



# Hold On To Your Hat

## Weather in Saskatchewan

Grade Four Science



### CURRICULUM CONNECTIONS

Grade Four Science Core Unit: Predicting Weather

<http://www.sasked.gov.sk.ca/docs/elemsci/gr4udesc.html>

## LESSON PLAN ONE: CLASSROOM INTRODUCTION TO THE THEME

### LESSON OVERVIEW

Students will learn about weather lore of the past, and investigate its validity as it pertains to predicting the weather.

### RESOURCES AND MATERIALS

- WDM Research documents entitled *Cold 'Nuff Fer Ya?* by Janet MacKenzie and *First Nations Weather* by Lua Young available at <http://www.wdm.ca/skteacherguide/>
- Fast Facts information (at the end of the resource package)
- Library and/or Internet access
- Pencils, paper
- Weather lore sheet (appendix one)



Devastation in the wake of the Regina Cyclone, 1912. Western Development Museum 3-A-129

### PROCEDURE

1. Prepare to teach the lessons on weather by reading the research documents listed in Resources and Materials and the Fast Facts section at the end of the resource package.
2. Discuss Saskatchewan's preoccupation with weather, past and present. Ask students why they think this is so. Brainstorm reasons why Saskatchewan is known as a land of weather extremes.
3. Discuss with students the idea of using folklore to predict the weather. Explain that Saskatchewan's First Peoples and early settlers couldn't turn on a radio or television set or open up a daily newspaper to find out the weather forecast. Through many years of observation and experience, certain happenings were associated with the coming weather, and in many cases, catchy sayings developed to go along with these observations.
4. Caution students that not all folk weather sayings are accurate or applicable outside of the locations in which they developed.
5. Explain that the students are going to be weather detectives who will investigate how accurate or inaccurate some folk weather sayings are when applied to where they live in Saskatchewan. Students are expected to give evidence to support why they believe their sayings to be true or not.
6. Divide the students into research teams and assign each team one or two folk sayings from the weather lore sheet from appendix one.
7. Allow students time to access library and Internet resources, interview grandparents or contact other sources. A good selection of information sources are listed in the Resources section of this resource package.
8. Have students share their findings with the class.



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### ADAPTATION AND EXTENSION

1. A similar activity can be done by having students study cloud types and patterns. For example, high-flying clouds to predict rain within 48 hours. A useful website is *Forecasting the Weather Using Clouds Grade 10* online at [www.sasklearning.gov.sk.ca/docs/native10/F\\_L\\_Objectives.html#IE](http://www.sasklearning.gov.sk.ca/docs/native10/F_L_Objectives.html#IE).
2. Try testing some simple weather prediction techniques using elements of nature. Observe changes in humidity by watching a pine cone. The cone will open in dry weather and close up in moist weather. To determine temperature in degrees Celcius, count the number of cricket chirps in 25 seconds, divide by three and add four.
3. Invite an Elder into the classroom to talk about signs used to predict weather in First Nations cultures. For guidelines on the protocol for inviting Elders into the classroom, refer to *Native Studies 10: A Curriculum Guide For Grade 10* online: [http://www.sasklearning.gov.sk.ca/docs/native10/F\\_L\\_Objectives.html#IE](http://www.sasklearning.gov.sk.ca/docs/native10/F_L_Objectives.html#IE)
4. Read "Spring Storm, 1916" by Lorna Crozier in *The Weather*, Coteau Books, 1983. Ask students to write a poem about a memorable weather event in their lives.

## LESSON PLAN TWO: AT THE MUSEUM

### LESSON OVERVIEW

Students will explore the contents of a discovery box and tour exhibits in the Museum.

### RESOURCES AND MATERIALS

- Materials and information sent to you in your Museum tour confirmation package



In the discovery box *Hold On To Your Hat - Weather In Saskatchewan*, students will discuss our four seasons, the challenges they have presented and how we have adapted to and harnessed the forces of nature. They will hear dramatic accounts of Saskatchewan's fierce storms, terrible tornadoes, and weird weather.



