

ARLINGTON ELEMENTARY

“Weather” or Not?

Developed by:

RUTH COLLINS, CORI DUTY, CATHERINE CLARKE, SARAH DOYLE

Organizer – ***How does knowledge of weather influence our daily decisions to keep us safe, healthy and prepared?***

Academic Expectations

- **1.12 Students will speak using appropriate forms, conventions, and styles to communicate ideas and information to different audiences for different purposes.**
- **1.16 Students use computers and other kinds of technology to collect, organize and communicate information and ideas**
- **2.2 Students identify, analyze, and use patterns, such as cycles and trends, to understand past and present events and predict possible future events**
- **2.10 Students understand measurement concepts and use measurements appropriately and accurately.**

Essential Questions

- **What is weather?**
- **How does the weather affect the clothes we wear?**
- **How do we determine the weather?**

Culminating Performance

Kindergarten students in co-operative groups will perform a class-generated skit, integrating illustrations created with the Paint program to demonstrate their knowledge about weather and appropriate decisions.

Upper primary students in co-operative groups will use PowerPoint to create informational presentations about a weather element to narrate the kindergarten skits.

Presentation Rubric

Points	Criteria
4	<ul style="list-style-type: none">• Uses complete sentences• Speaks clearly using appropriate expression, intonation, and voice level (verbal Clues)• Uses specific and appropriate vocabulary to identify concepts or objects• Recognizes and uses nonverbal cues (eye contact, facial expression, gestures, posture, body language)• Demonstrates awareness of audience needs
3	<ul style="list-style-type: none">• Uses some complete sentences• Speaks clearly using appropriate expression, intonation, and voice level (verbal Clues) most of the time• Uses some specific and appropriate vocabulary to identify concepts or objects• Recognizes and uses some nonverbal cues (eye contact, facial expression, gestures, posture, body language)• Begins to develop awareness of audience needs
2	<ul style="list-style-type: none">• Uses few complete sentences• Speaks clearly using appropriate expression, intonation, and voice level (verbal Clues) some of the time• Uses few specific and appropriate vocabulary to identify concepts or objects• Recognizes and uses few nonverbal cues (eye contact, facial expression, gestures, posture, body language)• Unaware of audience needs
1	<ul style="list-style-type: none">• Does not use complete sentences• Does not speak clearly using appropriate expression, intonation, and voice level (verbal Clues)• Does not use specific and appropriate vocabulary to identify concepts or objects• Does not recognize and/or use nonverbal cues (eye contact, facial expression, gestures, posture, body language)• No awareness of audience needs

Kindergarten Content Evaluation

Points	Criteria
4 3 2 1	<ul style="list-style-type: none">• Correctly identify clothing for weather condition
4 3 2 1	<ul style="list-style-type: none">• Create pictures which correctly illustrate weather conditions
4 3 2 1	<ul style="list-style-type: none">• Create props which accurately portray the weather
2-1- 0	<ul style="list-style-type: none">• Students identify safety precaution and justify its importance

Upper Primary Content

Points	Criteria
4 3 2 1	Research <ul style="list-style-type: none">• Internet• Additional sources• Notes• Each member contributes to topic
4 3 2 1	Students identify at least 4 important ideas about given weather element (including the definition, and at least 1 cause)
4 3 2 1	Information <ul style="list-style-type: none">• Organized in a logical order• Information is accurate

Knowledge (Core Content)

- **SC E-2.3.2** Weather can change from day to day and over the seasons. Weather can be described by observations, and measurable quantities, such as temperature, wind direction and speed, and precipitation.
- **AH-E-3.1.41** Create and perform using creative dramatics (role-playing)
- **RD-E-2.0.6** Use text features (e.g., pictures, lists, tables, charts, graphs, tables of contents, indexes, glossaries, headings, captions) to understand a passage.
- **RD-E-2.0.10** Connect the content of a passage to students' lives and/or real world
- **RD-E-4.0.6** Locate and apply information for authentic purposes.
- **MA-E- 2.2.6** Use standard units to measure volume of rectangular prisms, liquid capacity, money, time, and temperature (e.g., above and below zero)
- **MA-E 3.2.2** Collect, organize, and describe data (e.g., drawings, tables, charts)
- **MA-E 3.2.3** Construct and interpret displays of data (e.g., line graph, bar graph, pictograph, line plot, simple Venn diagram)
- **MA-E 3.2.5** Make predictions and draw conclusions based on data

Technology Standards

- T 4.4 Locate information using the Internet
- T 5.6.1.1 File (New, open, close, save, save as, save all, etc.)
- T 4.5.3 Open, close, and use application
- T 1.1 Demonstrate ethical use of electronic resources
- T 6.5 Create a presentation or product using application software

Skills/Abilities

- Research Internet/other resources
- Measurement
- Graphing
- Communication
- Public Speaking
- Organization
- Cause /Effect
- Technology Skills
- Reading and Listening Comprehension

