



Action Schools! BC



Instructional Example

Sodium and Your Health

Subject: Physical and Health Education (PHE) Grade 4

OVERVIEW

Most British Columbians, including children, have too much sodium in their diets. Schools can play an instrumental role in enhancing students' knowledge of what foods contain high amounts of sodium, as well as how diets lower in sodium support our health and well-being. Being aware of the presence and amount of sodium contained in various foods is the first step in making informed food choices.

This instructional example is designed to teach Grade 4 students about an interactive screening tool which will help them learn effective ways to reduce sodium (salt) intake and set personal sodium-reduction goals for a healthy heart.

While the intention is to teach students about reducing their sodium intake, it is important that they know we still need to consume some amounts of sodium – it is required for us to live! Healthy children need between 1000-1500mg of sodium each day; this works out to about $\frac{1}{2}$ a teaspoon (2.5mL) of table salt. Emphasize that while we want to avoid eating foods that are high in sodium, a healthy diet can include these foods every so often.

BIG IDEAS

- Personal choices and social and environmental factors influence our health and well-being (e.g., asking students to analyze which foods that they like eating have a high sodium content).
- Understanding ourselves and the various aspects of health helps us develop a balanced lifestyle (e.g., helping students to develop a personal goal of choosing foods that have low sodium content, which reduces their risk of high blood pressure, stroke, heart and kidney disease later in life (Healthy Families BC, 2013b)).

CORE COMPETENCIES

Communication (C)

- Acquire, interpret, and present information (includes inquiries)

- Students inquire into topics that interest them, and topics related to their school studies (e.g., helping students to acquire knowledge about how some of their food choices may contain high amounts of sodium, which could impact their future heart health).

Thinking (CT)

- Analyze and critique
 - Students learn to analyze and make judgments about a work, a position, a process, a performance, or another product or act (e.g., introducing the *Sodium Calculator* to students so that they can make meaning of their current sodium intake and make a personal plan to cut down sodium intake for a healthy heart).

Personal and Social (PS)

- Self-determination
 - Students who are personally aware and responsible have a sense of personal efficacy and growing confidence in a variety of situations (e.g., asking students to write a reflective essay about identifying their own strategies to cut down sodium intake).

LEARNING STANDARDS

PHE Curricular Competencies (What Students Will Do)

Healthy and Active Living

- Explain the relationship of healthy eating to overall health and well-being (e.g. teaching students about the connection between diets lower in sodium and heart health).

PHE Content (What Students Will Know)

- Practices that promote health and well-being, including those relating to healthy eating (e.g., teaching students how to identify foods that are lower in sodium based on the *Nutrition Facts Table*, and explaining to students how choosing low sodium foods that supports heart health).

COMPREHENSIVE SCHOOL HEALTH PILLARS

Relationships and Environments:

- Teachers make efforts to engage students socially, academically and intellectually by asking students to use a *Sodium Calculator* to set personal goals for reducing sodium intake.

Teaching and Learning:

- Activities are provided for students to talk about learning with their peers (e.g., asking students to evaluate sample *Nutrition Facts Tables* and discuss with classmates about how much sodium is presented in each of the sample foods).

Community Partnerships:

- Broaden students' concept about healthy eating and invite students to share their learning about how to create a low sodium meal plan with parents via an interactive *Sodium Sense* webpage.

School Policies:

- Adopt healthy eating as a school-wide practice that engages students in learning about healthy eating and its impact on our overall health and well-being.

CROSS-CURRICULAR CONNECTIONS

English Language Arts

- Comprehend and connect (reading, listening, viewing)
 - Use personal experience and knowledge to connect to text and deepen understanding of self, community, and world (e.g., inviting students to write about how they can make changes to their eating habits based on the sodium intake calculator).

Mathematics

- Reasoning and analyzing
 - Use technology to explore mathematics as well as develop mental math strategies and abilities to make sense of quantities by teaching students how to use *Sodium Calculator* to record the amount of sodium they consume and choose foods that will help them meet the recommended sodium intake – 1000 to 1500 mg of sodium per day.

