



FINDING **patterns**



Think About

Do you and/or your family have a garden? What types of plants do you grow?



Investigate

How well do you know your local agricultural community?

Use what you know about your community first. You can also use online sources such as those below that can help you find farms in different areas of Alberta. Remember that these sources do not represent all the farms that are located in Alberta.

Alberta Open Farm Days provides regional maps of some of the farms in areas of Alberta that participate in their yearly event. The event gives Albertans an opportunity to experience the farm and understand where their food comes from. Go to <https://albertaopenfarmdays.ca/open-farm-day-planner-maps/> and select a map.

The **Alberta Farm Fresh** website provides a map with different farm locations that sell products directly to people in their communities. Find a map that you can search at <https://albertafarmfresh.com/find-a-farm/>.

How does climate affect agriculture? Go to www.projectagriculture.ca/elementary to find the carousel slide with this guiding question in the **changing EARTH** topic. Use the information in the carousel slide and the **Farm and Climate Patterns Learning Source** to help you complete these learning tasks.

There are almost 230 000 farms in Canada that produce **commodities** - crops and animals grown and raised on farms. These commodities range from grains and oilseeds, vegetables and fruits to dairy cows, beef cows, chickens and hogs.

Work with your class or a trusted adult to select some farms that have their own website. Investigate what they grow or produce with the questions that follow.

How many farms were you able to identify in or around your community? Find the farms to the north, east, west and south of your community. What did you notice about the farms you were able to find?

North	East
West	South

What types of farms are represented in your area? Are there dairy cows, beef cattle, chicken or turkey, eggs, hogs, wheat, barley, pulses like chickpeas, lentils, beans or dry peas, greenhouse plants, fruit trees, vegetables or honey bees? Identify at least three of the commodities found on these farms.

In what ways do you think climate affects the food that’s available to you locally?



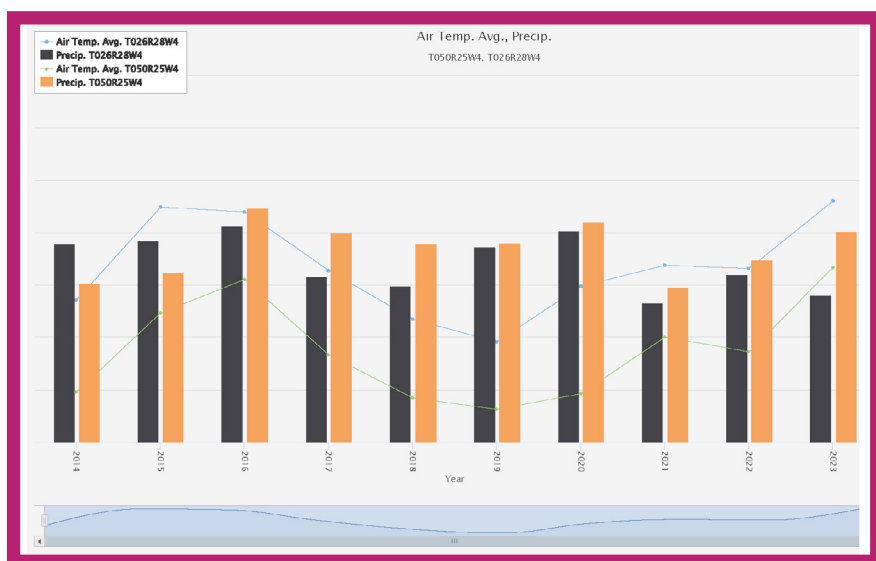
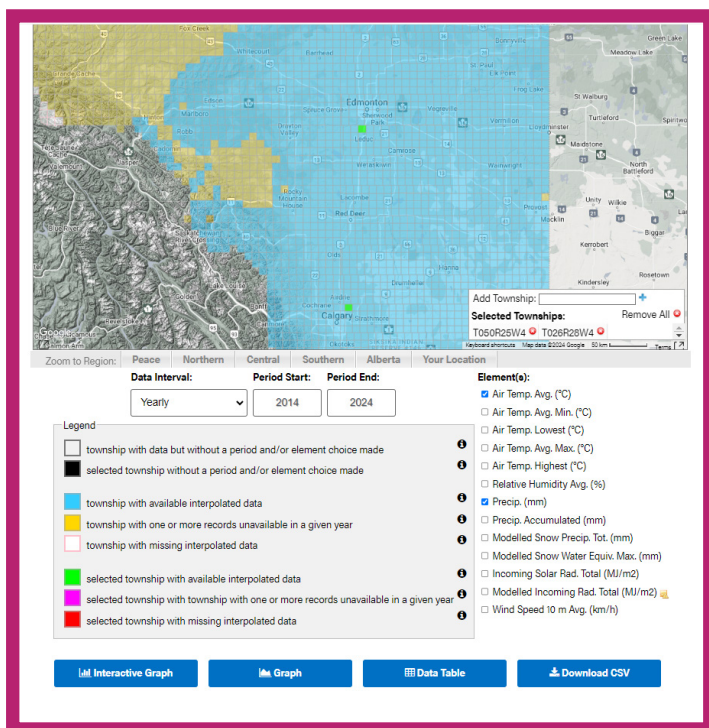
Challenge yourself! Work with your classmates to use the information on a website from the Government of Alberta. This website allows you to create a graph that shows the average temperature and precipitation for a specific **township** area in Alberta over a period of time.

