## Lesson 4: Planning Recipes

Let’s choose some recipes for a restaurant.

### 4.1: A Recipe for Your Restaurant

Imagine you could open a restaurant.

1. Select a recipe for a main dish you would like to serve at your restaurant.
2. Record the amount of each ingredient from your recipe in the first two columns of the table. You may not need to use every row.

| * ingredient
 | * amount
 | * amountper serving
 | * caloriesper serving
 |
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1. How many servings does this recipe make? Determine the amount of each ingredient in one serving, and record it in the third column of the table.
2. Restaurants are asked to label how many calories are in each meal on their menu.
	1. Use the nutrition information to calculate the amount of calories from each ingredient in your meal, and record it in the last column of the table.
	2. Next, find the total calories in one serving of your meal.
3. If a person wants to eat 2,000 calories per day, what percentage of their daily calorie intake would one serving of your meal be?

Grains

|  | mass (g) | calories | fat (g) | sodium (mg) |
| --- | --- | --- | --- | --- |
| biscuits, refrigerated dough (1) | 58 | 178 | 6.14 | 567 |
| bread crumbs (1 oz) | 28.35 | 112 | 1.5 | 208 |
| cornmeal (1 c) | 157 | 581 | 2.75 | 11 |
| egg noodles (1 c) | 38 | 146 | 1.69 | 8 |
| hamburger or hotdog buns (1) | 44 | 123 | 1.72 | 217 |
| oats (1 c) | 81 | 307 | 5.28 | 5 |
| pasta (1 c) | 91 | 338 | 1.37 | 5 |
| pie crust, refrigerated (1) | 229 | 1019 | 58.3 | 937 |
| pita bread (1 oz) | 28.35 | 8 | 0.34 | 152 |
| quinoa (1 c) | 170 | 626 | 10.32 | 8 |
| ramen noodles (1 pkg) | 81 | 356 | 14.25 | 1503 |
| rice flour (1 c) | 158 | 578 | 2.24 | 0 |
| rice, brown (1 c) | 185 | 679 | 5.92 | 9 |
| rice, white (1 c) | 185 | 675 | 1.22 | 9 |
| saltine crackers (5) | 14.9 | 62 | 1.29 | 140 |
| taco shells (1) | 12.9 | 61 | 2.81 | 42 |
| tortillas (1) | 49 | 146 | 3.71 | 364 |
| wheat bread (1 slice) | 29 | 79 | 1.31 | 137 |
| wheat flour (1 c) | 125 | 455 | 1.22 | 2 |
| white bread (1 slice) | 29 | 77 | 0.97 | 142 |

Vegetables

|  | mass (g) | calories | fat (g) | sodium (mg) |
| --- | --- | --- | --- | --- |
| asparagus (1 c) | 134 | 27 | 0.16 | 3 |
| avocados (1 c) | 150 | 240 | 22 | 10 |
| bell peppers (1 c) | 149 | 46 | 0.45 | 6 |
| broccoli (1 c) | 91 | 31 | 0.34 | 30 |
| carrots (1 c) | 128 | 52 | 0.31 | 88 |
| cauliflower (1 c) | 107 | 27 | 0.3 | 32 |
| celery (1 c) | 101 | 16 | 0.17 | 81 |
| chives (1 tbsp) | 3 | 1 | 0.02 | 0 |
| corn (1 c) | 145 | 125 | 1.96 | 22 |
| cucumber (1 c) | 133 | 16 | 0.21 | 3 |
| green beans (1 c) | 100 | 31 | 0.22 | 6 |
| lettuce (1 c) | 47 | 8 | 0.14 | 7 |
| mushrooms (1 c) | 70 | 15 | 0.24 | 4 |
| onions (1 c) | 160 | 64 | 0.16 | 6 |
| peas, frozen (1 c) | 134 | 103 | 0.54 | 145 |
| potatoes ($\frac{1}{2}$ c) | 75 | 59 | 0.11 | 14 |
| spinach (1 c) | 30 | 7 | 0.12 | 24 |
| squash (1 c) | 113 | 18 | 0.2 | 2 |
| sweet potatoes (1 c) | 133 | 114 | 0.07 | 73 |
| tomatoes (1 c) | 149 | 27 | 0.3 | 7 |

