

Diocese of Wheeling-Charleston

Unit Planner

Teacher: Holly Cheshire		Grade Level: 6	
Subject Area: Science		Cross Curricular Opportunities: Reading/Language Arts, Social Studies, Math, Technology	
Unit Title: Weather and Climate		Estimated Duration of Unit: 6 weeks	
Overview of Unit: Students will learn how scientists describe and predict the weather through the use of scientific instruments, modern technology, and the patterns observed in nature throughout history. Students will describe climate and study how it impacts life on Earth.			
Forms of Text (non fiction/fiction): non fiction- textbook, science related articles (online)		Teaching Strategies: guided/group reading, anticipation guides (using Plicker cards), brainstorming, direct teaching, whole class discussions, group work, partnered activities	
Catholic Identity Connections: Stewardship of the Earth- Identify practices of good stewardship and responsible conservation of resources. Discuss reverence for all God's creations. Share Biblical stories related to weather and climate: consider what it would be like to spend 40 days in the desert.			
Assessment (authentic/published - summative/formative): Plicker cards, student created partnered projects, lesson quizzes, unit test			
Standards Addressed			
Standard Number	Standards		
S.6.ESS.4	Students will collect data to provide evidence for how motions and complex interactions of air masses results in changes in weather conditions.		
S.6.ESS.5	Students will develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climate.		
S.6.ESS.6	Students will ask questions to clarify evidence of the factors that have caused change in global temperatures over the past century.		
Description of Activity	Resources	Date of Completion	
Plicker Cards: Get Ready to Read: What do you think? (Anticipation Guide- agree or disagree) Intro to Ch 17 p. 613 to preview unit.	iScience p. 613 www.plickers.com		
Key Vocabulary Handout (Quizlet Link to terms for practice) Chapter 17- p. 614 P. 615-617 What is Weather? Discuss with students weather variables and instruments: air temperature (kinetic energy), air pressure, wind, humidity, relative humidity, dew point. Students will create a chart in their science notebook with all weather variables.	www.quizlet.com student interactive notebook iScience textbook Class discussion		
Inquiry MiniLab Math Integration: Calculating dew point	p. 12 Teacher Resources iScience		

Clouds and Fog- Types of clouds and forms of precipitation- Determine the types of clouds that form at various altitudes. Record in weather variable chart in science notebook. Watch Brainpop video: Clouds. Students will discuss the video and take the review quiz with a partner.	www.brainpop.com student interactive notebook iScience textbook Class discussion		
Lesson 1 Quiz- Check for Understanding Use quizlet cards to review.	Teacher created assessment www.quizlet.com		
Tracking temperature and weather- Students will record the high and low temperatures for each day for a week. They will calculate the average temperatures.	Thermometers		
Math Integration- Conversion of units. Use formulas to convert Celsius to Fahrenheit.	iScience textbooks p. 624 for formulas and examples Teacher created practice sheet		
Lesson 2- Weather Patterns- p. 622 Lesson Outline p. 27 -28 Pressure systems, air masses, fronts, and severe weather. Students will watch the daily weather forecast from WSAZ. Students will listen for the meteorologists use of weather terms they have heard in class. Students will discuss the tools needed for each aspect of the forecast. Students will collect weather information for the following day and then compare that to the actual weather they observe directly.	Weather forecast: www.wsaz.com student interactive notebook iScience textbook		
Understanding the use of symbols- Decoding: Weather Folklore and Weather Poems Students will decode popular weather sayings used by farmers, fisherman, and sailors before the use of technology aided in predicting the weather.	http://sciencespot.net		
Science World Magazine Cool Careers/Storm Tracker Article and Video: Meteorologists who tracks tornadoes	Scholastic Science World Issue Archive http://scienceworld.scholastic.com/issues/03_23_15/book#/18		
Lesson 2 Review Quiz- Use quizlet cards to review concepts.	Teacher created assessment www.quizlet.com		
Lesson 3- Weather Forecasts Measuring the Weather, Weather Maps, and Predicting the Weather p. 634 iScience Students will study Doppler radar, surface reports, computer models.	iScience textbook		
Weather Maps- Records symbols commonly used on weather maps in science notebook. Students will use US weather maps and interpret the symbols.	Current Weather Maps www.weather.com		
Weather Symbols Bingo: Students will study weather symbols commonly appearing in weather station models and play the weather bingo game. Students must know the representative symbols when terminology is called aloud.	Weather Symbols Bingo- Flinn Scientific Kit		
Basic Station Models- Students will analyze station models used by meteorologists to report weather. Students will interpret data from the models. They will then create their own station models using the weather symbols they have been studying and the station model worksheet. Students will also convert barometric pressure from the models.	Basic Station Models Worksheet		
Meteorologist Guest Speaker- Tony Cavalier Students will brainstorm and create interview questions for the guest speaker. Students will write a summary of what they learned from the presentation.	Chief meteorologists guest speaker from local news station		
Chapter 17 Quizlet Live review game	www.quizlet.live		
Chapter 18- Climate Lesson 1: Eather's Climates p. 650 Key Vocabulary in notebooks and quizlet set created for study and review. Factors influencing Climate Notes: Students will read and watch a video. Students will take notes on how Earth's tilt and the latitude of a location determines a region's climate	www.ck12.org iScience Textbook		
p. 652 How does elevation effect climate? Analyze and interpret graphs and charts from cities with high and low elevations (mountains) to draw conclusions based on weather and temperature data.	iScience Textbook www.weather.com		
Climate Projects- Students will work with a partner to research a specific climate and create an ad attracting tourists to their location. Students will decide how to create their advertisement. Some favorite examples include pamphlets/brochures, infomercials, posters, and scrapbooks . Students will present projects to the class.	Teacher created project Internet access		
Global warming and Climate Change- Research the evidence and causes of the rise in global temperatures, and propose solutions to global warming issues.	Teacher created project/rubric Internet access		
Weather and Climate Unit Review	Teacher created study guide		
Unit quizlet live review game (work together in small groups racing to answer questions)	www.quizlet.live		

