Wild Wild Weather

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WILD, WILD WEATHER

UNIT OVERVIEW

Students tackle the mysteries and wonders of weather in this four part approach. The first section, "**Weather Tracking Chart**", involves students measuring and tracking the weather on a daily basis. In the second part, "**Core Lessons**", basic weather topics such as temperature, wind, pressure, clouds and precipitation are studied. Exciting activities integrated with student notes provide students with solid background information. The third part of the unit, "**Enrichment Lessons**" focuses on the more dramatic - examining tornadoes, hurricanes, thunderstorms and the greenhouse effect, again using student notes and activities. Six "**Optional Activities**" make up the fourth part of the unit.

PART I - WEATHER TRACKING CHART

Students keep track of the weather twice daily on a large-sized chart. Students begin the unit by measuring temperature and add other measurements to the chart as they are learned. Eventually students measure temperature, wind speed and direction, pressure, precipitation and cloud cover using student-made or teacher-made instruments, in most cases.

PART II - CORE LESSONS

This section covers basic weather topics by combining activities with student notes. The notes can be photocopied onto overhead projector transparencies or simply written on the board.

1.	**Solid Liquid Gas**	-	Wacky Weather (Quiz)
2.	**Changes of State**	-	Weather Whys (Worksheet)
3.	**Temperature**	-	Baby Food Jar Madness
4.	**Wind**	-	Wind Vane
5.	**High And Low Pressure**	-	Weather Pictograms
6.	**Clouds**	-	Clouds in a Jar
7.	**Precipitation**	-	Pop Bottle Rain Gauge

PART III - ENRICHMENT LESSONS

Similar to Part II, this section uses overhead notes and closely related assignments to examine such things as tornadoes, hurricanes and thunderstorms. Teachers may use all these lessons or select a few depending on availability of time and suitability.

8.	**Thunderstorms**	-	Popcorn Pilot (Creative Writing)
9.	**Tornadoes**	-	Rating Tornadoes (Fujita Intensity Scale)
10.	**Hurricanes**	-	Naming Hurricanes (Logic Puzzle)
11.	**Weather Forecasting**	-	Weather Predicting
12.	**Greenhouse Effect**	-	Letter To The Editor
13.	**Review**	-	Matching Review

PART IV - OPTIONAL ACTIVITIES

These, mostly fun activities, can be integrated into the unit as the teacher sees fit.

1. **Weather Wordsearches**
2. **Crossword Puzzle**
3. **Humidity Measurement**
4. **Weather Reporters**
5. **Movie Review - "Twister"**
6. **Groundhog Day**

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Twice a day, have a pair of students leave the class for a few minutes to track the weather. The place and time should be consistent from day to day - preferably first thing in the morning and right after lunch. The next day, a different pair takes the measurements.

Begin by having students measure the temperature. When students have finished the section about wind, have them add wind speed and direction to the chart. Continue on with pressure, precipitation and cloud description.

Date	AM or PM	Students	Temp. (C°)	Wind Speed (km/h)	Wind Direction	Pressure (Kpa)	Cloud Description

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CORE LESSON #1 - SOLID LIQUID GAS

Student Objectives and Activities

- Students are introduced to the topic and learn about the three states of matter and the differences between each.

- Students complete notes on the three states of matter and a quiz entitled "**Wacky Weather**".

Suggested Teaching Strategies

- Introduce the unit topic "weather" by giving students the quiz right off the bat.

- Remember, this quiz is only designed to heighten student interest and give them some idea of what will be studied in the unit. Go through the quiz as a class, although right and wrong answers are not important at this stage. (This same quiz could be used as a review activity towards the end of the unit)

- After reviewing the quiz, commence with the first page of notes about solids, liquids and gases. Students should thoroughly understand these concepts in the early section of this unit, as this information relates to the topics following. (Students may complain that the material in this section isn't about weather, but tell them "tough baloney" or that old standby "do you want some cheese...with your whine?")

*** **Note** ***

I have rebelled against tradition and my grade six spelling teacher and have chosen to spell "bologna" the way I want to!

