Nutrition Module 1: **Your Plate vs. MyPlate**

BACKGROUND INFORMATION

The United States government provides a guide called **MyPlate** to help individuals eat balanced and nutritious meals. MyPlate includes five **food groups** that are important for a well-rounded **eating pattern: fruits, vegetables, grains, protein foods**, and **dairy**. For fruits, MyPlate suggests eating whole fruits, such as a whole apple instead of apple juice. With vegetables, it is beneficial to consume a variety of vegetables from an array of colors. Consuming mostly whole grains, such as whole grain bread and brown rice, is also greatly encouraged. Similar to vegetables, it is recommended to vary your protein sources by including both plant and lean animal sources. Lastly, the recommendation for dairy is to consume low-fat or fat-free milk or fortified dairy alternatives. Not only are these five food groups important, but it is also beneficial to consume **oils** and **water**. Despite not being a MyPlate food group, oils provide essential nutrients. Water is essential for the body to properly digest and function. Therefore, choosing to drink water as the primary beverage option is ideal. All foods provide some source of nutrition. Although foods are generally categorized into just one of the food groups, many nutrients are found in foods from multiple groups. As a result, it is important to focus on the overall eating pattern.

Individual eating patterns may be influenced by food group recommendations, physical activity levels, and several other factors. The less active someone is, the fewer calories they will need, which in turn decreases their recommendations. Alternatively, the more active an individual is, the more calories their body will require, and thus they will have higher recommendations. **Physical activity intensity level** is typically described as one of three intensities. **Sedentary activity level** describes minimal physical activity and includes long time periods of being in a seated position. **Moderate activity level** typically includes activities beyond those required for daily activities. Examples of moderate physical activities include brisk walking, casual bicycling, casual dancing, practicing sports skills, recreational swimming, and general gardening. **Vigorous activity level** typically includes activities well beyond those required for daily activities and are more laborious than moderate physical activities. Examples of vigorous physical activities include running, hiking, competitive sports, swimming laps, aerobic dancing, and moving very heavy objects.

CONCEPTS AND VOCABULARY

Dairy: A food group consisting of fluid milk, products made from fluid milk, and dairy alternatives

Eating pattern: The combination of foods and beverages that a person consumes

Food groups: Groupings of similar foods based on nutritional composition and dietary benefits, including dairy, fruits, grains, protein foods, and vegetables

Fruits: A food group consisting of any fruit whether frozen, dried, canned, or fresh and 100% fruit juice

Grains: A food group consisting of food made from wheat, rice, oats, cornmeal, or barley

Moderate activity level: An amount of physical activity beyond what is required for activities of daily living

MyPlate: The nutrition guidance provided by the USDA that displays the five food groups that are recommended to be included in a healthy eating pattern

Oils: Fats that are liquid at room temperature and provide the body with energy and essential nutrients

Physical activity intensity level: The classification for the activity of an individual

Protein foods: A food group consisting of meat, poultry, seafood, eggs, nuts, and beans

Sedentary activity level: A minimal amount of physical activity, such as only those required for activities of daily living

Vegetables: A food group consisting of any vegetable whether frozen, dried, canned, or fresh

Vigorous activity level: An amount of physical activity more laborious than moderate physical activities and well beyond those required for activities of daily living

MATERIALS NEEDED

- ☐ Flip chart paper
- ☐ Writing utensils
- ☐ *Food Cards* (Appendix N1.1), one set per group
- ☐ *MyPlate* (Appendix N1.2), one per group
- ☐ *Characters* (Appendix N1.3)
- ☐ *Recommendations* (Appendix N1.4), one per group
- ☐ *Food Group Tracker* (Appendix N1.5), one per group
- ☐ Calculators, one per group

Materials provided in curriculum

TIME REQUIRED

45 to 60 minutes

SUGGESTED GROUPINGS

Small groups of 3 to 4

GETTING READY

- ☐ Make copies of *Food Cards* (Appendix N1.1), one set of cards for each group. Cut the cards out along the dashed line and then fold them along the solid line.
- ☐ Make copies of the *MyPlate* (Appendix N1.2), one for each group.
- ☐ Make one copy of *Characters* (Appendix N1.3), one character for each group, and cut them out along the dashed lines.
- ☐ Make copies of *Recommendations* (Appendix N1.4), one for each group.
  Facilitator tip: It is recommended that the above appendices be laminated to allow them to be more easily handled by youth and reused.
- ☐ Make copies of the *Food Group Tracker* (Appendix N1.5), one for each group.

- ☐ Organize youth into small groups of 3 – 4 youth.

  Facilitator tip: These are recommended to be the same groups that were formed in previous lessons. By doing so, the youth may continue developing teamwork skills with the same group members.
- ☐ Provide each group with one sheet of flip chart paper and writing utensils to answer opening questions.

OPENING QUESTIONS

Ask the youth to respond to each question/prompt below by recording their responses on the flip chart paper provided and sharing their ideas verbally.

• Explain what you know about what is included in a well-balanced meal.
• Explain why you think people may need to eat different amounts of food.

PROCEDURE (EXPERIENCING)

1. Provide each group with a set of *Food Cards*, asking them to keep the cards so that the food images are facing up, and a *MyPlate*.
2. Explain to youth that *MyPlate* is a visual representation of approximately how much of each food group someone should eat throughout the day.
3. Ask the youth to look through the *Food Cards* and then sort the *Food Cards* into which food groups they think each belongs to on *MyPlate*.
4. Ask youth to write down which food group they decided to sort each card into on the flip chart paper.
5. Inform youth that the back side of each of the *Food Cards* provides food group information for each food. Ask the youth to read through this information and resort their *Food Cards* into the correct food groups on *MyPlate*.
6. Provide each group with one of the *Characters* and ask youth to read through the character description and that character's typical weekday eating pattern within their groups.
7. Provide each group with *Recommendations*, *Food Group Tracker*, and a calculator.
8. Give youth a brief demonstration of how to use the *Recommendations*.
9. Ask youth to use the *Recommendations* and their character's information to determine the character's daily food group recommendations. Ask youth to record this information on the *Food Group Tracker*.
10. Ask youth to complete the rest of the *Food Group Tracker* using their character's information. They should also determine whether the character met their recommendations.

SHARING, PROCESSING, AND GENERALIZING

Have each group share their character and their *Food Group Tracker*. Ask youth to discuss the food groups that their character consumed and whether the character met their recommendations.

Follow the of lines thinking developed through the youth's thoughts, observations, and questions as they share their character's eating pattern. If necessary, ask more targeted questions.

• Explain how you went about determining whether your character met their recommendations.
• Explain how activity level affected your character's recommendations.

• Discuss any food group recommendations your character had difficulty meeting.
• Explain how your character could incorporate more foods from food groups that are already not included enough in their eating pattern.

CONCEPT AND TERM DISCOVERY/INTRODUCTION

Make sure youth understand the importance meeting recommendations by consuming food from all five **food groups** outlined in **MyPlate**. Youth should also recognize that the healthiest **eating patterns** include a variety of food groups. Furthermore, youth should understand that health cannot simply be determined through physical attributes and that people of all body types can be healthy. Additionally, make sure that the key vocabulary terms are either discovered by the youth or introduced to them: **dairy, fruits, grains, moderate activity level, oils, physical activity intensity level, protein foods, sedentary activity level, vegetables,** and **vigorous activity level.**

AGRICULTURE APPLICATION

MATERIALS NEEDED

- ☐ *Food Cards* (Appendix N1.1), one set per group
- ☐ *Ag Snack Plan* (Appendix N1.6), one per group
- ☐ Agriculture maintenance equipment

Materials provided in curriculum

TIME REQUIRED

15 to 20 minutes

GETTING READY

- ☐ *Gather Food Cards* (Appendix N1.1) from the previous activity, one for each group.
- ☐ Make copies of *Ag Snack Plan* (Appendix N1.6), one for each group.
- ☐ Supply enough materials to allow each youth to maintain their designated area in the agricultural space.
- ☐ Organize youth into small groups of 3 – 4 youth.

  Facilitator tip: These can be the same groups that were formed in previous lessons. By doing so, the youth may continue developing teamwork skills with the same group members.

PROCEDURE (EXPERIENCING)

1. Provide each group with an *Ag Snack Plan* and set of *Food Cards*.
2. Ask youth to use the *Ag Snack Plan* to plan a snack using the produce growing in the agricultural space. Their snack should mainly incorporate products from the agricultural space, but may also be supplemented with items that would need to be purchased.
3. Ask youth to complete the rest of the *Ag Snack Plan* by determining the contribution of their snack to someone's food group recommendations using the *Food Cards.*
4. With any time remaining, lead youth in maintaining their designated growing section. This may include discarding weeds, supplying additional nutrients, and watering plants.

SHARING, PROCESSING, AND GENERALIZING

Have the youth share their *Ag Snack Plan* and discuss how their snack could help someone meet their food group recommendations. Follow the lines of thinking developed through the youth's thoughts, observations, and questions as they share their plan for a snack incorporating agricultural space produce.

HOME CONCEPT APPLICATION

MATERIALS NEEDED

- ☐ *Recommendations* (Appendix N1.4), one per youth
- ☐ *Your Meal Plan* (Appendix N1.7), one per youth

Materials provided in curriculum

TIME REQUIRED

5 to 10 minutes

GETTING READY

- ☐ Make copies of *Recommendations* (Appendix N1.4), one for each youth.
- ☐ Make copies of the *Your Meal Plan* (Appendix N1.7), one for each youth.

PROCEDURE (EXPERIENCING)

1. Provide each youth with a copy of *Recommendations* and *Your Meal Plan*.
2. Explain to the youth that they will first need to identify their needs using the *Recommendations*. Then they can use that information to plan meals to meet their recommendations.
3. Ask the youth to record their meal plans on *Your Meal Plan*.

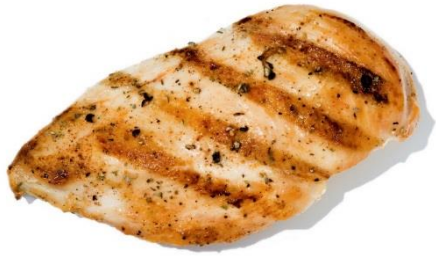
SHARING, PROCESSING, AND GENERALIZING

If they are comfortable sharing, have youth share their *Your Meal Plan* and discuss whether their recommendations were met. Follow the lines of thinking developed through the youth's thoughts, observations, and questions as they share their meal plans.

Vegetable 1 cup cubed avocado = 1 cup vegetables ½ medium avocado = ½ cup vegetables Also: ½ medium avocado = 15 grams oil	**Vegetable** 1 cup chopped or sliced tomato = 1 cup vegetables 1 medium tomato = ¾ cup vegetables	**Oil** 1 ounce (about ¼ cup) whole almonds = 15 grams oil Also: 1 ounce (about ¼ cup) of whole almonds = 2 ounces protein foods
Avocado 	Tomato 	Almonds 

Fruit 1 small apple = 1 cup fruit ½ large apple = 1 cup fruit 1 cup sliced apple = 1 cup fruit	**Vegetable** 1½ cup broccoli florets = 1 cup vegetables 1 cup cut broccoli stalks = 1 cup vegetables	**Dairy** 6 ounces container low-fat vanilla yogurt = ¾ cup dairy 1 cup low-fat vanilla yogurt = 1 cup dairy
Apple 	Broccoli 	Yogurt 

Protein Food 2 medium slices roasted white meat turkey with skin = 2 ounces protein foods	**Grain** 1 (8 inches across) flour tortilla = 2 ounces grains 1 (12 inches across) flour tortilla = 5 ounces grains	**Fruit** 1 large (8 to 9 inches long) banana = 1 cup fruit 1 small (less than 6 inches long) banana = ½ cup fruit
Turkey 	Flour Tortilla 	Banana 

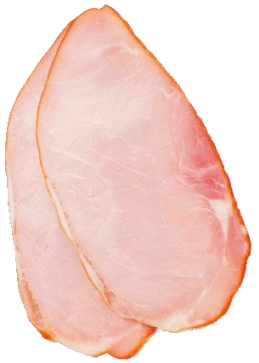
Vegetable 1 cup carrots = 1 cup vegetables 2 medium carrots = 1 cup vegetables 12 baby carrots = 1 cup vegetables	**Protein Food** 1 large hardboiled egg = 1 ounce protein foods 1 large egg = 1 ounce protein foods	**Protein Food** 1 medium baked skinless chicken breast = 3 ounces protein foods
Carrots 	Egg 	Chicken 

