

Chapter 3: How Does Addressing Climate Change Make Us Healthier?

Inquiry 4: Impacts on Health: Food Security

- < **Provocation** – Picture Comparison
- < **Question Generation** – Discovery, Question Starters, The Five Whys
- < **Knowledge Building** – Knowledge Building Circle, Umbrella Question
- < **Determining Understanding** – Concept Map
- < **Pursuing learning** – Experiment, books
- < **Consolidation** – Experiment Part 2
- < **Assessment** – Choice Board
- < **Take Action**



A. Provocation

To hook student interest, introduce the provocation to initiate student's thinking.

Pictures

Compare these two pictures of a cornfield as a class.



(unsplash.com)

Possible Questions:

- What do you notice about these pictures?
- Why is the weather important to farmers?
- What would happen to the farmers' crops if we didn't get any rain for a month?
- What would happen to the farmers' crops if it rained everyday for a month?
- Do you like to eat corn? Would you be able to if this happened?
- Is this happening in other parts of the world? How will this impact humans?



B. Question Generation

At this point in the inquiry, we want to harness students' curiosity and build off of the provocation by generating meaningful questions to continue to drive the learning process.

Discovery

In the fall, spring or summer, you can take the students outside and look at plants and where they grow. In the winter season they can look at indoor plants. What questions do the students have about the plants, the soil and where they grow?

Extension (Food access):

- How might these plants look different in other countries around the world?
- Do you think all of the countries in the world have the same plants?
- How do people decide what to grow?
- If the plants are different, what does that mean for the food people eat?

Help younger students with question starters.

(Who, What, Where, When, Why and How)

[Activities for Teaching Children to Ask and Answer Questions](#)



C. Knowledge Building

At this stage, students may be ready to engage in a group knowledge building activity. It will encourage students to open their minds to many alternative ways of thinking about the provocation and ideas that have been generated thus far in the inquiry process.

Engage in a class [Knowledge Building Circle](#) (recommended to conduct outside if possible) using one of the questions that you generated after the picture comparison activity or the example below.

- Possible [Umbrella Question](#): “What would you ask the farmer about their crops?”



D. Determining Understanding

At this stage in the inquiry, use responses to inform and guide the learning process. They can provide insight into which concepts need clarity, what students are already well informed about, and a general direction that students want to pursue.

After the Knowledge Building Circle, introduce [Concept Mapping](#) to students. This activity can be done in groups or with the whole class. (More info on [Concept Maps | Classroom Strategies | Reading Rockets](#))

1. Refer to the concept map that was constructed in the first three inquiries.
2. Add the new [concept map picture](#)(s) of drought, flood, environment and human impact. You can add the images or concepts that were taught on index cards or sticky notes to allow students to move them around the concept map.
3. Have students place and connect with lines the ideas that have something in common with concepts from inquiry 1, 2 and 3.
4. Finally, together develop a statement or big idea that explains the concept map.



E. Pursuing Learning

Students will continue exploration of health and climate change. If there is interest, the activities listed below offer deliberate, focused opportunities for students to pursue learning about physical and mental health related impacts and responses to climate change.

Activity Example 1: Science Experiment

Create a science experiment to understand drought and flooding.

Plant three food plants from seed or purchase three plants that are exactly the same. Decide what the plants will need in order to survive and how often they need to be watered. Decide which plant will be overwatered, never watered and which one will be watered when it needs to be. Make some predictions about what will happen to the plants or seeds after a couple of weeks. Students can use [this template](#) to record their predictions and subsequent learning.

Example Activity 2: Food Securities

If you would like to delve more into food securities and healthy eating and how it relates to climate change, read the book [The World Came to my Place Today](#) by [Jo Readman](#), [illustrated by Ley Honor Roberts](#) or find the book [here](#).

“The world really does come to visit George when his grandpa arrives, with a globe, to look after him and his sister for the day. Grandpa explains how everything from the cereal they eat for breakfast and the chocolate bars they love, to the rubber in their bicycle tyres and wood in their toys, come from plants all over the world. The lively, simple text follows George's day as he discovers the wonder of plants and how they affect his daily life.” (Jo Readman and Ley Honor Roberts)

Follow up: Activities to introduce the global-ness of food can be found in [this document](#) based on the book [“The World Came to My Place”](#).

Talk about children in our communities, in the rest of Canada, and in the world and how everyone is affected by climate change and food.

[World Hunger Statistics](#) (2016)

Additional Resources:

- [My Food Your Food](#) by [Lisa Bullard](#) Illustrated by [Christine M. Schneider](#)
 - “It’s food week in Manuel’s class. Each student tells about something special his or her family eats. Manuel learns that families have different food traditions. Some eat noodles with chopsticks. Others use a fork. Some families eat flatbread. Others eat puffy bread. Some families eat meat. Others eat no meat. What kind of food will Manuel share with his class? Join him to find out how deliciously different and alike food can be. A diverse cast gives multiple points of comparison.”
 - Sing along book: [My Food, Your Food, Our Food](#) by [Emma Carlson Berne](#), illustrated by [Sharon Sordo](#) and music by [Mark Oblinger](#)
- Book: [A Hundred Thousand Welcomes](#) by [Mary Lee Donovan](#), illustrated by [Lian Cho](#)
 - “Welcome, come in! You are invited to travel to homes around the world in this beautifully illustrated picture book about hospitality and acceptance, which features the word “welcome” from more than fourteen languages. Fans of Here We Are and The Wonderful Things You Will Be will enjoy this timeless story about family, friendship, empathy, and welcoming others.” (Mary Lee Donovan)

Possible Follow-up Questions:

- How does the weather impact our farmers and farmers around the world?
- Is it more difficult to live in other parts of Canada? The world?
- Is everyone able to afford to buy healthy food?
- What are some of the reasons people may not be able to afford to buy healthy food?
- What does it mean to be healthy? Are there different ways to be healthy and different factors to consider?