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### PROCEDURE

1. Prepare to teach and to tour the Museum by reviewing the resources listed. Divide your class into groups before the visit. Discuss the required number of groups with the Museum Programmer when book your visit. Select other staff members or parents to lead the groups. Advise the group leaders about what they will have to do.
2. Students will visit a Western Development Museum in Moose Jaw, North Battleford, Saskatoon or Yorkton. The entire class will assemble for a welcome and orientation.
3. The class will be divided into two, three or more groups. Students will interact with artifacts, replicas and photographs located in a discovery box. A leader's script included in the discovery box will spearhead discussion.
4. The class will tour pertinent exhibits in the Museum using a tour handout to guide their exploration. This handout may be a question-and-answer sheet or scavenger hunt. The tour script for the group will be sent to you with confirmation of your Museum tour booking.

## LESSON PLAN THREE: WHEN A MUSEUM VISIT ISN'T POSSIBLE

### LESSON OVERVIEW

Students will construct a timeline of extreme weather events in Saskatchewan.

### RESOURCES AND MATERIALS

- Copies of the Fast Facts information at the end of the resource package
- Paper, pencils, crayons/markers and bristol board
- Highway map of Saskatchewan and pushpins

### PROCEDURE

1. Prior to teaching the lesson, develop a blank template for a 100 year timeline between 1905 and 2005. The timeline should be large enough to incorporate student illustrations and the addition of weather events and dates. Large sheets of bristol board would provide a large enough surface area to accommodate the pictures and text. Divide the timeline into four equal pieces.
2. Distribute copies of the Fast Facts information on important weather events to each student and review as a class.



Digging out a locomotive buried in a snowbank near Estevan, SK, circa 1919. Western Development Museum 7-D(a)-43.



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3. Divide the class into four groups, assigning each group a 25 year time period between 1905 and 2005. Each group will be responsible for adding text and providing illustrations of the weather events occurring in their 25 year time period.
4. Give each group one of the four timeline pieces. Using the Fast Facts information, ask students to add the important weather events in Saskatchewan that took place during their 25 year time period to their piece of the timeline, and to illustrate each event with a picture.
5. Each group is also expected to find the location of their events on a Saskatchewan highway map, and to mark the location with a pushpin and tag. Hang the map in a central location and provide students with access to pushpins and slips of paper to make tags.
6. Once each group has completed its portion of the timeline, bring the pieces together and post them. Discuss how each extreme weather event affected humans, other living things and the economy in the areas they occurred.

## **ADAPTATION AND EXTENSION**

1. Visit a local area museum to see what kinds of weather prediction artifacts are in the collection. Discover artifacts for staying warm and keeping cool. To find a museum in your area, visit the Museums Association of Saskatchewan at <http://www.saskmuseums.org>.
2. Using a classroom projector or individual computers, view the weather-related photographs on the *Celebrating Saskatchewan's Heritage* website at <http://olc.spsd.sk.ca/DE/Sask100gallery/weather.htm>.

## **LESSON PLAN FOUR: CLASSROOM WRAP-UP**

### **LESSON OVERVIEW**

Students will participate in a webquest to discover why Saskatchewan is known as the “land of living skies”.

### **RESOURCES AND MATERIALS**

- Internet access to the *Living Skies Webquest*, created by Ron Waldron and Ingrid Gabert, at <http://olc.spsd.sk.ca/DE/webquests/landofthelivingskieswq/index.htm>
- Paper and pencils



Flooded field with partly submerged hay bales near Neuhorst, SK due to the high rainfall experienced during the 2005 growing season. Ruth Bitner Photo.



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## **PROCEDURE**

1. Introduce the students to the topic of changing weather by discussing the slogan found on Saskatchewan license plates – “Land of Living Skies”.
2. Create a mind map with students outlining the variety of weather related phenomena that bring this slogan to life.
3. Explain that the students will be going on a virtual journey to discover weather across the province by participating in a webquest.
4. Divide students into small groups or pairs and direct them to the *Living Skies Webquest* at <http://olc.spsd.sk.ca/DE/webquests/landofthelivingskieswq/index.htm>.
5. Direct students to follow the online instructions and complete the webquest.