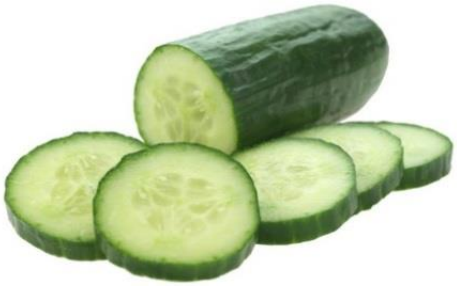
Protein Food 2 tablespoons peanut butter = 2 ounces protein foods Also: 2 tablespoons peanut butter = 16 grams oil	**Grain** 1 cup cooked brown rice = 2½ ounces grains	**Grain** 2 slices 100% whole wheat bread = 2 ounces grains
Peanut Butter 	Brown Rice 	Whole Wheat Bread 

Dairy 1 cup reduced-fat <u>milk</u> (2%) = 1 cup dairy	**Dairy** 1 cup calcium-fortified <u>soymilk</u> = 1 cup dairy	**Dairy** 1 slice <u>cheddar cheese</u> = ¾ cup of dairy ½ cup shredded <u>cheddar cheese</u> = 1¼ cup dairy
Milk 	Soymilk 	Cheddar Cheese 

Fruit	**Oil**	**Protein Food**
1 cup <u>blueberries</u> = 1 cup fruit	1 tablespoon <u>margarine</u> = 11 grams oil	1 small <u>hamburger patty</u> = 3 ounces protein foods
Blueberries 	Margarine 	Hamburger Patty 

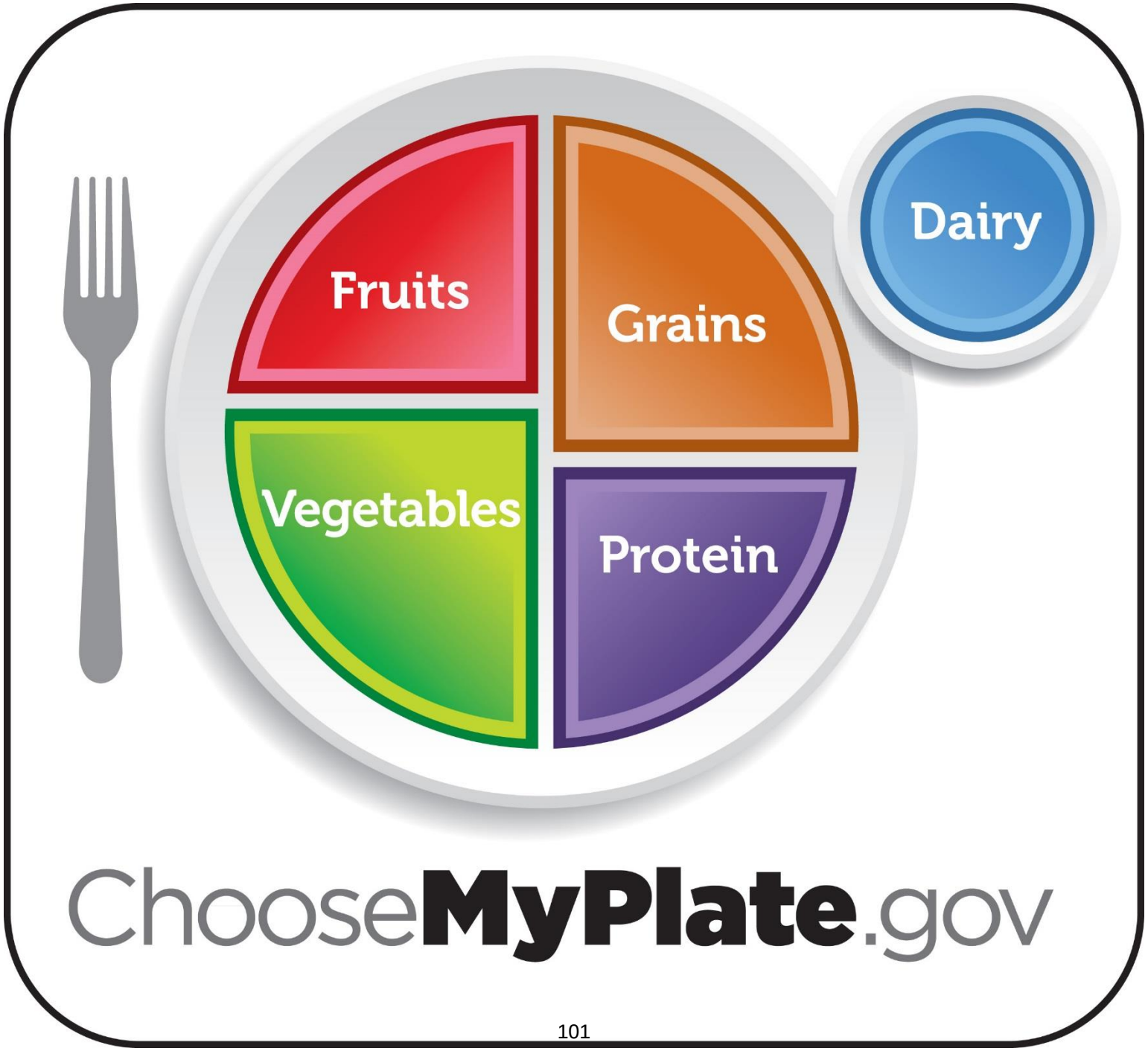
Fruit 1 small slice (about 1 inch thick) watermelon = 1 cup fruit 1 cup diced watermelon = 1 cup fruit	**Oil** 2 tablespoons vinaigrette = 8 grams oil	**Grain** 1 hamburger bun = 2½ ounces grains
Watermelon 	Vinaigrette 	Hamburger Bun 

Oil 1 tablespoon mayonnaise = 11 grams oil	**Vegetable** 1 cup chopped or sliced celery = 1 cup vegetables 2 large celery stalks (11 to 12 inches long) = 1 cup vegetables	**Protein Food** 3 thin slices ham = 2 ounces protein foods
Mayonnaise 	Celery 	Ham 

Fruit 1 cup of 100% orange juice = 1 cup fruit	**Vegetable** 1 cup sliced or chopped cucumber = 1 cup vegetables ½ large cucumber = 1 cup vegetables	**Grain** 1 cup of sweet cereal = 1 ounce grains
Orange Juice 	Cucumber 	Sweet Cereal 

Protein Food 1 cup cooked pinto beans = 4 ounces protein foods Also: 1 cup cooked pinto beans = 1 cup vegetables	**Grain** 7 square or round crackers = 1 ounce grains	**Vegetable** 1 cup of romaine lettuce = ½ cup vegetables
Pinto Beans 	Crackers 	Romaine Lettuce 

Protein Food 6 small fish sticks = 4 ounces protein foods	**Vegetable** 1 cup French fries = 1 cup vegetables About 12 fast food style French fries = 1 cup vegetables	**Fruit** 1 cup whole or cut-up grapes = 1 cup fruit About 32 seedless grapes = 1 cup fruit
Fish Sticks 	French Fries 	Grapes 


Fruits
Grains
Dairy
Vegetables
Protein
ChooseMyPlate.gov

Neel

Age: 16 Height: 6'2" Weight: 215 lbs.
Physical Activity Level: Vigorous

Neel is the quarterback for his high school football team and has practice every day. Although he is very happy with his performance, Neel is looking to gain more muscle to be even better. When Neel goes to the doctor for a check-up, he is told that he is generally healthy, but overweight.

Typical Weekday

Breakfast
- 1 cup of yogurt with ½ cup blueberries and ¼ cup almonds
- 2 slices whole wheat toast with 2 tablespoons margarine

Lunch
- 2 hamburger patties on a bun with 2 slices cheddar cheese and 1 tablespoon mayonnaise
- Salad with 1 cup lettuce, 1 medium chicken breast, ½ cup tomato, ½ medium avocado, and 2 tablespoons vinaigrette dressing

Snack
- A hardboiled egg, a large banana, and 12 baby carrots

Dinner
- 2 turkey wraps: 2, 12-inch tortilla, 2 slices of turkey, ½ medium avocado, and ½ cup lettuce
- 1 large apple
- 1 cup 2% milk

Luz

Age: 14 Height: 5'10" Weight: 160 lbs.
Physical Activity Level: Vigorous

Luz is a volleyball player. Her best friends are also on the team, so Luz loves going to volleyball practice. Luz gets an upset stomach whenever she drinks milk or consumes anything with dairy. Because of this, Luz avoids milk and other dairy products.

Typical Weekday

Breakfast
- 2 large scrambled eggs with 3 thin slices of ham
- 1 cup orange juice
- 1 slice whole wheat toast with 1 tablespoon margarine

Lunch
- Turkey sandwich with 2 slices whole wheat bread, 1 slice of turkey, 1 tablespoon mayonnaise, and ½ cup lettuce
- 1 cup diced watermelon
- 1 cup soymilk

Snack
- 2 large stalks celery
- 1 small apple
- 2 tablespoons peanut butter

Dinner
- Rice bowl: 1 medium chicken breast, 1 cup brown rice, ½ cup broccoli, ½ cup carrots, and ¼ cup almonds
- 1 cup soymilk

Naomi

Age: 15 Height: 5'5" Weight: 105 lbs.
Physical Activity Level: Sedentary

Naomi went in for her annual check-up and was told that she is underweight and should gain weight to be healthier. However, Naomi recently began eating just like her favorite celebrity. On her new diet, Naomi can only eat plain salads and is really hungry throughout the day. She wants to start running 1 mile every day to try to make the track team next year but is often too tired to run.

Typical Weekday

Breakfast
- Nothing

Lunch
- Plain salad: 1 cup lettuce, ½ cup carrots, ½ cup cucumber, and ½ cup tomato

Snack
- Nothing

Dinner
- Plain salad: 1 cup lettuce, ½ cup carrots, ½ cup cucumber, and ½ cup tomato

Alex

Age: 17 Height: 5'8" Weight: 150 lbs.
Physical Activity Level: Moderate

Alex walks to school every morning. After school every day, Alex works at a local grocery store as a courtesy clerk. His job requires him to move a lot, which is how Alex gets exercise. He also plays ultimate frisbee on the weekends. Alex does not have a lot of time to prepare meals and usually eats food that is quick and easy to make.

Typical Weekday

Breakfast
- 1 cup sweet cereal with 1 cup 2% milk

Lunch
- 2 bean and cheese burritos: 2, 12-inch tortilla, ½ cup cheddar cheese, and 1 cup pinto beans
- 1 small apple

Snack
- 14 crackers
- 2 tablespoons peanut butter
- 1 cup grapes

Dinner
- 12 fish sticks with about 24 French fries

Directions:
Use age, sex, and physical activity level to determine estimated daily calorie need.

	Males			Females		
	Physical Activity Level			Physical Activity Level		
Age	Sedentary	Moderate	Vigorous	Sedentary	Moderate	Vigorous
13	2,000	2,200	2,600	1,600	2,000	2,200
14	2,000	2,400	2,800	1,800	2,000	2,400
15	2,200	2,600	3,000	1,800	2,000	2,400
16	2,400	2,800	3,200	1,800	2,000	2,400
17	2,400	2,800	3,200	1,800	2,000	2,400
18	2,400	2,800	3,200	1,800	2,000	2,400
	Estimated Daily Calorie Need			Estimated Daily Calorie Need		

Directions:
Now that you know estimated daily calorie need, use that value to determine daily recommended intake for each food group.

		Estimated Daily Calorie Need								
		1,600	1,800	2,000	2,200	2,400	2,600	2,800	3,000	3,200
Food Group	Vegetables	2 cups	2½ cups	2½ cups	3 cups	3 cups	3½ cups	3½ cups	4 cups	4 cups
	Fruits	1½ cups	1½ cups	2 cups	2 cups	2 cups	2 cups	2½ cups	2½ cups	2½ cups
	Grains	5 ounces	6 ounces	6 ounces	7 ounces	8 ounces	9 ounces	10 ounces	10 ounces	10 ounces
	Dairy	3 cups	3 cups	3 cups	3 cups	3 cups	3 cups	3 cups	3 cups	3 cups
	Protein Foods	5 ounces	5 ounces	5½ ounces	6 ounces	6½ ounces	6½ ounces	7 ounces	7 ounces	7 ounces
	Oils	22 grams	24 grams	27 grams	29 grams	31 grams	34 grams	36 grams	44 grams	51 grams
		Daily Recommended Intake of Each Food Group								

Note: Vegetables, Fruits, Grains, Dairy, and Protein Foods are measured in equivalents

Character's Information

Name: _____ Age: _____ Male / Female (circle one)

Physical Activity Level: Sedentary / Moderate / Vigorous (circle one)

Character's Daily Food Group Recommendations

Grains:	Vegetables:
Dairy:	Protein Foods:
Fruits:	Oils:

Character's Eating Pattern

Meal #1	Grains:
	Protein Foods:
	Vegetables:
	Fruits:
	Dairy:
	Oils:
Meal #2	Grains:
	Protein Foods:
	Vegetables:
	Fruits:
	Dairy:
	Oils:

Meal #3	Grains:
	Protein Foods:
	Vegetables:
	Fruits:
	Dairy:
	Oils:
Other	Grains:
	Protein Foods:
	Vegetables:
	Fruits:
	Dairy:
	Oils:

Character's Total Consumption

Food Group Total	Recommendation Met?	
Grains:	☐ Yes	☐ No
Protein Foods:	☐ Yes	☐ No
Vegetables:	☐ Yes	☐ No
Fruits:	☐ Yes	☐ No
Dairy:	☐ Yes	☐ No
Oils:	☐ Yes	☐ No

Snack name:

Ingredient	From Agricultural Space or Need to Buy?	Amount Needed	Food Group	Equivalent for Recommendations
Example: lettuce	Ag space	1 cup	Vegetables	½ cup vegetables

Instructions to prepare your snack:

Directions: Plan three meals for **yourself** that meet **your** daily recommendations for each food group.