F. Consolidation

This step is designed to encourage students to integrate and synthesize key ideas. When students make connections and see relationships within and across lessons, this helps them to solidify knowledge and deepen understanding.

Plant Experiment Continued

Students can use words or pictures to represent their understanding based on the experiment they conducted in the [Plant Experiment](#)

Possible Question: What did you learn about climate change and food?



Assessment Idea

Teachers will assess learning at different points throughout the inquiry using multiple methods. The following assessment provides an alternative evaluation

method to standard quizzes and tests, that can be used after consolidation or at any point in the lesson to check for understanding.

Choice Board Strategy

Possible Guiding Question: What can we do to help our environment?

Sample Choice Board

Create a Bumper Sticker	Oral Story about how one child made a difference	Make an Announcement
Draw a Picture	FREE CHOICE	Create a dance or tableau scene
Make Music (any materials)	Sing a Song	Use Recycled Materials to Make a Model

After the students have decided which activity they would use to help the environment, they should be given an opportunity to present their understanding to other students/parents or administrators.



Take Action:

Allowing time for students to take action is an essential part of the learning process on climate change, as it empowers students and eases their eco-anxiety. Remind students that even when things get hard and seem so big they can always do something by taking action. Their actions will create an impact.

These ideas for action can be utilized at any point in the learning process, whether it's now or after completing more guided inquiries. Please note that the suggestions are consistent in each chapter.

While the future is uncertain, there are many examples of positive actions happening all around the world, and too often these stories do not get media coverage (check out [The Happy Broadcast](#) to get some good news for a change!). Finding actions that students can get involved in is paramount and in the subsequent thematic inquiries there are many examples of school projects and activities. As we collectively oscillate between optimism and outrage, stories of the past can also be important for active hope pathways.

Ask the students what they want to do to positively impact climate change. List their ideas and come up with a plan to put their action in place.

Ideas for Taking Action:

- [A Ready-made Vehicle Idling Campaign](#) NRCAN
- Create their own anti-idling or idle free posters for their community.
[Catalogue of Potential Idling Reduction Campaign](#) NRCAN
- Educate the school through different announcements sharing “waste and water facts”.
- Post the garbage collection graph on the wall outside the classroom. Do a second schoolyard garbage audit a month later. Put the second graph on the wall. Celebrate successes.
- Start a campaign for rain barrels to water school gardens
- Create anti-idling posters for the community
- Think about making a commitment to reducing plastic waste [10,000 Changes](#)
- [About World Food Day - World Food Day Canada](#) (October 16th every year)
What can we do to help that will also help climate change?

Action Project Examples

“KINDERGARTEN GARDEN PROJECT”- Byron Northview Public School- London, ON (2019) K-2

- Their vision for Canada is to foster healthy and mindful attitudes toward nature and the outside world. It is their hope to show the youngest students how to cultivate and grow a sustainable garden, respect the planning and planting process, and to reap the benefits of growing their own produce. [See their project here.](#)

“USING A HYDROPONIC GROW KIT WITH GRADE 1/2”- Anne Hathaway Public School- Stratford, ON (2020) K-2

- The goal of the project was to learn about the importance of eating local produce, sharing local produce with others, and learning about where food comes from. The first step of the project was to use a hydroponic grow kit to see leafy greens grow fairly rapidly in the classroom. Grade 1/2 were intrigued that plants could grow without soil and were very excited to watch the lettuce grow. [See their project here.](#)

*How could you use these great examples to come up with action projects with your K-2 students?

- [Think Big! Collective Action for Climate Change | Sustainability Classroom Resources](#) at Resources for Rethinking
- [World's Largest Lesson](#)

- “In the first activity the students watch a 5 minute video that takes them around the world visiting other young people who have taken individual actions to fight climate change. From India to Jordan, the students see that individual actions can make a difference while the narrator encourages them to fix things where they live. The message of the video is to invent, collaborate or campaign to make improvements where you live. After watching the video, the students will brainstorm a list of possible actions that could fight climate change.”
- Feeding Our Community - Ruth Betts Community School - Flin Flon, MB (2019)
 - Students at RBCS built a community garden to increase the availability of affordable fresh produce. Students acquired the knowledge to build, grow, and harvest their own fresh fruit and vegetables and how to utilize them in daily meals and snacks. The garden contains a plant medicine wheel, ceremonial plants, and a three sisters garden, incorporating traditional knowledge. [See their project here](#)
- VegFest - E.L. Crossley Secondary School, Pelham, ON (2016)
 - E.A.R.T.H. club members at E.L. Crossley hoped to inform their fellow students about the positive impacts a plant-based diet can have on the future of our planet. Students organized a week of veggie-friendly events with the support of various local community partners. The week’s events included a vegan cooking class with a local natural chef, a screening of the documentary Cowspiracy, a smoothie day, vegan salad bar extravaganza, cafeteria games, and a vendor day. VegFest received an overwhelmingly positive response and high levels of student participation each day. [See their project here](#)