

Unit 4: Weather and Climate (6 weeks)
Rationale
<i>Why is this unit important and appropriate for this grade level and at this time of the year?</i>
<p>During the unit students will build interest and deepen their understanding of weather and climate through a variety of hands on experiences that integrate literacy and science. Students will have opportunities to gather, analyze, interpret weather data collected. Students will demonstrate their understanding of weather concepts studied opinion, narrative, and informational writing. As a culminating project, students will create a weather public service announcement (PSA) in the form of a brochure, wiki, blog. This unit is grounded in both the Common Core Learning Standards (CCLS) and the Next Generation Science Standards .</p>
Enduring Understandings
<i>EU is an overarching understanding. EU is written using teacher language. EU is something the students will remember in five years. Students can use the EU in other disciplines.</i>
<p>Essential Understanding(s):</p> <ul style="list-style-type: none"> <li>Atmospheric conditions create weather variations.</li> </ul>
Essential Questions
<i>EQ is linked to the enduring understanding. EQ is written in student friendly language. EQ stimulates thought and is open-ended. EQ can be answered superficially early on and more deeply as the unit progresses.</i>
<p>Essential Question(s):</p> <ul style="list-style-type: none"> <li>How does the atmosphere create different types of weather?</li> </ul>
Learning Outcomes
<i>What do we expect students to know and be able to do at the end of the unit?</i>
<p>Content Learning Outcomes</p> <p>Students will:</p> <ul style="list-style-type: none"> <li>Organize and display weather data, recognize patterns</li> <li>Communicate similarities and differences between weather and climate</li> <li>Make predictions about weather (day-to-day and natural disasters)</li> <li>Obtain, evaluate and communicate information about natural disasters</li> <li>Describe climates in different regions of the world</li> <li>Read a weather map and thermometer</li> </ul> <p>Writing Learning Outcomes</p> <p>Students will:</p> <ul style="list-style-type: none"> <li>Stop and jot notes while listening to read alouds</li> <li>Guide inquiry and research by asking and answering questions</li> <li>Paraphrase facts and information read</li> <li>Record facts and information gathered on index cards, graphic organizers, etc.</li> <li>Analyze and evaluate collected information to further research</li> <li>Sort, label and categorize facts</li> <li>Organize paragraphs using topic sentences and supporting details</li> <li>Cite research resources using simple bibliographic form</li> <li>Create a public service announcement (PSA)</li> </ul>

2014-2015 Grade 3 Writing Units of Study

<b>Minilessons/Notes/Tips</b>
<i>What minilessons will lead to student learning outcomes?</i>
<p>Reading Learning Outcomes</p> <p>Students will:</p> <ul style="list-style-type: none"> <li>• Participate (listen, respond) in nonfiction interactive read alouds and shared readings</li> <li>• Read independently a range of nonfiction texts (e.g., narrative, all about, how to, question/answer, essays, brochures)</li> <li>• Utilize district research online databases (e.g., Pebble Go, Grolier Encyclopedia, Searchasaurus, World Book Online, True Flix) to research</li> <li>• Name and describe purpose(s) of different nonfiction text structures and features</li> <li>• Use text structures and features to navigate and comprehend texts</li> <li>• Activate prior knowledge before beginning new text</li> <li>• Ask questions before, during, and after reading to monitor comprehension</li> <li>• Synthesize facts and information read to identify big ideas</li> </ul>
<b>Vocabulary</b>
<i>What vocabulary terms will students be expected to know?</i>