Name: _____ Age: ____ Male / Female (circle one)

Physical Activity Level: Sedentary / Moderate / Vigorous (circle one)

Your Daily Recommended Amounts – Food Groups		
Grains:	Vegetables:	Dairy:
Protein Foods:	Fruits:	Oils:

	Foods	Amount
Meal #1		Grains:
		Protein Foods:
		Vegetables:
		Fruits:
		Dairy:
		Oils:
Meal #2		Grains:
		Protein Foods:
		Vegetables:
		Fruits:
		Dairy:
		Oils:
Meal #3		Grains:
		Protein Foods:
		Vegetables:
		Fruits:
		Dairy:
		Oils:

Total Amount	Recommendation Met?	
Grains:	Yes □	No □
Protein Foods:	Yes □	No □
Vegetables:	Yes □	No □
Fruits:	Yes □	No □
Dairy:	Yes □	No □
Oils:	Yes □	No □

Nutrition Module 2: **Read It to Eat It**

BACKGROUND INFORMATION

Nutrients have very important roles in the function of our bodies. We obtain nutrients from the variety of foods that we eat. Nutrients include **macronutrients** (**carbohydrates, fats**, and **protein**) and **micronutrients** (**vitamins** and **minerals**). Macronutrients are required in large amounts by the body to carry out normal processes, while micronutrients are required in relatively small amounts.

Carbohydrates include sugars, starches, and fibers and are the main source of energy for the body. There are two types of carbohydrates: simple and complex. Simple carbohydrates provide energy for the body relatively quickly. Complex carbohydrates take more time to digest, providing energy for the body over a longer time period compared to simple carbohydrates. Food sources of complex carbohydrates include beans, whole wheat bread, and vegetables. Another type of complex carbohydrate is **dietary fiber**, which is found in the edible parts of plants. Fiber has an important role in aiding digestion and heart health. Foods rich in fiber include whole grains, fruits, and vegetables.

Fats also provide energy for the body and are important for the absorption of vitamins A, D, E, and K. There are two types of fats: **saturated** and **unsaturated**. Saturated fats are solid at room temperature and usually come from animal sources, such as butter, meat, and cheese. However, some plants also contain saturated fats, such as coconut and palm oil. These types of fats are recommended to be consumed in lower amounts because they raise LDL cholesterol, commonly known as “bad cholesterol” in the body. The increase in this type of cholesterol has shown a strong correlation to cardiovascular disease. Unsaturated fats are liquid at room temperature and usually come from plant sources, such as avocado oil, vegetable oil, and flaxseed. Replacing saturated fats with unsaturated fats tends to raise levels of HDL cholesterol, commonly known as “good cholesterol,” which decreases the risk of chronic diseases.

Proteins also provide energy for the body and have many other important functions, such as providing structure in our bodies and helping our muscles move. Protein can be found in animal sources, such as chicken, fish, and red meats. Protein can also be found in smaller amounts in plant sources, such as beans and vegetables.

Vitamins and minerals both aid in the growth, development, and sometimes the structure of our bodies. Vitamins include vitamins A, C, D, K, and several B vitamins. Minerals needed by our bodies include calcium, iron, potassium, and many more. Both vitamins and minerals are found naturally in foods, but they can also be **fortified** into foods to help people reach recommendations. In the United States, juices, milk, cereals, bread products, among others are commonly fortified with micronutrients, such as vitamin A, vitamin D, iron, folic acid (one of the B vitamins), and calcium.

Packaged foods include **Nutrition Facts Labels** that list some of the nutrients in that particular food. The Nutrition Facts

Label also includes the amount of each listed nutrient in the food and the **Percent Daily Value** that it contributes to the recommendations for someone consuming about 2000 calories per day. The **serving size** that is listed on the Nutrition Facts Label is the measured amount of that food that reflects the amount of nutrients listed on the label. Although fruits and vegetables do not come with a Nutrition Facts Label, they are also packed with nutrients.

CONCEPTS AND VOCABULARY

Carbohydrate: A macronutrient that when consumed provides energy for the body and includes fruits, vegetables, and bread products

Dietary fiber: A type of carbohydrate found in plants that when consumed aids in digestion

Fat: A macronutrient that when consumed provides energy for the body and includes meat, cheese, and oils

Fortification: The process of adding certain vitamins and minerals into foods in an effort to help people meet recommendations

Macronutrient: A classification for nutrients needed in relatively large amounts for the body to function properly, including fats, carbohydrates, and protein

Micronutrient: A classification for nutrients needed in relatively small amounts for the body to function properly, including vitamins and minerals

Minerals: Micronutrients found in soil that are needed to allow the human body to grow and function properly

Nutrient: A compound that when consumed provides nourishment essential for growth and maintenance of the body

Nutrition Facts Label: The label on the side of packaged foods that lists the number of calories and selected nutrients found within a given serving size of that food

Percent Daily Value: A generalized percentage of the recommended amount of a nutrient provided in one serving of a food

Protein: A macronutrient that when consumed provides energy for the body in addition to building and maintaining muscles and includes meat, fish, chicken, and beans

Servings size: A measured amount of food or drink that is included on Nutrition Facts Labels to help when calculating the amount of a nutrient in a food item

Vitamins: Micronutrients made by living things that are needed to allow the human body to grow and function properly

MATERIALS NEEDED

- ☐ Flip chart paper
- ☐ Writing utensils
- ☐ *Nutrient Cards* (Appendix N2.1)), one of each nutrient type (macronutrient, vitamin, and mineral) per group
- ☐ *Food Cards* (Appendix N2.2), one set per group
- ☐ *Good Sources Worksheet* (Appendix N2.3), one per group
- ☐ Calculators, one per group

Materials provided in curriculum

TIME REQUIRED
45 to 60 minutes

SUGGESTED GROUPINGS
Small groups of 3 to 4

GETTING READY

- ☐ Make copies of the *Nutrient Cards* (Appendix N2.1), one of each nutrient type (macronutrient, vitamin, and mineral) for each group, and cut them out along the line.
- ☐ Make copies of the *Food Cards* (Appendix N2.2), one set for each group. Cut the cards out along the dashed line and then fold them along the solid line.

  Facilitator tip: It is recommended that the above appendices be laminated to allow them to be more easily handled by youth and reused.
- ☐ Make copies of *Good Sources Worksheet* (Appendix N2.3), one for each group.
- ☐ Organize youth into small groups of 3 – 4 youth.

  Facilitator tip: These can be the same groups that were formed in previous lessons. By doing so, the youth may continue developing teamwork skills with the same group members.
- ☐ Provide each group with one sheet of flip chart paper and writing utensils to answer opening questions.

OPENING QUESTIONS

Ask the youth to respond to each question/prompt below by recording their responses on the flip chart paper provided and sharing their ideas verbally.

• Explain what you know about the nutrients found in food.
• Describe how you would determine if a food is a good source of different nutrients.

PROCEDURE (EXPERIENCING)

1. Provide each group with three *Nutrient Cards*, making sure to give each group a macronutrient, vitamin, and mineral. Be sure youth know that the micronutrients in this activity are just a selection of many.
2. Ask the youth to read the information on the three cards within their groups.
3. Provide each group with *Food Cards*, asking them to place the cards so that the food images

are facing up.

4. Ask the youth to look through the *Food Cards* and pick one food that they think is a "good source" for each of their given nutrients. They should identify one food for their specific macronutrient, one food for their vitamin, and one food for their mineral.
5. Ask youth to share their assigned nutrients and the foods they think are a good source of each nutrient. Ask youth to also describe how they selected each food.
6. Tell youth that there is a *Nutrition Facts Label* on the back of the *Food Cards* and that it provides nutrition information for each food, including the serving size, macronutrient content, and some micronutrient content.
7. Provide each group with a *Good Sources Worksheet* and calculator.
8. Explain to the youth that they will be using the *Food Cards* and *Good Sources Worksheet* to create a meal that they believe is a "good source" of each of their assigned nutrients. Youth should include the serving size for each of the foods when creating their meal. Ask youth to also calculate the amount of their assigned nutrients in their meal.

   Facilitator tip: The group with the Carbohydrates Card may need help discovering that they should be looking for Dietary Fiber on the Nutrition Facts Label.
9. Inform youth that a food is considered a "good source" of a particular nutrient if it includes at least 10% of the *Percent Daily Value* for that nutrient.
10. With this information, ask youth to edit their meal if needed to make it a good source of each of their nutrients.

SHARING, PROCESSING, AND GENERALIZING

Have the youth share their meals and their answers to the *Good Sources Worksheet*.

Follow the lines of thinking developed through the youth's thoughts, observations, and questions as they share their meals and the amount of their assigned nutrients in those meals. If necessary, ask more targeted questions.

- Explain how you went about creating a meal that was a good source of your nutrients.
- Explain what you noticed about the foods that tended to be good sources of the different nutrients.
- Describe any challenges you had when creating your meals.
- Explain the ways you can use the information you learned from this activity in your everyday life.

CONCEPT AND TERM DISCOVERY/INTRODUCTION

Make sure that the youth understand the importance of using **Nutrition Facts Labels** for identifying the **macronutrient** and **micronutrient** content of foods. Also make sure that youth discover that fruits and vegetables tend to be good sources of essential micronutrients and **dietary fiber**. Additionally, make sure that key vocabulary terms are either discovered by the youth or introduced to them: **carbohydrates, fats, minerals, Percent Daily Value, protein, serving size**, and **vitamins**.

AGRICULTURE APPLICATION

MATERIALS NEEDED

- ☐ Small paper clips, six per group
- ☐ Scissors
- ☐ At least two different types of soil (can be purchased or collected from the agricultural space)
- ☐ Distilled water
- ☐ Stopwatch, one per group
- ☐ Permanent markers, one per group
- ☐ Litmus paper, a few sheets per group
- ☐ Agricultural maintenance equipment

TIME REQUIRED

15 to 20 minutes

GETTING READY

- ☐ Using scissors or another sharp object, carefully punch a hole about ½ cm in diameter in the bottom of paper cups, two for each group.
- ☐ Place soil, if purchasing, and the distilled water in a central location.
- ☐ Supply enough materials to allow each youth to maintain their designated area in the agricultural space.
- ☐ Organize youth into small groups of 3 – 4 youth.

  Facilitator tip: These can be the same groups that were formed in previous lessons. By doing so, the youth may continue developing teamwork skills with the same group members.

PROCEDURE (EXPERIENCING)

1. Orient youth to the supplies and explain that they will be testing the soil quality of the agricultural space.
2. Provide each group with two prepared with holes paper cups, four regular paper cups, a permanent marker, and a stopwatch.
3. Ask youth to identify the two soil types they would like to test and make observations of the soil using their sight and touch.
4. Ask youth to fill each of the cups with holes about ¾ full with the different types of soil.
5. Ask youth to filled two of the regular cups with distilled water and mark the level of the water using the permanent marker.
6. Ask youth to time how fast the distilled water travels through the soil as they pour the water over the soil. Youth should catch the water with their remaining empty cups underneath and time the number of seconds it takes before the water stops dripping.

7. Ask youth to record the number of seconds it takes for the water to pass through the soil. Youth should also mark the water level on the cup used to catch the water using the permanent marker.
8. Provide each group with some litmus paper and explain to the youth that they will now be measuring the pH of the soil using the litmus paper.
9. Ask the youth to pour the water back through the soil and insert the litmus paper into the soil for 2-3 seconds. They should then remove the litmus paper from the soil and record the color and approximate pH (red = acidic, green = neutral, purple = alkaline) on the side of the cup using the permanent marker.
10. With any time remaining, lead youth in maintaining their designated growing section. This may include discarding weeds, supplying additional nutrients, and watering plants.

SHARING, PROCESSING, AND GENERALIZING

Have the youth share their observations about the soil texture, moisture retention, drainage, and pH. Youth should discuss the components of good soil and how the soil quality may affect plant growth. Follow the lines of thinking developed through the youth's thoughts, observations, and questions as they share what they discovered about soil quality.