FIRST PEOPLES PRINCIPLES OF LEARNING FOR ALL STUDENTS

- Learning is holistic, reflexive, reflective, experiential, and relational (focused on connectedness, on reciprocal relationships, and a sense of place) (e.g., accessing community resources is an important part of First Peoples' ways of learning). Teachers can rely on community resources (such as the Sodium Calculator) to help inform students' learning experiences that are educationally relevant and culturally appropriate.
- Learning involves recognizing the consequences of one's actions (e.g., encouraging students to engage in conscious reflection is an important form of experiential learning in First Peoples cultures. Teachers can help students to consciously make meaning of their food choices and the possible effects of their choices might have on their well-being).

TIMEFRAME

- 50 minutes

MATERIALS AND TECHNOLOGY

- A computer lab or computers
- A board and markers
- Sodium Sense (interactive website <https://www.healthyfamiliesbc.ca/sodium-sense>)
- Dietary sodium screening tool (web-based tool <https://www.projectbiglife.ca/sodium/>)
- *Me and My Sodium Intake* handouts and answer key (hardcopies; Appendices A and B)
- Reflection Rubric (Appendix D)

TEACHER TIPS

- A review of the *Nutrition Facts Table* (Appendix B), the *Sodium Sense* activity (available from: <https://www.healthyfamiliesbc.ca/sodium-sense>) and the sodium screening tool (Appendix C) in advance is encouraged.
- Remind students to refer to the examples provided on the handout and additional ideas generated by the class when introducing the homework assignment.
- Post additional questions if students are unsure about the assignment. Sample questions can include:
 - What kinds of snacks might you plan to eat instead of reaching for high sodium foods?
 - How might you inform yourself of the sodium content of foods you are considering? For example:
 - ✓ Read the nutrition information on packages before buying.
 - ✓ Visit fast food restaurant websites to find out which choices are high and low in sodium.
 - ✓ Look for the [Informed Dining](#) logo on restaurant menus. Restaurants displaying this logo provide access to nutrition information, including sodium content.
 - ✓ Say “no thanks” to foods containing more than 15% Daily Value of sodium per serving.

STRATEGY

- Begin by posting the following question to students: "What is another name for salt?" and "What amount of sodium should you consume each day?" Answers should be: Children only need 1000 to 1500 mg of sodium per day – which is about half a teaspoon of salt. Finally, ask students “do you think British Columbians eat too little, just enough, or too much sodium?” Answer should be: British Columbians generally eat too much sodium, which isn’t good for our hearts.
- Play *Sodium Sense*.
 - Present the *Sodium Sense* link as an interactive learning game (Healthy Families BC, 2012c): <https://www.healthyfamiliesbc.ca/sodium-sense>
 - Ask students to drag food items onto the plate to show what they ate yesterday: 1) for breakfast; 2) for lunch; and 3) for dinner. Be sure to include other snack items.
 - Ask students to record their sodium intakes for each meal and their total sodium intake for yesterday.
 - Ask student volunteers to offer their sodium intake amount.

- Walk students through the *Me and My Sodium Intake* handout including the *Nutrition Facts Tables* (Appendix A) to assess popular foods that are high in sodium. Allow time for questions.
 - Have students individually complete the *Nutrition Facts Tables* exercise on the handout.
 - Evaluate each sample *Nutrition Facts Tables* and identify how much sodium is presented in each sample food.
 - Ask students: Any of your favourite foods listed? Any surprises? Have a few student volunteers share their answers.
 - Further have students build on this inquiry by using the Action Schools! BC *Making Fast Food Healthier* learning activity (available from: www.actionschoolsbc.ca/resources).
 - Guide the discussion around how students feel when eating healthy and unhealthy foods.
- Walk students through the connection between excess sodium intake and negative heart health.
 - Increase our chance of developing high blood pressure.
 - Increase blood volume, which means more work for the heart. The extra work can lead to high blood pressure, heart attack, and stroke.
- Explain to students that they are going to set a personal sodium-reduction goal for a healthy heart.
 - Introduce the web-based dietary sodium screening tool (“Sodium Calculator”) to students (Arcand et al., 2014; Big Life, 2014): <http://www.projectbiglife.ca/sodium/>
 - Ask students to answer the online questions to determine how much sodium they consume each day. Note that some students may have difficulty with these questions. If so, consider pairing students and they can decide on a “person” that they can answer the questions for. Or, the entire class can work together with the teacher on a fictitious person.
 - Ask students to use the feedback they receive after completing the questions to set a personal goal around sodium intake. For example, “I want to reduce my current sodium intake by 1000 mg.”
 - Ask students to write a reflection (4-5 sentences) on the following question: “What could you change in a day for breakfast, lunch, dinner, and snack foods to lower your sodium intake?”
- Guide the students in a discussion that delivers the take home message:
 - Children only need between 1000 to 1500 mg of sodium per day (about ½ a teaspoon of salt). Frequently eating foods that are high in sodium and getting more sodium than we need can increase our risk of high blood pressure, heart disease and stroke.
 - Take steps to cut back on sodium today: 1) share today's learning with your parents; and 2) use the interactive Sodium Sense link to create your meal plans with parents. Knowing which foods to limit in relation to sodium content is the first step in making informed food choices that support a healthy heart.