Wacky Weather Answers

True or False

1. F
2. T
3. T
4. T
5. T
6. F
7. F
8. F
9. F
10. T

Matching

1. b
2. c
3. c
4. c
5. c

WACKY WEATHER

NAME: _____

I True or False

1. Snow is just frozen rain. T ___ F ___
2. Most hailstones have rings inside. T ___ F ___
3. Clouds are made of millions of tiny water droplets. T ___ F ___
4. Fog is a low flying cloud. T ___ F ___
5. Cows and termites help make greenhouse gases. T ___ F ___
6. A twister is another name for hurricane. T ___ F ___
7. The safest place in a tornado is in a car. T ___ F ___
8. Clouds are a type of precipitation. T ___ F ___
9. Raindrops are teardrop shaped when falling. T ___ F ___
10. Jets can make clouds when they fly. T ___ F ___

II Multiple Choice

1. A mare's tail is:
   a) a type of wind.
   b) a high "wispy" cloud made of ice crystals.
   c) something found on the rear end of a female horse.

2. A chinook is:
   a) a type of BC salmon.
   b) the proper way to say "shnook".
   c) a warm wind.

3. Which is not a type of precipitation?
   a) rain b) sleet c) fog d) hail

4. The largest and most deadly of all storms are:
   a) blizzards b) tornadoes c) hurricanes

5. A single raindrop is made of _____ tiny water droplets joined together.
   a) one hundred b) one thousand c) one million

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CORE LESSON #2 - CHANGES OF STATE

Student Objectives and Activities

- Students understand changes of state including melting, freezing, evaporation and condensation.

- Students are able to give everyday examples of these changes of state as well as understanding the role of heat in the various changes of state.

- The related activity is a worksheet, "**Weather Whys**", designed to insure thorough understanding of the important concepts in this lesson.

Suggested Teaching Strategies

- Students begin by writing down the notes.

- Teachers can effectively demonstrate condensation using a glass jar with a lid. (a pickle jar will do)

- After feeding the jar of pickles to hungry students, be sure the outside of the jar is completely dry.

- Fill the jar with a tray full of ice cubes, put the lid back on and watch as water vapour (gas) in the air begins to condense on the cold outside surface of the jar, forming water droplets.

*** **Note** ***

To show how frost is made, add a teaspoon of salt to the ice and mix in. This will cause the outside of the jar to become even colder than in the first demonstration, creating frost. (Remember, frost is not just frozen water. It is ice that forms directly from water vapour)

Weather Whys Answers

Fill The Blanks

1. water
2. freezing
3. vapour
4. melting
5. heat
6. condensation
7. evaporation

Matching

1. b
2. d
3. c
4. a
5. d
6. c
7. b

Science Word - Weather

WEATHER WHYS

NAME: _____

I **Fill in the answers to find the science word.** _____

1.	○_ _ _ _	**Weather is affected by this important substance.**
2.	_ _ _○_ _ _ _	**The opposite of melting - when heat is taken away.**
3.	_○_ _ _ _	**This is the highest energy state.**
4.	_ _ _○_ _ _	**Adding heat energy to a solid will cause this to occur.**
5.	○_ _ _	**This must be added to turn a liquid into a gas.**
6.	_ _ _ _○_ _ _ _ _ _ _	**This happens when a gas or vapour turns into a liquid.**
7.	_ _ _ _ _○_ _ _ _ _	**This is the opposite of condensation.**

II **Matching**

1.	___	**Ice cubes turning to liquid water in the sun.**	**a) freezing**
2.	___	**Sweat on your skin turning to gas and cooling down your body.**	**b) melting**
3.	___	**Water vapour in the air being cooled down and turning into tiny, liquid water droplets.**	**c) condensation**
4.	___	**Liquid plastic cooling to form hard Tupperware bowls.**	**d) evaporation**
5.	___	**Liquid gas spilled on the ground turning to a gas and disappearing.**	
6.	___	**Droplets of water forming on the outside of a cold bottle of pop.**	
7.	___	**A popsicle turning to a wet sticky mess on a hot summer day.**	

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