

Nutrition Lab Graphing

Pillar: Healthy Eating

Division II

Grade Levels: 4-6

Core Curriculum Connections: Mathematics

I. Rationale: Students learn about the nutritional content in the foods they eat and how to make healthy food choices by analyzing the information contained in food labels. First, students learn how to read, interpret, and compare food labels and are exposed to tips on selecting healthy food options in each of the four food groups. Then, students engage in the process of collecting data through a nutrition lab. Finally, students represent their learning by constructing graphs, making interpretations, and drawing conclusions about healthy food choices. Grades 4, 5, and 6 students will create pictographs and bar graphs; double bar graphs, or line graphs respectively.

II. Curriculum Outcomes: Grades 4-6 Mathematics

Mathematics

STATISTICS AND PROBABILITY (Data Analysis)

General Outcome

Collect, display and analyze data to solve problems

Specific Outcomes:

Grade 4

2. Construct and interpret pictographs and bar graphs involving many-to-one correspondence to draw conclusions.
[C, PS, R, V]

Grade 5:

2. Construct and interpret double bar graphs to draw conclusions.
[C, PS, R, T, V] [ICT: C6-2.2, P5-2.3]

Grade 6:

1. Create, label and interpret line graphs to draw conclusions.
[C, CN, PS, R, V]
3. Graph collected data, and analyze the graph to solve problems.
[C, CN, PS, R, T] [ICT: C6-2.5, C7-2.1, P2-2.1, P2-2.2]

III. Materials:

- See list of materials on each individual station instruction sheet below.
- The students could bring in the nutritional labels, the teacher could use the labels provided, or labels with a wide variation in ingredients could be brought in and used for more interesting results as indicated in the helpful information section of the station instruction sheets.
- Graph paper for representing data for each student

IV. Procedure:

1. Set up the three stations: snack bar, juice, and sandwich filling according to the instructions provided that follow.
2. Provide students with guidance on how to read and interpret food labels. Be sure to discuss the basic categories that appear on a food label such as fat, protein, carbohydrates, fibre, calories, sugar etc. Talk about nutritional guidelines with students and how to determine whether a snack is considered 'healthy' or not. For more information and tips on how to compare food labels and identify healthy options in each of the four food groups, visit the following link: [Food Labels - Canada's Food Guide](#) .
3. Separate students into small groups, distribute the data collection handouts, and explain the procedure for visiting each station and recording nutritional information from the food labels.
4. Have students rotate through the three stations and record the necessary data in the chart provided.
5. Gather students back together and discuss the information they obtained. Discuss the implications of this data and the instructions for graphing this data according to the grade level expectations. Grade 4 students will need to construct a pictograph and a bar graph so that they can compare the data and draw conclusions about the results. Grade 5 students will construct a double bar graph and Grade 6 students will create line graphs and interpret their results to draw conclusions. Fat, sugar, calories, fibre, protein, and sodium content could be compared in various ways depending on the outcome to be achieved.
6. Have each student complete their graphs, analyze their results, and then respond to writing prompt on their data collection sheets which asks them to provide their recommendation for the most healthful food option from each station supported by what they learned about healthy food in this lesson.

V. Assessment Ideas:

- Collect the completed graphs and check for accuracy of the data represented, the scale used, and format of the graph.

Nutrition



Materials: Station 1

Consumable

none

Nonconsumable

wrapper from cereal snack bar with per serving nutritional information

wrapper from cereal breakfast bar with per serving nutritional information

wrapper or box from candy with per serving nutritional information

Materials: Station 2

Consumable

none

Nonconsumable

container or label from fruit juice, including per serving nutritional information

container or label from fruit juice drink, including per serving nutritional information

container or label from vegetable juice, including per serving nutritional information

Materials: Station 3

Consumable

none

Nonconsumable

per serving nutritional information for peanut butter

per serving nutritional information for bologna

per serving nutritional information for turkey bologna

Additional materials to set up the Stations

None

How to Set Up

Station 1

Materials

- wrapper from cereal snack bar with per serving nutritional information
- wrapper from cereal breakfast bar with per serving nutritional information
- wrapper or box from candy with per serving nutritional information