HOME CONCEPT APPLICATION

MATERIALS NEEDED

- ☐ *Nutrition Facts Labels at Home* (Appendix N2.4), one per youth

TIME REQUIRED

5 to 10 minutes

Materials provided in curriculum

GETTING READY

☐ Make copies of *Nutrition Facts Labels at Home* (Appendix N2.4), one for each youth.

PROCEDURE (EXPERIENCING)

1. Provide each youth with a *Nutrition Facts Labels at Home.*
2. Explain to the youth that they will look for a Nutrition Facts Label on packaged food they already have in their home or at a local grocery store.
3. Ask youth to complete the *Nutrition Facts Labels at Home* using their selected food to determine the amount of some of the nutrients found in that food and whether that food is a good source of the selected nutrients.

SHARING, PROCESSING, AND GENERALIZING

Have the youth share their *Nutrition Facts Labels at Home* and discuss whether the food they selected was a good source of any of the selected nutrients. Follow the lines of thinking developed through the youth's thoughts, observations, and questions as they share what they discovered about the nutrients found in their selected food.

Macronutrients

Carbohydrates (including Dietary Fiber)

Carbohydrates are an important source of energy for our body. There are two types of carbohydrates: simple and complex. Simple carbohydrates, like table sugar, are used more quickly by the body, which gives us energy for a short period of time. Complex carbohydrates are digested more slowly, which gives our bodies energy for a longer period of time.

Dietary fiber is a special type of complex carbohydrate found in the edible parts of plants. Dietary fiber is very important to eat because it helps your digestive system function normally. A lot of people do not eat enough dietary fiber every day, so it is important to focus on including foods in meals that are good sources of dietary fiber.

Fats

Fats are a major source of energy for the body. They contribute to the structure of cells and help our body absorb and use vitamins A, D, E, and K. There are two main types of fats: saturated and unsaturated. Saturated fats are solid at room temperature and usually come from animal sources. Unsaturated fats are liquid at room temperature and usually come from plant sources. It is generally recommended to consume more unsaturated fat than saturated fat.

Protein

Protein provides energy for the body, but its main function is in providing structure for cells in the body. It also has important roles in the function of our muscles, in the repair and production of new cells, and in the general growth and development of our bodies. Protein can be found in both animal and plant sources.

Vitamins

Vitamin A

Vitamin A is most commonly found in two forms in food. One of the forms is common in fruits and vegetables and the other can be found in animal products. Vitamin A has many functions, including maintaining the health of eyes, skin, and teeth.

Vitamin C

Vitamin C is important for the growth and repair of tissues. It aids in wound healing, formation of teeth, bones, cartilage, skin, tendons, ligaments, and blood vessels. Vitamin C also helps our bodies use iron. Vitamin C can be found in a variety of fruits and vegetables.

Vitamin D

Vitamin D has an important role in the formation of bones and helps our bodies use calcium. Although vitamin D is not commonly found in nature, it has been added into some foods through a process called fortification. Our bodies can also produce vitamin D by being under sunlight.

Minerals

Calcium

Calcium has an important role in the formation of strong teeth and bones. It also aids in sending nerve signals, moving muscles, regulating heartbeat, and releasing hormones. Calcium is commonly found in a variety of foods and can also be added to certain foods through a process called fortification.

Potassium

Potassium aids in contracting muscles, regulating heartbeat, and moving nutrients across and between cells. Potassium is commonly found in a variety of foods in small amounts.

Iron

Iron has many functions in our bodies, but its main function involves transporting oxygen in the blood. Iron is also part of many important proteins and enzymes. Iron is in a variety of foods naturally and can also be added to certain foods through a process called fortification.

Avocado

Banana

Blueberries

Avocado

Nutrition Facts

Serving size	1/2 medium avocado (68g)
Amount Per Serving	
Calories	**50**
	% Daily Value*
Total Fat 11g	**14%**
Saturated Fat 1.5g	**8%**
Trans Fat 0g	
Polyunsaturated Fat 1g	
Monounsaturated Fat 7g	
Cholesterol 0mg	**0%**
Sodium 5mg	**0%**
Total Carbohydrate 6g	**2%**
Dietary Fiber 5g	**18%**
Total Sugars 0g	
Includes 0g Added Sugars	**0%**
Protein 1g	**2%**
Vitamin D 0mcg	0%
Calcium 6mg	0%
Iron 0.5mg	2%
Potassium 345mg	8%
Vitamin A 43mcg	0%
Vitamin C 6mg	6%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Banana

Nutrition Facts

Serving size	1/2 medium banana (118g)
Amount Per Serving	
Calories	**50**
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 0mg	**0%**
Total Carbohydrate 27g	**10%**
Dietary Fiber 3g	**11%**
Total Sugars 14g	
Includes 0g Added Sugars	**0%**
Protein 1g	**2%**
Vitamin D 0mcg	0%
Calcium 6mg	0%
Iron 0mg	0%
Potassium 422mg	8%
Vitamin A 30mcg	0%
Vitamin C 10mg	10%

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Blueberries

Nutrition Facts

Serving size	1/2 cup (74g)
Amount Per Serving	
Calories	**40**
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 0mg	**0%**
Total Carbohydrate 11g	**4%**
Dietary Fiber 2g	**7%**
Total Sugars 7g	
Includes 0g Added Sugars	**0%**
Protein 1g	**2%**
Vitamin D 0mcg	0%
Calcium 4mg	0%
Iron 0mg	0%
Potassium 57mg	2%
Vitamin A 22mcg	0%
Vitamin C 7mg	8%

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Flour Tortilla

Flour Tortilla

Nutrition Facts

Serving size	**1 tortilla (46g)**
Amount Per Serving	
Calories	**140**
	% Daily Value*
Total Fat 3.5g	**4%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 1g	
Monounsaturated Fat 2g	
Cholesterol 0mg	**0%**
Sodium 300mg	**13%**
Total Carbohydrate 24g	**9%**
Dietary Fiber 1g	**4%**
Total Sugars 1g	
Includes 0g Added Sugars	**0%**
Protein 4g	**8%**
Vitamin D 0mcg	0%
Calcium 60mg	4%
Iron 1.5mg	8%
Potassium 70mg	2%
Vitamin A 0mcg	0%
Vitamin C 0mg	0%

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Broccoli

Broccoli

Nutrition Facts

Serving size	**1/2 cup (46g)**
Amount Per Serving	
Calories	**20**
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 15mg	**1%**
Total Carbohydrate 3g	**1%**
Dietary Fiber 1g	**4%**
Total Sugars 0g	
Includes 0g Added Sugars	**0%**
Protein 1g	**2%**
Vitamin D 0mcg	0%
Calcium 21mg	2%
Iron 0mg	0%
Potassium 144mg	4%
Vitamin A 159mcg	2%
Vitamin C 41mg	45%

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Brown Rice

Brown Rice, cooked

Nutrition Facts

Serving size	**1 cup (195g)**
Amount Per Serving	
Calories	**220**
	% Daily Value*
Total Fat 1.5g	**2%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0.5g	
Monounsaturated Fat 0.5g	
Cholesterol 0mg	**0%**
Sodium 0mg	**0%**
Total Carbohydrate 46g	**17%**
Dietary Fiber 4g	**14%**
Total Sugars 0g	
Includes 0g Added Sugars	**0%**
Protein 5g	**10%**
Vitamin D 0mcg	0%
Calcium 20mg	2%
Iron 1mg	6%
Potassium 150mg	4%
Vitamin A 0mcg	0%
Vitamin C 0mg	0%

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Orange Juice

Orange Juice, calcium and vitamin D fortified

Nutrition Facts

Serving size	**1 cup (249g)**
Amount Per Serving	
Calories	**120**
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 5mg	**0%**
Total Carbohydrate 28g	**10%**
Dietary Fiber < 1g	**2%**
Total Sugars 21g	
Includes 6g Added Sugars	**12%**
Protein 2g	**4%**
Vitamin D 2.5mcg	10%
Calcium 350mg	25%
Iron 0.5mg	2%
Potassium 440mg	10%
Vitamin A 0mcg	0%
Vitamin C 82mg	90%

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Strawberries

Strawberries

Nutrition Facts

Serving size	**1/2 cup (72g)**
Amount Per Serving	
Calories	**25**
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 0mg	**0%**
Total Carbohydrate 6g	**2%**
Dietary Fiber 1g	**4%**
Total Sugars 4g	
Includes 0g Added Sugars	**0%**
Protein 1g	**2%**
Vitamin D 0mcg	0%
Calcium 12mg	0%
Iron 0mg	0%
Potassium 110mg	2%
Vitamin A 5mcg	0%
Vitamin C 42mg	45%

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Red Bell Pepper

Red Bell Pepper

Nutrition Facts

Serving size	**1/2 cup (46g)**
Amount Per Serving	
Calories	**15**
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 40mg	**2%**
Total Carbohydrate 3g	**1%**
Dietary Fiber 1g	**4%**
Total Sugars 2g	
Includes 0g Added Sugars	**0%**
Protein 0g	**0%**
Vitamin D 0mcg	0%
Calcium 3mg	0%
Iron 0mg	0%
Potassium 95mg	2%
Vitamin A 750mcg	80%
Vitamin C 59mg	70%

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Potato Chips

Potato Chips

Nutrition Facts

Serving size	1 oz (About 15 chips) (28g)
Amount Per Serving	
Calories	**150**
	% Daily Value*
Total Fat 10g	**13%**
Saturated Fat 3g	**15%**
Trans Fat 0g	
Polyunsaturated Fat 3g	
Monounsaturated Fat 3g	
Cholesterol 0mg	**0%**
Sodium 150mg	**7%**
Total Carbohydrate 14g	**5%**
Dietary Fiber 1g	**4%**
Total Sugars 0g	
Includes 0g Added Sugars	**0%**
Protein 2g	**4%**
Vitamin D 0mcg	0%
Calcium 7mg	0%
Iron 0.5mg	2%
Potassium 460mg	10%
Vitamin A 0mcg	0%
Vitamin C 5mg	6%

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Sweet Cereal

Sweet Cereal

Nutrition Facts

Serving size	1 cup (28g)
Amount Per Serving	
Calories	**100**
	% Daily Value*
Total Fat 1g	**1%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 120mg	**5%**
Total Carbohydrate 25g	**9%**
Dietary Fiber 2g	**7%**
Total Sugars 12g	
Includes 10g Added Sugars	**20%**
Protein 1g	**2%**
Vitamin D 1mcg	4%
Calcium 24mg	2%
Iron 4mg	20%
Potassium 30mg	0%
Vitamin A 9mcg	0%
Vitamin C 14mg	15%

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Green Beans

Green Beans

Nutrition Facts

Serving size	1/2 cup (55g)
Amount Per Serving	
Calories	**20**
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 0mg	**0%**
Total Carbohydrate 4g	**1%**
Dietary Fiber 2g	**7%**
Total Sugars 1g	
Includes 0g Added Sugars	**0%**
Protein 1g	**2%**
Vitamin D 0mcg	0%
Calcium 20mg	2%
Iron 0.5mg	2%
Potassium 115mg	2%
Vitamin A 208mcg	2%
Vitamin C 9mg	10%

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White Bread

Write Bread

Nutrition Facts

Serving size	**1 slice (25g)**
Amount Per Serving	
Calories	**70**
	% Daily Value*
Total Fat 1g	**1%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 170mg	**7%**
Total Carbohydrate 13g	**5%**
Dietary Fiber < 1g	**2%**
Total Sugars 1g	
Includes 0g Added Sugars	**0%**
Protein 2g	**4%**
Vitamin D 0mcg	0%
Calcium 40mg	4%
Iron 1mg	6%
Potassium 25mg	0%
Vitamin A 0mcg	0%
Vitamin C 0mg	0%

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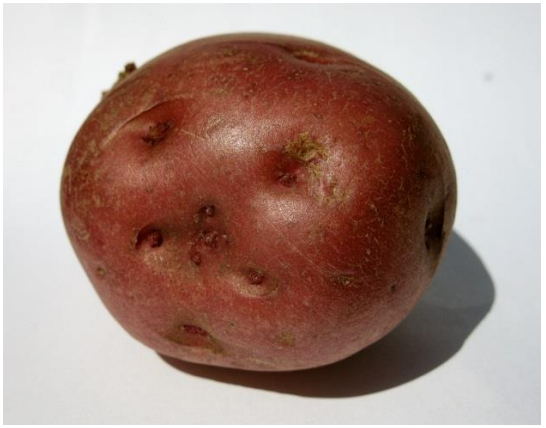
Red Potatoes



Red Potatoes

Nutrition Facts

Serving size	**1 medium potato (173g)**
Amount Per Serving	
Calories	**150**
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 20mg	**1%**
Total Carbohydrate 34g	**12%**
Dietary Fiber 3g	**11%**
Total Sugars 2g	
Includes 0g Added Sugars	**0%**
Protein 4g	**8%**
Vitamin D 0mcg	0%
Calcium 15mg	2%
Iron 1mg	6%
Potassium 950mg	20%
Vitamin A 10mcg	0%
Vitamin C 22mg	25%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Spinach