ASSESSMENT

- Reflection Rubric (Appendix D).
 - Allow students to take thoughtful actions to make meaning of their food choices and the impact they might have on their heart.

RESOURCES/REFERENCES

- Arcand, J., Abdulaziz, K., Bennett, C., L'abbé, M.R., & Manuel, D.G. (2014). Developing a Web-based dietary sodium screening tool for personalized assessment and feedback. *Applied Physiology, Nutrition, and Metabolism*, 39(3),413-4. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/24552393>
- Big Life. (2014). *Sodium calculator*. Retrieved from <http://www.projectbiglife.ca/sodium/>
- Dietitians of Canada. (2012). *Promoting mental health through healthy eating and nutritional care*. Retrieved from <http://www.dietitians.ca/Downloads/Public/Nutrition-and-Mental-Health-complete-2012.aspx>
- Health Canada. (2016). *Sodium in Canada*. Retrieved from <http://www.hc-sc.gc.ca/fn-an/nutrition/sodium/index-eng.php>
- HealthyFamilies BC. (2013a). *Sodium and kids*. Retrieved from <https://www.healthyfamiliesbc.ca/home/articles/kids-corner-sodium>
- HealthyFamilies BC. (2013b). *The health effects of high sodium*. Retrieved from <https://www.healthyfamiliesbc.ca/home/articles/health-effects-high-sodium>
- HealthyFamilies BC. (2012c). *Sodium sense*. Retrieved from <https://www.healthyfamiliesbc.ca/sodium-sense>
- HealthyFamilies BC. (2012d). *Informed Dining*. Retrieved from <https://www.healthyfamiliesbc.ca/home/informed-dining>
- Heart and Stroke Foundation of Canada. <http://www.heartandstroke.ca/>

APPENDIX A

NAME _____

Me and My Sodium Intake

How to Use a Nutrition Facts Table to Understand the Sodium Content of Food and Drink

Nutrition Facts Tables are found on most food and drink packages and contain important nutrition information. When assessing a food or drink product for sodium content, follow these three steps:

CHEESE TORTELLINI PASTA WITH TOMATO SAUCE

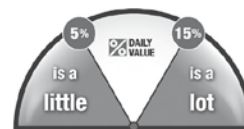
1
Look at the serving size listed in the Nutrition Facts Table and compare it to how much you actually consume. The serving size is not based on Canada's Food Guide Servings.

2
Find the sodium section on the Nutrition Facts Table.

Nutrition Facts		Valeur nutritive	
Per 500 ml (373 g)		Portion 500 ml (373 g)	
Amount	% Daily Value	Teneur	% valeur quotidienne
Calories / Calories	430		
Fat / Lipides	9 g		14%
Saturated / saturés	4 g		24%
+ Trans / trans	0 g		
Cholesterol / Cholestérol	50 mg		
Sodium / Sodium	1750 mg		73%
Carbohydrate / Glucides	73 g		24%
Fibre / Fibres	6 g		24%
Sugars / Sucres	12 g		
Protein / Protéines	19 g		
Vitamin A / Vitamine A			25%
Vitamin C / Vitamine C			25%
Calcium / Calcium			20%
Iron / Fer			30%

3
Use the % Daily Value (%DV) on the label to compare products and to see if the food has **a little or a lot** of a nutrient.

Here is a guide:
5% DV or less is **a little**
15% DV or more is **a lot**



5% is a **little**, 15% is a **lot** applies to all nutrients

Check the food labels often because product ingredients may change.

