

Weather to Farm

TEACHER GUIDE (Grade 5)

GOALS:

- Students will identify and define components of weather.
- Students will describe how weather conditions affect farming and the production of the food they eat.

CURRICULUM CONNECTIONS

Grade 5 Science - Weather Unit	
5-4-01	Use appropriate vocabulary related to their investigations of weather. Include: weather; properties; volume; pressure; air masses; fronts; weather instrument; severe weather; forecast; accuracy; water cycle; climate; terms related to public weather reports, and cloud formations
5-4-02	Describe how weather conditions may affect the activities of humans and other animals. Examples: heavy rainfall may cause roads to wash out; stormy conditions may prevent a space shuttle launching; in excessive heat, cattle may produce less milk
5-4-07	Identify and describe components of public weather reports from a variety of sources. Include: temperature; relative humidity; wind speed and direction; wind chill; barometric pressure; humidex; cloud cover; ultraviolet index; warm and cold fronts; amount, types, and probability of precipitation
5-4-16	Differentiate between weather and climate. Examples: weather includes the atmospheric conditions existing at a particular time and place; climate describes the long-term weather trend of a particular region

VOCABULARY DEFINED IN THE GAME

blizzard	climate	cold front	dew	drought
frost	frost free days	heat wave	humidex	rain
relative humidity	snow	warm front	weather	wind

BACKGROUND INFORMATION:

Weather impacts our food security because weather can positively or negatively impact the growing of crops and raising of animals for food.

One of the biggest risks that farmers must deal with is the weather, something they have no control over.

But farmers do have control over how they adapt to and prepare for bad weather. For example:

- Although the drought on the Prairies in the 1980s was worse than the 1930s no one talks about the ‘dirty eighties’ because farmers changed farming practices to include zero-till, herbicide weed control instead of tillage, and cover crops to protect soil, capture snow, and hold moisture.
- Farmers plant tree shelterbelts to minimize wind erosion of soil, moderate the absorption and release of moisture, and provide shade for livestock.
- Farmers use new crop varieties that mature more quickly and require fewer frost-free days.
- Farmers can buy crop insurance against disastrous weather like severe flooding or hail.

In this Weather to Farm game, a farmer’s lack of control of the weather is simulated by having students randomly select weather cards to discover the effects of that weather on their crops, animals, and bottom line. Students will also have the option of buying crop insurance to cover the costs of planting a crop that gets destroyed by severe weather.



While we often hear in the media when weather has created disastrous consequences for food production and farmers, weather usually creates reasonable conditions for growing crops and raising animals, thus ensuring that farmers produce enough food to feed us all.

Climate change is creating more unpredictable weather. Farmers today, and in the future, will have the difficult task of adapting to even more unpredictable weather. Innovation, technology, and new best management practices are being developed today to help farmers adapt.

Lesson Plan Options

Option I.	In-class Lesson	Page 3
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Option I: IN-CLASS LESSON PLAN

Materials Needed:

- **Follow the Farmers** - [Weather to Farm video](#)
- **Weather to Farm Game**
- **Device(s)** – see Option A & B descriptions below.
 - Option A: Whole Class Activity – computer, projector, screen
 - Option B: Individual Student Activity – one tablet, laptop, or computer per student

Activate

Use the Weather to Farm Video to activate student learning.

BEFORE THE VIDEO

- As a class, have students identify all the components of weather that they know. Record the students' answers.
- Ask students why they think a farmer would want to have a weather station on their farm?

DURING THE VIDEO

- Have students watch for all the weather components that Korey measures on his farm.

AFTER THE VIDEO

- Revisit your class's list of weather components. Check off all the weather components on your list that Korey uses on his farm and add any missing weather components.
- Have a class discussion about why farmers would want to have a weather station on their farm and why it is important for farmers to keep track of the weather.

Acquire

Have students play the **Weather to Farm Virtual Game** using either option A or B below.

Assess

Assessment ideas:

1. Have students journal about how weather affects farmers and the growing of the food we all eat.
2. Look at weather reports on or from different days of the year and have students discuss or write about how that weather might affect a farmer and his/her ability to grow food.
3. Have the students keep a 'Farm Diary' for a week, in which they record the weather each day and how it affected what they, the farmer, did and/or how it affected their crops or livestock.

Example Diary entry:

Weather - May 15, 2021

Temperature: high of 15°C, low of 4°C

Precipitation: rain, 25 mm

Wind: NW 20km/h

Relative Humidity: 95%

Today, I had to postpone shearing the sheep due to the steady rain, so I worked in the workshop changing the oil in the tractor. It needed an oil change because of all the field work we have been doing planting seed.

The rain is welcome though as it will help my newly planted canola to sprout and grow.

WEATHER TO FARM GAMEPLAY OPTIONS*

OPTION A: Whole Class Activity

Weather to Farm Game

- This game can be led by the teacher, projected onto a screen, and played as a class to introduce and define weather terms and the important effects that weather has on farmers and the production of our food.
- Then reinforce the learning by having the students play the game again on their own.

