be a great snack choice. It's not only crunchy and fun to eat, but a good source of complex carbohydrates and fiber.



What Makes Popcorn Pop?

A popcorn kernel is made of water stored within soft starch. A hard outer shell surrounds the kernel. When the kernel is heated, the water expands. Pressure builds, until eventually the hard outer surface gives way. The starch expands suddenly. The popcorn kernel explodes, turning inside out.

Ways to Make Popcorn

If you'd like to make your own popcorn at home, you have several choices.

Prepackaged microwave popcorn is easy and quick to make. Cleanup is simple. On the other hand, microwave popcorn is more expensive than bulk popcorn. It can be high in fat and salt because of added ingredients.

A **microwave popper** is a container for popping bulk popcorn in the microwave oven. It's designed to concentrate the microwave energy on the kernels.

An **electric popper** heats oil to pop corn automatically.

A **hot air popper** is also electric, but it uses a stream of hot air instead of hot oil. It lets you make popcorn with less fat.

Making Popcorn on the Range

Popping corn on the range is another option. Here's how:

1. Preheat a heavy pan or skillet. Choose one with a loose lid that will allow steam to escape.
2. Add $\frac{1}{4}$ cup cooking oil and a couple of test kernels. Don't let the oil get hot enough to smoke.
3. When the test kernels pop or spin, add the rest of the popcorn. Use just enough to cover the bottom of the pan.
4. Put the cover on the pan. Shake it to spread the oil. The popcorn should start to pop.
5. Remove the pan from the range when the popping begins to slow. The heat from the oil will pop the rest of the kernels.
6. When the popping stops, empty the popped popcorn into a large bowl.

Storing Popcorn

Store popcorn kernels in an airtight container in a cool place, such as a kitchen cabinet. Leaving kernels uncovered, storing them in a hot place, or refrigerating them can make the kernels dry out. Then your popcorn may not pop.

Taking Action

Suggest three ways to flavor plain popcorn without adding butter, salt, or sugary coatings.

Caffeine

Many popular beverages—including coffee, tea, some soft drinks, and cocoa—contain caffeine. This chemical is found naturally in some foods and beverages and added to others. It’s also found in many medicines.

People often have questions about caffeine. They wonder: Is it safe? Should it be avoided? Here are the facts.

The Safety of Caffeine

Caffeine has been in use for thousands of years. The U.S. Food and Drug Administration (FDA) includes caffeine in the category of food additives that are “generally recognized as safe.”

At various times, there have been reports about possible links between caffeine and a variety of health problems. Often this is because a single study or the work of one researcher suggests a link. In any scientific research, the results of a single study are not enough. Before the findings are accepted, they must be verified by other studies. Sometimes the first study is found to be flawed. So far, no well-designed scientific studies have shown that caffeine poses a significant health risk.

The American Medical Association and the American Cancer Society agree with the FDA that moderate use of caffeine is safe. “Moderate” is usually defined as about 300 milligrams (mg) a day. This guideline applies to all adults, including pregnant women.

Caffeine and Bone Health

Some studies have found that caffeine increases the amount of calcium the body loses. However, other studies have shown

that caffeine does not decrease bone density. It seems that as long as enough calcium is consumed, the slight loss caused by caffeine may not be a problem.

While caffeine may not be the culprit, there is a related concern about bone health. Many teens choose soft drinks as a beverage instead of milk. As a result, they may not be getting enough calcium. Calcium and other nutrients are important for building strong bones and maintaining them later in life.

Pros and Cons of Caffeine

Caffeine is a mild stimulant. It can help people feel alert. Many people make a habit of drinking coffee, tea, and soft drinks for this reason.

Some people are more sensitive to caffeine than others. They may experience unwanted effects, such as sleeplessness. Caffeine may cause a slight, temporary rise in blood pressure in some people.

Sources of Caffeine

In the United States, people average about 200 milligrams of caffeine per day. For adults, coffee is the main source. Teens get most of their caffeine from soft drinks.

The chart on the next page shows the caffeine content of various foods and beverages. The amount can vary widely depending on the brand and the preparation method. For instance, those who like strong tea or coffee get more caffeine than those who drink their beverages weak.

Caffeine (Continued)**Caffeine Content of Some Beverages and Foods**

| Product | Serving Size | Caffeine (mg) |
|-----------------------------|--------------|---------------|
| Coffee, brewed, drip method | 8 fl. oz. | 60-180 |
| Coffee, instant | 8 fl. oz. | 30-120 |
| Coffee, decaffeinated | 8 fl. oz. | 1-5 |
| Tea, brewed, U.S. brands | 8 fl. oz. | 20-90 |
| Tea, brewed, imported | 8 fl. oz. | 25-110 |
| Tea, iced | 12 fl. oz. | 14-75 |
| Chocolate milk | 8 fl. oz. | 2-7 |
| Cocoa beverage | 8 fl. oz. | 3-32 |
| Soft drinks, caffeinated | 12 fl. oz. | 20-60 |
| Milk chocolate | 1 ounce | 1-15 |
| Dark chocolate, semi-sweet | 1 ounce | 5-35 |

Caffeine and Food Labels

Currently, it's not easy to know how much caffeine you're getting. When caffeine is a natural part of a food or beverage, it's not listed on the label. When caffeine is added, it must be included in the ingredients list. However, the label does not have to say how much caffeine is in the product.

Some health and consumer groups want this to change. They think food and beverage labels should be required to identify the caffeine content. They also want information about possible negative effects of caffeine to be included on the label of products that contain caffeine.

Other groups take a different view. They point out that labeling caffeine content is not always a simple matter. When caffeine is naturally present rather than added, the exact amount is not always consistent and could be hard to determine. With tea and coffee, caffeine content also depends on the brewing method. In addition, these groups feel there isn't enough room on product labels to provide adequate information about caffeine.

Making Decisions About Caffeine

Because caffeine affects people differently, there's no amount that's right for everyone. If you think caffeine is causing you problems, you may want to cut back. Avoiding caffeine within four hours before bedtime may help prevent insomnia (trouble sleeping).

If you decide to cut out caffeine entirely, you may want to do so gradually. Eliminating caffeine all at once sometimes causes headaches, fatigue, drowsiness, restlessness, or irritability. However, these symptoms usually last only a few days.

Taking Action

Using the table above, calculate how much caffeine you think you consume in an average day. Do you feel you're consuming too much? Why or why not?

How Yeast Works

Yeast is a microscopic plant. For thousands of years, it's been used to leaven bread.

Today yeast is sold in dry or compressed forms. The dry form can be stored a long time at room temperature. Because compressed yeast contains more moisture, it must be stored in the refrigerator.



Fermentation

Yeast works as a leavening agent through a chemical process called *fermentation* (fur-men-TAY-shun). Fermentation splits complex chemicals into simpler ones.

During fermentation, the yeast breaks down starch and sugar in the recipe. It changes them to carbon dioxide, which is a gas, and ethyl alcohol. The carbon dioxide makes the product rise. The gluten in the dough creates a mesh that holds the gas, which gives the product its shape.

During baking, the ethyl alcohol formed by the yeast evaporates. The yeast plants themselves are killed. This stops the fermentation process.

Factors Affecting Leavening

There are several factors that influence how well yeast leavens. These affect how much carbon dioxide the yeast plants produce.

- More yeast yields more carbon dioxide. Too much yeast, however, can affect flavor and texture.

- Adding sugar, which acts as food for the yeast, creates more gas. Too much sugar, however, can slow fermentation.
- Too much salt decreases the amount of carbon dioxide.
- Warm temperatures speed the rate at which the gas is created. The best temperature for fermentation is between 78 and 82°F.
- Sudden temperature changes can decrease the amount of gas produced. A change, either high or low, can slow fermentation.

One of the challenges in using yeast is to create the right conditions. The yeast should grow at a rate and for the length of time that will produce the best product. This is why following the recipe is important in making products with yeast.

Taking Action

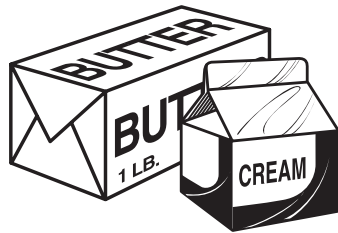
Dissolve a package of dry yeast in $\frac{1}{2}$ cup of 90°F water. Divide the mixture equally in three small glasses. Add 1 Tbsp. sugar to the first glass, 1 Tbsp. corn syrup to the next glass, and 1 Tbsp. cornstarch to the third glass. Stir each with a clean spoon. Label the glasses. Place the glasses in a 90°F warm water bath higher than the liquid in the glasses. Measure fermentation by the size of the bubbles in the foam and the rate at which they form. Which bubbled first? Which bubbled at the steadiest rate? Can you smell the alcohol of fermentation? How does yeast make bread rise?

Comparing Fats and Oils

Several types of fats and oils can be used in baking. It's best to use the type called for in the recipe. Solid fats and oils can't be substituted for one another without making other adjustments in the recipe. You may be able to substitute one solid fat for another. However, the switch may change the flavor and texture of the finished product.