Preparation

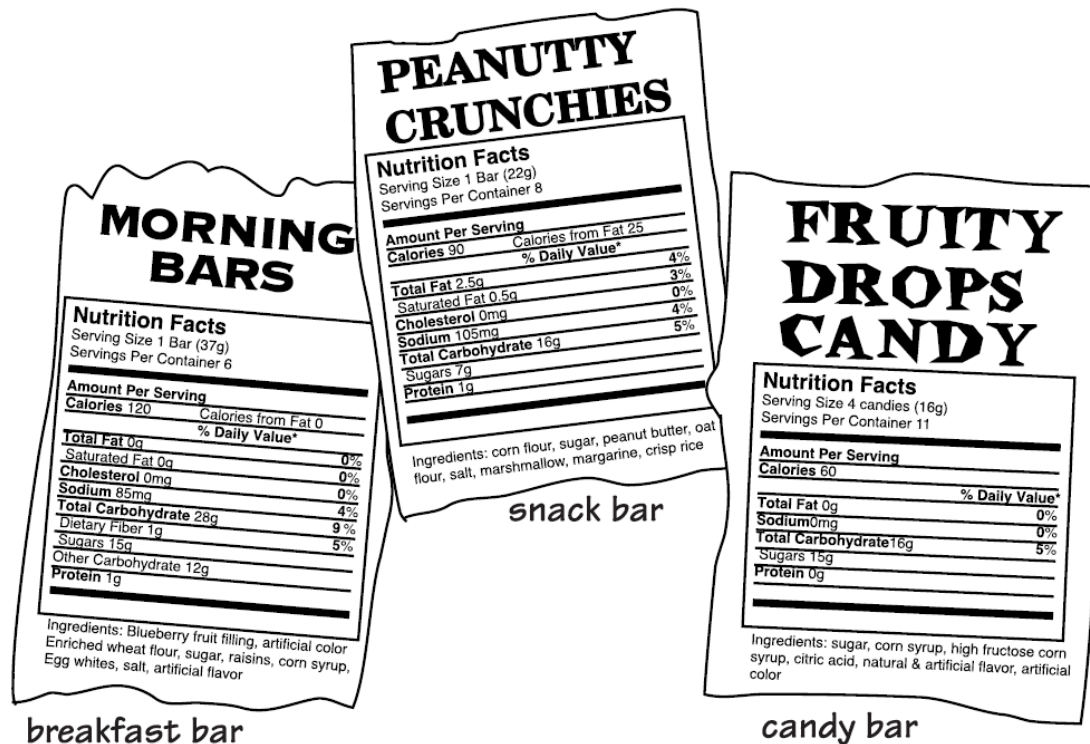
1. Make some nutritional comparisons of your own to use as a reference when judging students' observations.

Helpful Information

- For more interesting results, choose products with a wide variation of ingredients, for example, a chocolate chip granola bar, a fruit filled breakfast bar, and a nonchocolate candy.

Setup

Station 1



Be sure that the materials are set up like this before you leave this station.

How to Set Up

Station 2

Materials

container or label from fruit juice, including per serving nutritional information

container or label from fruit juice drink, including per serving nutritional information

container or label from vegetable juice, including per serving nutritional information

Preparation

1. Make some nutritional comparisons of your own to use as a reference when judging students' observations.
2. Explain to students that ingredients on the label are listed in order of amount, greatest amount first.

Helpful Information

- For more interesting results, choose products so that there is a wide variation in ingredients, for example, a 100 percent fruit juice, a juice drink containing high fructose corn syrup and less than 50 percent juice, and a vegetable juice containing 100 percent vegetable juice.

Setup

Station 2

MIGHTY FRESH
Juice Drink

Nutrition Facts	
Serving Size 1 can (183 ml)	
Amount Per Serving	
Calories 35	Calories from Fat 0
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Cholesterol 0mg	0%
Sodium 95mg	3%
Total Carbohydrate 9g	4%
Dietary Fiber 1g	
Sugars 5g	
Other Carbohydrate 5g	
Protein 0g	

Ingredients: Apple juice, grape juice and cherry juice (water, juice concentrates), natural flavors, ascorbic acid (vitamin C).