Spinach

Nutrition Facts

Serving size	**1 cup (30g)**
Amount Per Serving	
Calories	**5**
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 25mg	**1%**
Total Carbohydrate 1g	**0%**
Dietary Fiber 1g	**4%**
Total Sugars 0g	
Includes 0g Added Sugars	**0%**
Protein 1g	**2%**
Vitamin D 0mcg	0%
Calcium 30mg	2%
Iron 1mg	6%
Potassium 170mg	4%
Vitamin A 1690mcg	15%
Vitamin C 8mg	8%

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Tomato

Tomato

Nutrition Facts

Serving size	1 medium tomato (123g)
Amount Per Serving	
Calories	**20**
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 5mg	**0%**
Total Carbohydrate 5g	**2%**
Dietary Fiber 2g	**7%**
Total Sugars 3g	
Includes 0g Added Sugars	**0%**
Protein 1g	**2%**
Vitamin D 0mcg	0%
Calcium 10mg	0%
Iron 0.5mg	2%
Potassium 290mg	6%
Vitamin A 550mcg	6%
Vitamin C 16mg	20%

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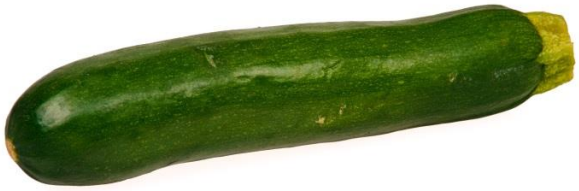
Zucchini



Zucchini

Nutrition Facts

Serving size	1/2 cup (62g)
Amount Per Serving	
Calories	**10**
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 5mg	**0%**
Total Carbohydrate 2g	**1%**
Dietary Fiber 1g	**4%**
Total Sugars 1g	
Includes 0g Added Sugars	**0%**
Protein 1g	**2%**
Vitamin D 0mcg	0%
Calcium 9mg	0%
Iron 0mg	0%
Potassium 163mg	4%
Vitamin A 75mcg	0%
Vitamin C 10mg	10%

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Oatmeal

Oatmeal, cooked

Nutrition Facts

Serving size	1 cup, cooked (234g)
Amount Per Serving	
Calories	**160**
	% Daily Value*
Total Fat 3g	**4%**
Saturated Fat 0.5g	**3%**
Trans Fat 0g	
Polyunsaturated Fat 1g	
Monounsaturated Fat 1g	
Cholesterol 0mg	**0%**
Sodium 115mg	**5%**
Total Carbohydrate 29g	**11%**
Dietary Fiber 4g	**14%**
Total Sugars 1g	
Includes 0g Added Sugars	**0%**
Protein 6g	**12%**
Vitamin D 0mcg	0%
Calcium 187mg	15%
Iron 14mg	80%
Potassium 140mg	2%
Vitamin A 0mcg	0%
Vitamin C 0mg	0%

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Soda

Whole Wheat Bread

Whole Wheat Pasta

Soda

Nutrition Facts

Serving size	12 fl oz (1 can) (355g)
Amount Per Serving	
Calories	**150**
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 30mg	**1%**
Total Carbohydrate 41g	**15%**
Dietary Fiber 0g	**0%**
Total Sugars 41g	
Includes 41g Added Sugars	**82%**
Protein 0g	**0%**
Vitamin D 0mcg	0%
Calcium 0mg	0%
Iron 0mg	0%
Potassium 0mg	0%
Vitamin A 0mcg	0%
Vitamin C 0mg	0%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Whole Wheat Bread

Nutrition Facts

Serving size	1 slice (28g)
Amount Per Serving	
Calories	**70**
	% Daily Value*
Total Fat 1g	**1%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 130mg	**6%**
Total Carbohydrate 12g	**4%**
Dietary Fiber 2g	**7%**
Total Sugars 2g	
Includes 0g Added Sugars	**0%**
Protein 4g	**8%**
Vitamin D 0mcg	0%
Calcium 30mg	2%
Iron 0.5mg	2%
Potassium 70mg	2%
Vitamin A 0mcg	0%
Vitamin C 0mg	0%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Whole Wheat Pasta

Nutrition Facts

Serving size	1 cup (85g)
Amount Per Serving	
Calories	**320**
	% Daily Value*
Total Fat 2g	**3%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 1g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 0mg	**0%**
Total Carbohydrate 65g	**24%**
Dietary Fiber 8g	**29%**
Total Sugars 3g	
Includes 0g Added Sugars	**0%**
Protein 11g	**22%**
Vitamin D 0mcg	0%
Calcium 30mg	2%
Iron 3mg	15%
Potassium 300mg	6%
Vitamin A 0mcg	0%
Vitamin C 0mg	0%

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Cheddar Cheese

Cheddar Cheese

Nutrition Facts

Serving size	**1 slice (28g)**
Amount Per Serving	
Calories	**110**
	% Daily Value*
Total Fat 9g	**12%**
Saturated Fat 6g	**30%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 3g	
Cholesterol 30mg	**10%**
Sodium 180mg	**8%**
Total Carbohydrate 0g	**0%**
Dietary Fiber 0g	**0%**
Total Sugars 0g	
Includes 0g Added Sugars	**0%**
Protein 7g	**14%**
Vitamin D 0mcg	0%
Calcium 200mg	15%
Iron 0mg	0%
Potassium 25mg	0%
Vitamin A 75mcg	8%
Vitamin C 0mg	0%

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Yogurt

Yogurt, low-fat, plain

Nutrition Facts

Serving size	**1/2 cup (113g)**
Amount Per Serving	
Calories	**70**
	% Daily Value*
Total Fat 2g	**3%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0.5g	
Cholesterol 5mg	**2%**
Sodium 80mg	**3%**
Total Carbohydrate 8g	**3%**
Dietary Fiber 0g	**0%**
Total Sugars 8g	
Includes 0g Added Sugars	**0%**
Protein 6g	**12%**
Vitamin D 0mcg	0%
Calcium 207mg	15%
Iron 0mg	0%
Potassium 264mg	6%
Vitamin A 2mcg	0%
Vitamin C 1mg	2%

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Bacon

Bacon

Nutrition Facts

Serving size	**1 slice (8g)**
Amount Per Serving	
Calories	**40**
	% Daily Value*
Total Fat 3g	**4%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Polyunsaturated Fat 0.5g	
Monounsaturated Fat 1.5g	
Cholesterol 10mg	**3%**
Sodium 180mg	**8%**
Total Carbohydrate 0g	**0%**
Dietary Fiber 0g	**0%**
Total Sugars 0g	
Includes 0g Added Sugars	**0%**
Protein 13g	**26%**
Vitamin D 0mcg	0%
Calcium 1mg	0%
Iron 0mg	0%
Potassium 45mg	0%
Vitamin A 1mcg	0%
Vitamin C 0mg	0%

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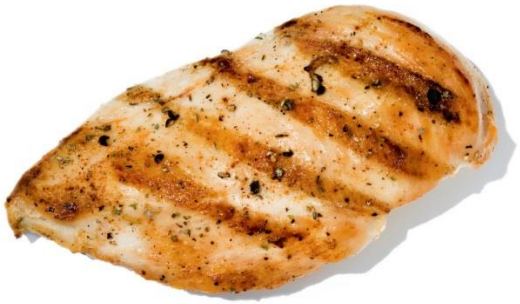
Chicken Breast



Chicken Breast

Nutrition Facts

Serving size	1/2 breast, boneless, skinless (86g)
Amount Per Serving	
Calories	**140**
	% Daily Value*
Total Fat 3g	**4%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Polyunsaturated Fat 1g	
Monounsaturated Fat 1g	
Cholesterol 75mg	**25%**
Sodium 65mg	**3%**
Total Carbohydrate 0g	**0%**
Dietary Fiber 0g	**0%**
Total Sugars 0g	
Includes 0g Added Sugars	**0%**
Protein 27g	**54%**
Vitamin D 0mcg	0%
Calcium 13mg	0%
Iron 1mg	6%
Potassium 220mg	4%
Vitamin A 5mcg	0%
Vitamin C 0mg	0%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Salmon

Salmon, cooked

Nutrition Facts

Serving size	1/2 fillet (85g)
Amount Per Serving	
Calories	**180**
	% Daily Value*
Total Fat 10g	**13%**
Saturated Fat 2g	**10%**
Trans Fat 0g	
Polyunsaturated Fat 4g	
Monounsaturated Fat 4g	
Cholesterol 55mg	**18%**
Sodium 50mg	**2%**
Total Carbohydrate 0g	**0%**
Dietary Fiber 0g	**0%**
Total Sugars 0g	
Includes 0g Added Sugars	**0%**
Protein 19g	**38%**
Vitamin D 0mcg	0%
Calcium 13mg	0%
Iron 0.5mg	2%
Potassium 330mg	8%
Vitamin A 11mcg	2%
Vitamin C 3mg	4%

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Egg

Egg

Nutrition Facts

Serving size	1 large egg (80g)
Amount Per Serving	
Calories	**80**
	% Daily Value*
Total Fat 5g	**6%**
Saturated Fat 1.5g	**8%**
Trans Fat 0g	
Polyunsaturated Fat 0.5g	
Monounsaturated Fat 2g	
Cholesterol 210mg	**70%**
Sodium 65mg	**3%**
Total Carbohydrate < 1g	**0%**
Dietary Fiber 0g	**0%**
Total Sugars < 1g	
Includes 0g Added Sugars	**0%**
Protein 6g	**12%**
Vitamin D 0mcg	0%
Calcium 25mg	2%
Iron 0.5mg	2%
Potassium 60mg	2%
Vitamin A 85mcg	10%
Vitamin C 0mg	0%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Tofu

Tofu, firm

Nutrition Facts

Serving size	3 oz (about 1/3 cup) (85g)
Amount Per Serving	
Calories	**70**
	% Daily Value*
Total Fat 3.5g	**4%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 2g	
Monounsaturated Fat 1g	
Cholesterol 0mg	**0%**
Sodium 15mg	**1%**
Total Carbohydrate 2g	**1%**
Dietary Fiber 1g	**4%**
Total Sugars 0g	
Includes 0g Added Sugars	**0%**
Protein 8g	**16%**
Vitamin D 0mcg	0%
Calcium 100mg	8%
Iron 1mg	6%
Potassium 300mg	6%
Vitamin A 0mcg	0%
Vitamin C 0mg	0%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Almonds

Almonds

Nutrition Facts

Serving size	1 oz (about 23 almonds) (28g)
Amount Per Serving	
Calories	**160**
	% Daily Value*
Total Fat 14g	**18%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Polyunsaturated Fat 3g	
Monounsaturated Fat 9g	
Cholesterol 0mg	**0%**
Sodium 0mg	**0%**
Total Carbohydrate 6g	**2%**
Dietary Fiber 3g	**11%**
Total Sugars 1g	
Includes 0g Added Sugars	**0%**
Protein 6g	**12%**
Vitamin D 0mcg	0%
Calcium 75mg	6%
Iron 1mg	6%
Potassium 200mg	4%
Vitamin A 0mcg	0%
Vitamin C 0mg	0%

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Tomato Sauce

Tomato Sauce, canned

Nutrition Facts

Serving size	1/2 cup (122g)
Amount Per Serving	
Calories	**30**
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 640mg	**28%**
Total Carbohydrate 7g	**3%**
Dietary Fiber 2g	**7%**
Total Sugars 5g	
Includes 0g Added Sugars	**0%**
Protein 2g	**4%**
Vitamin D 0mcg	0%
Calcium 16mg	2%
Iron 1mg	6%
Potassium 405mg	8%
Vitamin A 317mcg	2%
Vitamin C 9mg	10%

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Strawberry Jam

Strawberry Jam

Nutrition Facts

Serving size	**1 tbsp (20g)**
Amount Per Serving	
Calories	**60**
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 5mg	**0%**
Total Carbohydrate 14g	**5%**
Dietary Fiber 0g	**0%**
Total Sugars 10g	
Includes 5g Added Sugars	**10%**
Protein 0g	**0%**
Vitamin D 0mcg	0%
Calcium 4mg	0%
Iron 0mg	0%
Potassium 15mg	0%
Vitamin A 0mcg	0%
Vitamin C 2mg	2%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Peanut Butter

Peanut Butter

Nutrition Facts

Serving size	**2 tbsp (32g)**
Amount Per Serving	
Calories	**190**
	% Daily Value*
Total Fat 16g	**21%**
Saturated Fat 3g	**15%**
Trans Fat 0g	
Polyunsaturated Fat 4g	
Monounsaturated Fat 8g	
Cholesterol 0mg	**0%**
Sodium 135mg	**6%**
Total Carbohydrate 7g	**3%**
Dietary Fiber 2g	**7%**
Total Sugars 3g	
Includes 3g Added Sugars	**6%**
Protein 7g	**14%**
Vitamin D 0mcg	0%
Calcium 15mg	2%
Iron 0.5mg	2%
Potassium 180mg	4%
Vitamin A 0mcg	0%
Vitamin C 0mg	0%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Milk

