



ENERGY LESSON PLAN

Food Security: Are We Living In A Desert?

Background

The main three things humans need to survive are food, shelter, and water. All over the world, more than 800,000,000 people are in need of food. That means that over 10.5% of the world's population is going hungry. Most malnourished people dwell in developing nations, but is it possible to experience food insecurity in an urban setting? According to the **Food and Agriculture Organization of the United Nations**, **food security** occurs "when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life". A **food desert** is a residential area where residents do not have access to good quality, affordable food. Those who live in food deserts are more likely to have poor diets due to the greater distances they must travel to gain access to healthy food options. The purpose of this activity is to assess the underlying issues that influence food insecurity in your community.

Materials

- Camera
- Chart (attached)
- Measuring tape
- Paper (for taking notes)
- Writing utensils

Procedure

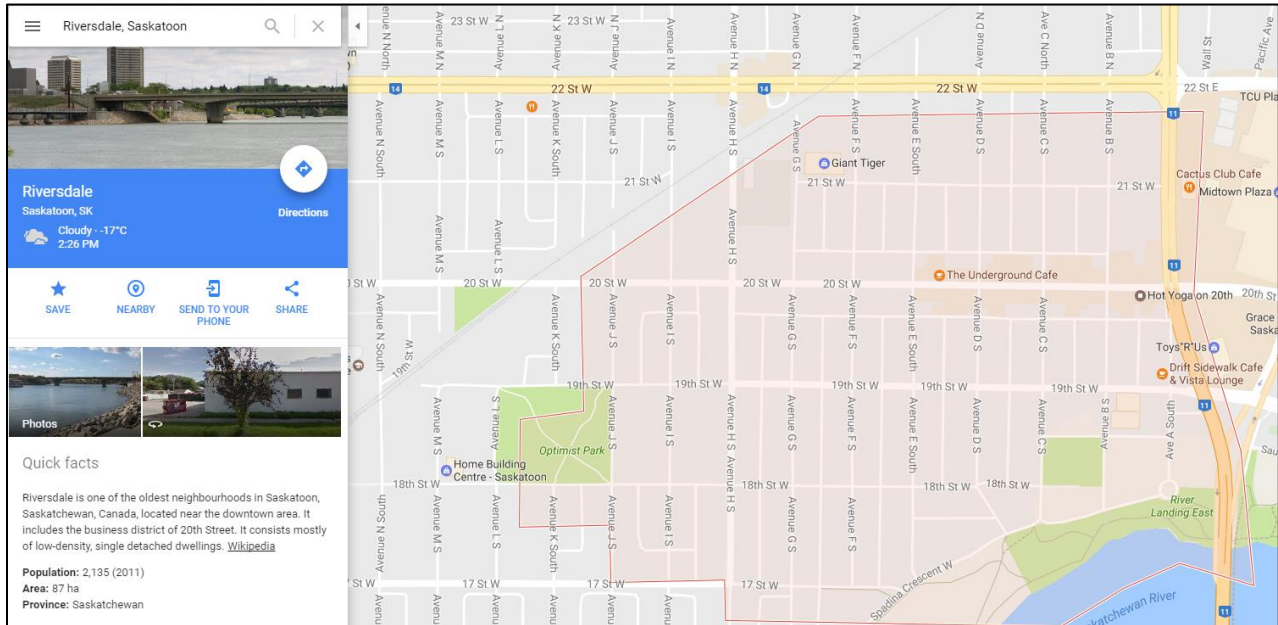
1. Divide the students into groups of four or five. Assign one neighbourhood to each group. If you wish, stay as one group and analyze your school's neighbourhood.
2. Print off the attached chart (one for each group).
3. Make a plan to visit one grocery store and one convenience store in each neighbourhood you will be studying.
4. Have the students conduct an audit by filling in the attached chart. Be sure to measure the width of the sidewalk adjacent to the grocery store, as well as the sidewalk adjacent to the convenience store.
5. Travel to a residential part of the neighbourhood you are studying. Have the students carry out the following actions, encouraging them to record their findings and/or take pictures to remind themselves later on.
 - a. Measure the width of the sidewalk in this residential area.

"Human hunger is...caused by poverty and inequality, not scarcity. We produce more than enough to feed all people on the planet."