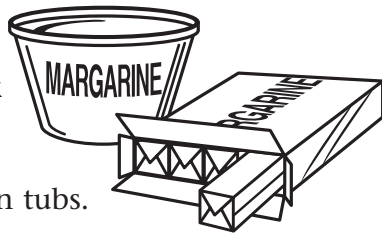
Butter

- A fat made from cream.
- Contains cholesterol.
- May be purchased lightly salted or unsalted.



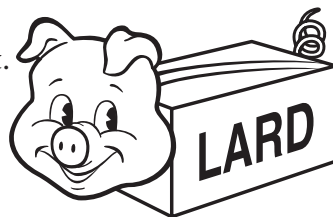
Margarine

- A fat made from vegetable oils.
- No cholesterol, but may contain trans fat.
- May be purchased in stick form or as a soft margarine (or "spread") in tubs.
- Not all margarine products will work in baking. Check the label.



Lard

- A solid fat from hogs.
- Most often used in pie crust. Gives a flaky texture.
- Contains cholesterol.



Shortening

- A solid fat made from vegetable oil.
- No cholesterol.
- Plain shortening has little flavor. Butter-flavored shortening is available.



Cooking Oil

- Made from vegetables such as corn, soybeans, cottonseeds, peanuts, safflower seeds, or olives.
- No cholesterol.
- Olive oil is not usually used for baking due to its distinct flavor.



Taking Action

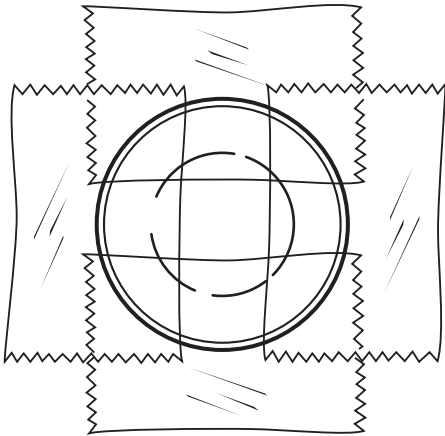
Find a cookie recipe that calls for shortening, butter, or margarine. Prepare half the recipe as directed and the other half using one of the other two fats. How do the flavor and texture of the cookies differ? How do the fats compare nutritionally?

How to Frost a Layer Cake

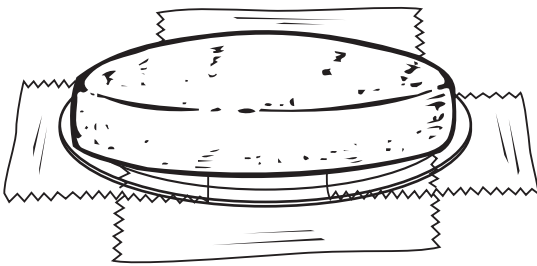
1. Brush crumbs from the surface of the layers. Use a pastry brush or paper towel.



2. Arrange four strips of waxed paper on a cake plate. Cover only the edges of the plate, not the center.



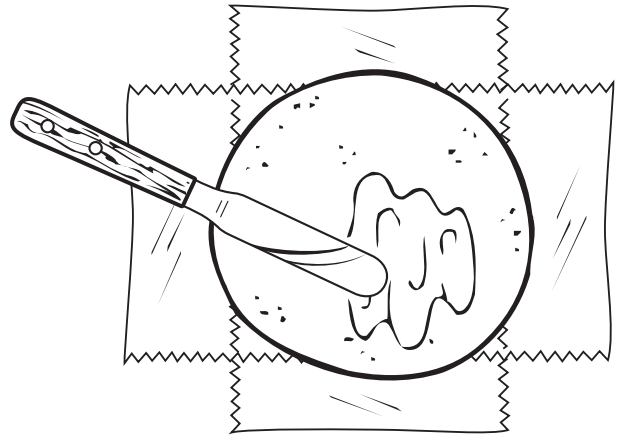
3. Place one layer of cake on the center of the plate over the waxed paper.



4. Use a metal spatula or table knife to spread the frosting. Don't use a sharp knife—you might cut into the cake.



5. Spread frosting evenly over the top of the cake layer.

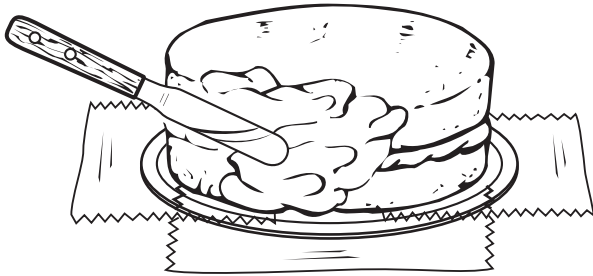


6. Place the second layer on top of the frosting. Be sure the sides of the layers line up evenly.

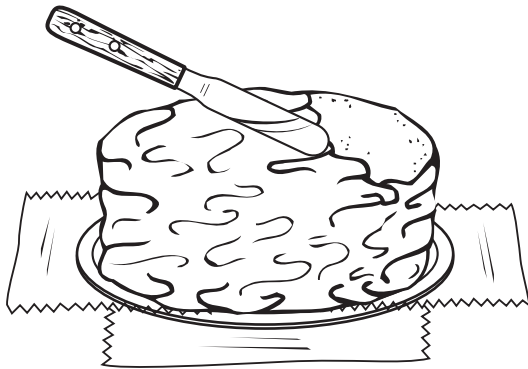


How to Frost a Layer Cake (*Continued*)

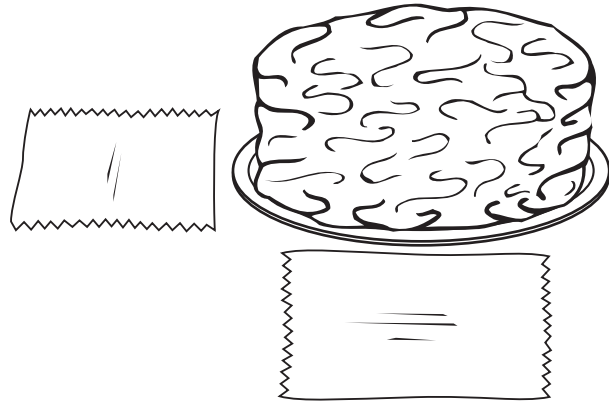
7. Spread frosting evenly over the sides. Bring the frosting up over the top edge of the cake. Be sure to fill in any spaces between layers.



8. Spread frosting over the top of the cake. Blend it in with the frosting on the sides. For an attractive appearance, make designs in the frosting, such as swirls or peaks.



9. Carefully pull the waxed paper out from under the cake. Work slowly so you don't remove any frosting from the bottom edge of the cake.



Taking Action

1. Explain the purpose of these steps: brushing crumbs from the cake; putting waxed paper on the plate; frosting the sides of the cake before the top.
2. With classmates, bake a batch of cupcakes. Cut each cupcake in half horizontally. Practice frosting miniature cakes, using each cupcake half as a cake layer.

How to Make Pie Crust

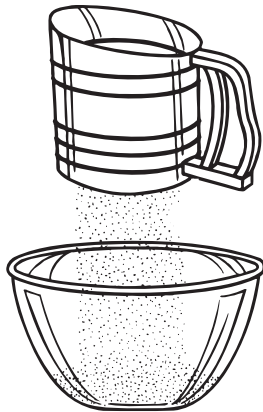
Pie crust is made from flour, fat, cold water, and salt. When combined and baked in just the right way, these simple ingredients can form a flaky, tender, tasty crust.

The amount of water listed in a pie crust recipe is usually not exact. This is because flour varies in the amount of water it will absorb. The weather also affects the amount of water needed. More water will be needed on a dry day than on a humid day.

When making pie crust, handle the dough as little as possible. Kneading or mixing the dough develops gluten, which will make the pastry hard and tough. Heat from your hands can melt the shortening so the pastry won't be flaky.

To make pie crust, follow these steps:

1. Sift the flour and salt together in a mixing bowl.



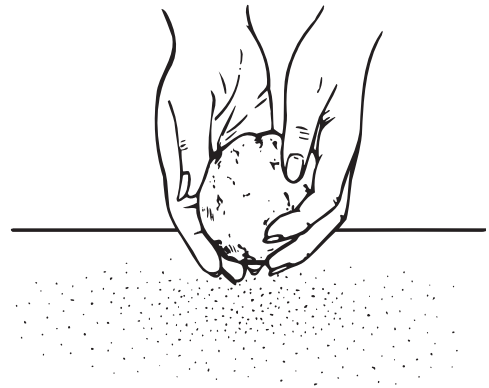
2. Cut the shortening into the flour, using a pastry blender or two knives, until the particles are the size of small peas.



3. Add the cold water gradually, mixing with a fork. Press the mixture with the fork to form a ball. The mixture should be just moist enough to hold together.



4. Gather the dough with your fingers. Press gently to form a firm ball.



5. Roll out dough immediately, or cover and refrigerate it for later use.

Continued on next page

How to Make Pie Crust (*Continued*)

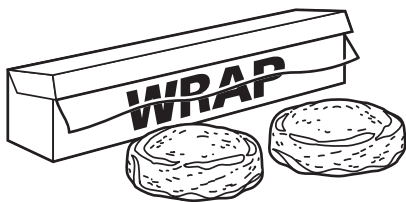
Pie Crust Made with Oil

For those who desire to eat pie crust with lower saturated fat, pie crust can also be made with vegetable oil. The results won't be as flaky but it does make a very tender crust. To make oil pie crust, follow these steps:

1. Sift the flour and salt together.
2. Measure the liquid and oil into a liquid measuring cup.
3. Pour the liquid mixture into a bowl.
4. Add all the flour and salt mixture to the liquids. Stir until mixed.