## **ADAPTATION AND EXTENSION**

1. Students could present their research findings from the webquest in an alternate presentation format like a poster or diorama.
2. Make weather instruments to measure weather data. The following resources include instructions and information for constructing simple instruments:
  - Scholastic’s *Weather Watch* website [http://teacher.scholastic.com/activities/wwatch/gather\\_data/](http://teacher.scholastic.com/activities/wwatch/gather_data/)
  - Saskatchewan Learning’s *Science: A Curriculum Guide for the Elementary Level*, “Grade 4 Core Unit: Weather,” pages 424-431 or <http://www.sasked.gov.sk.ca/docs/elemsci/gr4udesc.html>
3. Visit a museum like Wanuskewin Heritage Park or the Royal Saskatchewan Museum to see how First Nations protected themselves against the cold. Research how and why First Nations groups travelled to different areas with the seasons. Visit the Saskatchewan Science Centre in Regina to explore climate change.



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### RESOURCES:

- Weather-related photographs and activities are available on the *Celebrating Saskatchewan's Heritage* website: <http://olc.spsd.sk.ca/DE/saskatchewan100/index.html>.
- WDM weather-related research papers, *Cold 'Nuff Fer Ya?* by Janet Mackenzie and *First Nations Weather* by Lua Young, are available online at <http://www.wdm.ca/skteacherguide/>.
- Environment Canada's *Skywatchers* website provides weather information for teachers and students. Take a virtual tour of a weather office from the comfort of your classroom! [http://www.weatheroffice.pyr.ec.gc.ca/skywatchers/index\\_e.html](http://www.weatheroffice.pyr.ec.gc.ca/skywatchers/index_e.html)
- Scholastic's *Weather Watch* website explores weather tools, tracking clouds, forecasting and climate. [http://teacher.scholastic.com/activities/wwatch/gather\\_data/](http://teacher.scholastic.com/activities/wwatch/gather_data/)
- Environment Canada provides weather forecasts and other weather related information. <http://www.ec.gc.ca/envhome.html>
- Climate Change Saskatchewan includes information on the factors influencing climate change in the province and what people can do to help. Resources for educators are available. <http://www.climatechangesask.com/index.cfm>
- The *Rhyming Folk Lore Weather Forecasting* website is a privately administered site with a lengthy list of folklore weather forecasting methods, and contributors from around the world. <http://users.tpg.com.au/sharenet/wea/weather.html>
- Wheaton, Elaine. *But It's a Dry Cold: Weathering the Canadian Prairies*. Calgary: Fifth House Publishers, 1998.
- Crozier, Lorna. *The Weather*. Moose Jaw: Coteau Books, 1983.
- Canadian version of the *Farmers' Almanac*.

### FAST FACTS

The facts below outline some extreme weather events in Saskatchewan history. This is by no means a complete list of extreme weather in Saskatchewan, but it provides a snapshot of some of the more notable weather events that have touched the province.

- The winter of 1906-07 was an extremely cold, harsh and long winter. The cold and blizzards took their toll, especially on livestock, as 70 per cent of range cattle died in southwestern Saskatchewan.
- On June 30, 1912, a cyclone hit the City of Regina. The storm killed 28 people, destroyed 500 buildings and left 2500 people homeless. The winds during the storm were calculated at 500 km/hr+, which would classify the cyclone as an F5 storm – the strongest on the Fujita Scale. It is often referred to as the Regina Tornado as well.
- Saskatchewan experienced a period of drought during the years 1929 to 1938 known as the Dirty Thirties. Drought, heat and dust storms drove farmers to desperation. The year 1937 is considered the worst year of this time period with an all time low crop average of 2.6 bushels per acre. The towns of Midale and Yellow Grass experienced the hottest day ever recorded in Canada on July 5, 1937 when the mercury rose to 45°C.