Timeline for Unit—Kindergarten

DAY	OBJECTIVE	SUGGESTED ACTIVITIES	ASSESSMENT	CRITICAL RESOURCES
DAY 1	Assess current knowledge	Pre-test and KWL	Pre-test	Computer generated test
DAY 2	To introduce weather	Use text to define and give examples of weather		Weather Words and What They Mean by Gail Gibbons
DAY 3	Identify three main types of clouds and the weather each brings.	FOSS investigation 2, part 3 Watching Clouds Make clouds with 2/3 class	Match three types of clouds with the appropriate picture.	Weather Forecasting Delta Science Module page 63
DAY 4	Identify safety precautions for different types of weather	Smart board activity with The Disaster Area	What did you learn quiz from site	www.fema.gov/kids/dizarea.htm
DAY 5	Explain the sun's role in our weather	Use models to demonstrate how sun heats the earth. What gets warmer faster? Soil, sand, or water	Teacher generated T/F assessment of the sun's role in our weather	Test
DAY 6	To learn that the thermometer is a tool to measure temperature	Use model to demonstrate how to measure temperature Create a thermometer Experiment with thermometers in various temperatures of water	Observations	Mailbox K Dec/Jan 02-03 Page 8 & 9 Discover Science Page 15
DAY 7	Demonstrate how to measure rain with a rain gauge	Make a rain gauge Part 4, page 25 Discuss rain gauge location (FOSS kit) Observe rain gauge after the rain	Air and Weather journal Observations Extension: If I were a meteorologist . . .	FOSS part 4 page 28
DAY 8	To understand lower temperatures causes snow	Explain relationship between snow and colder temperatures using text	Teachers Helper Dec/Jan 01-02 page 36-44 (Book about temperature getting colder)	White Snow, Bright Snow by Tressett Teachers Helper Dec/Jan 01-02 page 36-44
DAY 9	Connect all learning in preparation for assessment	Watch video Dress for the Weather to demonstrate weather determines our daily decisions Complete KWL	Teacher generated assessment to identify correct weather/dress relationship Responses from students added to (KWL)	Media Center VHS Dress for the Weather (80964) Teacher generated assessment and clip art
DAY 10	To assess learning in the weather unit of study	Complete computer generated post-test	Post-test	Hot Potatoes test generating site
DAY 11-15	Demonstrate through presentation, knowledge gained through unit of study	Making props for skit Dialogue Paint projects (k) PowerPoint projects (2/3)	Presentation will be scored according to generated rubric	Rubric Paint Program PowerPoint Materials for making props

Timeline for Unit 2/3

DAY	OBJECTIVES	SUGGESTED ACTIVITIES	ASSESSMENT	RESOURCES
DAY 1	<p>Assess current knowledge of weather Find out what we want to learn about weather</p> <p>Recognize a weather map and the symbols used to describe weather elements</p>	<p>Pre-Test KWL Chart</p> <p>Look at weather maps and discuss symbols</p>	<p>On-line pre-test from McGraw-Hill website</p> <p>Use a weather map and its symbols to describe the weather on a given day</p>	<p>McGraw-Hill website Chapter 7 Lesson 3 Quiz</p> <p>Newspaper weather maps</p> <p>Activity Sheet 6 (Weather Forecasting Delta Science Module)</p>
DAY 2	<p>Explain the water cycle Introduction to Weather terms and concepts</p>	<p>Water Cycle song/dance Students will explain and illustrate water cycle Watch video Read books to introduce discussion of definition of weather and important weather terms and definitions</p>	<p>Water Cycle diagram</p> <p>Correctly identify water cycle terms</p>	<p>Song from www.songsforteaching.com/waterinthe air</p> <p>Gail Gibbons' Weather Words and What They Mean</p> <p>Weather by Herta Breiter</p> <p>Water cycle handouts</p> <p>The Water Cycle: Go With the Flow (video)</p> <p>McGraw-Hill Text</p>
DAY 3	<p>Describe how clouds are formed; Identify types of clouds and what they mean for weather conditions; Discuss wind, causes of wind, effects of wind on clouds and weather</p>	<p>Make clouds in a jar</p> <p>Read A Cloud Book by dePaola</p> <p>Begin cloud observations with chart to draw/label cloud formations over five day period</p>	<p>Correctly identify pictures of clouds</p> <p>Predict weather based on clouds</p>	<p>Weather Forecasting Delta Science Module (Teacher Resource for making clouds)</p> <p>A Cloud Book by Tomie de Paola</p> <p>Clouds by Gail Saunders-Smith</p> <p>Wind and What it Does, video</p>