Reference: Interactive Nutrition Label and Quiz, Using the Nutrition Facts Table: % Daily Value, 2010 (hc-sc.gc.ca/fn-an/label-etiquet/nutrition/cons/fact-fiche-eng.php)

% Daily Value, reproduced with permission from the Minister of Health, Health Canada, 2013 (www.hc-sc.gc.ca)

Check out these sample Nutrition Facts Tables to find out how much sodium is in these common foods.

FAST FOOD HOT DOG

Nutrition Facts		Valeur nutritive	
Per 45 g wiener, bun, 15 ml ketchup pour 45 g wiener, pain, 15 ml ketchup			
Amount		% Daily Value	
Teneur		% valeur quotidienne	
Calories / Calories	260		
Fat / Lipides	12 g	18%	
Saturated / saturés	4.5 g	23%	
+ Trans / trans	0 g		
Cholesterol / Cholestérol	25 mg		
Sodium / Sodium	820 mg	34%	
Carbohydrate / Glucides	28 g	9%	
Fibre / Fibres	1 g	4%	
Sugars / Sucres	7 g		
Protein / Protéines	10 g		
Vitamin A / Vitamine A		2%	
Vitamin C / Vitamine C		6%	
Calcium / Calcium		6%	
Iron / Fer		15%	

PREPARED RAMEN NOODLE SOUP

Nutrition Facts		Valeur nutritive	
Per 250 ml (244 g) pour 250 ml (244 g)			
Amount		% Daily Value	
Teneur		% valeur quotidienne	
Calories / Calories	150		
Fat / Lipides	7 g	11%	
Saturated / saturés	3.5 g	18%	
+ Trans / trans	0 g		
Cholesterol / Cholestérol	0 mg		
Sodium / Sodium	750 mg	31%	
Carbohydrate / Glucides	19 g	6%	
Fibre / Fibres	6 g	24%	
Sugars / Sucres	0 g		
Protein / Protéines	3 g		
Vitamin A / Vitamine A		0%	
Vitamin C / Vitamine C		0%	
Calcium / Calcium		0%	
Iron / Fer		8%	

FAST FOOD HAMBURGER LARGE (DOUBLE PATTY)

Nutrition Facts		Valeur nutritive	
Per 1 sandwich (209 g) pour 1 sandwich (209 g)			
Amount		% Daily Value	
Teneur		% valeur quotidienne	
Calories / Calories	540		
Fat / Lipides	29 g	45%	
Saturated / saturés	10 g	53%	
+ Trans / trans	0.5 g		
Cholesterol / Cholestérol	70 mg		
Sodium / Sodium	1020 mg	43%	
Carbohydrate / Glucides	44 g	15%	
Fibre / Fibres	3 g	12%	
Sugars / Sucres	9 g		
Protein / Protéines	24 g		
Vitamin A / Vitamine A		10%	
Vitamin C / Vitamine C		4%	
Calcium / Calcium		25%	
Iron / Fer		35%	

FAST FOOD HAWAIIAN PIZZA

Nutrition Facts		Valeur nutritive	
Per Slice pour pointe			
Amount		% Daily Value	
Teneur		% valeur quotidienne	
Calories / Calories	670		
Fat / Lipides	24 g	37%	
Saturated / saturés	11 g	57%	
+ Trans / trans	0.5 g		
Cholesterol / Cholestérol	70 mg		
Sodium / Sodium	1180 mg	49%	
Carbohydrate / Glucides	75 g	25%	
Fibre / Fibres	4 g	16%	
Sugars / Sucres	8 g		
Protein / Protéines	39 g		
Vitamin A / Vitamine A		2%	
Vitamin C / Vitamine C		0%	
Calcium / Calcium		45%	
Iron / Fer		30%	

FAST FOOD CHICKEN SANDWICH

Nutrition Facts	
Valeur nutritive	
Per 1 sandwich (204 g) pour 1 sandwich (204 g)	
Amount Teneur	% Daily Value % valeur quotidienne
Calories / Calories 580	
Fat / Lipides 31 g	48%
Saturated / saturés 7 g + Trans / trans 2 g	45%
Cholesterol / Cholestérol 65 mg	
Sodium / Sodium 1200 mg	50%
Carbohydrate / Glucides 50 g	17%
Fibre / Fibres 5 g	20%
Sugars / Sucres 6 g	
Protein / Protéines 26 g	
Vitamin A / Vitamine A	0%
Vitamin C / Vitamine C	0%
Calcium / Calcium	8%
Iron / Fer	30%