Fruit

|  | mass (g) | calories | fat (g) | sodium (mg) |
| --- | --- | --- | --- | --- |
| apple juice (1 c) | 248 | 114 | 0.32 | 10 |
| apples (1 c) | 110 | 53 | 0.14 | 0 |
| bananas (1 c) | 225 | 200 | 0.74 | 2 |
| blueberries (1 c) | 148 | 84 | 0.49 | 1 |
| cantaloupe (1 c) | 177 | 60 | 0.34 | 28 |
| cherries (1 c) | 138 | 87 | 0.28 | 0 |
| cranberries, dried ($\frac{1}{4}$ c) | 40 | 123 | 0.44 | 2 |
| grapes (1 c) | 151 | 104 | 0.24 | 3 |
| lemon juice (1 c) | 244 | 54 | 0.59 | 2 |
| Mandarin oranges (1 c) | 252 | 154 | 0.25 | 15 |
| mangoes (1 c) | 165 | 99 | 0.63 | 2 |
| orange juice (1 c) | 249 | 122 | 0.3 | 5 |
| oranges (1 c) | 180 | 85 | 0.22 | 0 |
| peaches (1 c) | 154 | 60 | 0.38 | 0 |
| pears (1 c) | 140 | 80 | 0.2 | 1 |
| pineapple, canned (1 c) | 181 | 109 | 0.2 | 2 |
| pomegranate juice (1 c) | 1249 | 134 | 0.72 | 22 |
| raisins (1 c) | 165 | 493 | 0.76 | 18 |
| raspberries (1 c) | 123 | 64 | 0.8 | 1 |
| strawberries (1 c) | 152 | 49 | 0.46 | 2 |

Meat

|  | mass (g) | calories | fat (g) | sodium (mg) |
| --- | --- | --- | --- | --- |
| bacon (1 slice) | 26 | 106 | 10.21 | 122 |
| chicken thigh (1) | 193 | 427 | 32.06 | 156 |
| chicken, light meat (3 oz) | 85 | 100 | 1.45 | 60 |
| cob (3 oz) | 85 | 61 | 0.17 | 93 |
| crab (3 oz) | 85 | 73 | 0.82 | 251 |
| ground beef (4 oz) | 113 | 375 | 33.9 | 75 |
| ground turkey (4 oz) | 113 | 172 | 9.44 | 80 |
| halibut (3 oz) | 85 | 77 | 1.13 | 58 |
| ham (1 oz) | 28.35 | 38 | 1.53 | 319 |
| hot dogs (1) | 51 | 141 | 12.33 | 498 |
| lobster (1) | 150 | 116 | 1.12 | 634 |
| pepperoni (3 oz) | 85 | 428 | 39.34 | 1345 |
| pork sausage (1) | 25 | 72 | 6.2 | 185 |
| pork tenderloin (3 oz) | 85 | 102 | 3 | 44 |
| salmon (1 fillet) | 108 | 373 | 12.34 | 55 |
| shrimp (3 oz) | 85 | 72 | 0.43 | 101 |
| tofu ($\frac{1}{2}$ c) | 126 | 98 | 5.25 | 15 |
| trout (1 fillet) | 79 | 111 | 4.88 | 40 |
| tuna, canned (1 oz) | 28.35 | 24 | 0.27 | 70 |
| turkey (3 oz) | 85 | 92 | 2.12 | 105 |