<b>Content Specific Vocabulary Tier 2</b>	<b>Content Specific Vocabulary Tier 3</b>	<b>Opinion Writing Vocabulary</b>	<b>Compare/ Contrast Vocabulary</b>
<ul style="list-style-type: none"> <li>• Impact</li> <li>• Data</li> <li>• Temperature</li> <li>• Thermometer</li> <li>• Celsius</li> <li>• Fahrenheit</li> <li>• Average</li> <li>• Variations</li> <li>• Patterns</li> <li>• Long-term</li> <li>• Typical</li> <li>• Conditions</li> <li>• Expected</li> <li>• Obtain</li> <li>• Hazards</li> <li>• Solution</li> <li>• Effect</li> <li>• Observe</li> <li>• Introduction</li> <li>• Summary</li> <li>• Conclusion</li> <li>• Topic</li> <li>• Understandable</li> <li>pace</li> <li>• Impact</li> <li>• Classify</li> </ul>	<ul style="list-style-type: none"> <li>• Climate</li> <li>• Weather</li> <li>• Wind direction</li> <li>• Precipitation</li> <li>• Lightening</li> <li>• Natural hazards</li> <li>• Severe weather</li> <li>• Floods</li> <li>• Coastal erosion</li> <li>• Drought</li> <li>• Tornadoes</li> <li>• Hurricanes</li> <li>• Natural phenomena</li> </ul>	<ul style="list-style-type: none"> <li>• Opinion</li> <li>• Thesis</li> <li>• Claim</li> <li>• Proof</li> <li>• Therefore</li> <li>• Since</li> <li>• Besides</li> <li>• Consequently</li> <li>• Yet</li> <li>• But</li> <li>• In addition</li> <li>• For example</li> </ul>	<ul style="list-style-type: none"> <li>• Like</li> <li>• Alike</li> <li>• Similar</li> <li>• Similarities</li> <li>• Similarly</li> <li>• Same</li> <li>• Common</li> <li>• Both</li> <li>• But</li> <li>• However</li> <li>• Although</li> <li>• Differ</li> <li>• Different</li> <li>• Instead</li> <li>• On the other hand</li> </ul>

Mini-lessons/Learning Activities:

**Week 1: Weather and Climate**

- Utilize read aloud time to learn about climate: *A Tree for All Seasons* by Robin Bernard
- Compare seasons and the typical conditions in a given area **(Assessment, Level 2)**
- Discuss and chart similarities and differences between weather and climate **(Assessment, Level 2)**
- Writing Task:
  - Opinion Paragraph Writing (Where would you want to live? What type of weather do you like?) **(Assessment, Level 3)**
    - Compose a paragraph with a strong topic sentence, supporting details, and a concluding statement about their opinion
    - Use content specific vocabulary and opinion writing vocabulary.
    - Link opinions and reasons using words and phrases (for example, because, therefore, since, for example, in order to, in addition) and using sentence starters such as "I'd say that", "I believe that", "In my opinion", "From my perspective"
    - Refer to Grade 3 Opinion Paragraph Writing Unit
    - Refer to pp. 1-8, 11, 12 (Graphic Organizer) *The Common Core Writing Book, K-5* by Gretchen Owocki

**Week 2: Weather Tools, Data Collection**

- Utilize read aloud time to learn about weather: *Predicting the Weather*, by Brenda Parkes and Judy Cooper and *Studying Weather and Climates*, Conrad J. Storad
- Use senses to determine weather (sight, sound, observational skills) **(Assessment, Level 1)**
- Collect data on temperature (read, use, create a thermometer, record daily temperature- address fluctuations in temperature across a day) **(Assessment, Level 1)**
- Create a weather tool (pinwheel, wind speed meter, barometer, rain gauge, wind sock)
- Collect data on precipitation
  - Study water cycle (Brainpop Jr. movie), clouds (Brainpop Jr. movie)
- Writing Task:
  - Nonfiction Procedural/How To Text
    - Students will write a procedural text explaining how to create a weather recording tool. **(Assessment, Level 4)**
    - Refer to p. 67, *The Common Core Writing Book, K-5* by Gretchen Owocki

**Week 3: Natural Hazards**

- Utilize read aloud time to learn about natural hazards: *Can It Rain Cats and Dogs?* by Melvin and Gilda Berger, pp. 34-46 ("Wild Weather")
- Discuss and chart extreme weather and natural hazards
- Brainstorm ways of reducing the impact of natural disasters (e.g., sandbags near coastlines during hurricanes, storm cellars for tornadoes, lightning rods)
- Utilize independent reading to research interest-based natural hazards
  - \*Align with Reading Unit: Nonfiction: Spotlight on Activating Background Knowledge and Questioning
    - Discuss how readers ask themselves what they want to learn about a topic
    - Monitor and modify thinking when new information is presented
    - Rethink misconceptions - take new learning/new information to use it to revise prior thinking
    - Discuss how readers stop and jot new ideas, questions, wonderings, reactions
- Writing Task:
  - Compare/Contrast Natural Hazards Paragraph Writing **(Assessment, Level 3)**
    - Compose two (or more) paragraphs that highlight similarities and differences between two types of natural hazards
    - Organize paragraphs using topic sentences, supporting details, and concluding statements
    - Use content specific vocabulary and compare/contrast vocabulary to write about two types of weather

