



eat well

EXPLORING CANADA'S FOOD GUIDE

Teacher Guide

With curriculum connections to Grades 4-8

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STUDENT LEARNING OBJECTIVES

- Students will read and interpret information found on Canada's new nutrition labels
- Students will sort foods according to the eat well plate in the new Canada Food Guide
- Students will compare types of nutrients found in different foods and food groups
- Students will identify how and why nutrition labels are changing between 2017 and 2022
- Students will classify beverages as seldom, sometimes or often foods based on information in the new nutrition labels
- Students will compare different types of protein food, including their nutrition and environmental impact
- Students will identify how science and technology help farmers provide healthier, safer, higher quality, more environmentally sustainable and abundant food for Canadians
- Students will identify ways to reduce consumer food waste
- Students will explain why variety is an essential part of a nutritious diet
- Students will create healthy eat well plates based on the new Canada Food Guide recommendations

MANITOBA CURRICULUM CONNECTIONS AT A GLANCE

| Curriculum Outcomes Grade 4 Health | | Activity | | | | | | |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------|----------|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| K.5.4.C.1a | Demonstrate an understanding of food groups, serving sizes, and serving numbers that support good health. | | ✓ | ✓ | ✓ | | | ✓ |
| Grade 4 Math | | | | | | | | |
| 4.SP.2 | Construct and interpret pictographs and bar graphs involving many-to-one correspondence to draw conclusions | | | ✓ | | | | |
| 4.PR.3 | Represent and describe patterns and relationships using charts and tables to solve problems. | ✓ | | | | ✓ | | |

| Curriculum Outcomes Grade 5 Science | | Activity | | | | | | |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5-o-6A | Construct graphs to display data and interpret and evaluate these and other graphs. Examples: bar graphs | | ✓ | ✓ | | ✓ | | |
| 5-o-8C | Recognize that technology is a way of solving problems in response to human needs. | | | | | | ✓ | |
| 5-1-01 | Use appropriate vocabulary related to their investigations of human health. Include: nutrients; carbohydrates; proteins; fats; vitamins; minerals; Canada's Food Guide to Healthy Eating; food group; serving size. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 5-1-02 | Interpret nutritional information found on food labels. Examples: ingredient proportions, identification of potential allergens, information related to energy content and nutrients | ✓ | | ✓ | ✓ | ✓ | ✓ | |

| Curriculum Outcomes Grade 5 & 6 Food Nutrition | | Activity | | | | | | |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5.1.6.8 6.1.6.8 | Prepare and serve a food item(s) that reflects current nutritional guidelines and also fits into a balanced eating plan for optimal health (e.g., snacks, entrees, soups, desserts, breakfasts, etc.). | | | | | | | ✓ |
| 5.2.1.2 6.2.1.2 | Identify the six classifications of nutrients (i.e., carbohydrates, protein, fats, vitamins, minerals, water). | ✓ | | ✓ | ✓ | ✓ | ✓ | |
| 5.2.1.3 6.2.1.3 | Identify Canada's dietary guidelines (e.g., versions of Canada's Food Guide). | | ✓ | | | ✓ | | ✓ |
| 5.2.1.4 6.2.1.4 | Identify the key messages and recommendations in Canada's dietary guidelines (e.g., nutrients, exercise, illustrations, foods emphasized). | | ✓ | | | ✓ | ✓ | ✓ |
| 5.2.1.5 6.2.1.5 | Identify personal food choices (e.g. diversity within the food groups, food choices such as seldom, sometimes, and often) and recommended serving sizes. | | | | | ✓ | | ✓ |
| 5.2.2.2 | Identify food labels as a source of information. | ✓ | | ✓ | ✓ | ✓ | | |
| 6.2.2.2 | List the food and nutrition/health information on labels (e.g. nutrition facts table, ingredient list, nutrition or health claims). | ✓ | | ✓ | ✓ | ✓ | | |
| 5.3.2.3 6.3.2.3 | Identify Manitoba food that is grown/harvested, reared, caught, and processed locally (e.g., fresh, frozen, seasonal, canned, and dried). | | | | ✓ | | ✓ | |
| 5.4.1.6 6.4.1.6 | Identify the foods eaten traditionally by Indigenous Peoples of Manitoba (e.g., berries, fish, moose, squash). | | | | ✓ | | ✓ | |
| Grade 6 Math | | | | | | | | |
| 6.SP.3 | Graph collected data and analyze the graph to solve problems. | | | ✓ | | | | |