5. Shape into 2 flat balls.
6. Wrap in plastic wrap.



7. Refrigerate for 15 min. or more.
8. Roll out between two pieces of plastic wrap or wax paper.



Taking Action

Using cookbooks or other references, learn about three methods for finishing the edge of a pie. Describe each method. Which would you be most likely to use? Why?

Food Journal

Introduction

Unit One helps you look ahead to the adventure of food that awaits you in this course. It encourages you to set goals for what you want to accomplish. It helps you identify the resources you might use in meeting your goals. It also provides a look at careers in the food industry that might be of interest to you. The rest of the adventure will be up to you. Where do you want this adventure to take you?

Assignment

Travelers often keep a journal in which they record the details of their adventures. To help you keep track of your adventures in this course, you will keep a *Food Journal*. In it you will make entries about the things you have learned and how you plan to apply them to your own life.

Your journal should include entries for each chapter you study during this course. For each entry, include the following:

- Your learning goal(s) for the chapter.
- A personal decision you made related to this topic. For example, you may decide to eat low-fat foods and increase your exercise level to maintain a healthy weight.
- Your plan for putting the decision into action.
- Your evaluation of the results.

Materials and Resources

To keep your journal, you will need a notebook, a pen, and your textbook. You may need other resources such as recipes or the Internet. In addition, you may need to visit a local supermarket or the public library, or involve family and friends. You will need ingredients for any recipes you decide to try.

Procedure

During the course, you will need to read each chapter as it is assigned and actively participate in class. Before you begin studying each topic, you should:

1. Decide what you want to learn and record your goal(s) in your *Food Journal*.
2. Make a personal decision related to the topic. For example, you might decide to research a career in food photography, develop a personal fitness plan, compare your diet with the Dietary Guidelines, read an appliance instruction manual, taste a new food, develop your consumer skills, or try a new recipe.
3. Develop a step-by-step action plan.
4. Evaluate the results after you have carried out your plan. Record your decision, action plan, and evaluation in your *Food Journal*. You may decide to enhance your *Food Journal* with photographs—either your own or those collected from magazines.

Food Journal (Continued)

Directions: Have your instructor evaluate your *Food Journal* using the following rubric. The rating scale is: 3 = good; 2 = fair; 1 = poor.

Evaluation

| Category | 3 | 2 | 1 | Score |
|--------------------|--|--|---|--------------|
| Entries | All completed. | Some completed. | Few or none completed. | |
| Goal | Clearly stated. | Somewhat clear. | Unclear. | |
| Decision | Clearly stated and relevant to topic. | Somewhat clear and relevant to topic. | Unclear and lacking relevance. | |
| Action Plan | Clear plan with steps identified. | General plan with some steps identified. | Vague or no plan. | |
| Evaluation | Careful analysis of results. | General analysis of results. | Little or no analysis of results. | |
| Depth | Strong understanding of topic. | Some understanding of topic. | Little or no understanding of topic. | |
| Writing | Uses complete sentences and correct grammar. | Uses mostly complete sentences and some incorrect grammar. | Uses few complete sentences and grammar usage is very poor. | |
| Neatness | Neat and easy to read. | Somewhat neat and easy to read. | Lacks neatness and is not easy to read. | |
| | | | Total Score | |

Food Trend Research

Introduction

Learning about food trends is a great way to start your adventure of food. Food trends reflect “what’s hot and what’s not” in food choices and cooking techniques. What foods are popular right now? Are there specific Ethnic foods hot on the food scene? Have some of them been combined with other ethnic food? Remember that food trends tend to go in waves (or cycles) of popularity. What foods were popular last year? Ten years ago? Fifty years ago? Have foods that were popular 30 years ago (“retro”) made a recent “come back”? By investigating trends, you will develop a sense of curiosity that will make this course even more relevant and interesting.

What are some ways to find out about food trends? Try the following:

- Read food-related magazines.
- Examine a variety of new cookbooks.
- Check out recipe sites on the Internet.
- Look for new food products at the supermarket.
- Check out information about “fancy food” shows.
- Watch televised food shows for the latest in creative food trends.

Assignment

Choose a food trend to investigate. Consider investigating the impact of world news on food production or the foods people eat. You may want to investigate ethnic foods, such as the array of available Asian foods that are increasing in popularity. Perhaps the popularity of certain foods in a

particular region of the United States is of interest to you. Learning about new careers in the food industry may also be a trend. Use a variety of resources to gather information, then plan and make a presentation to the class sharing what you learned.

Materials and Procedure

To complete this project, you should use at least five different resources. You may use printed resources—such as magazines, newspapers, and books—or the Internet and television to locate information. Consider talking to adults in your community to add a local viewpoint. Then complete the following steps:

1. Outline your presentation after gathering information.
2. Plan ways to make the presentation interesting such as using PowerPoint® slides, a handout, food samples, or class involvement.
3. Prepare your visual, handout, or food samples.
4. Practice your presentation at home alone and with your family.
5. Give your presentation to the class. Your presentation should include a creative opening, at least three main points, and a creative ending. Your visuals or handout should be creative, easily read, neat, clear, and grammatically correct. If you provide a food sample, it should be a good example of the product. Store and serve your product at the correct temperature. Present your food product attractively.

Food Trend Research (Continued)

Directions: Have your instructor evaluate your *Food Trend Research* presentation using the following rubric. The rating scale is: 3 = good; 2 = fair; 1 = poor.

Evaluation

| Category | 3 | 2 | 1 | Score |
|-----------------------------|--|--|---|-------|
| Content | All information is factually correct. | Most information is factually correct. | Information includes many factual errors. | |
| Introduction | Excellent. Creatively conveys interest in topic. | Good. Conveys interest in topic. | Poor. Lacks interest to capture classmate attention. | |
| Discussion | Excellent. Asks and answers effective questions. | Good. Asks and answers questions. | Vague. Questions and answers are not clear. | |
| Insight and Analysis | Displays great insight and analysis of topic. | Displays some insight and analysis of topic. | Displays little insight and analysis of topic. | |
| Conclusion | Effectively ties together the presentation. | Adequately ties together the presentation. | Poorly ties together the presentation. | |
| Sources | Excellent variety. | Adequate variety. | Inadequate variety. | |
| Organization | Well organized and clearly presented. | Adequately organized and presented. | Poorly organized and presented. | |
| Grammar and Spelling | Correct grammar and spelling used throughout presentation. | Several errors in grammar and spelling used throughout presentation. | Many errors in grammar and spelling used throughout presentation. | |
| Paper | Very clean and legible. | Somewhat clean and legible. | Messy and illegible. | |
| Total Score | | | | |

Personal Glossary of Food Terms

Introduction

Every subject has a unique set of terms that are used by people in the field. As you study the topics in this course, you will encounter terms that are new to you. One way to keep track of these terms is to create a personal glossary. By writing down new terms and their definitions, you will be able to refer to them as needed throughout the course. Should you decide to pursue a career in the food industry, you will have a head start on learning the terms used by food professionals.

Assignment

Each time you encounter an unfamiliar food or culinary term, record it in your *Personal Glossary of Food Terms*. Note the chapter number and title, then as you study the topic, write down each new term and its definition. *Key Terms* in the chapter are in bold type followed by a definition. You can also find *Key Terms* and their definitions in the *Glossary* at the end of the textbook. Review your glossary frequently to ensure that you learn each term. You may also want to include new terms that you come across as you research various topics. Use your glossary when you study for tests. At the end of the course, you will be surprised how many new terms you have learned.

Materials and Resources

For your *Personal Glossary of Food Terms* you will need a loose-leaf notebook, a pen, and your textbook. You can find the definitions of *Key Terms* in the text or in the *Glossary* at the end of the text. If you want to add other words to your glossary, refer to resources such as the dictionary, other food or culinary books, or the Internet for definitions. Enhance your *Personal Glossary of Food Terms* with photos or illustrations that you create yourself or find in magazines.

Procedure

1. As you read each chapter or listen in class, note any unfamiliar food or culinary terms in your *Personal Glossary of Food Terms* notebook.
2. As soon as you have time, add a definition for each term. Be sure to establish an orderly format and to write neatly.
3. Add color or illustrations to help you remember the definitions of the terms.

Personal Glossary of Food Terms (*Continued*)

Directions: Have your instructor evaluate your *Personal Glossary of Food Terms* using the following rubric. The rating scale is: 3 = good; 2 = fair; 1 = poor.