Milk, reduced-fat (2%), vitamin D fortified

Nutrition Facts

Serving size	**1 cup (244g)**
Amount Per Serving	
Calories	**120**
	% Daily Value*
Total Fat 5g	**6%**
Saturated Fat 3g	**15%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 1.5g	
Cholesterol 20mg	**7%**
Sodium 100mg	**4%**
Total Carbohydrate 12g	**4%**
Dietary Fiber 0g	**0%**
Total Sugars 12g	
Includes 0g Added Sugars	**0%**
Protein 8g	**16%**
Vitamin D 3mcg	15%
Calcium 285mg	20%
Iron 0mg	0%
Potassium 369mg	8%
Vitamin A 135mcg	15%
Vitamin C 0.5mg	0%

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Chocolate Chip Cookie

Chocolate Chip Cookie

Nutrition Facts

Serving size	1 cookie, large (40g)
Amount Per Serving	
Calories	**190**
	% Daily Value*
Total Fat 9g	**12%**
Saturated Fat 4g	**20%**
Trans Fat 0g	
Polyunsaturated Fat 1g	
Monounsaturated Fat 3g	
Cholesterol 0mg	**0%**
Sodium 120mg	**5%**
Total Carbohydrate 26g	**9%**
Dietary Fiber 1g	**4%**
Total Sugars 14g	
Includes 14g Added Sugars	**28%**
Protein 2g	**4%**
Vitamin D 0mcg	0%
Calcium 10mg	0%
Iron 1mg	6%
Potassium 60mg	2%
Vitamin A 0mcg	0%
Vitamin C 0mg	0%

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Black Beans

Black Beans

Nutrition Facts

Serving size	1/2 cup (86g)
Amount Per Serving	
Calories	**110**
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 130mg	**6%**
Total Carbohydrate 20g	**7%**
Dietary Fiber 8g	**29%**
Total Sugars 1g	
Includes 0g Added Sugars	**0%**
Protein 7g	**14%**
Vitamin D 0mcg	0%
Calcium 51mg	4%
Iron 2mg	10%
Potassium 488mg	10%
Vitamin A 0mcg	0%
Vitamin C 0mg	0%

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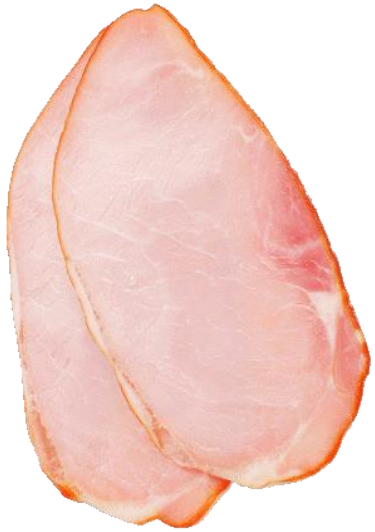
Ham



Ham, sliced

Nutrition Facts

Serving size	1 slice (28g)
Amount Per Serving	
Calories	**45**
	% Daily Value*
Total Fat 2.5g	**3%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 1g	
Cholesterol 15mg	**5%**
Sodium 360mg	**16%**
Total Carbohydrate 1g	**0%**
Dietary Fiber 0g	**0%**
Total Sugars 0g	
Includes 0g Added Sugars	**0%**
Protein 5g	**10%**
Vitamin D 0mcg	0%
Calcium 7mg	0%
Iron 0mg	0%
Potassium 80mg	2%
Vitamin A 0mcg	0%
Vitamin C 0mg	0%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Assigned Macronutrient (Carbohydrate *or* Fat *or* Protein):	
Assigned Vitamin (Vitamin A *or* Vitamin C *or* Vitamin D):	
Assigned Mineral (Calcium *or* Potassium *or* Iron):	

Create a meal that you think is a good source of each of your assigned nutrients.

Food	Serving Size

Macronutrient (Carbohydrate *or* Fat *or* Protein)	
Total amount of the macronutrient in the meal (g):	
What is the total Daily Value of this macronutrient in the meal? (%)	

Vitamin (Vitamin A *or* Vitamin C *or* Vitamin D)	
Total amount of the vitamin in the meal (mg/mcg):	
What is the total Daily Value of this vitamin in the meal? (%)	

Mineral (Calcium *or* Potassium *or* Iron)	
Total amount of the mineral in the meal (mg/mcg):	
What is the total Daily Value of this mineral in the meal? (%)	

Directions: Choose a food in your home or grocery store that has a Nutrition Facts Label included on the packaging. Complete the following table to discover the amount of each nutrient in the food and whether it is a good source of that nutrient. As a reminder, a food is considered a good source if it provides at least 10% of the Percent Daily Value for that nutrient.

Food:	
Serving size of food:	

Protein	Total amount of protein in a serving (g)	
	What is the total Percent Daily Value of protein in a serving? (%)	
	Is a serving of the food a good source of protein?	
Dietary Fiber	Total amount of dietary fiber in a serving (g)	
	What is the total Percent Daily Value of dietary fiber in a serving? (%)	
	Is a serving of the food a good source of dietary fiber?	
Vitamin D	Total amount of vitamin D in a serving (g)	
	What is the total Percent Daily Value of vitamin D in a serving? (%)	
	Is a serving of the food a good source of vitamin D?	
Calcium	Total amount of calcium in a serving (g)	
	What is the total Percent Daily Value of calcium in a serving? (%)	
	Is a serving of the food a good source of calcium?	
Iron	Total amount of iron in a serving (g)	
	What is the total Percent Daily Value of iron in a serving? (%)	
	Is a serving of the food a good source of iron?	
Potassium	Total amount of potassium in a serving (g)	
	What is the total Percent Daily Value of potassium in a serving? (%)	
	Is a serving of the food a good source of potassium?	

Nutrition Module 3:
Nutrition for All

BACKGROUND INFORMATION

Our **metabolism** helps regulate the process of breaking down food for energy. This allows us to perform simple everyday tasks, such as sitting, along with more arduous activities, such as exercising. Foods that we eat provide **nutrients** necessary to keep our metabolism functioning properly. However, not all foods have the same **nutrient composition**. Therefore, designing a **nutrient-dense** eating pattern requires not only consideration of the amount of food being consumed, but also the variety. The Food and Nutrition Board of the Institute of Medicine, National Academy of Sciences established the **Dietary Reference Intakes (DRIs)** to provide guidance on the recommended amount of **macronutrients** and **micronutrients** to consume each day. The DRIs suggested consumption amounts for each nutrient vary by sex, age, and physical activity level.

There are some nutrients in the United States that are being overconsumed, and others that are commonly under-consumed, known as **nutrients of concern**. For adolescents, nutrients that are commonly under-consumed include **calcium, potassium, iron, vitamin D,** and **dietary fiber**. In an effort to prevent deficiencies and certain diseases, food **fortification** has been implemented in the United States, which involves adding certain vitamins and minerals into select foods.

Calcium is a mineral that is stored in the bones and can be found in foods like certain leafy green vegetables, dairy products, and fortified foods, commonly cereals and juices. Calcium is important because it helps build and maintain strong bones and also helps muscles function. Vitamin D helps the body absorb calcium and thus is also important for bone health. Although vitamin D can be synthesized by the body upon skin exposure to the sun's ultraviolet rays, individuals are still encouraged to consume foods that naturally contain or are **fortified** with vitamin D. Vitamin D can be found in egg yolks and fortified into dairy products, cereals, and juices. Dietary fiber plays a major role in body function as well, aiding in digestion and blood sugar regulation. Foods that are good sources of dietary fiber include whole grains, fruits, vegetables, and beans. These foods can also be good sources of potassium, which is important for a variety of functions in the body, including blood pressure regulation, nerve signaling, and muscle movement.

Iron is also an important nutrient because it helps red blood cells transport oxygen throughout the body. Some foods high in iron include red meats, beans, and certain leafy green vegetables. If the recommended amount of iron is not consumed, an individual could become deficient and even develop a disease called anemia. With iron deficiency anemia, red blood cells are not able to transport oxygen efficiently, which causes fatigue, weakness, and potentially fainting. Individuals at risk for iron deficiency anemia are usually encouraged to consume an iron **supplement**. Supplements are available in capsules or powders and typically

contain high amounts of one or more nutrients. Nutrients in supplements are usually not the same as nutrients found in food and can be dangerous if consumed in excess. Therefore, it is always recommended that supplements not be consumed unless recommended by a medical professional.

CONCEPTS AND VOCABULARY

Calcium: A mineral essential for proper bone growth and maintenance

Dietary fiber: A type of carbohydrate found in plants that when consumed aids in digestion

Dietary Reference Intakes (DRIs): Reference values that are used to plan and assess nutrient intakes of healthy people

Fortification: The process of adding certain vitamins and minerals into foods in an effort to help people meet recommendations

Iron: A mineral that helps red blood cells transport oxygen throughout the body

Macronutrient: A classification for nutrients needed in relatively large amounts for the body to function properly, including fats, carbohydrates, and protein

Metabolism: The biological process of converting food into energy for the body

Micronutrient: A classification for nutrients needed in relatively small amounts for the body to function properly, including vitamins and minerals

Nutrient: A compound that when consumed provides nourishment essential for growth and maintenance of the body

Nutrient composition: The distribution of nutrients that make up a food

Nutrient-dense: Foods that contain relatively high proportions of vitamins or minerals compared to the number of calories

Nutrient of concern: Nutrients found to be underconsumed or overconsumed by a particular population

Potassium: A mineral and electrolyte that is important for nerve and organ function

Supplement: Capsule or powder that contains high amounts of one or more nutrients

Vitamin D: A vitamin that promotes the absorption of calcium and aids in bone health

MATERIALS NEEDED

- Flip chart paper
- Writing utensils
- *Food Cards* (Appendix N2.2 from prior activity), one set per group
- *Character Cards* (Appendix N3.1)
- *Meal Plan* (Appendix N3.2), one per group
- *Recommendations* (Appendix N3.3), one per group

Materials provided in curriculum

TIME REQUIRED

45 to 60 minutes

SUGGESTED GROUPINGS

Small groups of 3 to 4

GETTING READY

- ☐ Gather the previous lesson's *Food Cards* (Appendix N2.2), one set for each group.
- ☐ Make copies of the *Character Cards* (Appendix N3.1), one card for each group. Cut the cards out along the dashed line and then fold them along the solid line.
- ☐ Make copies of *Recommendations* (Appendix N3.3), one for each group.

  Facilitator tip: It is recommended that the above appendices be laminated to allow them to be more easily handled by youth and reused.
- ☐ Make copies of *Meal Plan* (Appendix N3.2), one for each group
- ☐ Organize youth into small groups of 3 – 4 youth.

  Facilitator tip: These can be the same groups that were formed in previous lessons. By doing so, the youth may continue developing teamwork skills with the same group members.
- ☐ Provide each group with one sheet of flip chart paper and markers to answer the opening questions.

OPENING QUESTIONS

Ask the youth to respond to each question/prompt below by recording their responses on the flip chart paper provided and sharing their ideas verbally.

• Explain what you think it means for a food to be considered nutritious.
• Explain what you know about why people should eat a variety of different foods.

PROCEDURE (EXPERIENCING)

1. Provide each group with a set of *Food Cards, a Character Card*, and a *Meal Plan*.
2. Ask youth to read the description on their assigned *Character Card*.
3. Explain to the youth that each group will choose ingredients from their set of *Food Cards* to create a day's worth of meals for their character based on their description. Youth should record their meal on the *Meal Plan*.
4. Once plans have been finalized, provide each group with the *Recommendations* and ask youth to use the *Recommendations* to identify the nutrient recommendations for their character.
5. Ask the youth to turn their *Character Card* over to the other side. Explain to the youth that this side of the card indicates a nutrient of concern for teenagers.
6. Ask youth to use the Nutrition Facts Labels on the back of the *Food Cards* to determine whether their planned meal meets their character's recommendation for their assigned nutrient of concern. Encourage youth to use their flip chart paper for calculating the total amount of the nutrient of concern in their meal.
7. If the meal each group created does not meet their character's recommendation, encourage youth to modify their meal plan to meet the recommendation.

SHARING, PROCESSING, AND GENERALIZING

Have the youth share their *Character Cards and Meal Plan*. Ask them to describe the foods they chose and whether their character's nutrient of concern recommendation was met by their plan.

Follow the lines of thinking developed through the youth's thoughts, observations, and

questions as they share their meal plans. If necessary, ask more targeted questions.

- Explain how you went about choosing foods for your character's meal.
- Describe what types of foods you noticed contributed most to your character's nutrient of concern recommendation.
- Describe why you think these nutrients are considered nutrients of concern.
- Describe any difficulties you had in meeting your character's recommendation for the nutrient of concern.
- Explain what recommendations you would give your character to help them meet their nutrient of concern recommendation.