#### **Week 4: Weather and Geography**

- Utilize read aloud time to identify how authors infuse weather into the setting and/or plot of fictional texts. Suggested texts include: *The Rain Stomper* by Addie Boswell, *Come On, Rain* by Karen Hesse, *Heat Wave* by Eileen Spinelli, *Cactus Hotel* by Brenda Guiberson
- Discuss the role geography plays on weather and how it can result in different natural hazards (e.g., Tornado Alley, hurricanes occurring off-shore and affecting coastal areas only, wildfires in the west, tsunamis effecting small islands in the ocean)
- Create a map and map key that indicates geographical weather occurrences (**Assessment, Level 2**)
- Writing Task:
  - Realistic Fiction Storytelling (incorporating weather/climate into a story's setting and/or plot) (**Assessment, Level 3**)
    - Orally rehearse a realistic fiction story including content specific vocabulary and facts about natural hazards.
    - Create a storyboard to capture a realistic fiction story. (This can be used later during Grade 3 Realistic Fiction Writing Unit)
    - Refer to *Crafting True Stories* by Lucy Calkins and Marjorie Martinelli
    - Refer to Grade 2 Realistic Fiction Writing Unit, Grade 3 Personal Narrative Writing Unit

#### **Week 5: Identifying Hazardous Weather by Geographic Location**

- Review big ideas presented in Weeks 1-4: daily weather, typical weather (climate, seasons), geography
- Inquiry Project: Study a specific location linked to certain hazardous weather
  - Teacher will facilitate a whole class inquiry study of a local weather event (NY floods, hurricanes, erosion in recent years) to model the inquiry process students will engage in independently/partnerships
  - Students will:
    - Select a topic for study  
(Consider grouping students by location: e.g., New York/Louisiana and hurricanes, Kansas/Oklahoma and tornadoes, Iowa and floods, California/Texas and wildfires, Hawaii-tsunami, Nevada/Arizona and droughts, etc. Choices do not need to be limited to U.S. geography.)
    - Develop strong open-ended questions about weather/climate of the chosen location
    - Research using print and digital texts and images) and take notes about topic
    - Paraphrase facts/information learned while reading
    - Collect facts/ information on notecards or graphic organizers
    - Analyze and evaluate collected information to further research
    - Sort/label/categorize facts into topics
    - Record resources using simple bibliographic template

#### **Week 6: Public Service Announcement (Assessment, Level 4)**

\*See Performance Based Assessment

- Study mentor PSA's (in form of pamphlet, wiki, blog, website) to identify features, structures, layout, etc.
- Create a PSA
  - Develop a claim statement (How does weather affect a visit to a specific place?)
  - Collect and organize information that supports thesis/ claim
  - Create an interesting layout (for text and visuals)
  - Select appropriate features
  - Develop a sense of voice and audience
  - Use domain/content specific vocabulary
  - Use paragraph structure
  - Display cited sources and images
  - Revise work for adding/deleting/rearranging information
  - Edit work for conventions of punctuation, capitalization, spelling and grammar usage (Refer to Common Core Language Standards)
  - Publish and share PSA's with school audience and beyond
  - During peer presentations, take notes of new information learned, questions/wonderings

## 2014-2015 Grade 3 Writing Units of Study

- Self-assess/peer assess PSA's using class created rubric
- Complete a unit reflection. Reflections might prompt students to respond to questions such as the following: During the unit, I learned....One strategy I think I used particularly well is... Something (sentence, part) I am particularly proud of in this piece of writing is...The topic I chose for this piece is....I chose this topic because....