Evaluation

| Category | 3 | 2 | 1 | Score |
|--------------------|---------------------------------------|------------------------------------|--|--------------|
| Entries | Several terms for each chapter. | One or two terms for each chapter. | Less than one term per chapter. | |
| Terms | Challenging terms included. | Some challenging terms included. | Only <i>Key Terms</i> included for each chapter. | |
| Format | Clear and consistent format. | Somewhat consistent format. | Format unclear and inconsistent. | |
| Appearance | Neat and clean. | Somewhat neat and clean. | Messy and dirty. | |
| Creativity | Effective use of color illustrations. | Some use of color illustrations. | No use of color illustrations. | |
| Total Score | | | | |

Nutrition News Scrapbook

Introduction

Unit Two introduces you to the basics of nutrition and wellness. The study of health and nutrition is interesting because scientists are learning more about these topics each year. Clipping health and nutrition articles while you are enrolled in this course will give you an idea just how much scientists learn about keeping the body healthy each year.

As you read, don't be alarmed by controversy. Until final conclusions are reached, contradictory studies may be reported. This is part of the scientific process. It may take years before a particular question is settled. Researchers often review the same data and reach different conclusions. This is because the debate between researchers raises more questions that require further study.

Assignment

Throughout this course, you will clip health and nutrition news articles and use them to create a *Nutrition News Scrapbook*. If you prefer, you may make copies of the articles rather than clip them. Try to collect articles on a variety of nutrition-related topics.

Materials and Resources

For your *Nutrition News Scrapbook*, you will need the following:

- Notebook
- Construction paper
- Computer/printer
- Newspapers
- Magazines
- Dividers
- Paper
- Glue
- Pen

Procedure

Use the following steps to complete your *Nutrition News Scrapbook*:

1. Prepare a *Nutrition News Scrapbook* for use during this course. Decorate the cover attractively. You may want to embellish and add divider pages later.
2. Clip articles about nutrition and wellness as you find them. For each article, critique the following:

Headline. Does the headline promote a “quick fix” that departs from previous research and scientific beliefs? Does it claim a dramatic breakthrough? Does it stick to known facts? Remember, it was written to engage readers.

Purpose. What is the purpose of the article? Is the purpose to objectively educate the public or just to sell a product?

Study design. Was this a “preliminary” study or one that confirms the findings of many previous studies? Does the study show associations or relationships between two factors or was it based on controlled experiments? Were subjects randomly assigned to either the experimental group or the control group?

Context. Does the story include details such as the amount of a food consumed or specifics about the dosage of a supplement taken and how often the food or supplement was consumed? Did it include details about the study population (gender, age, etc.)? How large was the group studied? Were numbers, not just percentages, given to help put things in perspective?

Nutrition News Scrapbook (*Continued*)

Realistic claims. Do claims seem exaggerated or unrealistic? Are simplistic conclusions drawn from a complex study to sell a product? Does the article include anecdotal information from persons who have no formal training in nutrition or from personal testimonials about the benefits or results obtained from using a product?

Conclusions. Was information about the risks and benefits provided? Did the results confirm or contradict previous studies? Does the story include important details that may apply to you or allow you to make an informed decision?

Funding source. Did funding come from the government, industry, health organizations, individuals, or some other source? Might the source of funding have interest in the results?

Researchers. What are their credentials? With what organizations are they affiliated?

Source of information. Has the study been reviewed by recognized scientific experts and published in reputable peer-reviewed scientific journals, like the *New England Journal of Medicine*? Was the research presented at a well-known scientific conference? Does the information say “some studies show...” or does it state where the study was published so that you can read it yourself?

3. Neatly cut out the article and mount it attractively on a sheet of paper. Include the name of the publication, date, and page number(s). Write or keyboard your critique on a separate sheet of paper. Place both items in your scrapbook.

Directions: Have your instructor evaluate your *Nutrition News Scrapbook* using the following rubric. The rating scale is: 3 = good; 2 = fair; 1 = poor.

Evaluation

| Category | 3 | 2 | 1 | Score |
|----------------|--|---|--|-------|
| Appearance | Neat and creative. | Somewhat neat and creative. | Messy and lacks interest. | |
| Cover/Dividers | Attractive and relevant to news items. | Adequate and somewhat relevant. | Poor appearance; no relevance. | |
| Articles | Varied and well selected. | Some variety and adequate selection. | Little variety and limited selection. | |
| Sources | Exceeded sufficient number and types; well documented. | Sufficient number and types included; not all sources cited properly. | Inadequate number and types included; sources poorly documented. | |
| Critiques | Thorough. | Adequate. | Limited. | |
| | | | Total Score | |

Nutrition Newsletter

Introduction

Have you read recent nutrition news about children's diets? A growing number of children between ages 6 and 17 are overweight. In addition, about half of all U.S. children under 5 years of age don't get enough calcium in their diets. Once children reach their teen years, the majority of teens do not get the recommended amount of calcium. According to the *National Institutes of Health (NIH)*, American children and teens are in the midst of a "calcium crisis."

Children's eating habits need improvement to prevent diseases resulting from poor nutrition. Obesity in childhood can lead to a host of medical problems, including heart disease and high blood pressure.

Assignment

To help elementary school children learn more about good eating habits, you and your classmates will use what you are learning to create a *Nutrition Newsletter*. The newsletter should include informative articles, pictures, word games, and suggestions for nutritious snacks. You can even make up riddles and mnemonics to help children learn about nutrition. Give the newsletter a creative title and use headlines that will appeal to children.

Materials and Resources

To create the *Nutrition Newsletter*, you will need nutrition references, a computer and printer, access to the Internet, a word processing program, and paper.

Procedure

Prepare a newsletter that includes at least 10 articles and games. Use the following steps in preparing your *Nutrition Newsletter*:

1. Divide your class into teams that will be responsible for creating different parts of the newsletter. The following are suggestions:
 - *Editorial*—Gives assignments, edits newsletter.
 - *Layout*—Plans format and oversees layout.
 - *Writing*—Writes nutrition articles at appropriate reading level.
 - *Activity creation*—Develops nutrition word games, puzzles, riddles, and mnemonics.
 - *Illustration and design*—Selects photos and illustrations to include in the newsletter, chooses type styles.
2. Research your assigned topic and complete your assignment. Refer to nutrition information for children in library resources and on Internet sites.
3. Assist your classmates in putting together the newsletter. Use your creativity to make the newsletter appealing to children.
4. Print the newsletter and share it with an appropriate group of elementary school children.
5. Evaluate the newsletter based on class evaluation and children's responses.

Nutrition Newsletter (Continued)

Directions: Have your instructor evaluate your *Nutrition Newsletter* using the following rubric. The rating scale is: 3 = good; 2 = fair; 1 = poor.

Evaluation

| Category | 3 | 2 | 1 | Score |
|-----------------------------|---|--|---|-------|
| Task Completion | Maximum requirement of articles met. | Minimum requirement of articles met. | Missing more than one article. | |
| Cooperative Work | High level of cooperation. | Acceptable level of cooperation. | Little evidence of cooperative effort. | |
| Format | Organized and appealing. | Somewhat organized and appealing. | Poor organization; lacks appeal. | |
| Headlines | Accurately describe all content. | Accurately describe most content. | Do not accurately describe four or more articles. | |
| Fact Accuracy | Accurate facts and citations. | Some inaccuracy in facts or citations. | More than two factual errors. | |
| Bias Control | All articles written without bias. | Some opinion or bias present in articles. | More than two articles contain bias. | |
| Spelling and Grammar | No errors. | One to three errors. | Four or more errors. | |
| Illustrations | Used at least four appropriate illustrations. | Used one to three appropriate illustrations. | No illustrations. | |
| Games | Accurate and appealing. | Somewhat accurate and appealing. | Lacking accuracy and appeal. | |
| Age Appropriateness | All articles appropriate for the age of children. | One to three items are not age appropriate. | Four or more items are not age appropriate. | |
| Total Score | | | | |

Teaching About Nutrition

Introduction

“To teach is to learn twice,” is a saying common among teachers. It means that you learn something better if you teach it to someone else. One way to ensure that you have really learned your nutrition facts is to teach them to someone else.

Assignment

For this project you will teach a nutrition topic to other students, such as elementary students. Check with your teacher about contacting preschool or elementary classes for this project. Each person in your class will choose a different nutrition topic to teach. Then you will study the topic and plan a creative way to teach the information to the chosen group.

Materials and Resources

To develop your lesson, your primary resource will be your textbook. You may also use library and Internet resources if needed. Depending on the methods you choose for teaching the topic, you may need other resources such as a computer, puppets, or other creative manipulative.

Procedure

Use the following steps to prepare and teach your lesson about nutrition.

1. Choose a nutrition topic to teach.
Coordinate your choice with those of other classmates. Your teacher may allow you to work in groups if appropriate.
2. Research your topic thoroughly and decide what you want the children to learn.
3. Plan creative ways to teach the lesson.
Remember: Children learn best if they are actively involved in the lesson. You might consider using group activities, puzzles, games, puppets, or skits.
4. Prepare everything you need to teach and evaluate the lesson.
5. In class, practice teaching the lesson.
6. Teach the lesson to the chosen group.

Teaching About Nutrition (Continued)

Directions: Have your instructor evaluate your nutrition lesson using the following rubric. The rating scale is: 3 = good; 2 = fair; 1 = poor.