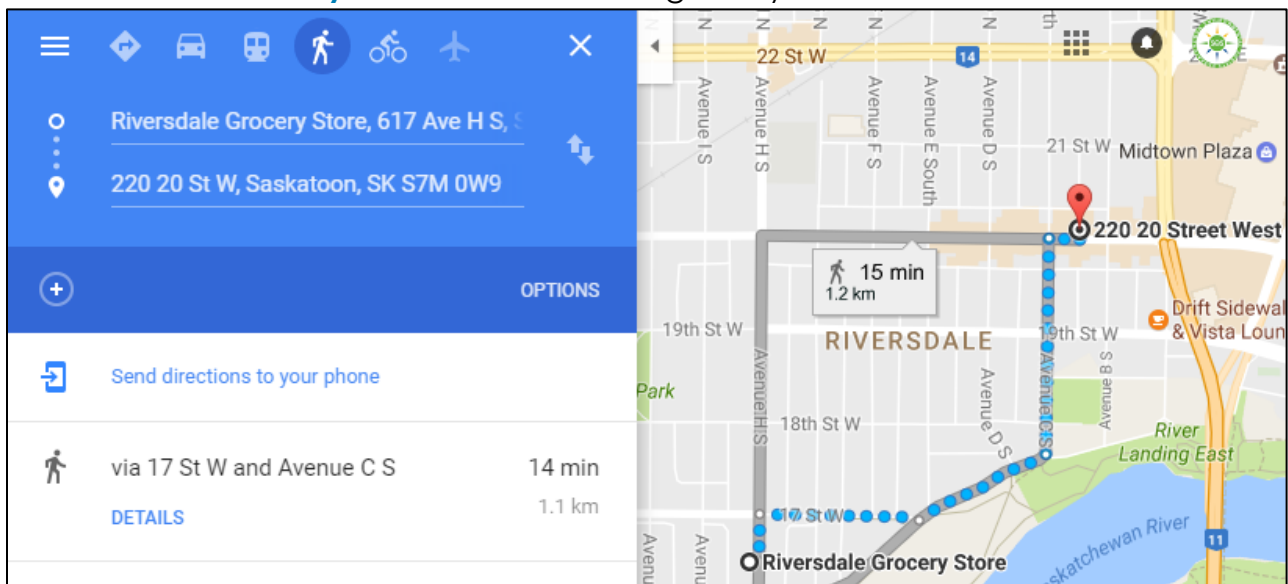
David Suzuki



- b. Analyze features such as green space, transit stops, street lamps, benches, etc. that are adjacent to the sidewalk.
 - c. Do homes in the neighbourhood have driveways? Do you get the impression that residents in this neighbourhood have vehicles?
6. Use **Google Maps** to discover the area of your neighbourhood. The example below highlights the Riversdale neighbourhood in Saskatoon, which covers an area of 87 hectares.



7. Using **Google Maps**, measure the distance between the grocery store you studied and different locations in the community. Play around with different features of Google Maps, and map out a walkable route between the grocery store and a location of your choice. The example below maps a route between the **Saskatchewan Environmental Society's** office and a local grocery store.





8. Complete the Inquiry and Discussion Questions (attached).
9. Discuss potential student-led action campaigns.

Campaign Ideas

- Arrange a program to teach people to garden in their yard
- Implement a Good Food Box in the neighbourhood
- Organize a farmers market in the neighbourhood
- Survey local residents to see if there is a need for a better transit system in the neighbourhood
- Signal to local officials that a better transit system is important to the community
- Start a community garden
- Strengthen the local food bank by raising awareness, fundraising, donating food, etc.
- Others

Did you know?

According to Food Banks Canada, 31,395 Saskatchewan residents used food banks in 2016. This was a 17.5% increase from 2015. In fact, the number of Saskatchewan residents accessing food banks has increased by over 76% since the 2008 financial crisis.

[livesustainablelives](http://livesustainablelives.ca)

Extension

Meal management is the combination of all processes encompassed in accomplishing getting a meal on the table. These processes include the purchasing of food at the grocery store, preparing the food (e.g. chopping), cooking the actual meal, and plating the meal. The students may be interested in the grocery shopping aspect of meal management. To fulfill this interest, students can include items of their choice in the attached chart. Using [Canada's Food Guide](#), have the students prepare a three-day menu of healthy food options for their family.

Additional Resources

Food Banks Canada: [HungerCount 2016](#)

PROOF: [Household Food Insecurity in Canada, 2011](#)

Saskatoon Health Region: [Food Access in Saskatoon Community Report](#)

“All aspects of food security are potentially affected by climate change, including food access, utilization, and price stability.”