Go to <https://acis.alberta.ca/township-data-viewer.jsp>.

Here's how to create a graph. Check out the example image here before you start. This example shows what the screen on this website will look like when two townships are selected.

1. Enlarge or decrease the size of the map to show the area you want to focus on. Click on a small square on the map to select it.
2. Select two different locations.
3. Look for the Data Interval, Period Start, Period End and Elements options under the map.
4. Select **Yearly** for the Data Interval.
5. Select the **start and end dates**.
6. Select **Air Temp. Avg. (°C)** and **Precip. (mm)** in the Elements menu.
7. Click the Interactive Graph button to display your information. Hover over each bar in the graph and each point on the line to see the averages. Your graph may look something like the example image here.

Townships refer to a specific section of land in Alberta. The township system is a grid that divides the province into equal-sized parcels, or squares, of land.



What locations did you pick? In what climate zones are these locations (subarctic, semi-arid, humid continental)?

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Record the information you get from your graph in a **Retrieval Chart**. Use the chart below or make your own.

	Location 1	Location 2	Location 1	Location 2
Year	Average Temperature	Average Temperature	Average Precipitation	Average Precipitation

What similarities or differences did you see in your graph and chart?

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What patterns or trends in the **average temperatures** did you notice over time for each location?

A **trend** is a pattern of change or a movement that occurs over time.

Location 1	Location 2

What patterns or trends in the **average precipitation** did you notice over time for each location?

Location 1	Location 2

In what ways do you think a farmer could use information from a data source like this to plan when to plant their crops or how much water they might need?

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Experiment

Do **microclimates** exist close to you? Work as a class to identify the hottest and coolest locations in your schoolyard to investigate for microclimates. Look for more or less sun exposure, closeness to a building, a higher elevation or more vegetation.

Assign a different location to a group in your class. Mark the locations in some way so you can find them again.

WHAT TO USE

- Thermometer
- Anemometer (to measure wind speed and pressure); alternatively use just a windsock or flags

WHAT TO DO

1. Identify and describe your location. Make initial observations about sunlight exposure, shade coverage, wind speed and direction and temperature.

Use your senses to observe differences in temperature and moisture levels. Identify and describe any **living things** – plants, animals and/ or insects – that you see. Identify and describe any **non-living features**, such as holes, rocks, etc.

2. Place a thermometer at your location to measure the air temperature. Ensure that the thermometers are positioned in shaded areas and are not directly exposed to sunlight or artificial heat sources. Record the temperature reading.



Location (Hottest or Coolest)	Sunlight and Shade	Wind	Humidity/ Moisture Levels	Temperature	What Lives Here	What Else is Found Here

3. Bring your observations back to compare your location with the other locations your classmates observed. Discuss and compare using the questions that follow.

What might be making your location the hottest or coolest spot?

How does your location compare to other hottest (or coolest) locations?

Did you notice any differences between the plants and animals that live in the other locations? What were the differences?

What evidence did you find of any microclimates that exist in your schoolyard?

Create a map of the schoolyard and mark the locations you investigated. Record your data and observations to make comparisons.