DAY 4	<p>Explain rain and where it comes from; relate rain to water cycle; discuss benefits of rain; discover what causes thunder and lightning; Identify rain gauge as tool for measuring rain amounts</p>	<p>Read Why Does it Rain? and Why does it Thunder and Lightning? by Chris Arvetis</p> <p>What makes it rain? The story of a raindrop by Keith Brandt</p> <p>Examine a rain gauge and how it is used</p> <p>Explain causes for rain, lightning and thunder</p> <p>Create lightning & thunder</p>	<p>Open-response explaining how rain is related to water cycle and why it rains</p> <p>Experiment (ability to create lightning and thunder) and Written explanation (where does lightning and thunder come from)</p>	<p>Arvetis' books</p> <p>Brandt's book</p> <p>Weather Watching Delta Science Module (Teacher resource for creating lightning and thunder)</p>
DAY 5	<p>Explain what causes snow and its relation to the water cycle; discuss characteristics of snowflakes</p>	<p>Read Why Does it Snow? By Chris Arvetis</p> <p>Watch Snow: A First Film</p>	<p>Students write down at least three facts about snow that they learned.</p>	<p>Arvetis' book</p> <p>Video</p>
DAY 6	<p>Explain the effects of the sun on temperature and weather; discuss how earth's revolutions/rotations determine weather/seasons; Identify geographic regions by temperature</p>	<p>Use models to illustrate sun's relation to earth and temperatures on the earth ("Straight On!" experiment)</p> <p>Review previous lessons on heat and sun's production of heat</p> <p>Use models to demonstrate how sun heats the earth; "More Heat" What gets warmer faster—sand or water?</p>	<p>Students will describe position of earth/sun on warm, sunny day.</p> <p>Students will identify sun as a source of heat energy.</p> <p>Students will explain how the sun affects temperature and weather on the earth.</p>	<p>Models of earth and sun (Delta Sun, Moon, and Stars Kit)</p> <p>Janice VanCleave's Weather (book of experiments)</p> <p>Heat source</p> <p>Water</p> <p>Sand or Dirt</p>

DAY 7	<p>Temperature/Thermometers</p> <p>Use thermometers as a tool for measuring temperature</p> <p>Relate temperature to weather conditions</p> <p>Recognize how knowing high and low temperatures can help you make daily decisions.</p> <p>Graph temperatures to show change over time</p>	<p>Read thermometers</p> <p>Read/watch weather reports on newspaper, internet, and TV—Use information to plan clothing/activities</p> <p>Collect temperature data three times/day. At end of five days, create line graphs using Graph Club program</p>	<p>Students will correctly read a thermometer within one degree.</p> <p>Open-Response: Students will plan a field trip based on a location's high/low temperatures for a given day.</p> <p>Students will create line graphs using Graph Club then answer questions based on the graph.</p>	<p>Thermometers</p> <p>Newspaper weather reports</p> <p>Internet weather reports</p> <p>Television weather reports</p> <p>http://www.weather.com/weather/local/40505</p> <p>Graph Club program</p>
DAY 8	<p>Discover what fronts are and how to track them on a weather map. Describe the job of a meteorologist. Discuss the usefulness of forecasting the weather.</p>	<p>Define and discuss vocabulary related to fronts: air mass, cold front, occluded front, stationary front, warm front, weather front.</p> <p>Use TV, internet, and newspaper weather maps and find front symbols and discuss what those mean for the weather.</p> <p>Discuss the job of a meteorologist and why it is important to forecast the weather. How do weather forecasts influence our daily decisions? Read books related to forecasting the weather.</p>	<p>Assessment Activity Sheet 2, Part A (Weather Forecasting, Delta Science Module) Students will use a weather map to answer questions.</p>	<p>Bill Meck, local meteorologist</p> <p>Weather Forecasting, Delta Science Module</p> <p>TV, Internet, Newspaper weather maps</p> <p>I Can Be A Weather Forecaster, Claire Martin</p> <p>Weather Forecaster, video</p>
DAY 9	<p>Connect all learning in preparation for assessment</p>	<p>Complete KWL Chart</p> <p>PowerPoint Jeopardy Review of terms and concepts</p>	<p>KWL: L column will show increase in knowledge of weather concepts</p> <p>Student responses during Jeopardy</p>	<p>Smart Board</p> <p>PowerPoint (teacher generated Jeopardy game)</p>
DAY 10	<p>To assess learning in weather unit of study</p>	<p>Complete Post-Test and Written Assessment</p>	<p>On-line Post-Test</p> <p>Teacher Made written assessment</p>	<p>Internet/McGraw-Hill website</p> <p>Teacher made summative assessment</p>
DAY 11-15	<p>Demonstrate through presentation, knowledge gained through unit of study</p>	<p>Making props for skit</p> <p>Dialogue</p> <p>Paint projects (k)</p> <p>PowerPoint projects (2/3)</p>	<p>Presentation will be scored according to generated rubric</p>	<p>Rubric</p> <p>Paint Program</p> <p>PowerPoint</p> <p>Materials for making props</p>