### Notes/Tips:

- Create and post a banner of the EQ.
- Create a Science Word Wall with Tier 2 and Tier 3 content specific vocabulary with visuals
- Chart Opinion Writing Vocabulary and Compare/Contrast Vocabulary and have mini-charts available to students
- Recommended websites:
  - [www.discoveryeducation.com](http://www.discoveryeducation.com) (search: weather)
  - [www.brainpop.com](http://www.brainpop.com) (search: weather)
  - [www.Sciencenewsforkids.org](http://www.Sciencenewsforkids.org) (no password needed)
- Recommended on-line databases:
  - [www.pebblego.com](http://www.pebblego.com)
  - [www.worldbookonline.com](http://www.worldbookonline.com)
  - [www.grolierencyclopedia.com](http://www.grolierencyclopedia.com)
- Multiple paper choices should be made available to students for each writing activity
- Explore and take field trips to local weather station and/or invite in local weather reporter
- Use multimedia to research and study weather and climate including videos, weather reports, etc. as well as by studying reports in local and national newspapers

## Assessment

*How will student learning be assessed?*

### Formative Assessments:

\*See Webb's Depth of Knowledge Assessment Attachment

#### Level 1: Recall & Reproduction

- Use senses to determine weather (sight, sound, observational skills)
- Collect data on temperature (read, use, create a thermometer, record daily temperature)

#### Level 2: Basic Application of Skills and Concepts

- Compare seasons and typical conditions in a given area
- Discuss and chart similarities and differences between weather climate
- Create a map and map key that indicates geographical weather occurrences

#### Level 3: Short-term Strategic Thinking

- Write opinion paragraphs
- Write compare and contrast paragraphs
- Engage in storytelling

**Level 4: Extended Higher Order Thinking**

**Performance Based Assessment:**

Students will:

- Create a PSA (possible formats include pamphlet, website, wiki, blog) for a specific location that is often affected by one or more hazardous weather conditions. (Student inquiries during Week 5 will be used to create the PSA's.) Address the question: How should the residents of and/or visitors to the particular region prepare for and respond to extreme weather events?
  - Choose a natural hazard and a region
  - Revisit where and why the hazard occurs
  - Review research notes to develop a claim about how to best prepare for the event
  - Review research to select reasons, facts and details to support claim
  - Continue research to gather additional information to support claim as needed
  - Choose format for PSA (print, multimedia)
  - Plan layout to most effectively display information
  - Select appropriate features
  - Develop a sense of voice and audience
  - Use domain/content specific vocabulary
  - Write in paragraph format
  - Display cited sources and images
  - Make an oral presentation about PSA
  - Assess PSA project and presentation using a class created rubric

**Standards**

*What standards are addressed during the unit?*

**CCLS in Science**

- Organize simple weather data sets to record local weather data and identify day- to- day variations, as well as long term patterns of weather.
- Display simple data sets in tables and graphs to describe typical weather conditions expected during a particular season and identify variations over years.
- Obtain and communicate information about the similarities and differences between weather and climate.
- Use evidence to evaluate and refine design solutions that reduce the environmental and or societal impacts of a weather related hazard.
- Obtain and communicate information about new and/or improved technologies, developed as a result of increased scientific knowledge of weather or related hazards, which have changed the way people live or interact with one another.

**CCLS in Writing**

- **W.3.1:** Write opinion pieces on topics or texts, supporting a point of view with reasons.
  - a) Introduce the topic or text they are writing about, state an opinion, and create an organizational structure that lists reasons.
  - b) Provide reasons that support the opinion.
  - c) Use linking words and phrases (e.g., because, therefore, since, for example) to connect opinions and reasons.
  - d) Provide a concluding statement or section.
- **W.3.2:** Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
  - a) Introduce a topic and group related information together; include illustrations when useful to aiding comprehension.
  - b) Develop topics with facts, definitions, and details.
  - c) Use linking words and phrases (e.g., also, another, and, more, but) to connect ideas within categories.
  - d) Provide a concluding statement or section.