| Curriculum Outcomes Grade 7 & 8 Food Nutrition | | Activity | | | | | | |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7.1.6.8 8.1.6.8 | Prepare and serve a food item(s) that reflects current nutritional guidelines and also fits into a balanced eating plan for optimal health (e.g., snacks, entrees, soups, desserts, breakfasts, etc.). | | | | | | | ✓ |
| 7.1.6.10 8.1.6.10 | Evaluate and critique a food item(s) and/or recipe(s) according to a set criteria. | | | | | ✓ | | |
| 7.2.1.4 | Describe the key messages and recommendations in Canada's dietary guidelines as they apply to rural, urban, and northern locations. | | | | | ✓ | | ✓ |
| 7.2.1.5 8.2.1.5 | Identify diverse foods within the food groups (e.g., non-dairy sources of calcium, nutrient-dense foods), recommended serving sizes, key messages, and recommendations according to Canada's dietary guidelines. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 7.2.1.7 | Identify a meal plan(s) that include(s) a variety of foods according to Canada's dietary guidelines. | | | | | | | ✓ |
| 8.2.1.7 | Develop a personal meal plan(s) that incorporates a variety of foods according to Canada's dietary guidelines (e.g. include an apple with lunch, add healthy foods into meals, such as adding a chopped apple into coleslaw). | | | | | | | ✓ |
| 7.2.2.2 | Describe how food and nutrition/health information on labels (e.g., nutrition facts table, ingredient list, nutrition claims) are used to identify specific information or to compare food products (e.g. compare products based on fat, salt, sugar, fibre content). | | | ✓ | ✓ | ✓ | ✓ | |
| 7.2.2.3 | Analyze food labels to select ingredients and/or food products to meet the nutritional needs of the adolescent. | | | | | ✓ | | |
| 8.2.2.3 | Compare and contrast food labels of various products to make informed food choices to promote health and wellness. | | | | | ✓ | ✓ | |
| 7.3.2.3 8.3.2.3 | Identify food that is grown/harvested, reared, caught, and processed throughout Canada (e.g. fresh, frozen, seasonal, canned, and dried). | | | | ✓ | | ✓ | |
| 7.3.2.4 | Identify foods from around the world that are available in Manitoba (e.g. fish, tropical fruits, nuts, coffee, tea, chocolate, etc.). | | | | ✓ | | | |

MATERIALS

INCLUDED IN THIS KIT:

- **Teacher Guide**
- **Master worksheets:**
 - » Activity 1- the set of 40 different **Food Nutrition Labels**
 - » Activity 1- the set of 40 blank **Student Nutrition Cards**
 - » Activity 3 - the student graphing worksheet, **Nutrients in Your Food**
 - » Activity 3 - **Graph Paper**
 - » Activity 5 - the student worksheet, **Helping Canadians Make Healthy Choices**
 - » Activity 6 - Let's Look at Proteins – a series of 3 student worksheets:
 - » Part 1 – **Protein Nutrition**
 - » Part 2 - **What are Proteins?**
 - » Part 3 – **Decreasing the Environmental Impact of Producing Protein Foods in Canada**
 - » Activity 7 - the student worksheet, **Eat Well Plate Challenge**
- **Answer Key** for Activities 1 - 7
- **Display materials** including **Canada's Food Guide Eat Well Plate** and **Food Category Labels** for Activity 2
- **Eat Well Cards** - 6 decks for use with Activities 2, 4, 6 & 7

ACTIVITIES

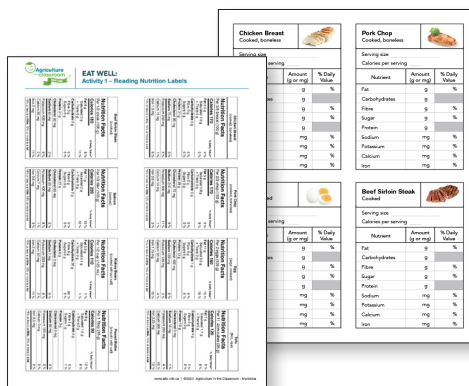
ACTIVITY 1 – READING NUTRITION FACTS LABELS

Lesson Plan:

- Give each student 1 or more blank Student Nutrition Cards and the corresponding Food Nutrition Label(s).
- Have each student use information from the Food Nutrition Label(s) to fill in their blank Student Nutrition Card(s).
- Have each student put their name on the back of the card they completed.

MATERIALS NEEDED:

- 1 photocopied and cut out set of 40 Food Nutrition Labels
- 1 photocopied and cut out set of the 40 blank Student Nutrition Cards



ACTIVITY 2 – EAT WELL PLATE FOOD GROUPS**LESSON PLAN:**

- Create a display with the materials provided. See display suggestions below.
- Have each student place their completed Student Nutrition Card(s) from Activity 1 under the Canada Food Guide food group on the display that they believe their food belongs to.
- As a class, decide if any of the foods were put in the wrong food group and make corrections as needed.

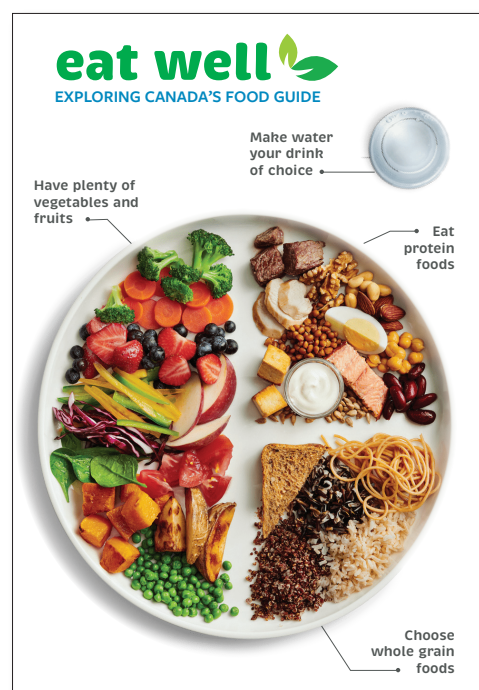
DISPLAY OPTION 1:

**VEGETABLES
AND FRUITS**



PROTEINS

GRAINS

DISPLAY OPTION 2:

**VEGETABLES
AND FRUITS**

PROTEINS

GRAINS

ACTIVITY 3 – CREATING AND ANALYZING FOOD NUTRIENT GRAPHS

LESSON PLAN:

- Have each student take back their completed student nutrition card(s) from the display and, using the appropriate coloured highlighter, colour in the top left-hand corner of their card(s).
 - » Green for vegetables and fruits
 - » Orange for proteins
 - » Yellow for grain products
 - » (See the Eat Well card deck for examples)
- Hand out a graphing worksheet and graph paper to each student.
 - » Have students create bar graphs on the graph paper provided using the data on their Student Nutrition Card(s). The colour of the bars on their graph is to match the colour used for the food group their food belongs to.
 - » Have students post their completed graphs under the correct Food Group heading on the display.
 - » Have students do a gallery walk to compare the graphs and answer the questions on the graphing worksheet.

Materials needed:

- Orange, green, and yellow highlighters
- Samples from the Eat Well card deck
- Copies, 1/student, of the graphing worksheet, 'Nutrients in Your Food'
- 40 copies of the Activity 3 Graphing Paper. Students will need 1 copy of the graph paper for each nutrition card they completed
- Answer key

ACTIVITY 4 – NUTRIENT CHALLENGE CARD GAME

LESSON PLAN:

- Nutrition Challenge Card Game (a cross between a Top Trumps game and the card game War.)
 - » Have students play in groups of 3 or 4
 - » Give each group a deck of 40 Eat Well cards.
 - » Dealer deals out all the cards
 - » Players place their cards nutrition facts down in a pile in front of them.
 - » Player to the left of the dealer picks up the top card from their own pile, looks at the nutrition facts, says the food on their card and the nutrient they choose to challenge with (i.e. Green Beans, Fibre 10%) and lays their card nutrition facts up on the table in front of them.
 - » Each of the other players, in turn, takes the top card from their pile of cards, says the food they have and what amount of challenge nutrient they have, (i.e. Beef Sirloin Steak, Fibre 0%; or Kidney Beans, Fibre 20%) and then places it nutrition facts up on the table in front of them.
 - » The player with the highest challenge nutrient (i.e. Kidney Beans, Fibre 20% in our example) is the winner. The winner takes the cards and adds them to the bottom of their pile. Then they take the card off the top of their pile, identify the food and what nutrient they are challenging with for the next round and lay that card face up on the table in front of them.
 - » Play continues until one player has all the cards or time is up in which case the player with the most cards is the winner.

Materials needed:

- 6 decks of Eat Well cards

| Broccoli (cooked without salt) | | |
|-----------------------------------|---------------------|---------------|
| Serving size: ½ cup (85 g) | | |
| Calories per serving: 30 | | |
| Nutrient | Amount (g or mg) | % Daily Value |
| Fat | 0 g | 0% |
| Carbohydrates | 6 g | |
| Fibre | 3 g | |
| Sugar | 1 g | |
| Protein | 2 g | |
| Sodium | 35 mg | |
| Potassium | 250 mg | |
| Calcium | 30 mg | |
| Iron | 0.5 mg | |



ACTIVITY 5 – CANADA FOOD GUIDE TOOLS FOR MAKING HEALTHY NUTRITION CHOICES**LESSON PLAN:**

- Have students complete the ‘Helping Canadians Make Healthy Choices’ worksheet to discover:
 - » The recent changes to the Nutrition Facts Table and the rationale for the changes including: addition of potassium, removal of vitamins A and C, addition of %DV for sugar, and addition of %DV footnote.
 - » Students will also discover the rationale behind limiting sodium and sugary drinks.

Materials needed:

- Copies, 1/student, of ‘Helping Canadians Make Healthy Choices’ worksheet
- Answer Key

ACTIVITY 6 – LET’S LOOK AT PROTEIN**LESSON PLAN:**

This activity includes 3 stand-alone worksheets that will help students explore the new protein group on the new Canada Food Guide’s Eat Well Plate.

- **Part 1 – Protein Nutrition.** Topics include why protein is an important nutrient, identifying protein foods and where they are grown.
 - » Give each student a copy of the worksheet ‘Let’s Look at Protein: Part 1 – Protein Nutrition.’
 - » Create groups of 3 – 4 students. Give each group 1 deck of 40 Eat Well cards.
 - » Have each group work through the activities and questions on the worksheet.
- **Part 2 – What are Proteins?** Topics include essential amino acids, complete, incomplete and complementary proteins, and a comparison of types of proteins in our diet.
 - » Give each student a copy of the worksheet ‘Let’s Look at Protein: Part 2 – What are Proteins?’.
 - » Create groups of 3 – 4 students. Give each group 1 deck of 40 Eat Well cards.
 - » Have each group work through the activities and questions on the worksheet.
- **Part 3 – Decreasing the Environmental Impact of Producing Protein Foods in Canada.** Topics include the current impact of agriculture in Canada, what farmers are doing to decrease the impact and how individual Canadians can help by reducing food waste.
 - » Give each student a copy of the worksheet ‘Let’s Look at Protein: Part 3 – Decreasing the Environmental Impact of producing Protein Foods in Canada’.
 - » Have each student complete the worksheet.