IPCC

COMMUNITY:

WIDTH OF SIDEWALK:

NAME OF GROCERY STORE:

NAME OF CONVENIENCE STORE:

FOOD ITEM	AVAILABILITY (✓/x)	COST (\$)	QUALITY (good/average/poor)	AVAILABILITY (✓/x)	COST (\$)	QUALITY (good/average/poor)
Romaine lettuce, head						
Baby-cut carrots, 907g bag**						
Canned peas, 398mL						
Apples, 1.36kg bag*						
Bananas*						
Apple sauce, 6 x 104mL containers (624mL)						
Canned fruit, 398mL						
Whole wheat pasta**						
Kraft Dinner, 225g						
Whole grain bread, loaf						

FOOD ITEM	GROCERY STORE			CONVENIENCE STORE		
	AVAILABILITY (✓/x)	COST (\$)	QUALITY (good/average/poor)	AVAILABILITY (✓/x)	COST (\$)	QUALITY (good/average/poor)
Whole grain cereal (e.g. Shreddies), 725g**						
Hot dog buns, dozen						
Canola oil, 946mL						
Lean ground beef*						
Hot dogs**						
Salmon, canned, 170g						
Peanut butter, 1kg						
Eggs, large, dozen						
2% milk, 4L						
Cheese, 450g**						

*Students may wish to record the cost per kg

**Students may wish to record the cost per 100g



Inquiry and Discussion Questions

1. What is the area (hectares or km²) of the neighbourhood you studied?
2. Do you think residents that live in the neighbourhood you studied can walk to a grocery store in fifteen minutes or less? Could they get to a grocery store in fifteen minutes or less if they biked or used public transit?
3. What was the measurement of the sidewalk in the neighbourhood you studied? Was there any greenery along walkways? Did you notice any benches, transit stops, or street lamps adjacent to the sidewalk? Record your findings.
4. Do you think your findings in Question #3 encourage active transport? Why or why not?
5. Analyze your chart. Is the neighbourhood you studied a food desert? Explain your reasoning.
6. What do residents of this neighbourhood have to do to access affordable, healthy food?
7. What is one disadvantage of living in a food desert?



8. With your group, brainstorm some ideas to make healthy food more accessible in the neighbourhood you studied.



Answer Key

3. A wider sidewalk equipped with benches and surrounding greenery creates an inviting, walkable environment. Optimum sidewalk width for a residential area is about 2.5m. The ideal width for a sidewalk in a business setting ranges from 2.7m to 4m.

Resource: [Sidewalks: A Livability Fact Sheet](#)

Street lamps increase commuter safety. Transit stops increase the convenience of taking the bus, encouraging more sustainable behaviours.

5. Some neighbourhoods may not have a grocery store with healthy, affordable food. This makes it more likely for residents to choose less healthy foods they can afford. Residents may choose to shop at local convenience stores if they are easier (closer and safer) to walk to.

You may wish to think about the difference between neighbourhoods with low-income status and high-income status. For example, if residents own a car, they will be able to access healthy food by driving to a grocery store. If residents do not own a car, they must access food that is available within walking distance. They do not have the luxury of driving themselves across town or taking a taxi to do their grocery shopping.

7. Obesity rates in Canadians have significantly increased since the late 1970s. This trend is emerging globally due to urbanization, modernization, and economic development. In 2014, over 20% of Canadian adults (approximately 5.3 million individuals) and 6.2% of youth (125,000 individuals aged 12-17) were classified as obese. Obesity can lead to diabetes, heart disease, and high blood pressure. Obesity influences poor emotional health, low self-esteem, and diminished social well-being.



Curriculum Connections

Health Education 7: USC7.5 Evaluate personal food choices and needs by applying accurate and current nutritional knowledge (e.g., content labels).

Health Education 9: USC9.1 Develop informed conclusions about the importance of leadership skills and promotion in health decision making.

Wellness 10: W1 Evaluate one's understanding of wellness while participating in various learning opportunities that balance the dimensions of wellness (i.e., physical, psychological, social, spiritual, environmental). **W2** Assess, through participation in service learning opportunities and other means (e.g. interviews, discussions, observations), how service learning enhances the well-being of the volunteer and to the individual or organization/community. **W11** Make informed decisions regarding personal healthy eating practices based on connections to wellness.

Environmental Science 20: ES20-HP1 Investigate technologies and processes used for mitigating and managing resource use, waste generation and pollution associated with a growing human population.

Health Science 20: HS20-SDS1 Create and carry out a plan to explore one or more topics of personal interest relevant to Health Science 20. **HS20-NU1** Assess the importance of macronutrients (i.e., carbohydrates, proteins and fats) and micronutrients (e.g., vitamins, minerals and phytochemicals) in maintaining human health.

Food Studies 30: 4.3 To understand and analyze Canada's Food Guide. **5.3** To recognize and examine the foods that belong to the Bread and Cereal group. **6.2** To recognize the number and sizes of daily servings required in the diet. **10.7** To define meal management and to identify factors involved in planning meals. **27.5** Understand the meaning of food security.