Evaluation

| Category | 3 | 2 | 1 | Score |
|----------------------------|--|--|---|-------|
| Target Audience | Appropriate for age group. | Somewhat appropriate for age group. | Inappropriate for age group. | |
| Goals | Clearly state learning to take place. | Somewhat clearly state learning to take place. | Goals are vague. | |
| Learning Activities | Activities varied and appealing. | Activities somewhat varied and appealing. | Activities show little variety or appeal. | |
| Contents | High level of accuracy. | Mostly accurate. | Several errors in contents. | |
| Materials | All materials well prepared. | Most materials well prepared. | Some materials poorly prepared. | |
| Evaluation | Clearly covers lesson content; age appropriate for audience. | Mostly covers lesson content; mostly age appropriate for audience. | Inadequately covers content; content is too simple or too complex for audience. | |
| Total Score | | | | |

Demonstrate a Skill

Introduction

It's fun to show others how to do something you've learned. By doing so you demonstrate that you have both knowledge and skill. In Unit Three you will be learning how to use and care for kitchen appliances, tools, and equipment. You will be learning shopping skills, basic food preparation techniques, measuring methods, basic cooking methods, and microwave techniques. Your teacher will give you opportunities to show the class or others what you are learning.

Assignment

Plan and carry out a demonstration of a skill related to one of the chapters in Unit Three. Work with your teacher to choose an appropriate skill to demonstrate. For example, you may demonstrate how to use certain appliances or equipment, or you may demonstrate basic cooking techniques. Your teacher may ask you to do an individual demonstration or allow you to work with a partner.

Materials and Resources

To plan your demonstration, refer to your textbook and other appropriate resources. You may need to visit a grocery store to collect information, food, or props. Be creative in your use of props or technology. You should wear appropriate clothing, an apron, and hair covering. To carry out your demonstration, you may need kitchen appliances, tools, and equipment.

Procedure

Complete the following steps to plan, prepare, and carry out your demonstration.

1. Work with your teacher to select an appropriate skill to demonstrate. Decide whether you will do an individual demonstration or work with a partner.
2. Use your textbook and other print resources and the Internet to research the skill you will be demonstrating.
3. Plan your demonstration. List each step you will demonstrate. Identify all items that will be needed for the demonstration. Prepare a display, handouts, or PowerPoint™ presentation to summarize key points. Decide whether you will involve the class in the demonstration. Decide whether you will provide samples of any product.
4. Practice your demonstration at home.
5. Make sure that you have everything you need for the demonstration. You may need to bring some items from home. Others may be available in class. (**Note:** If you plan to use items at school, provide your teacher with a list and be sure the items are available.)
6. Set up your demonstration.
7. Carry out your demonstration.

Demonstrate a Skill (Continued)

Directions: Have your instructor evaluate your demonstration using the chart below.

Evaluation

| Criteria | 3 = Very Good | 2 = Needs Some Improvement | 1 = Needs Improvement | Score |
|-----------------------------|---------------|----------------------------|-----------------------|-------|
| Appearance | | | | |
| Confidence | | | | |
| Voice Quality | | | | |
| Grammar | | | | |
| Introduction | | | | |
| Knowledge of Subject Matter | | | | |
| Organization | | | | |
| Demonstration Techniques | | | | |
| Visuals/Handouts (If Used) | | | | |
| Product | | | | |
| Summary | | | | |
| | | | Total Score | |

Comments:

Work Habits Poster Project

Introduction

Food-related businesses use colorful posters with clear illustrations and simple messages to help workers remember to use safe habits, to keep food safe, to work efficiently, and to conserve and recycle. Posters can help you and your classmates develop good work habits in the foods lab, too.

Assignment

Develop a work habits poster to present to the class and post in the classroom or foods lab.

Materials and Resources

For this project you will need poster board, markers, and glue. You may also need magazines or clip art.

Procedure

Use the following steps to prepare your work habits poster.

1. Work with your teacher to select a topic for your poster.
2. Carefully research the topic using your textbook and other resources.
3. Decide what information to include on the poster. Think about what your audience knows and what they need to know. The poster may include a title and several key points or a single important reminder. **Remember:** Eliminate all but the most important information.
4. Decide what illustrations are needed for the poster. You may be able to draw an illustration, clip a picture or graphic from a magazine, or download clip art from the Internet.
5. Plan the layout of the poster. Decide what you will use to attract attention. You might use a picture, a chart, or a memorable title. Plan the placement of pictures and words. Plan how you will use color. Decide what size and type of lettering to use. Allow space around elements to avoid a crowded appearance. (**Note:** It is helpful to sketch several ideas, then choose the best one.)
6. Create the poster. You may want to lightly sketch your layout in pencil before you begin. Lightly penciling in straight lines where you want lettering will make your work easier. Draw illustrations or glue artwork in place. Carefully complete the lettering. You can also complete poster elements or the entire poster using a computer. (**Hint:** Preview your poster by asking someone from your class to evaluate it for you.)
7. Present your poster to your class. Explain the importance to the topic and provide additional information to explain the contents of the poster.
8. Have your instructor evaluate your *Work Habits Poster Project* using the evaluation checklist on page 100.

Work Habits Poster Project (Continued)

Evaluation

| Questions | Yes | No |
|--|-----|----|
| 1. If you encountered this poster, would you stop to look at it? | | |
| 2. Is the poster appropriate for the audience? | | |
| 3. Is the purpose of the poster clear? | | |
| 4. Can the title be read from 6 feet away? | | |
| 5. Are the main ideas appropriate to the topic? | | |
| 6. Do details support the main ideas? | | |
| 7. Are the facts on the poster accurate? | | |
| 8. Is the poster neat and legible? | | |
| 9. Is the poster attractive in terms of design, layout, and color? | | |
| 10. Are capitalization, usage, punctuation, and spelling correct? | | |

Comments:

Food Safety Experiment

Introduction

Each of us is responsible for cleanliness in the kitchen. At home you are responsible for yourself and your family. In workplaces, such as hospitals and restaurants, workers are responsible for patients and customers, too.

Assignment

For this project, you will contaminate the growing medium in a petri dish and allow microorganisms to develop. This will help you understand why sanitation is important when you handle, prepare, and serve food.

Materials and Resources

You will need a nutrient agar plate (or petri dish), a marking pen, antibacterial soap, and transparent tape. You will also need a volunteer whose hands have not been washed recently.

Procedure

Divide into groups as directed by your instructor. Use the following steps to complete your food safety experiment.

1. Mark the petri dish with nutrient agar (on the outside of the half with agar) into four sections. Label the plate with the names of your group members and today's date. Then number the sections one to four.
2. Wet the hand of a volunteer, then have the person touch the agar in Section One. This will account for resident skin bacteria and tap water bacteria.
3. Have the volunteer wash his or her hands thoroughly for two minutes using antibacterial soap and cold water. Have the volunteer touch the agar in Section Two. This shows the effect of soap alone.
4. Have the volunteer wash his or her hands thoroughly for at least two minutes using antibacterial soap and hot water (being careful not to use water hot enough to burn the skin). Rinse with hot water. Have the volunteer touch the agar in Section Three. This shows the effect of temperature and soap.
5. Leave Section Four of the petri dish with nutrient agar untouched as a control to show that the plate was not contaminated.
6. Put the cover on the petri dish. Fasten the dish closed with transparent tape and incubate in a drawer out of direct sunlight.
7. After 48 hours, count the number of colonies that formed in the petri dish and record them in the chart on page 102. **Do not open the petri dish.**
8. Dispose of contaminated petri dishes as directed by your teacher.

Food Safety Experiment (Continued)

Data Table

| Colony Counts per Petri Dish Section | | | | |
|--------------------------------------|-----------|-----------|-----------|-----------|
| Group Member Names | Section 1 | Section 2 | Section 3 | Section 4 |
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |

Evaluation

Answer the following questions or statements to demonstrate your understanding of the importance of hand washing when handling, preparing, and serving food. Write your answers on a separate sheet of paper and attach it to this project.

1. Research how people must clean their hands for their occupations. Choose from the following occupations: dental hygienist, nurse, or food service worker. Write the approved hand-washing procedure.
2. Was there evidence of contamination on any of the plates? What do you think was the source of contamination?
3. Was there evidence of bacteria in the tap water?
4. Hot water is often recommended for hand washing. Is that supported by the data?
5. Most people do not spend two minutes washing their hands before eating or preparing food. Is this a serious health hazard? Why or why not?
6. What sources of error might there have been in this investigation?
7. If you make an error, should you report it? Why or why not?

Meal Management Lab Group Project

Introduction

Meal management involves all of the steps necessary to plan a meal, schedule preparation tasks, prepare and serve the meal, and evaluate the results.

Assignment

Working in a group of four to six, you will plan an appealing and nutritious lunch menu that can be prepared in the foods lab during class. Next you will determine the amount of time required for each task and make a combined work plan and schedule. You will also make a shopping list. Then you will work together to prepare and serve the meal, to clean your work area, and to evaluate the results.

Materials and Resources

For planning the meal, you will need cookbooks, paper, and pen. For preparing the meal, you will need kitchen appliances, equipment, and food.

For serving the meal, you will need dishes, glasses, flatware, serving dishes, and table linens. For cleanup, you will need dish detergent, a dishpan, dishcloth, and dish towels. For evaluation, you will need a pen and paper.