* See the note on p.4

OPTION B: Individual Student Activity

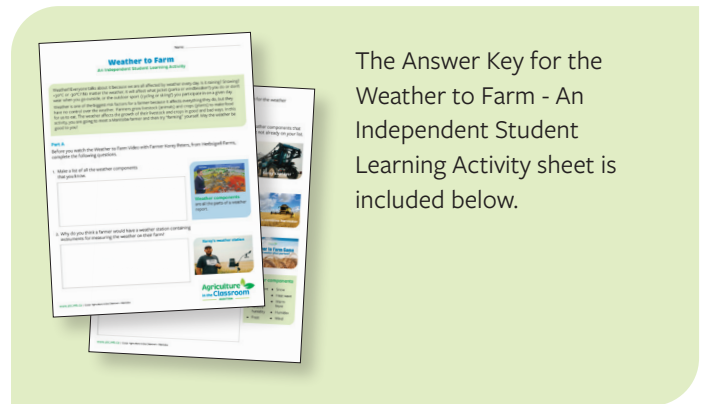
Weather to Farm Game

1. Once students have learned the different weather terms, the Weather to Farm Game provides a fun, interactive way for them to individually review those terms and discover how weather conditions affect the activities of farmers and the food they produce.
2. This game can be played by students using any device: laptop, tablet, or desktop.

Option II: INDEPENDENT STUDENT VIRTUAL LESSON

Materials Needed:

- One device, tablet, laptop, or computer, per student
- Provide the online Weather to Farm - Independent Student Learning Activity fillable pdf to each student.
 - The electronic fillable pdf is available as a free download on the [Follow the Farmer webpage](#).
 - The pdf contains the live links needed for students to access the following materials used in this lesson:
 - » Follow the Farmers - Weather to Farm video
 - » Weather to Farm online game
 - You can preview these resources on the [Follow the Farmers webpage](#).
 - This worksheet is designed using
 - » Activate (Part A)
 - » Acquire (Part B the video and Part C the game)
 - » Assess (Part D).



The Answer Key for the Weather to Farm - An Independent Student Learning Activity sheet is included below.

Please note

When playing the Weather to Farm Game for the second time on the same computer, you will encounter a black screen with the option to Resume or Restart. This is a control screen put in place by your browser. Choose Restart to start the game from the beginning.



Weather to Farm Answer Key

An Independent Student Learning Activity

Weather! Everyone talks about it because we are all affected by weather every day. Is it raining? Snowing? +30°C or -30°C? No matter the weather, it will affect what jacket (parka or windbreaker?) you do or don't wear when you go outside, or the outdoor sport (cycling or skiing?) you participate in on a given day.

Weather is one of the biggest risk factors for a farmer because it affects everything they do, but they have no control over the weather. Farmers grow livestock (animals) and crops (plants) to make food for us to eat. The weather affects the growth of their livestock and crops in good and bad ways. In this activity, you are going to meet a Manitoba farmer and then try “farming” yourself. May the weather be good to you!

Part A

Before you watch the Weather to Farm Video with Farmer Korey Peters, from Herbsigwil Farms, complete the following questions.

1. Make a list of all the weather components that you know.

Weather components could include:

- | | |
|--|------------------------------|
| • temperature | • frost |
| • wind speed and direction | • warm or cold front |
| • wind chill | • heat wave |
| • precipitation such as rain, snow, hail | • humidex |
| • cloud cover | • barometric pressure |
| • relative humidity | • low or high pressure areas |
| • UV index | |



Weather components are all the parts of a weather report.

2. Why do you think a farmer would have a weather station containing instruments for measuring the weather on their farm?

Answers will vary



Part B: During the Weather to Farm Video with Farmer Korey Peters, watch for the weather components that Korey uses to make decisions on his farm.

1. [Click here](#) to watch the Weather to Farm video.
2. Go back to your list of weather components in **Part A**. Check off all the weather components that Korey uses to make decisions on his farm. Add any that Korey used that are not already on your list.
3. Korey checks on wind speed to help him decide the best time to spray his crop to protect it from weeds. What type of wind is best for spraying crops?

Very light or no wind is best.

4. Why does Korey check if frost is being forecasted when he is deciding when to plant seeds?

Frost can damage or kill tiny new plants so you don't want to plant the seeds too early and have the plants sprout when there is a frost coming.

5. Why can't crops be harvested when it rains?

The harvested crop would be wet. If wet grain is put in the grain bin it will spoil.

6. What is the most interesting thing you learned in this video?

Answers will vary



Part C: Now it is time for you to be the farmer.

[Click here](#) to play the Weather to Farm Game.

Record your score here: [Answers will vary](#)

The intro screen may look like this. If so, click Restart here!



Part D: Complete the following question.

1. a. Pick 2 weather components from the list.
b. For each weather component you have chosen, describe:
 - i. one good way it could affect your farm
 - ii. one bad way it could affect your farm

Answers will vary

Weather components

- | | |
|---------------------|--------------|
| • Cold front | • Snow |
| • Rain | • Heat wave |
| • Dew | • Warm front |
| • Relative humidity | • Humidex |
| • Frost | • Wind |