Materials needed:

- 6 decks of Eat Well cards
- Let’s Look at Proteins – a series of 3 worksheets:
 - » Part 1 – Protein Nutrition
 - » Part 2 – What are Proteins?
 - » Part 3 – Decreasing the Environmental Impact of Producing Protein Foods in Canada
- Computer, projector, and screen to play videos
- Answer key

Videos for Part 3

- Topic: Precision Agriculture:
 - » [GPS Technology on the Farm](#), 1:59
- Topic: Grassland Sustainability:
 - » [Guardians of the Grasslands](#), 12:44
 - » [MB Species at Risk Partnerships on Agricultural Lands](#), 3:45
- Topic: Food Waste:
 - » [Life of a Strawberry](#), 1:53

ACTIVITY 7 – EAT WELL PLATE CHALLENGE

LESSON PLAN:

- Show the students the following Canada Food Guide Videos:
 - » [Healthy snacks using Canada's food guide plate](#), 0:46s
 - » [Healthy breakfasts using Canada's food guide plate](#), 0:33s
 - » [Eat together using Canada's food guide plate](#), 0:46s
 - » [Use Canada's food guide plate to make any meal](#), 0:40s
- 1. Individually or in groups, have students complete the Eat Well Plate Challenge worksheet.
 - » It may be helpful to provide students with a deck of Eat Well cards.

ASSESSMENT IDEAS:

2. Students/groups could present their Eat Well Plate and their plan for where, when, why, and how they will eat their meal to the class.
3. Have students/groups post their Eat Well Plates as part of a classroom display.

Materials Needed:

- 6 decks of Eat Well cards
- Computer, projector, and screen to play the Eat Well Plate videos
- Copies, 1/student or 1/student group of the Eat Well Plate Challenge worksheet
- Copies, 1/student or 1/student group of the Blank My Eat Well Plate

EXTENSION ACTIVITY SUGGESTIONS:

1. Have students look for the new nutrition facts label on food packages in their homes and bring them in and share them.
2. Have students do a web search for the food on the card/graph they completed to find the complete list of nutrients (minerals and vitamins) in that food.
3. Have students compare nutrient facts labels for food prepared or preserved using different methods. i.e. fresh corn, frozen corn, canned corn, flaked corn (cornflakes cereal), corn meal.
4. Have students bring in the nutrition facts label for their favourite snack food and compare and/or graph the fat, sugar, and sodium content of each.

ENRICHMENT RESOURCES

- **Sodium: the basics**, Government of Canada
<https://www.canada.ca/en/health-canada/services/nutrients/sodium/sodium-basics.html>
- **Sodium Detector** - Use the Sodium Interactive Tool to learn how much sodium is in the foods that you eat.
Government of Canada
<https://health.canada.ca/en/health-canada/services/food-nutrition/food-guides-healthy-eating/nutrients/sodium/detector.html>
- **snapAG** – Information sheets from Agriculture in the Classroom - Canada. Use the Environment and Food/Nutrition topic filters to find relevant sheets.
<https://aitc-canada.ca/en-ca/learn-about-agriculture/category/plant-and-animal-proteins>

VIDEO SUMMARY AND LINKS

ACTIVITY 6

GPS Technology on the Farm, 1:59. <https://www.manitobapork.com/educational-videos>

This video is brought to you by Manitoba Pork. Nutrient-rich soil grows the most nourishing food. If cropland is short of any nutrients, a valuable organic fertilizer like hog manure can be injected before the crop is planted. By using Global Positioning Systems (GPS) and doing annual soil testing, farmers make sure that every bit of hog manure is used to its best advantage while reducing their carbon footprint.

Guardians of the Grasslands, 12:44. <https://guardiansofthegrasslands.ca>

This short documentary is brought to you by a group of dedicated Canadian conservationists, ranchers, and filmmakers. The film explores the current state of one of the world's most endangered ecosystems, the Great Plains grasslands, and the role that cattle play in its survival here on the Canadian prairies.

MB Species at Risk Partnerships on Agricultural Lands, 3:45 <https://vimeo.com/388562868>

This short documentary is brought to you by Manitoba Beef Producers (MPB) and features conservationist Dr. Christian Artuso, who was the MB Program Manager for Bird Studies Canada at the time the video was made. Dr. Artuso worked with MBP's Species at Risk Partnerships on Agricultural Lands (SARPAL) Keep Grazing project for grassland threatened species. The video was shot in southwestern Manitoba at the property of MBP District 1 Director Gord Adams.