Procedure

1. Plan a nutritious lunch menu that can be prepared in the foods lab during class time. Evaluate the menu for appeal. Consider flavor, color, texture, temperature, and size and shape of the foods included. Consider the equipment available and the skills of group members. Prepare a shopping list for the foods needed. Obtain your teacher's approval of the menu.
2. Identify the tasks to complete each menu item. Arrange those tasks into a combined work plan for the meal. Make a schedule based on the combined work plan. **Remember:** Be sure the work is divided equally.
3. Prepare the meal using the work plan as a guide. Gather equipment and ingredients first. Use equipment properly. Set a timer when needed. Dovetail tasks when possible. Clean up as you work.
4. Serve the meal. Use an appropriate style of meal service. Set the table using appropriate tableware. Set each place setting correctly. Add appropriate table decorations. Observe basic table manners while you enjoy the meal.
5. Clear the table and store leftovers properly. Scrape all food off dishes and into the garbage container or disposal. Place dishes in the automatic dishwasher or wash by hand. After the dishes have been washed, wipe up any crumbs or spills from the table and counters. Sweep the floor.
6. Have your instructor rate your performance, using the evaluation on page 104. The rating scale is: 5=Excellent; 4=Great; 3=Average; 2=Poor; 1=Very Poor.

Meal Management Lab Group Project (Continued)

Evaluation

| Criteria | Points | | | | |
|--|--------|---|---|---|---|
| Menu | 5 | 4 | 3 | 2 | 1 |
| 1. Did the menu include a variety of nutritious foods? | | | | | |
| 2. Was the menu appealing? | | | | | |
| 3. Was resource availability carefully considered? | | | | | |
| 4. Was the shopping list complete and understandable? | | | | | |
| Work Plan | 5 | 4 | 3 | 2 | 1 |
| 1. Were preparation tasks clearly identified? | | | | | |
| 2. Did the schedule allow sufficient time for preparation? | | | | | |
| 3. Did the combined work plan divide tasks evenly? | | | | | |
| Meal Preparation | 5 | 4 | 3 | 2 | 1 |
| 1. Did the group use the work plan as a guide during meal preparation? | | | | | |
| 2. Were group members flexible when needed? | | | | | |
| 3. Did individual group members take responsibility? | | | | | |
| 4. Were cleanup tasks completed during preparation? | | | | | |
| Meal Service | 5 | 4 | 3 | 2 | 1 |
| 1. Was an appropriate meal service style chosen? | | | | | |
| 2. Was the table set properly for the menu? | | | | | |
| 3. Were attractive table decorations used? | | | | | |
| 4. Did group members observe table manners while eating? | | | | | |
| Cleanup | 5 | 4 | 3 | 2 | 1 |
| 1. Was the table cleared and food stored promptly after the meal? | | | | | |
| 2. Were dishes scraped in the kitchen before washing? | | | | | |
| 3. Were dishes washed correctly? | | | | | |
| 4. Were surfaces cleaned and sanitized? | | | | | |
| 5. Was the floor thoroughly swept? | | | | | |
| Total Points Out of 100 | | | | | |

Meal Management Home Project

Introduction

It is one thing to prepare a single recipe or to work in a lab group to prepare a meal. It is quite another to prepare a meal by yourself at home with no help. To do so requires combining all of the skills you have been developing.

Assignment

Plan, prepare, and serve a meal at home for your family. Evaluate the results. Have your family evaluate the results as well. Write a report that includes your menu, shopping list, schedule, and evaluations.

Materials and Resources

For planning the meal, you will need cookbooks, paper, and pen. For preparing the meal, you will need kitchen appliances, equipment, and food.

For serving the meal, you will need dishes, glasses, flatware, serving dishes, and table linens. For cleanup, you will need dish detergent, a dishpan, dishcloth, and dish towels. For evaluation, you will need a pen and paper.

Procedure

1. When planning, consider your family's meal patterns, nutritional needs, individual needs, and your resources. Make sure the meal is appealing. Prepare a shopping list for the items you do not have on hand.
2. Identify the tasks you will need to complete. Arrange those tasks into a combined work plan. Make a schedule.
3. Prepare the meal using the work plan as a guide. Gather equipment and ingredients first. Use equipment properly. Set a timer when needed. Dovetail tasks when possible. Clean up as you work.
4. Serve the meal. Use an appropriate style of meal service. Set the table using appropriate tableware. Set each place setting correctly. Add appropriate table decorations. Observe basic table manners while you enjoy the meal.
5. Clear the table and store leftovers properly. Scrape all food off dishes and into the garbage container or disposal. Place dishes in the automatic dishwasher or wash by hand. After the dishes have been washed, wipe up any crumbs or spills from the table and counters. Sweep the floor.
6. Have your family members evaluate the results using the evaluation that follows on page 106. Have them use the following rating scale: 5=Excellent; 4=Great; 3=Average; 2=Poor; 1=Very Poor.

Meal Management Home Project (Continued)

Evaluation

| Criteria | Points | | | | |
|---|--------|---|---|---|---|
| | 5 | 4 | 3 | 2 | 1 |
| Menu | | | | | |
| 1. Did the menu include a variety of nutritious foods? | | | | | |
| 2. Was the menu appealing? | | | | | |
| 3. Was resource availability carefully considered? | | | | | |
| 4. Was the shopping list complete and understandable? | | | | | |
| Work Plan | | | | | |
| 1. Were preparation tasks clearly identified? | | | | | |
| 2. Did the schedule allow sufficient time for preparation? | | | | | |
| 3. Was the combined work plan successful? | | | | | |
| Meal Preparation | | | | | |
| 1. Did you use the work plan as a guide during meal preparation? | | | | | |
| 2. Were you flexible when needed? | | | | | |
| 3. Did you take responsibility? | | | | | |
| 4. Were cleanup tasks completed during preparation? | | | | | |
| Meal Service | | | | | |
| 1. Was an appropriate meal service style chosen? | | | | | |
| 2. Was the table set properly for the menu? | | | | | |
| 3. Were attractive table decorations used? | | | | | |
| 4. Did everyone observe proper table manners while eating? | | | | | |
| Cleanup | | | | | |
| 1. Was the table cleared and food stored promptly after the meal? | | | | | |
| 2. Were dishes scraped in the kitchen before washing? | | | | | |
| 3. Were dishes washed correctly? | | | | | |
| 4. Were surfaces cleaned and sanitized? | | | | | |
| 5. Was the floor thoroughly swept? | | | | | |
| Total Points Out of 100 | | | | | |

Signature of adult family member: _____

Food Infomercial

Introduction

Food is fascinating! Have you ever wondered what is so special about milk? Are you curious why yogurt and cheese were invented? Why do you think grains are the staple food in diets around the world? What makes a peach blush? How can vegetables help prevent diseases? What are some benefits of tofu? What hidden dangers may lurk in the poultry you buy? What's so great about fish? What's the beef about beef? What makes a meringue stand up? A little research will help you find the answers to these questions and many more.

Assignment

On television, an infomercial is a short or regular-length television program that combines information presentation with an integrated suggestion to buy a particular product or service. For this project you will work on a team to research a food represented in Unit 6 and use the information to prepare an infomercial for that food. Your infomercial should include nutrition information, food production information, buying and storage information, and food preparation information. You will present your infomercial to your class via videotape.

Materials and Resources

To research the food you choose, you may use your textbook, other foods references, and the Internet. To complete your infomercial, you will need a video camera and videotape. To show it to the class, you will need access to a VCR, and a TV set or a projection system.

Procedure

1. Choose a food to research and obtain your teacher's approval.
2. Use at least five resources to find information about how the food is produced, the food's nutritional value, how to buy and store the food, and how to prepare the food. Work as a team to decide what information to include in your infomercial.
3. Decide what each team member's role(s) will be in producing the infomercial. Someone must direct the filming of the infomercial; someone must run the video camera; someone must edit the film; and more than one person should act. Everyone must participate!
4. Write a script for the infomercial spotlighting what you learned about the food. Decide who will act out each part of the infomercial. Make the infomercial interesting and eye-catching to teens.
5. Develop a storyboard for each scene in the infomercial.
6. Practice several times before you videotape the infomercial.
7. Videotape the infomercial. You may need to shoot several takes of each scene.
8. Use your VCR or a computer program to edit the videotape to produce the final product.
9. Show the infomercial in class.

Food Infomercial (Continued)

Directions: Have the class or your instructor evaluate your infomercial using the evaluation below. The rating scale is: 4 = great; 3 = good; 2 = fair; 1 = poor.

Evaluation

| Category | 4 | 3 | 2 | 1 | Score |
|----------------------------|--|---|--|---|-------|
| Content | All assigned content is included. | Most assigned content is included. | Some assigned content is included. | Much of assigned content is not included. | |
| Script | Script is well written and detailed. | Script is written but lacks detail. | Script is roughly sketched with no detail. | Script was not written out. | |
| Preparation | Practice is clearly evident. | Practice is somewhat evident. | Presentation shows evidence of some practice. | Presentation shows little evidence of practice. | |
| Appeal | Infomercial is interesting and eye-catching. | Infomercial is fairly interesting and eye-catching. | Infomercial somewhat lacking in interest and appeal. | Infomercial lacks interest and appeal. | |
| Presentation Length | Infomercial is within assigned time range. | Infomercial is a little too long or too short. | Infomercial is over or under time limit. | Infomercial is well over or under time limit. | |
| Participation | Everyone on the team participated. | Some team members did more work than others. | More than two team members did not participate. | More than three team members did not participate. | |
| Total Score | | | | | |

Unusual Food Hunt

Introduction

Each part of the world has its own unique assortment of foods. Have you ever tried seaweed, a common ingredient in Asia and the Pacific—mainly eaten with rice, sushi, and vegetables? How many times have you passed by exotic fruits such as mango or papaya in the grocery store without ever trying them? Have you ever eaten an insect? Did you know that there are 1,400 known edible (tasty) insect species in the world? No, you won't turn green and grow a pair of antennae if you eat a bug!