Nuts, Beans, and Seeds

|  | mass (g) | calories | fat (g) | sodium (mg) |
| --- | --- | --- | --- | --- |
| almonds (1 c) | 143 | 828 | 71.4 | 1 |
| black beans (1 c) | 240 | 218 | 0.7 | 331 |
| cashews (1 oz) | 28.35 | 157 | 12.43 | 3 |
| chickpeas (1 c) | 240 | 211 | 4.68 | 667 |
| coconut (1 c) | 80 | 283 | 26.8 | 16 |
| fava beans (1 c) | 256 | 182 | 0.56 | 1160 |
| flaxseed  (1 tbsp) | 10.3 | 55 | 4.34 | 3 |
| white beans (1 c) | 262 | 299 | 1.02 | 969 |
| kidney beans (1 c) | 256 | 215 | 1.54 | 758 |
| lentils (1 c) | 192 | 676 | 2.04 | 12 |
| lima beans (1 c) | 164 | 216 | 0.72 | 85 |
| macadamia nuts (1 c) | 134 | 962 | 101.53 | 7 |
| peanut butter (2 tbsp) | 32 | 191 | 16.22 | 136 |
| peanuts (1 oz) | 28.35 | 166 | 14.08 | 116 |
| pecans (1 c) | 109 | 753 | 78.45 | 0 |
| pinto beans (1 c) | 240 | 197 | 1.34 | 643 |
| pistachios (1 c) | 123 | 689 | 55.74 | 1 |
| pumpkin seeds (1 c) | 129 | 721 | 63.27 | 9 |
| sesame seeds (1 c) | 144 | 825 | 71.52 | 16 |
| sunflower seeds (1 c) | 46 | 269 | 23.67 | 4 |

Dairy

|  | mass (g) | calories | fat (g) | sodium (mg) |
| --- | --- | --- | --- | --- |
| almond milk (1 c) | 262 | 39 | 2.88 | 186 |
| blue cheese (1 oz) | 28.35 | 100 | 8.15 | 325 |
| butter (1 pat) | 5 | 36 | 4.06 | 1 |
| cheddar cheese (1 c) | 132 | 533 | 43.97 | 862 |
| coconut milk (1 c) | 226 | 445 | 48.21 | 29 |
| cream cheese (1 tbsp) | 14.5 | 51 | 4.99 | 46 |
| egg white (1) | 33 | 17 | 0.06 | 55 |
| egg yolk (1) | 17 | 55 | 4.51 | 8 |
| eggs (1) | 50 | 72 | 4.76 | 71 |
| evaporated milk (1 c) | 252 | 270 | 5.04 | 252 |
| whipping cream (1 c) | 120 | 408 | 43.3 | 32 |
| margarine (1 tbsp) | 14.2 | 101 | 11.38 | 4 |
| milk, skim (1 c) | 245 | 83 | 0.2 | 103 |
| milk, whole (1 c) | 244 | 149 | 7.93 | 105 |
| mozzarella cheese (1 c)  | 132 | 389 | 26.11 | 879 |
| Parmesan cheese (1 c) | 100 | 420 | 27.84 | 1804 |
| sour cream (1 tbsp) | 12 | 16 | 1.27 | 10 |
| soy milk (1 c) | 243 | 80 | 3.91 | 90 |
| Swiss cheese (1 c) | 132 | 519 | 40.91 | 247 |
| yogurt (6 oz) | 170 | 107 | 2.64 | 119 |