- **W.3.3:** Write narratives to develop real or imagined experiences or events using effective techniques, descriptive details, and clear event sequence.
  - a) Establish a situation and introduce a narrator and/or characters; organize an event sequence that unfolds naturally.
  - b) Use dialogue and descriptions of actions, thoughts, and feelings to develop experiences and events or show the response of characters to situations.
  - c) Use temporal words and phrases to signal event order.
  - d) Provide a sense of closure.
- **W.3.4:** With guidance and support from adults, produce writing in which the development and organization are appropriate to task and performance.
- **W.3.5:** With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.
- **W.3.7:** Conduct short research projects that build knowledge about a topic.
- **W.3.8:** Recall information from experiences or gather information from print and digital sources; take brief notes on sources and short evidence into provided categories.
- **W.3.10:** Write routinely over time frames (time for research, reflection, and revision) and shorter time frames (a single sitting day or two) for a range of discipline specific tasks

#### **CCLS in Reading**

- **RI.3.1:** Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- **RI.3.2:** Determine the main idea of a text; recount the key details and explain how they support the main idea.
- **RI.3.4:** Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
- **RI.3.5:** Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.
- **RI.3.6:** Distinguish their own point of view from that of the author of a text.
- **RI.3.7:** Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).
- **RI.3.8:** Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence).

#### **CCLS in Language**

- **L.3.2:** Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
  - a) Capitalize appropriate words in titles.
  - b) Use commas in addresses.
  - c) Use commas and quotation marks in dialogue.
  - d) Form and use possessives.
  - e) Use conventional spelling for high-frequency and other studies words and for adding suffixes to base words (e.g., sitting, smiles, cries, happiness)
  - f) Use spelling patterns and generalizations (e.g., word families, position-based spellings, syllable patterns, ending rules, meaningful word parts) in writing words.
  - g) Consult reference materials, including beginning dictionaries, as needed to check and correct spellings.
- **L.3.4:** Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies.
  - a) Use sentence-level content as a clue to the meaning of a word or phrase.

**CCLS Speaking and Listening**

- **SL.3.3:** Ask and answer questions about information from a speakers, offering appropriate elaboration and detail.
- **SL.3.4:** Report on a topic or text, tell a story, or recount an experience when appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

**Professional & Student Resources**

*What professional resources will be helpful in planning the unit?*

Professional Resources:

- *The Common Core Writing Book, K-5* by Gretchen Owocki
- *The Common Core Lesson Book, K-5* by Gretchen Owocki
- *Units of Study in Opinion, Information, and Narrative Writing* (Grade 3)
  - *Crafting True Stories* by Lucy Calkins and Marjorie Martinelli
  - *The Art of Information Writing* by Lucy Calkins and M. Colleen Cruz
  - *Changing the World* by Lucy Calkins and Kelly Boland Hohne
- *Inquiry Circles in Action (Comprehension and Collaboration)* by Stephanie Harvey and Harvey Daniels (pp. 116-142)
- *Strategies That Work* by Stephanie Harvey and Anne Goudvis (Part III: Comprehension Across the Curriculum)

Student Resources:

- District Online Databases (e.g., Grolier Encyclopedia, World Book Online, Pebble Go, Searchasaurus, Scholastic TrueFlix)
- *Predicting the Weather* (Sundance) by Brenda Parkes and Judy Cooper (Shared Reading Big Book)
- *Studying Weather and Climates* by Conrad J. Storad (Read Aloud)
- *A Tree for All Seasons* by Robin Bernard (Read Aloud)
- *Can It Rain Cats and Dogs?* by Melvin and Gilda Berger (Read Aloud)
- *The Rain Stomper* by Addie Boswell (Read Aloud)
- *Come On, Rain* by Karen Hesse (Read Aloud)
- *Recess at 20 Below* (Primary Comprehension Toolkit) by Cindy Lou Aillaud (Read Aloud)
- *Heat Wave* by Eileen Spinelli (Read Aloud)
- *Cactus Hotel* by Brenda Guiberson (Read Aloud)
- Smart Words Readers, Weather Pack (Scholastic): *Tornadoes, Weather and Climate, Rain and Lightning, Blizzards*, and *Hurricanes* (Level R/S) (Independent Reading or Research Resource)
- Science Vocabulary Readers, Wild Weather Pack (Scholastic): *Lightning!*, *Hurricanes!*, *Blizzards!*, *Tornadoes!*, and *Floods!* (Level M) (Independent Reading or Research Resource)
- *Crackle, Flash, Boom!* (Toolkit Texts, selected by Stephanie Harvey and Anne Goudvis)
- *What's the Weather Out There?* (Keep Reading!, selected by Stephanie Harvey and Anne Goudvis)