CONCEPT AND TERM DISCOVERY/INTRODUCTION

Make sure that the youth understand the importance of considering balance when designing a meal plan. Youth should understand that consuming a variety of foods is needed to meet nutrition recommendations. In addition to food groups, recommendations exist for **macronutrients** and **micronutrients**. Youth should also understand that it is important to be aware of **nutrients of concern** for their age group when planning meals. Nutrition Facts Labels can be used to determine whether youth are meeting the **Dietary Reference Intakes (DRIs)** for certain **nutrients**. Additionally, make sure that key vocabulary terms are either discovered by the youth or introduced to them: **calcium, dietary fiber, fortification, iron, metabolism, nutrient composition, nutrient-dense, potassium, supplement,** and **vitamin D.**

AGRICULTURE APPLICATION

MATERIALS NEEDED

- ☐ Two large plastic storage containers with lids (generally inexpensive at hardware stores)
- ☐ A drill, pointed screwdriver, or knife
- ☐ Paper, such as newspaper, or dry leaves
- ☐ Food scraps
- ☐ Gloves, one pair per youth (optional)
- ☐ Art supplies, such as poster paper, markers, crayons, pens, colored pencils, construction paper, scissors, and glue
- ☐ Agriculture maintenance equipment

TIME REQUIRED

15 to 20 minutes

SUGGESTED GROUPINGS

Small groups of 3 to 4

GETTING READY

- ☐ Drill or cut several holes in the bottoms and lids of the storage containers.
- ☐ Supply enough materials to allow each youth to maintain their designated area in the agricultural space.

☐ Organize youth into small groups of 3 – 4 youth.

Facilitator tip: These can be the same groups that were formed in previous lessons. By doing so, the youth may continue developing teamwork skills with the same group members.

PROCEDURE (EXPERIENCING)

1. Explain to the youth that soil health is an important component to successfully growing plants and that composting is a simple way to add nutrients to the soil.
2. Explain to the youth that they will be creating a compost pile in their agricultural space.
3. Ask the youth to designate a composting area in the agricultural space. This area should not be in full sun and should be near the agricultural space, but placed far enough away where insects and organic smells will not be disruptive.
4. Place the prepared storage containers in the spot chosen by the youth.
5. Ask youth to line the bottom of the container with paper or dry leaves, about ¼ full. Then ask youth to fill the container about ½ full with dirt from the agricultural space.
6. Ask youth to add any food scraps and other compostable materials. Many items can be composted, except ashes, animal products, dairy products, and diseased plants.
7. Ask youth to gently mix the food scraps and dirt using a shovel or trowel and then add enough water to just moisten the top. Then ask youth to firmly place the prepared lid on the container.
8. Ask youth to continue collecting food scraps over the next several weeks and adding them to the compost container. Additionally, youth should rotate the contents of the compost by stirring it around every three to four days to ensure quality soil is produced. If the compost looks dry, youth can add enough water to just moisten the top.
9. Provide youth with the art supplies and ask youth to create signs within their groups to post in school lunchrooms to encourage students to compost their food scraps instead of throwing them away.
10. With any time remaining, lead youth in maintaining their designated growing section. This may include discarding weeds, supplying additional nutrients, and watering plants.

SHARING, PROCESSING, AND GENERALIZING

Have the youth discuss the importance of composting and discuss how it will benefit the plants. Follow the lines of thinking developed through the youth's thoughts, observations, and questions as they share what they discovered about composting.

HOME CONCEPT APPLICATION

MATERIALS NEEDED

☐ *Nutrition at Home* (Appendix N3.4), one per youth

TIME REQUIRED

5 to 10 minutes

Materials provided in curriculum

GETTING READY

☐ Make double-sided copies of *Nutrition at Home* (Appendix N3.4), one for each youth.

PROCEDURE (EXPERIENCING)

1. Provide each youth with a copy of *Nutrition at Home*.
2. Ask youth to use *Nutrition at Home* to track a day of their eating, including the foods eaten and the specified nutrients found in those foods. Encourage youth to complete this worksheet with their families.
3. Explain to youth that they can then use the back of the *Nutrition at Home* to determine whether they met their nutrient of concern recommendations.

SHARING, PROCESSING, AND GENERALIZING

If they are comfortable sharing, have the youth share their *Nutrition at Home* and discuss whether they met their nutrition of concern recommendations for the day they tracked. Follow the lines of thinking developed through the youth's thoughts, observations, and questions as they share their experience tracking their eating for one day.

Andre is a 16 year-old male who cannot eat wheat products because he has celiac disease and they give him a really bad stomachache.	Jasmine is a 17 year-old female who gets full really fast and prefers to only eat small meals.
Dietary Fiber	Potassium
Bianca is a 15 year-old female who is a vegan and does not eat or drink any animal products.	Peter is a 14 year-old male who is lactose intolerant and can't have milk or cheese.
Iron	Calcium
Mia is a 16 year-old female who lives in a city where it mostly rains. She also prefers to spend her time indoors.	
Vitamin D	

Directions: Use the following table to organize a one-day meal plan for your character.

Meal	Foods in Meal

Directions: Find the nutrient recommendation for your character and determine whether your group's one-day meal plan meets their recommendation.

For the table below: M = males, F = females.

Recommendations for Nutrients of Concern					
Age Range	**Calcium (mg/day)**	**Potassium (mg/day)**	**Iron (mg/day)**	**Vitamin D (mcg/day)**	**Dietary Fiber (g/day)**
1 – 3 years old	700	2,000	7	15	19
4 – 8 years old	1000	2,300	10	15	25
9 – 13 years old	1300	2,300 (F) 2,500 (M)	8	15	26 (F) 31 (M)
14 – 18 years old	1300	2,300 (F) 3,000 (M)	11 (M) 15 (F)	15	26 (F) 38 (M)
19 – 50 years old	1000	2,600 (F) 3,400 (M)	8 (M) 18 (F)	15	25 (F) 38 (M)

Note: Calcium, potassium, iron, vitamin D, and dietary fiber are nutrients of concern for adolescents and adults. These nutrients are generally under-consumed.

Directions: Use this worksheet to track your meals for one day. Then use the following page to identify your recommendations for nutrients of concern and determine whether you met your recommendations.

Meal	Foods in Meal	Amount Included*
		Calcium:
		Potassium:
		Iron:
		Vitamin D:
		Dietary Fiber:
		Calcium:
		Potassium:
		Iron:
		Vitamin D:
		Dietary Fiber:
		Calcium:
		Potassium:
		Iron:
		Vitamin D:
		Dietary Fiber:
		Calcium:
		Potassium:
		Iron:
		Vitamin D:
		Dietary Fiber:

*If you need to look-up nutrients in a given food, go to https://nutritiondata.self.com/ and search for the food item.

For the table below: M = males, F = females.

Recommendations for Nutrients of Concern					
Age Range	**Calcium (mg/day)**	**Potassium (mg/day)**	**Iron (mg/day)**	**Vitamin D (mcg/day)**	**Dietary Fiber (g/day)**
1 - 3 years old	700	2,000	7	15	19
4 - 8 years old	1000	2,300	10	15	25
9-13 years old	1300	2,300 (F) 2,500 (M)	8	15	26 (F) 31 (M)
14-18 years old	1300	2,300 (F) 3,000 (M)	11 (M) 15 (F)	15	26 (F) 38 (M)
19-50 years old	1000	2,600 (F) 3,400 (M)	8 (M) 18 (F)	15	25 (F) 38 (M)

Note: Calcium, potassium, iron, vitamin D, and dietary fiber are nutrients of concern for adolescents and adults. These nutrients are generally under-consumed.

Nutrition Module 4: **Fact or Fiction**

BACKGROUND INFORMATION

Children and adolescents can have a large influence on their guardians' food purchases. With this, food companies have identified young people as key **consumers** driving the food market. In turn, food advertising is heavily geared toward youth. Food advertising has become an industry that targets specific demographics simply by how it is commercialized. Unfortunately, the food that is most heavily marketed to young people is high in saturated fat, added sugars, and sodium. These are all nutrients that are generally recommended to be consumed in limited amounts. The overconsumption of foods high in sugar, sodium, and saturated fat are large contributors to obesity in the United States and have been correlated to chronic disease risk.

Food **advertisements** can be found on television programs, social media, and games geared toward youth. These advertisements commonly employ **marketing strategies** to engage their target audience. One such marketing strategy is through **branding**. When branding, the food company designs the product to **appeal** to the child, or in other words, to "catch the eye" of that target demographic. Advertising that includes bright colors, cartoon animals, or **promotions** on the packaging are common ways to gain **publicity**. When a product is publicized as a brand rather than the nutrient content of the food, popularity increases, and the publicity encourages other children to want that food. In addition, publicity is also created through commercials, billboards, and even social media to create a high demand for that product.

Methods food branding teams use to promote their products are not necessarily meant to help someone choose what foods are the most nutrient-dense. Instead, **reliable resources** are sources for information that do not contain a purely profit-based motivation, rather the marketing strategy of the producer is driven by increasing the knowledge of the consumer. When choosing foods, a reliable resource would be the Nutrition Facts Label, where the facts about the nutritional content of the food are included. These labels are produced by the product company and regulated by the Food and Drug Administration (FDA). When looking for general nutrition information, it is best to consult materials produced by academics from nutrition departments at universities, professional nutrition organizations, such as the Academy of Nutrition and Dietetics or the American Society for Nutrition, or governmental agencies, such as the USDA or FDA.

CONCEPTS AND VOCABULARY

Advertisement: Paid announcement in in which a product is presented to the public, usually with the intent of influencing the public to purchase the product

Appeal: Something that draws the attention of a specific demographic

Branding: Creating a certain and recognizable meaning associated with a product

Consumer: An individual or manufacturer that buys products from an entity that creates goods

Marketing strategies: Plan of action to make a product appeal to the consumer to facilitate a purchase

Promotion: A method of incentivizing a purchase to persuade a consumer

Publicity: A product gaining popularity through repeated advertising to consumers

Reliable resources: Sources that do not contain a purely profit-based motivation and provide information to consumers for educational purposes

MATERIALS NEEDED

- ☐ Flip chart paper
- ☐ Writing utensils
- ☐ *Gym Ad* (Appendix N4.1), one per group
- ☐ *Marketing Strategies* (Appendix N4.2), one per group
- ☐ *Fact Sheets* (Appendix N4.3)
- ☐ Blank standard sized paper or cardstock
- ☐ Art supplies, such as markers, crayons, pens, colored pencils, construction paper, scissors, and glue

Materials provided in curriculum

TIME REQUIRED

30 to 45 minutes

SUGGESTED GROUPINGS

Small groups of 3 to 4

GETTING READY

- ☐ Make copies of the *Gym Ad* (Appendix N4.1), one for each group.
- ☐ Make copies of the *Marketing Strategies* (Appendix N4.2), one for each group.
- ☐ Make copies of the *Fact Sheets* (Appendix N4.3), one fact sheet for each group.
  Facilitator tip: It is recommended that the above appendices be laminated to allow them to be more easily handled by youth and reused.
- ☐ Place the blank paper and art supplies in a central location.
- ☐ Organize youth into small groups of 3 – 4 youth.
  Facilitator tip: These can be the same groups that were formed in previous lessons. By doing so, the youth may continue developing teamwork skills with the same group members.
- ☐ Provide each group with one sheet of flip chart paper and writing utensils to answer opening questions.

OPENING QUESTIONS

Ask the youth to respond to each question/prompt below by recording their responses on the flip chart paper provided and sharing their ideas verbally.

• Describe what methods you think companies use to get people to buy their products.
• Explain how you or people you know find information on nutrition.

PROCEDURE (EXPERIENCING)

1. Provide each group with the *Gym Ad*.
2. Ask youth to look over the *Gym Ad* and describe any marketing strategies they think are being used.
3. Provide each group with the *Marketing Strategies*.
4. Ask the youth to read the *Marketing Strategies* within their groups and discuss whether the *Gym Ad* and any other advertisements they have seen recently use the strategies.
5. Provide each group with one of the *Fact Sheets*.
6. Explain to the youth that they will be creating an advertisement to promote the information in the *Fact Sheets* in an engaging way.
7. Ask youth to use the information provided in the *Fact Sheets* and the techniques in the *Marketing Strategies* to create advertisements on their given topic. Youth may create a paper-based advertisement using the blank paper and art supplies or any other kind of advertisement of their choosing, such as a television commercial or social media post.

SHARING, PROCESSING, AND GENERALIZING

Have the youth share their advertisements and discuss how they determined the style of, and information provided in their advertisement.

Follow the lines of thinking developed through the youth's thoughts, observations, and questions as they share their advertisement. If necessary, ask more targeted questions.