Life of a Strawberry, 1:53 min. <https://www.youtube.com/watch?v=CLFOK4U34wI>

This video is a TV ad created by the Ad Council and the Natural Resources Defense Council as part of their "Save The Food," a national public service campaign to combat food waste from its largest source—consumers, who collectively waste more food than grocery stores, restaurants or farms. The initiative hopes to encourage consumers to reduce the amount of food they trash in their homes, thereby saving the water, energy and money that are lost along with it.

ACTIVITY 7

The four short Eat Well Plate videos developed by Health Canada can be viewed using the links below for the Health Canada website or YouTube.

| VIDEO | HEALTH CANADA LINK | YOUTUBE LINK |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Healthy snacks using Canada's food guide plate, 0:46s | https://www.canada.ca/en/health-canada/services/video/food-nutrition/eat-well-plate-healthy-snacks.html | https://www.youtube.com/watch?v=Zj1w42_WhpE |
| Healthy breakfasts using Canada's food guide plate, 0:33s | https://www.canada.ca/en/health-canada/services/video/food-nutrition/eat-well-plate-healthy-breakfasts.html | https://www.youtube.com/watch?v=FQ35D2OzRYM |
| Eat together using Canada's food guide plate, 0:46s | https://www.canada.ca/en/health-canada/services/video/food-nutrition/plate-eat-together.html | https://www.youtube.com/watch?v=9FG4d-2tEC0 |
| Use Canada's food guide plate to make any meal, 0:40s | https://www.canada.ca/en/health-canada/services/video/food-nutrition/plate-make-any-meal.html | https://www.youtube.com/watch?v=hknXiyFwUEA |

SOURCES

1. Government of Canada, <https://www.canada.ca/en/health-canada/services/food-labelling-changes.html?ga=2.123181771.1796658230.1504725069-1191879540.1497452049#a>
2. Government of Canada <https://www.canada.ca/en/health-canada/services/publications/food-nutrition/infographic-salty-situation.html>
3. Government of Canada. (October 11, 2019). Canada's Food Guide. <https://food-guide.canada.ca/en/>
4. Canadian Agri-Food Trade Alliance <http://cafta.org/agri-food-exports/cafta-exports/> and <http://cafta.org/agri-food-exports/canadas-agri-food-exports-2014/>
5. US Food & Drug Administration (FDA). (No date). Protein. https://www.accessdata.fda.gov/scripts/interactivenutritionfactslabel/assets/InteractiveNFL_Protein_March2020.pdf
6. Ibid
7. Mt. Pleasant J, Cornell University, Food Yields and Nutrient Analyses of the Three Sisters: A Haudenosaunee (Iroquois) Cropping System. <https://ojs.ethnobiology.org/index.php/eb/article/view/721/413>
8. Think Beef.ca. (November 2020). Plant Versus Animal Protein – Why the Debate? https://thinkbeef.ca/wp-content/uploads/2020/11/Plant-vs-Animal-Protein-Foods_11.20.pdf
9. Tessari, P., Lante, A. & Mosca, G. (May 25, 2016). "Essential Amino Acids: Master Regulators of Nutrition and Environmental Footprint?" <https://www.nature.com/articles/srep26074>
10. The Canadian Agri-Food Policy Institute (September 2019) https://capi-icpa.ca/wp-content/uploads/2019/09/2019-09-20-CAPI-paper-Efficient-Ag-GHG-Solutions-Provider_WEB.pdf
11. Beef Cattle Research Council. (October 28, 2019). "Environmental Footprint of Beef." <https://www.beefresearch.ca/research-topic.cfm/environmental-footprint-of-beef-production-6>
12. Beef Cattle Research Council. (February 27, 2019). "How Much Water is Used to Make a Pound of Beef?" <http://www.beefresearch.ca/blog/cattle-feed-water-use/>
13. Beef Cattle Research Council. (July 2019). Beef's Place in a Healthy Environment. http://www.beefresearch.ca/files/pdf/BCRC_infographic_beefs_place_healthy_environment_July2019.pdf
14. National Geographic. (September 17, 2021) How can the most endangered ecosystem in the world be saved? by Gabriel Popkin. <https://www.nationalgeographic.com/environment/article/a-farming-boom-is-threatening-us-climate-and-conservation-goals>
15. Mayo Clinic (June 29, 2019). Sodium: How to tame your salt habit. <https://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/sodium/art-20045479>
16. Manitoba Egg Farmers, <https://www.eggs.mb.ca/about-us/social-responsibility>
17. Dairy Farmers of Canada, <https://dairyfarmersofcanada.ca/en/who-we-are/our-commitments/environment-our-legacy-future-generations>
18. Manitoba Pork, <https://www.manitobapork.com/sustainability-focus/environment>

ANSWER KEY

ACTIVITY 3 – NUTRIENTS IN YOUR FOOD WORKSHEET

Part 1

PAGE 1: BAR GRAPH 1

1. a. Multiple Choice **B) By 2s**

PAGE 1: BAR GRAPH 2

2. No. The y-axis number scale represents %DV in Graph 1 and grams in Graph 2. Since they are not the same unit (variable) the graphs cannot be compared to each other and do not have to use the same scale. (If you want to compare graph 1 for different foods, then the number scale must be the same for every graph 1 so that comparing graphs is relevant and easy. The same is true for graph 2.)
5. So anyone reading this graph will know what it is about.