Many unusual foods can be found in your supermarket, especially in the international section. Others can be found in specialty catalogs or on the Internet. Still others, consumed in remote areas of the world, are simply interesting to read about.

Assignment

Your assignment is to go on an “unusual food hunt” or scavenger hunt. The foods can be fresh or processed. Locate as much information as you can find about the food, such as where in the world it is found, how it is grown, what people eat the food, and how it is prepared. If possible, bring a sample to class for a “taste test.”

Materials and Resources

To search for unusual foods, visit your local supermarket or a specialty food store, use a specialty food catalog, or use the Internet. Use library resources and the Internet to locate information about the food.

Procedure

1. Visit your local supermarket or food specialty store, obtain a specialty food catalog that features unusual foods, or search the Internet. Decide on an unusual food to research. Get your teacher's approval.
2. Obtain information about the food. Try to find answers to the following questions:
 - Where in the world is the food found?
 - How is it collected, grown, or produced?
 - Who eats the food?
 - How is the food prepared?
3. Obtain a sample to bring to class for a “taste test.” Try to avoid foods that are abnormally hot and spicy, such as habanero peppers.
4. Tally students' taste preferences for the food. Create a graph showing the percentage of students who liked the food, who thought it was okay, and who disliked the food.

Name _____ Date _____ Class _____

Unusual Food Hunt (Continued)

Directions: Write the name of each food you tasted on the chart below, then indicate how well you liked it. Use the following rating scale.

6=Really liked 5=Liked 4=Somewhat liked 3=Somewhat disliked 2=Disliked
1=Really disliked

Evaluation

| Food Item | Likability Scale | | | | | |
|-----------|------------------|---|---|---|---|---|
| | 6 | 5 | 4 | 3 | 2 | 1 |
| | | | | | | |
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Ethnic Food Market Tour

Introduction

Tucked away in a shopping center somewhere near you, the world awaits. In larger towns and cities everywhere, you can find unusual and authentic delights from around the world. Middle Eastern, Latin American, Indian, Asian, South Asian, African, and even obscure European food-stuffs can be found in supermarkets and local markets. The shoppers are likely to be as varied as the merchandise.

Stepping into one of these markets can be like taking a trip to another country. The smells, voices, and tastes all conspire to transport you to their homeland. For instance, you may sense the sounds and activity of a Mexican market. You may be greeted by the pungent aromas of rich curry mixes or by spicy vegetable pickles. So take an inexpensive trip to another country. Go visit one of the ethnic markets near you and experience another place by indulging in one of the most deeply cultural rituals around: eating.

If you're unfamiliar with some of the spices or methods of preparation required for the journey, ask the owners how to use their products. Most people are glad to trade food advice, because whenever people share recipes, they are also sharing a bit of themselves.

Assignment

As a class, tour an ethnic market or the ethnic section of a local supermarket. Working on a team, select an ethnic food that is unfamiliar to you, then use the food in a recipe.

Materials and Resources

You will need access to an ethnic market or the ethnic section of a local supermarket. You will need ingredients, including an ethnic food, to use in preparing a recipe. You will need kitchen appliances and equipment to prepare the recipe.

Procedure

1. Visit an ethnic market or the ethnic section of a local supermarket.
2. Working on a team, select an ethnic food that is unfamiliar to the team members.
3. Using ethnic cookbooks or the Internet, locate a recipe using the food.
4. Prepare the ethnic recipe using the food selected.
5. Evaluate the results.

Evaluation

Each team member should complete an evaluation of the ethnic recipe prepared. List the ingredients used, describe the preparation methods, and describe the results.

Ethnic Food Tried: _____

Recipe Prepared: _____

Name _____ Date _____ Class _____

Ethnic Food Market Tour (*Continued*)

Ingredients:

Preparation Methods:

Results:

Directions: Circle your response to each criteria listed below.

Evaluation

| | | | |
|--|------|----------------------|-----------|
| Difficulty of preparation. | Easy | Moderately Difficult | Difficult |
| Flavor appeal. | Good | Fair | Poor |
| Desirable appearance. | Good | Fair | Poor |
| Would you try this food again? | Yes | No | |
| Would you recommend this recipe to someone else? | Yes | No | |

Developing Creative Combos

Introduction

Different kinds of foods can be put together to make many pleasing combination dishes. For example, soups can combine vegetables, meat, poultry, or fish with other ingredients in unusual combinations. Main dish mixtures include casseroles, stir-fries, and pizza. Even snacks and beverages are often combinations of several foods.

Assignment

Working individually or in teams, develop a recipe for a combination food, such as a salad, soup, or casserole. Use an unusual, or unexpected, array of ingredients—although flavors should be complementary.

Materials and Resources

For this project, you will not use a cookbook or the Internet. You will use your own creativity. To prepare your creative food combination, you will need kitchen appliances and equipment and ingredients.

Procedure

1. For each category listed on the chart below, brainstorm a list of food ingredients to be used in three interesting combinations. For example, a tossed salad often includes greens, vegetables, a dressing, and toppings.
2. Select a combination of ingredients that sounds tasty to you. Use this combination of ingredients to create your recipe.
3. Give your recipe an interesting name. List the recipe name, ingredients, and preparation methods on your evaluation form.
4. Using basic food preparation techniques, prepare enough of the food combination to serve four people.
5. Taste the food combination and evaluate the results.

Food Combinations

| Food Categories | Combination 1 | Combination 2 | Combination 3 |
|-----------------|---------------|---------------|---------------|
| Salads | | | |
| Soups | | | |
| Casseroles | | | |

Continued on next page

Name _____ Date _____ Class _____

Developing Creative Combos (*Continued*)

Directions: List your recipe title below. Describe the ingredients, the preparation methods, and the results of your recipe.

Recipe Title: _____

Ingredients:

Preparation Methods:

Results:

Directions: Circle your response to each criteria listed below.

Evaluation

| | | | |
|---------------------------------------|------|---------|-------------|
| Difficulty of preparation methods. | Easy | Average | Difficult |
| Flavor appeal. | Good | Fair | Poor |
| Desirable appearance. | Good | Fair | Undesirable |
| Would you try this combination again? | Yes | No | |

“Fusion” Combos

Introduction

All of the world’s ethnic cuisines include traditional dishes that are made from fresh foods. In Latin America, there is guacamole, cabbage salad, gazpacho, and young coconut water. In India and the Middle East, there are chutneys and spicy salads of herbs and diced vegetables. In Italy, there are pesto sauces and delicious green salads.

With a little creativity, you can make your own versions inspired by your favorite cultural and ethnic foods. Taking the best elements of your favorite ethnic dishes to create new combinations is called “fusion” cooking. For example, you might create an eggplant pizza, coleslaw with coconut mayonnaise, zucchini marinara, or a sweet potato pie. Simply look through your favorite ethnic cookbooks and let them inspire you to invent new recipes using fresh ingredients.

Assignment

Using print or Internet resources, identify foods commonly used in preparing your cultural favorites. Read about food combinations popular in the countries of origin for your favorites. Then based on what you learned, create a “fusion” recipe for a combination food using ingredients that are pleasing to your palette.

Materials and Resources

To research the foods and food combinations of your favorite cultural and ethnic dishes, use ethnic cookbooks and print or Internet resources. To prepare the

combination of foods you select, you will need access to kitchen appliances and equipment and ingredients.

Procedure

1. Choose at least two cultural or ethnic combination dishes that you like. List the ethnic origins of your choices in the space provided on the top of page 116.
2. After studying the ethnic recipes for these dishes, identify the types of foods that are used and write them on the chart on the following page. For example, stir-fries are made with small amounts of meat or other protein, a combination of vegetables, and a sauce.
3. Study the ingredients in each ethnic combination dish. Use the ingredients from each to identify three possible “fusion” combinations. List each combination on the chart on page 116.
4. Select the “fusion” combination of ingredients that sounds most tasty to you.
5. Give your “fusion” recipe an interesting name. List the recipe name, ingredients, and preparation methods in the space provided on page 116. Use additional paper if needed.
6. Using basic food preparation techniques, prepare enough of the food combination to serve four people.
7. Taste the “fusion” food combination and evaluate the results. Record your responses on the evaluation form on page 116.

Name _____ Date _____ Class _____

“Fusion” Combos (Continued)

Ethnic Origins of Foods

Choice 1: _____

Choice 2: _____

| Ingredients in Ethnic Dishes | Fusion Combo 1 | Fusion Combo 2 | Fusion Combo 3 |
|------------------------------|----------------|----------------|----------------|
| 1st Choice | | | |
| 2nd Choice | | | |

Recipe Name: _____

Ingredients: _____

Preparation Methods: _____

Results: _____

Directions: Circle your response to each of the criteria below.