- Describe what marketing strategies you decided to use in your advertisement.
- Discuss what marketing strategies you think are most effective for nutrition information.
- Explain how you went about deciding what information to include in your advertisement.
- Describe the audience that your advertisement would most appeal to.
- Discuss what could go wrong if someone has incorrect nutrition information.

CONCEPT AND TERM DISCOVERY/INTRODUCTION

Youth should understand that information provided in **advertisements** may mislead **consumers** in order to increase sales of a product. This is typically done through the use of carefully selected **marketing strategies**. Youth should recognize the importance of seeking information from **reliable resources** in order to receive the most accurate information on a given topic. Additionally, make sure that key vocabulary terms are either discovered by the youth or introduced to them: **appeal, branding, promotion**, and **publicity**.

AGRICULTURE APPLICATION

MATERIALS NEEDED

- ☐ *Marketing Strategies* (Appendix N4.2), one per group
- ☐ *Homemade Pesticide Recipes* (Appendix N4.4), one per group
- ☐ Bowls or cups for mixing liquids, one per youth
- ☐ Small spray bottles, one per youth
- ☐ Measuring cups, one set per group
- ☐ Measuring spoons, one set per group
- ☐ Cutting boards, one per group
- ☐ Cutting utensils, one per group
- ☐ Natural pesticide ingredients, see *Homemade Pesticide Recipes* (Appendix N4.4)
- ☐ Blank standard sized paper or cardstock
- ☐ Art supplies, such as markers, crayons, pens, colored pencils, construction paper, scissors, and glue
- ☐ Agriculture maintenance equipment

TIME REQUIRED
20 to 30 minutes

Materials provided in curriculum

GETTING READY

- ☐ Place natural pesticide ingredients in a central location.
- ☐ Place paper and art supplies in a central location.
- ☐ Supply enough materials to allow each youth to maintain their designated area in the agricultural space.
- ☐ Organize youth into small groups of 3 – 4 youth.

  Facilitator tip: These can be the same groups that were formed in previous lessons. By doing so, the youth may continue developing teamwork skills with the same group members.

PROCEDURE (EXPERIENCING)

1. Provide each group with *Homemade Pesticide Recipes, Marketing Strategies*, measuring cups, measuring spoons, cutting boards, and cutting utensils. Additionally, provide each youth with a small spray bottle and a bowl or cup.
2. Explain to youth that they will be making a homemade pesticide and creating an advertisement for the homemade pesticide recipe of their choice.
3. Ask youth to create a homemade pesticide following the recipes provided in *Homemade Pesticide Recipes*. They can utilize the supplies provided to them and gather whatever ingredients that may need from the central location to complete the task.

4. Once youth have developed a homemade pesticide, ask youth to use the *Marketing Strategies* to create an advertisement for their pesticide. Youth may use the paper and art supplies to create a paper-based advertisement or may use the materials to brainstorm for an online advertisement for social media.
5. Ask each youth to carefully spray their pesticide on designated area in the agricultural space. Ask youth to monitor the space to see if their homemade pesticides help keep harmful critters away.
6. With any time remaining, lead youth in maintaining their designated growing section. This may include discarding weeds, supplying additional nutrients, and watering plants.

SHARING, PROCESSING, AND GENERALIZING

Have the youth share their homemade pesticide and discuss the marketing strategies used in their advertisement. Follow the lines of thinking developed through the youth's thoughts, observations, and questions as they share what they discovered advertising.

HOME CONCEPT APPLICATION

MATERIALS NEEDED

- ☐ *Ad Home Worksheet* (Appendix N4.5), one per youth

TIME REQUIRED

5 to 10 minutes

Materials provided in curriculum

GETTING READY

☐ Make copies of *Ad Home Worksheet* (Appendix N4.5), one for each youth.

PROCEDURE (EXPERIENCING)

1. Provide each youth with an *Ad Home Worksheet*.
2. Explain to the youth that they will use the *Ad Home Worksheet* to analyze a nutrition-related advertisement.
3. Ask the youth to complete the *Ad Home Worksheet* using messaging on the front of a food or supplements package, something in a magazine, a commercial on TV, or an online advertisement.

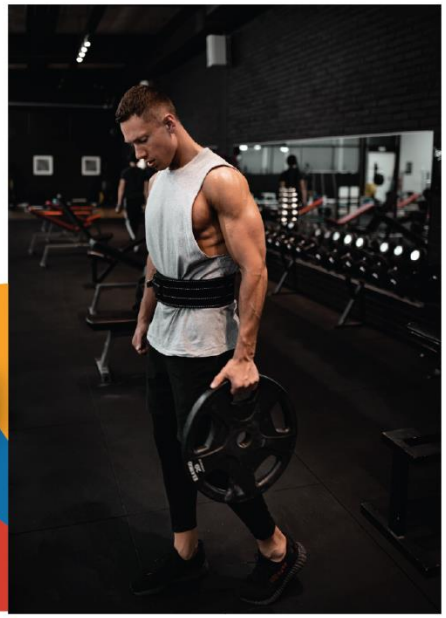
SHARING, PROCESSING, AND GENERALIZING

Have the youth share their *Ad Home Worksheet* and describe the advertisement they chose to analyze. Follow the lines of thinking developed through the youth's thoughts, observations, and questions as they share what they learned about the advertised topic.

the GYM

Claim one **FREE** personal training session

Come get **RIPPED** in the gym all the **Hollywood stars** are raving about!



40% OFF first 6 months

Offer ends 02.01.2009 and is valid for the first 6 months of the contract. Contracts are required. Results may vary through individuals: frequency, intensity, age, gender, weight, overall exercise routine, supplements, diet, cardio, genetics, etc...

Marketing Strategies	
Publicity and Branding	The advertisement is easily seen: • Online through social media or website banners • Television commercials • Billboards People recognize the brand in the advertisement: • Logo or product symbol • Spokescharacter or spokesperson
Appeal	People like the look and feel of the advertisement: • Bright colors • Makes them feel a certain way • Includes music • People who look like the intended audience are in the advertisement The advertisement is popular: • References other things that are popular, like movies or video games • Includes popular celebrities, professional athletes, or cartoon characters
Promotions	The advertisement offers something to the audience: • Additional product or service received for free with purchase • Sweepstakes, prizes, or giveaways • Point or reward program • Free downloads • Games or puzzles on packaging

Gluten Fact Sheet

Gluten is a group of proteins found in wheat, rye, and barley, as well as foods made from these grains, including pasta and most baked goods. It may also be found in oats.

Celiac disease is a disease in which the immune system reacts to gluten, causing damage to the small intestine.
Common symptoms:

- Diarrhea
- Abdominal pain
- Fatigue

Nutrients found in whole wheat bread include:

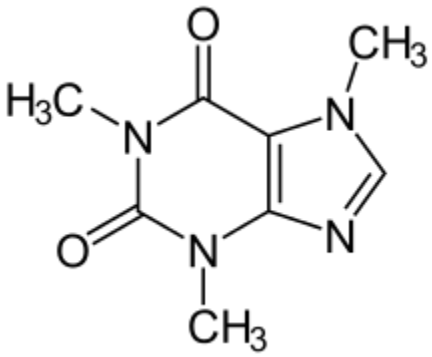
- Fiber: helps your digestive system function normally
- B vitamins: have multiple functions in the body, including forming red blood cells and helping the body use other nutrients
- Iron: helps red blood cells transport oxygen throughout the body
- Complex carbohydrate: provides the body with energy

Other food options for these nutrients:

- Complex carbohydrates and fiber – fruits, vegetables, beans, grains
- B vitamins – fruits, vegetables, beans, grains, meats
- Iron – leafy green vegetables, meats, beans

Energy Drinks Fact Sheet

Energy drinks are beverages made of carbonated water, sugar, and various added ingredients (typically caffeine and vitamins and minerals in excessive amounts). Energy drinks provide a feeling of energy because they usually contain relatively high amounts of caffeine and sugar.



Caffeine can enhance alertness and mood. Caffeine consumption is also associated with nervousness, irritability, increased urination, abnormal heart rhythms, and stomachaches. All effects of caffeine vary between individuals and also vary depending on the amount consumed.

If consuming caffeine, the *Dietary Guidelines for Americans* recommends that adults do not consume more than 400mg per day. For reference, there is about 80mg in a small cup of black coffee. It is generally advised that children, adolescents, and pregnant or nursing women limit caffeine consumption.

Substitutes for energy drinks:

- Water
- Flavored water
- 100% fruit juice
- Carbonated water
- Unsweetened tea

Protein Fact Sheet

Protein is an important nutrient that provides energy and also provides structure for cells in the body. Protein has important roles in the function of our muscles, in the repair and production of new cells, and in the general growth and development of our bodies.

Excess protein is not used efficiently by the body and is stored as fat. Over time, excess protein can cause damage to bones, kidneys, and the liver.

Protein requirements vary between individuals. Some people, such as athletes, injured people, and older adults, may have higher protein needs compared to other people.

High quality proteins include:

- Meat
- Fish
- Eggs
- Dairy
- Soy

After exercising, it is important to eat high quality protein within two hours to enhance muscle repair and growth. However, it is also important to consume carbohydrates to replenish stores that were used during exercise.

Water Fact Sheet

The human body is made up of 60% water, which is found in blood, cells, and bodily fluids, such as saliva and sweat. The consumption of water is essential to maintain healthy bodily functions. Water can be consumed in various forms. Fruits and vegetables, basic drinking water, and other beverages contain water and can help hydrate the body.

Drinking adequate amounts of water can help:

- Prevent dehydration
- Improve skin health and reduce acne
- Boost immune system
- Increase energy and brain power

Dehydration is a health condition that results from not drinking enough water or from losing large amounts of bodily fluids, such as excessive sweating, vomiting, or diarrhea. The symptoms of dehydration include:

- Dizziness
- Headache
- Extreme thirst
- Dry mouth and tongue

A simple equation can be used to estimate the average amount of water you should be consuming daily:
Body weight (in pounds) ÷ 2 = # of ounces of water you should drink

It is recommended that anyone above the age of 13 drink at least 8 to 10 glasses or two liters of water every day. However, if a person is physically active or in very warm temperatures, they likely need more water to prevent dehydration.

Homemade Pesticide Recipes

Salt Spray:

- ¼ teaspoon sea salt
- ¼ cup warm water

Citrus and Cayenne Pepper Spray:

- ¼ teaspoon citrus juice (orange or lemon) or 5 drops of citrus essential oil
- A pinch of cayenne pepper
- ¼ cup warm water

Onion and Garlic Spray:

- ¼ clove of garlic, minced
- One dice-sized piece of an onion
- 3-4 drops of liquid soap
- ¼ cup warm water

Tomato Leaf Spray:

- 2 tablespoons chopped tomato leaves
- ¼ cup warm water

Baby Shampoo Spray:

- ¼ teaspoon baby shampoo
- ¼ cup warm water

Olive Oil Spray:

- 1 teaspoon olive oil
- ⅛ teaspoon liquid soap
- ¼ cup warm water

Jalapeño Spray:

- ¼ chopped jalapeno
- ¼ cup of warm water

Directions: Choose a nutrition-related advertisement to analyze using the following questions. The advertisement can be messaging on the front of a food or supplements package, something in a magazine, a commercial on TV, or an online advertisement.

Describe why the advertisement caught your attention.

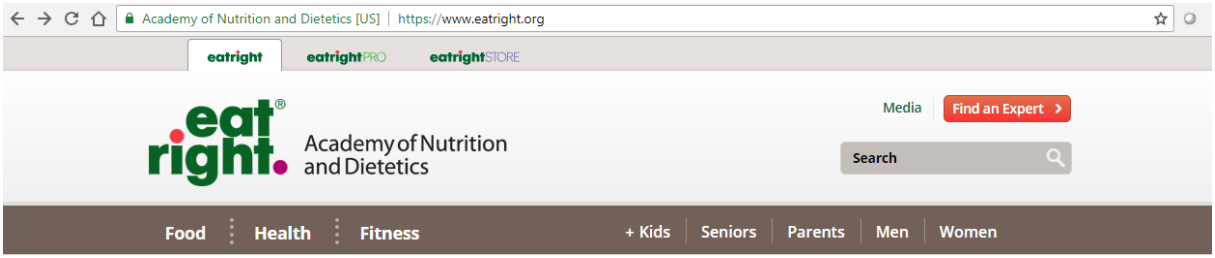
What is the advertisement claiming?

Does the advertisement state information different from other information you have seen on this topic? If so, how do the messages differ?

How would you go about verifying the information on this topic?

Use the Academy of Nutrition and Dietetics website (https://www.eatright.org/) to learn more about the topic of the advertisement you found. This website includes several science-based articles on nutrition that are easy to search.

1. Go to https://www.eatright.org/.



2. Type the nutrient of interest into the search bar in the top right corner and hit enter or click the magnifying glass.

3. Several articles will likely appear. You may find it helpful to use the column on the left to narrow the results. Read through the article titles and click on the one that best aligns with your advertisement.