CHEESE TORTELLINI PASTA WITH TOMATO SAUCE

Nutrition Facts	
Valeur nutritive	
Per 500 ml (373 g) pour 500 ml (373 g)	
Amount Teneur	% Daily Value % valeur quotidienne
Calories / Calories 430	
Fat / Lipides 9 g	14%
Saturated / saturés 4 g + Trans / trans 0 g	20%
Cholesterol / Cholestérol 50 mg	
Sodium / Sodium 1750 mg	73%
Carbohydrate / Glucides 73 g	24%
Fibre / Fibres 6 g	24%
Sugars / Sucres 12 g	
Protein / Protéines 19 g	
Vitamin A / Vitamine A	25%
Vitamin C / Vitamine C	25%
Calcium / Calcium	20%
Iron / Fer	30%

What % DV of sodium do the Nutrition Facts Tables indicate for these foods?

- Fast Food Hot Dog _____ %DV
- Ramen Noodle Soup (prepared) _____ %DV
- Fast Food Hamburger Large (double patty) _____ %DV
- Fast Food Hawaiian Pizza _____ %DV
- Fast Food Chicken Sandwich _____ %DV
- Cheese Tortellini Pasta with Tomato Sauce _____ %DV

My Sodium Intake Goal

In order to reduce my sodium intake, I will:

_____ for the next _____ days.

I will reach my goal by (doing what?): _____

APPENDIX B

ME AND MY SODIUM INTAKE ANSWER KEY

- Fast Food Hot Dog: 34% DV
- Ramen Noodle Soup (Prepared): 31% DV
- Large (double patty) Fast Food Hamburger: 43% DV
- Fast Food Hawaiian Pizza: 49% DV
- Fast Food Chicken Sandwich: 50% DV
- Cheese Tortellini Pasta with Tomato Sauce: 73% DV
- NOTE: All of these food examples far exceed the guideline of “15% is a lot”

APPENDIX C: REFERENCE FOR TEACHER - BIG LIFE SODIUM CALCULATOR:
SAMPLE REPORT

HERE IS HOW YOUR DAILY SODIUM LOOKS

You consume about

3600 mg

of sodium per day

That's

143%more than the recommended level of **1500** mg for your age

and

65%more than the recommended maximum of **2200** mg for your age**28%**

of your intake is from eating out

19%

of your intake is from prepared meals, sides and soups

16%

of your intake is from bakery products and cereals

15%

of your intake is from cheese and dairy products

13%

of your intake is from processed meat, fish and poultry

5%

of your intake is from added salt

3%

of your intake is from spreads, condiments, dips and sauces

0%

of your intake is from salty snacks

0%

of your intake is from canned vegetables

Brief Report ▲

More ►

APPENDIX D: REFLECTION RUBRIC - SET A PERSONAL SODIUM-REDUCTION GOAL FOR A HEALTHY HEART

	4	3	2	1
Content	4 diverse ideas about sodium-reduction, along with all the other information (e.g., the connection between healthy eating and healthy heart) are presented in a logical manner.	3 ideas about sodium-reduction are presented, but some information (e.g., the connection between healthy eating and healthy heart) is missing and/or not presented in a logical manner.	2 ideas about sodium-reduction are presented, but some essential information is missing (e.g., the connection between healthy eating and healthy heart), making it difficult to understand.	Ideas presented about sodium-reduction are questionable. Information is not presented in a logical manner (e.g., the connection between healthy eating and healthy heart), making it difficult to understand.
Presentation	Presentation flows well and shows extensive use of resources (<4) in an analytical way.	Presentation does not flow as well as it might have. Resources (>3) are used. Overall presentation is informative.	Presentation does not flow as well as it might have. Some resources (>2) are used to show general understanding.	Presentation is unorganized. Resources are not fully used to convey the assigned theme, making it difficult to follow.
Mechanics	No spelling and grammatical errors. Evidence of paraphrasing as opposed to quoting authors' ideas throughout the work.	Making more than 3 spelling/ grammatical errors. Some effort is made to paraphrase authors' ideas.	Making more than 2 spelling/ grammatical errors. Tendency to quote authors' ideas.	Too many spelling and grammatical errors. Lack efforts in citing authors' ideas.