Part 2

PAGE 3 & 4

1. a. Smallest amount of fat is **Vegetables and Fruit**
 b. Highest amount of carbohydrates is **Grains**
 c. Highest amount of protein is **Proteins**
- 2.

| NUTRIENTS | TOP 3 FOODS | FOOD GROUP | YOUR PREFERENCE |
|---------------|---------------------------|------------|-----------------|
| Carbohydrates | SPAGHETTI 62g | GRAINS | |
| | BAGEL 45g | GRAINS | |
| | WHITE LONG GRAIN RICE 39g | GRAINS | |
| Protein | BEEF SIRLOIN STEAK 31g | PROTEINS | |
| | CHICKEN BREAST 31g | PROTEINS | |
| | ELK STEAK 31g | PROTEINS | |

2.

| NUTRIENTS | TOP 3 FOODS | FOOD GROUP | YOUR PREFERENCE |
|-----------|--------------------------------|--------------------|-----------------|
| Fibre | LENTILS 8g = 29% | PROTEINS | |
| | KIDNEY BEANS 6g = 20% | PROTEINS | |
| | BREAD, WHOLE GRAIN 6g = 20% | GRAINS | |
| Potassium | POTATO 750mg = 16% | VEGETABLES & FRUIT | |
| | BANANA 500mg = 11% | VEGETABLES & FRUIT | |
| | PORK CHOP 500mg = 11% | PROTEINS | |
| Calcium | TOFU 600mg = 45% | PROTEINS | |
| | MILK 300mg = 23% | PROTEINS | |
| | YOGURT 250mg = 20% | PROTEINS | |
| Iron | CHEERIOS 5.5mg = 30% | GRAINS | |
| | ELK STEAK 4mg = 23% | PROTEINS | |
| | LENTILS 3.5 mg = 19% | PROTEINS | |

3. Different food groups contain foods that provide different types and amounts of nutrients, so you need to eat foods from each group to ensure you get all the nutrients you need to be healthy.

ACTIVITY 5 – HELPING CANADIANS MAKE HEALTHY CHOICES WORKSHEET

PAGE 1

A) NUTRITION FACTS TABLE

1. The differences:

- Increased the font size of serving size and calories.
- Added a bold line under the calories.
- Removed % Daily Value (%DV) for Carbohydrate.
- Added new % Daily Value for total sugars.
- Added the amounts in milligrams (mg) for potassium, calcium, and iron.
- Vitamin A and Vitamin C removed, and potassium added.
- Added a footnote “5% or less is a little, 15% or more is a lot” at the bottom of the table.
- Order is different: Instead of fat, cholesterol, sodium, carbohydrates, protein, it is fat, carbohydrates, protein, cholesterol, sodium.

| ORIGINAL | |
|------------------------------------------------|---------------------------------------|
| Nutrition Facts | |
| Valeur nutritive | |
| Per 250 mL / par 250 mL | |
| Amount Teneur | % Daily Value % valeur quotidienne |
| Calories / Calories 110 | |
| Fat / Lipides 0 g | 0 % |
| Saturated / saturés 0 g + Trans / trans 0 g | 0 % |
| Cholesterol / Cholestérol 0 mg | |
| Sodium / Sodium 0 mg | 0 % |
| Carbohydrate / Glucides 26 g | 9 % |
| Fibre / Fibres 0 g | 0 % |
| Sugars / Sucres 22 g | |
| Protein / Protéines 2 g | |
| Vitamin A / Vitamine A | 0 % |
| Vitamin C / Vitamine C | 120 % |
| Calcium / Calcium | 2 % |
| Iron / Fer | 0 % |

Calories is larger
and stands out
more with bold
line below

mg amounts are
shown

New % Daily
Value footnote

| NEW | |
|-----------------------------------------------------------------------------------------------------|----------------|
| Nutrition Facts | |
| Valeur nutritive | |
| Per 1 cup (250 mL) pour 1 tasse (250 mL) | |
| Calories 110 | % Daily Value* |
| Fat / Lipides 0 g | 0 % |
| Saturated / saturés 0 g + Trans / trans 0 g | 0 % |
| Carbohydrate / Glucides 26 g | |
| Fibre / Fibres 0 g | 0 % |
| Sugars / Sucres 22 g | 22 % |
| Protein / Protéines 2 g | |
| Cholesterol / Cholestérol 0 mg | |
| Sodium 0 mg | 0 % |
| Potassium 450 mg | 10 % |
| Calcium 30 mg | 2 % |
| Iron / Fer 0 mg | 0 % |
| *5% or less is a little, 15% or more is a lot *5% ou moins c'est peu, 15% ou plus c'est beaucoup | |

Serving size
stands out more
and is more
similar on similar
foods

Daily Values
updated

New % Daily
Value for total
sugars

Updated list
of minerals of
public health
concern

Here are some reasons for the changes found in the new **Nutrition Facts Table** from the Government of Canada.