Evaluation

| | | | |
|--|------|---------|-----------|
| Difficulty of preparation methods. | Easy | Average | Difficult |
| Flavor appeal. | Good | Fair | Poor |
| Desirable appearance. | Good | Fair | Poor |
| Would you try this food combination again? | Yes | No | |

Baking Demonstration

Introduction

Baking is a task that involves many skills. You need to know how to grease and flour a pan, how to place pans in the oven, and how to remove products from pans.

For quick breads, you need to know how to mix ingredients using the muffin method and the biscuit method, how to mix biscuit dough, how to knead biscuit dough, and how to roll and cut biscuits.

When making cookies, you need to know how to make bar cookies, drop cookies, molded cookies, pressed cookies, rolled cookies, and refrigerator cookies. You need to know how to remove cookies from the pan.

Different mixing techniques are used for shortened cakes and foam cakes. After the cake is baked, you need to know how to remove it from the pan.

For pies, you need to know how to make one- and two-crust pies and deep dish pies. Making a piecrust involves mixing, rolling, placing in the pan, and creating a decorative edge. You may also want to know how to make a crumb crust. And then there are the fillings—fruit filling, pudding-type filling, custard filling, and chiffon filling—each requiring different techniques.

Assignment

For this project, you will choose a baking skill, perfect the skill, and then demonstrate it to the class.

Materials and Resources

Your planning resources may include your textbook, cookbooks, and the Internet. For your demonstration, you will

need access to kitchen appliances and equipment. You will also need ingredients for your demonstration.

Procedure

1. Plan the demonstration.
 - Outline the information and determine the way it will be presented.
 - Develop a sequential plan that includes a preparation schedule and time for questions and discussion.
 - List all of the items needed for the demonstration and be sure they are all available.
 - Determine the steps that can be done ahead of time. For example, ingredients might be pre-measured. If time does not allow for cooking time, you may need to prepare a finished or partially finished product in advance.
 - Practice using the equipment needed for the demonstration if you have not used it before.
 - Decide how you will display the finished product.
2. Prepare a handout, if needed. Decide how the handout will be displayed. Decide when to share the handout with the class.
3. Practice the demonstration several times. Practice first without actually using ingredients. Practice once or twice with ingredients. Learn to discuss each step as you work. Resolve any problems you encounter.

Continued on next page

Baking Demonstration (Continued)

- 4. Assemble equipment and ingredients on trays. Place the ingredients and equipment on the trays in their order of use. Cover until the demonstration begins.
- 5. Dress appropriately for the demonstration. Wash your hands before you begin. Place a lined wastebasket next to the demonstration table.
- 6. Present your baking demonstration to the class. Briefly introduce the demonstration. Make sure everyone can see. Maintain good posture as you work.

Keep the work surface neat and organized. Wipe up spills immediately. Summarize while you prepare the food for display. Pass samples around after the demonstration.

- 7. Have your instructor or your classmates evaluate your demonstration by checking the appropriate rating for each criteria listed below. Use the following rating scale: 5=Excellent, 4=Great, 3=Good, 2=Fair, 1=Poor.

Evaluation

| Criteria | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|
| Organized materials and equipment efficiently. | | | | | |
| Worked so classmates could see. | | | | | |
| Kept work surface neat and clean. | | | | | |
| Displayed skill in using the technique demonstrated. | | | | | |
| Maintained informative commentary during demonstration. | | | | | |
| Involved classmates in demonstration. | | | | | |
| Used good voice quality and grammar. | | | | | |
| Exhibited appropriate appearance and posture. | | | | | |
| Utilized quality visuals/handouts (if used). | | | | | |
| Completed demonstration within time limit. | | | | | |
| Produced a quality product. | | | | | |
| Total Score | | | | | |

Comments:

Home Baking Project

Introduction

For many adults, one of the most tantalizing memories of childhood is the smell of freshly baked breads, pies, cakes, and cookies. In the past, these soul-satisfying foods were prepared from scratch using only the freshest ingredients. Today, many people are again making the kitchen the center of activity in their homes. The kitchen is again becoming a place where family and friends gather to talk, laugh, and eat. For that reason, the art of baking is regaining popularity.

Assignment

Prepare a baked product at home for your family. Bring a sample to class for your teacher to evaluate.

Materials and Resources

For this project, you will need a cookbook, magazine, Internet, or family recipe for a baked product. You will need access to kitchen appliances, equipment, and ingredients for the recipe you choose.

Procedure

1. Using a cookbook, magazine, the Internet, or family recipe collection, select a recipe for a baked product.
2. Study the recipe carefully to be sure you understand each step.
3. Gather the ingredients needed to prepare the recipe. Be sure all of the equipment needed is available.
4. Preheat the oven, if needed. Prepare the baking pans as directed. Following the directions, prepare the recipe. Set a timer for the recommended baking time. Check for doneness as directed.
5. Cool and cut the baked product as directed.
6. Serve the baked product to your family, reserving a sample for your teacher's evaluation.

Name _____ Date _____ Class _____

Home Baking Project (*Continued*)

Directions: Ask an adult in your family to evaluate the product using the evaluation below. The rating scale is as follows: 3 = good; 2 = fair; 1 = poor.

Evaluation

| Criteria | 3 | 2 | 1 | Score |
|---|-------------|---|---|-------|
| Quality characteristics are consistent with type of baked product. | | | | |
| Appearance is consistent with type of quality-baked product and is appealing. | | | | |
| Texture is consistent with type of quality-baked product. | | | | |
| Flavor is consistent with type of quality-baked product. | | | | |
| | Total Score | | | |

Overall Comments: _____

Signature of adult family member: _____

Baking Competition

Introduction

Have you ever thought about entering a baking competition? Tap into your creativity and give it a try. Current baking trends include:

- New flavor combinations that blur ethnic boundaries.
- Healthier recipes that still provide wonderful flavor.
- Quick and easy recipes with new shortcuts, such as using prepared ingredients.

Assignment

For this project, you and your classmates will all prepare the same type of recipe, such as the muffin recipe found on page 356 of the *Discovering Food and Nutrition* textbook. Or, your teacher will provide the recipes. Your goal is to prepare the best product. The top three winners will receive ribbons.

Materials and Resources

You will need a recipe as provided by your teacher, access to kitchen appliances and equipment, and the ingredients for the recipe.

Procedure

1. Study the recipe to make sure you understand all of the steps.
2. Gather the equipment and ingredients needed to prepare the recipe.
3. Preheat the oven, if directed. Prepare baking pans as directed. Measure and mix the ingredients as directed in the recipe. Prepare the product for baking as directed. Place the product in the oven and set the timer. Check for doneness as directed. Cool and cut the product as directed.
4. Participate in the baking competition. Have your teacher evaluate your baked product on the chart below. The rating scale is as follows: 3=good, 2=fair, 1=poor.

Evaluation

| Criteria | 3 | 2 | 1 | Score |
|---|---|---|---|-------|
| Quality characteristics are consistent with type of baked product. | | | | |
| Appearance is consistent with type of quality-baked product and is appealing. | | | | |
| Texture is consistent with type of quality-baked product. | | | | |
| Flavor is consistent with type of quality-baked product. | | | | |
| Total Score | | | | |

Sweet Versus Savory Baked Products

Introduction

Is there anyone who doesn't love a piece of creamy, delectable cheesecake? Most of us think that delicious cheesecake is only available in a restaurant or our favorite bakery. However, many home bakers enjoy making cheesecakes at home.

Did you know that cheesecake could be either sweet or savory? While sweet cheesecakes are usually served as desserts or for special occasions, savory cheesecakes can be served as appetizers or even as the entrée for a light lunch or supper.

Assignment

Working in the foods lab, lab groups will prepare a variety of sweet and savory cheesecakes. Using a basic cheesecake recipe, each group will choose the flavoring ingredients for either sweet or savory cheesecakes. Taste test, then assess the cheesecakes.

Materials and Resources

Locate a variety of sweet and savory cheesecake recipes using print or Internet resources. To prepare the cheesecakes, you

will need access to kitchen appliances and equipment and the ingredients for the recipes.

Procedure

1. Using cookbooks, magazines, or the Internet, study a variety of cheesecake recipes to get ideas for your own combination of ingredients.
2. Select the ingredients you will use to flavor your group's sweet or savory cheesecake. Make a shopping list of the ingredients needed.
3. Prepare a basic cheesecake recipe, adding the ingredients needed to create either a sweet or savory cheesecake.
4. Have a taste test of all the sweet and savory cheesecakes. Discuss when you would serve each cheesecake. What changes, if any, would you make to improve each cheesecake? Evaluate your cheesecake using the chart below. The rating scale is as follows: 3=good, 2=fair, 1=poor.

Evaluation

| Criteria | 3 | 2 | 1 | Score |
|--|---|---|---|-------|
| Quality characteristics are consistent. | | | | |
| Appearance is consistent with quality cheesecakes. | | | | |
| Texture is smooth and creamy. | | | | |
| Flavor is pleasing. | | | | |
| Total Score | | | | |