Sauces and Other Liquids

|  | mass (g) | calories | fat (g) | sodium (mg) |
| --- | --- | --- | --- | --- |
| barbecue sauce (1 tbsp) | 17 | 29 | 0.11 | 175 |
| chicken broth (1 c) | 249 | 15 | 0.52 | 924 |
| cream of chicken soup ($\frac{1}{2}$ c) | 126 | 113 | 7.27 | 885 |
| gravy (1 c) | 233 | 1 | 5.5 | 1305 |
| honey (1 c) | 339 | 25 | 0 | 14 |
| Italian dressing (1 tbsp) | 14.7 | 35 | 3.1 | 146 |
| jams and jellies (1 tbsp) | 20 | 56 | 0.01 | 6 |
| ketchup (1 tbsp) | 17 | 17 | 0.02 | 154 |
| mayonnaise (1 tbsp) | 15 | 103 | 11.67 | 73 |
| mustard (1 tsp) | 5 | 3 | 0.17 | 55 |
| pasta sauce ($\frac{1}{2}$ c) | 132 | 66 | 2.13 | 577 |
| ranch dressing (1 tbsp) | 15 | 64 | 6.68 | 135 |
| salsa (2 tbsp) | 36 | 10 | 0.06 | 256 |
| soy sauce (1 tbsp) | 16 | 8 | 0.09 | 879 |
| vanilla extract (1 tsp) | 4.2 | 12 | 0 | 0 |
| vegetable broth (1 c) | 221 | 11 | 0.15 | 654 |
| vegetable oil (1 tbsp) | 14 | 124 | 14 | 0 |
| vinegar (1 tbsp) | 15 | 3 | 0 | 0 |
| water (1 fl oz) | 29.6 | 0 | 0 | 1 |
| Worcestershire sauce (1 tbsp) | 17 | 13 | 0 | 167 |

Spices and Other Powders

|  | mass (g) | calories | fat (g) | sodium (mg) |
| --- | --- | --- | --- | --- |
| baking powder (1 tsp) | 4.6 | 2 | 0 | 488 |
| baking soda (1 tsp) | 4.6 | 0 | 0 | 1259 |
| black pepper (1 tsp) | 2.3 | 6 | 0.07 | 0 |
| chicken bouillon (1 cube) | 4.8 | 10 | 0.23 | 1152 |
| chili powder (1 tsp) | 2.7 | 8 | 0.39 | 77 |
| cinnamon (1 tsp) | 2.6 | 6 | 0.03 | 0 |
| cocoa powder (1 c) | 86 | 196 | 11.78 | 18 |
| cornstarch (1 c) | 128 | 488 | 0.06 | 12 |
| cumin (1 tsp) | 2.1 | 8 | 0.47 | 4 |
| garlic (1 clove) | 3 | 4 | 0.01 | 0.5 |
| garlic powder (1 tsp) | 3.1 | 10 | 0.02 | 2 |
| onion powder (1 tsp) | 2.4 | 8 | 0.02 | 2 |
| onion soup mix (1 tbsp) | 7.5 | 22 | 0.03 | 602 |
| oregano (1 tsp) | 1 | 3 | 0.04 | 0 |
| paprika (1 tsp) | 2.3 | 6 | 0.3 | 2 |
| parsley (1 tsp) | 0.5 | 1 | 0.03 | 2 |
| powdered sugar (1 c) | 120 | 467 | 0 | 2 |
| salt (1 tsp) | 6 | 0 | 0 | 2325 |
| sugar (1 tsp) | 2.8 | 11 | 0 | 0 |
| taco seasoning (2 tsp) | 5.7 | 18 | 0 | 411 |

#### Are you ready for more?

The labels on packaged foods tell how much of different nutrients they contain. Here is what some different food labels say about their sodium content.

* cheese crackers, 351 mg, 14% daily value
* apple chips, 15 mg, <1% daily value
* granola bar, 82 mg, 3% daily value

Estimate the maximum recommended amount of sodium intake per day (100% daily value). Explain your reasoning.

### 4.2: Health Claims

For a meal to be considered:

* “low calorie”—it must have 120 calories or less per 100 grams of food.
* “low fat”—it must have 3 grams of fat or less per 100 grams of food.
* “low sodium”—it must have 140 milligrams of sodium or less per 100 grams of food.
1. Does the meal you chose in the previous activity meet the requirements to be considered:
	1. low calorie?
	2. low fat?
	3. low sodium?
* Be prepared to explain your reasoning.
1. Select or invent another recipe you would like to serve at your restaurant that does meet the requirements to be considered either low calorie, low fat, or low sodium. Show that your recipe meets that requirement. Organize your thinking so it can be followed by others.

| ingredient | amountper serving | caloriesper serving | fatper serving | sodiumper serving |
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