The changes to the nutrition facts table include:

- making the serving size more:
 - » consistent, so that it's easier to compare similar foods
 - » realistic, so that it reflects the amount that Canadians typically eat in one sitting
- making the information on serving size and calories easier to find and read by:
 - » increasing the font size of serving size and calories
 - » adding a bold line under the calories
- revising the % daily values based on updated science
- adding a new % daily value for total sugars
- updating the list of nutrients to:
 - » add potassium because:
 - it's important for maintaining healthy blood pressure
 - most Canadians are not getting enough of this nutrient
 - » remove vitamin A and vitamin C because:
 - most Canadians get enough of these nutrients in their diets
 - » adding the amounts in milligrams (mg) for potassium, calcium, and iron
- adding a footnote at the bottom of the table about % daily value
 - » this will help consumers understand how much sugar and other nutrients (like sodium) are in their food and will explain that:
 - 5% or less is a little
 - 15% or more is a lot

PAGE 2

C) Sugar

1. 1 g of sugar = **1 %** daily value of sugar
100 g of sugar = 100 % daily value of sugar
2. 100 grams of sugar = **25** teaspoons of sugar

PAGE 3

E) Sodium

1. Canadians need 1500 mg of sodium each day.
2. 76% of children aged 4 - 13 years eat too much sodium.
3. 1 tsp of salt contains 2325 mg of sodium.
4. The average restaurant meal item contains 1 day's worth of sodium.

PAGES 4, 5 & 6

F) Drinks

1.
 - A. **Often** – although it is not low in sugar or fat, it is not high in sugar or fat either. It has more than a little potassium and a lot of calcium, both nutrients that we need more of.
 - B. **Seldom** – it has a lot of sugar.
 - C. **Seldom** – it has a lot of sugar and no other nutrients.
 - D. **Seldom** – it has a very large amount of sugar and no other nutrients.
 - E. **Seldom** – it has a lot of sugar, very little potassium and more than a little salt.
 - F. **Seldom or Sometimes** – it has more than a little potassium, but it has a lot of sugar.
(The Heart and Stroke Foundation recommends that we eat fruit, not drink it.)

2.

| Q #1 Nutrition Label | a) Beverage | b) Sugar %DV |
|-------------------------|-----------------------------|--------------|
| A. | 2% White Milk | 12% |
| B. | Vitamin Water | 32% |
| C. | Coca-Cola | 39% |
| D. | Slurpee (Coca-Cola flavour) | 78% |
| E. | Powerade | 12% |
| F. | 100% Orange Juice | 20% |

3.
 - a. Chocolate Milk (250 mL) = **24%** Daily Value
 - b. Flavoured Latte (355 mL) = **36%** Daily Value
 - c. Sweetened Iced Tea (695 mL) = **40%** Daily Value
 - d. Energy Drink (710 mL) = **84%** Daily Value
4. Water has no sugar, something we want less of. Water makes up 55% to 75% of our body, and we lose water every time we breathe, sweat, or go to the toilet. To stay healthy, we need to drink water every day to replace what we lose.

White milk and unsweetened plant-based beverages contain less than 15% sugar and provide other important nutrients like calcium. These are nutritious choices, unlike other beverages that contain large amounts of sugar and very little if any other nutrients. Sugar is something we want to consume a little of.

ACTIVITY 6 – LET’S LOOK AT PROTEIN WORKSHEETS

PART 1: PROTEIN NUTRITION WORKSHEET

PAGE 1

3.

| Who’s growing your animal-based protein? | | Grown In | |
|------------------------------------------|----------------------------|----------|----------|
| The Farmer | Food Produced | Canada | Manitoba |
| Beef Producers | Beef Sirloin Steak | x | x |
| Chicken Producers | Chicken Breast | x | x |
| Dairy Farmers | White Milk, Yogurt, Cheese | x | x |
| Egg Farmers | Egg | x | x |
| Elk Farmers | Elk Steak | x | x |
| Pork Producers | Pork Chop | x | x |
| Salmon Farmers | Salmon | x | |
| Turkey Producers | Turkey Breast | x | x |

PAGE 2

- Animal-based proteins contain much greater amounts of protein per serving than plant-based proteins.
- Grain foods contain protein as well, and in similar amounts as plant-based proteins in the protein group.
- Vegetables and fruits contain a very small amount of protein.

PART 2: WHAT ARE PROTEINS WORKSHEET

PAGE 4

- Plant-based proteins contain fibre. Plant-based proteins like kidney beans and lentils contain a lot of fibre (i.e. more than 15% DV). Animal-based proteins contain no fibre.

2. a.

| Animal-based Protein Food | Calories / Serving | Protein in grams |
|---------------------------|--------------------|------------------|
| Beef Sirloin Steak | 180 | 31 |
| Chicken Breast | 170 | 31 |
| Pork Chop | 170 | 29 |

| Plant-based Protein Food | Calories / Serving | Protein in grams |
|--------------------------|--------------------|------------------|
| Kidney Beans | 110 | 8 |
| Peanut Butter | 90 | 3 |
| Tofu | 120 | 13 |

- b. About **1** serving of beef which would contain **180** total calories.
 About **1** serving of chicken which would contain **170** total calories.
 About **1** serving of pork which would contain **170** total calories.
 About **4** servings of kidney beans which would contain **440** total calories.
 About **10** servings of peanut butter which would contain **900** total calories.
 About **2** (or 2.25) servings of tofu which would contain **240** (or 270) total calories.
- c. You need to eat more servings and calories of plant-based protein to get the same amount of protein you would get eating only 1 serving and fewer calories of animal-based protein.