Power Ade

Nutrition Facts	
Serving Size 1 Can (22g)	
Servings Per Container 8	
Amount Per Serving	
Calories 35	Calories from Fat 0
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0.5g	3%
Cholesterol 0mg	0%
Sodium 95mg	4%
Total Carbohydrate 16g	5%
Dietary Fiber 1g	
Sugars 5g	
Protein 0g	

Ingredients: Tomato juice from concentrate (water and tomato concentrate), reconstituted vegetable juice blend (water and concentrated juices of carrots, celery, beets, parsley, lettuce, watercress and spinach), salt, vitamin C (ascorbic acid), flavoring, citric acid.

MORNING DEW
Fruit juice

Nutrition Facts	
Serving Size 8 fl oz (240g)	
Servings Per Container 8	
Amount Per Serving	
Calories 110	Calories from Fat 0
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Potassium 450mg	13%
Total Carbohydrate 25g	9%
Sugars 22g	
Protein 2g	
Vitamin C 120%	Calcium 2%
Vitamin 10%	Niacin 4%
Vitamin B6 6%	Folate 12%

Ingredients: 100% juice.

fruit juice drink container

vegetable juice wrapper

fruit juice container

Be sure that the materials are set up like this before you leave this station.

How to Set Up

Station 3

Materials

- per serving nutritional information for peanut butter
- per serving nutritional information for bologna
- per serving nutritional information for turkey bologna

Preparation

1. Make some nutritional comparisons of your own to use as a reference when judging students' observations.

Helpful Information

- For more interesting results, choose products so that there is a wide variation in results, for example, a low- or no fat-turkey bologna.

Setup

Station 3

The diagram shows three product labels arranged on a surface. Each label includes a title, a 'Nutrition Facts' table, and an ingredients list. The labels are for 'Bill's Bologna', 'MR. TURKEY BOLOGNA', and 'MR. NUTTY SPREAD PEANUT BUTTER'. Below each label is a handwritten-style caption: 'bologna package', 'turkey bologna package', and 'peanut butter container' respectively.

Bill's BOLOGNA

Nutrition Facts
Serving Size 1 slice (28g)
Servings Per Container 8

Amount Per Serving	Fat Cal 70
Calories 90	% Daily Value*
Total Fat 8g	15%
Saturated Fat 3g	10%
Cholesterol 30mg	12%
Sodium 290mg	0%
Total Carb 1g	
Sugars less than 1g	
Protein 3g	
Iron 2%	

Ingredients: chicken, pork, water, corn syrup, salt, dextrose, beef

MR. TURKEY BOLOGNA

Nutrition Facts
Serving Size 1 slice (28g)
Servings Per Container 12

Amount Per Serving	Fat Cal 0
Calories 25	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Cholesterol 10mg	3%
Sodium 250mg	0%
Total Carb 2g	1%
Sugars less than 1g	
Protein 3g	
Calcium 2%	

Ingredients: turkey, water, turkey broth, beef, dextrose, corn syrup, salt

MR. NUTTY SPREAD PEANUT BUTTER

Nutrition Facts
Serving Size 2 tbsp (32g)
Servings Per Container about 16

Amount Per Serving	Calories from Fat 13.5
Calories 190	% Daily Value*
Total Fat 16g	25%
Saturated Fat 3g	15%
Cholesterol 0mg	0%
Sodium 120mg	5%
Total Carbohydrate 6g	2%
Dietary Fiber 2g	
Sugars 3g	
Protein 9g	
Iron 2%	Niacin 15%

Ingredients: Peanuts, sugar, fully hydrogenated vegetable oils (cottonseed and rapeseed), salt, and corn syrup.

Be sure that the materials are set up like this before you leave this station.

Name _____ Date _____

Performance Activity

Imagine that you are part of the Consumer Education Department of your city. Your assignment is to survey some common foods and determine which is the more healthful product.

My Data Collection

Station 1

Use the card at the station to correctly set up the equipment.

Snack Foods

Read the labels on each of the snack foods.

- Record your observations in the data table.

Snack Food	Calories (per serving)	Fat Calories (per serving)	Grams of Fat (per serving)	Grams of Sugar (per serving)

Station 2

Use the card at the station to correctly set up the equipment.

Bottled Juices

Read the labels on each of the bottled juices.

- Record your observations in the data table.

Bottled Juice	Calories (per serving)	Grams of Sugar (per serving)	Percent Juice	First Three Ingredients