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- Two deadly tornadoes struck during the summer of 1944. On July 1, 1944, a tornado at Lebret took four lives, and an August 9 tornado in Kamsack killed three. Kamsack was devastated with 75 per cent of its homes and 100 businesses destroyed.
- The blizzard of February 1947 is one of the most memorable in Saskatchewan's history. The blizzard raged for 10 days, blocking all highways into Regina. A train was buried in a snowdrift a kilometre long and eight metres deep. Food, fuel and feed supplies ran low. One farmer is reported to have had to cut a hole in the roof of his barn to get inside to milk his cows.
- Due to rapid spring thawing, in 1952 Saskatchewan had serious floods in many parts of the province. Most Eastend residents were forced to evacuate due to flooding of the town and the dam there was seriously damaged. The 380 meter long Saskatchewan Landing Bridge, opened in 1951, was destroyed by powerful ice floes on April 6, 1952.
- Saskatchewan experienced a severe drought in 1961. A ten-day heat wave in early June hit Saskatchewan, and high temperatures and little rain resulted in the hottest and driest month ever recorded in Western Canada to that time.
- A remarkable event occurred during the 1961 drought year which was the driest on record for areas in southern Saskatchewan. On May 30, 1961, the hamlet of Buffalo Gap received 250 mm of rain in one hour. Hail the size of small eggs fell and piled up as much as four metres in some areas. Strong winds of 100 kilometres per hour were also experienced.
- On August 27, 1973, the largest ever-recorded hailstone in Canada fell near Cedoux, Saskatchewan. The hailstone measured a whopping 114 mm across and weighed 290 grams. The storm caused an estimated \$10 million in crop and property damage.
- Tornado force winds and hail caused damage to farms and towns in southeastern Saskatchewan on July 8, 1989. A general store and skating rink were lifted from Peebles and deposited three kilometres away.
- The community of Vanguard experienced extensive flooding after 330 mm of rain fell in eight hours on July 3, 2000, washing out roads and fields, and causing property damage.
- Saskatchewan experienced a significant drought during 2001-2003. Record-breaking heat hit Saskatchewan in July 2001, and only got worse as summer wore on. Some farmers destroyed their stunted grain, a cheaper alternative to harvesting. Others let their cattle graze on what was left of their crops. Some communities, such as Kindersley, declared themselves disaster areas. In September 2002, the Canadian Wheat Board dropped out of world markets, because the continuing drought meant there was not enough wheat to sell to new customers. Warm winds brought record highs in early January of 2003, especially in the southwest of the province.
- More than 1000 people from community of Cumberland House and the nearby Cumberland House First Nation were evacuated due to rising flood waters of the Saskatchewan River in June 2005.



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## APPENDIX ONE

### Weather Lore

- If the Rooster crows on going to bed, he may rise with a watery head.
- When bees stay close to the hive, rain is close by.
- Red sky at night, shepherd's delight. Red sky in the morning, shepherd's warning.
- When teeth and bones and bunions ache, expect the clouds to fill the lake.
- Birds on a telephone wire indicate the coming of rain.
- Flowers close up before a storm.
- Fish bite best before a rain.
- A reddish sun has water in his eye; before long you won't be dry.
- When clouds appear like rocks and towers, the Earth's refreshed with frequent showers.
- Flowers smell best just before a rain.
- When a halo rings the moon or sun, rain is approaching on the run.
- Before a storm, cows will lie down and refuse to go out to pasture. If cows huddle, it's going to rain.
- The higher the clouds, the better the weather.
- If clouds move against the wind, rain will follow.
- Expect stormy weather when ants travel in a straight line.
- When the leaves of trees turn over, it foretells a storm.
- If March comes in like a lion, it goes out like a lamb. If March comes in like a lamb, it goes out like a lion.
- Six months after a winter day of hoar frost it will rain.