PAGE 5**Test Your Understanding**

- There are 9 essential amino acids (EAs). These 9 must come from our food so it is essential we include them in our diet.
- Complete protein examples include all animal proteins, soy-based foods, and quinoa.
 - Incomplete protein examples include plant-based proteins such as pulses, whole grain foods and nuts.
- The Three Sisters crop includes the grain maize (also known as corn) and the legume beans. Each of these foods by themselves are incomplete proteins. When eaten together, they provide all 9 EAs.
- Plant-based proteins include fibre and are low in saturated fat.
 - Animal-based proteins include vitamins B12 and D3, DHA omega 3 fatty acids, and heme iron.
- Answers will vary but should include foods that are animal-based or contain legumes, pulses, whole grains, or nuts.

PART 3: DECREASING THE ENVIRONMENTAL IMPACT OF PRODUCING PROTEIN FOODS IN CANADA WORKSHEET**PAGES 11 & 12****Test Your Understanding**

- Crop farmers are reducing the environmental impact of growing plant-based proteins by using:
 - Conservation or zero-till – not ploughing the soil so carbon remains stored in the soil and isn't released into the atmosphere.
 - Herbicide Resistant Genetically Engineered (GE) Crops – reducing the need to plough land to control weeds so less carbon is released into the air.
 - Precision Agriculture – using technology to produce the most with the least environmental footprint
 - Including legumes in the crop rotation to lower nitrogen fertilizer use and its associated greenhouse gases as well as improve the soil.

2. Legumes can take nitrogen from the air and put it into the soil where plants can use it. This means less nitrogen fertilizer is needed for legume crops. Since the production and spreading of man-made fertilizers requires the burning of fossil fuels, growing legumes reduces greenhouse gas emissions.
3. Grasslands need to be maintained because they protect habitat for wildlife, protect wetlands, reduce flooding, and store carbon to offset greenhouse gas (GHG) emissions.
4. Cattle
5. Science, technology, and innovation have:
 - Improved livestock breeding
 - Improved livestock diets
 - Improved manure management
6. One of:
 - Beef Cattle: Producing 1 kg of beef in 2011 compared to 1981 produced fewer GHGs, including 14% less CH₄, 15% less N₂O and 12% less CO₂ with 29% fewer cows and 24% less land.
 - Chicken Farmers – In the past 40 years have lowered their carbon footprint by 37%, their water consumption by 45% and their non-renewable energy use by 37%.
 - Dairy Farmers – In the past 5 years have reduced their carbon footprint by 7%, water consumption by 6% and land use by 11%. It takes 65% fewer dairy cows to produce milk for all of Canada today than it did 50 years ago.
 - Egg Farmers – Between 1962 and 2012, they used 81% less land, 41% less energy and 69% less water, and produced 72% fewer greenhouse gas emissions while increasing egg production by 50%.
 - Pork Producers – For every kilogram of pork produced today, farmers use about 40% less water, 33% less feed and as much as 59% less land while emitting 35% fewer greenhouse gases than they did 50 years ago.
7. All the land, water, fossil fuels, greenhouse gas emissions and worker time and energy used to grow, process and transport that food is wasted when food is thrown away.
8. a. 47% – consumer food waste
b. 56.6 million tonnes of greenhouse gases
9. Food in a landfill releases methane as it breaks down. Methane has 25 times the global warming potential of carbon dioxide. Composting food waste does not give off methane. It also produces compost which can be recycled as a valuable fertilizer.
10. a. Any 2 of:
 - Use leftovers, or freeze them for later use instead of throwing them away
 - Serve yourself a small amount – you can always go back for seconds if you are still hungry
 - Compost food scrapsb. Student tips for reducing food waste will vary.
11. Livestock eat by-products from food and energy processing such as canola meal and distiller's grain as well as crops that are not high enough quality for human consumption, and turn them from waste products to high quality protein for our plates.

MASTER WORKSHEETS

The following worksheets are also available on our website, under the Teacher's tab in *Resources & Activities*. Included in the master worksheets:

- » Activity 1- the set of 40 different **Food Nutrition Labels**
- » Activity 1- the set of 40 blank **Student Nutrition Cards**
- » Activity 3 - the student graphing worksheet, **Nutrients in Your Food**
- » Activity 3 - **Graph Paper**
- » Activity 5 - the student worksheet, **Helping Canadians Make Healthy Choices**
- » Activity 6 - Let's Look at Proteins – a series of 3 student worksheets:
 - » Part 1 – **Protein Nutrition**
 - » Part 2 - **What are Proteins?**
 - » Part 3 – **Decreasing the Environmental Impact of Producing Protein Foods in Canada**
- » Activity 7 - the student worksheet, **Eat Well Plate Challenge**



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