Unit Test -Including multiple choice, true/false, interpreting data, short answer, and matching.	Teacher Created Assessment www.easytestmaker.com	
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Differentiated Instruction Opportunities/Overview: group pairings, one on one teaching, graphic organizers, typing instead of handwriting, chapter summaries, oral reading, auditory textbook, reduced assignments, paired assignments/tasks

Cross Curricular Opportunities:

Standard Number	Standard Description	Resources	Date
S.6-8.L.1	cite specific textual evidence to support analysis of science and technical texts.	textbook, articles, and research assignments	
S.6-8.L.2	determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.	textbook, articles, and research assignments	
S.6-8.L.3	follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks	Lab Activities and Demonstrations; Data Collection at Home	
S.6-8.L.4	determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.	textbook, articles, and research assignments; Lab activities	
S.6-8.L.5	analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.	textbook, articles, and research/essay assignments	
S.6-8.L.6	analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.	Launch Lab	
S.6-8.L.7	integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).	Science Notebook Outlining Lessons-venn diagrams , charts, and graphs.	
S.6-8.L.7	distinguish among facts, reasoned judgment based on research findings, and speculation in a text.	Interviewing a Meteorologists; Climate Tourism Projects	
S.6-8.L.8	compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.	CK-12 Latitude and Climate	
S.6-8.L.13	produce clear and coherent writing in which the development, organization and style are appropriate to task, purpose and audience	Interviewing a Meteorologist; Climate Tourism Projects	
S.6-8.L.15	use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.	Climate Tourism Projects	
S.6-8.L.16	conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.	Interviewing a Meteorologists; Climate Tourism Projects	
S.6-8.L.17	gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.	Interviewing a Meteorologists; Climate Tourism Projects	
S.6-8.L.18	draw evidence from informational texts to support analysis, reflection and research.	Interviewing a Meteorologists; Climate Tourism Projects	

Common Core Checklist

Writing

X	Paragraph: yes
	Essay (narratives, fairy tales, realistic fiction): no
X	Summary: yes
X	Research: yes
X	Detailed answers (text supported): yes
X	Notes (note taking skills, outlines): yes
X	Complete sentences: yes

Reading	
X	Informational text: yes
	Lexile
X	Complex literature: yes
X	Speaking: yes
X	Listening: yes
X	Varied strategies and instructional methods: yes
X	Critical thinking in whole class discussion: yes
X	Student led activities: yes
NGSS	common core standards (literature circles): no
Technology	
X	Smartboard: yes
X	Computers: yes
	iPads: no
X	Powerpoint, Elmo etc.: yes
Differentiated Instruction	
X	Used multiple resources: yes
X	Domain Vocabulary: yes
X	Cross-Curricular: yes
X	Collaborative engagement (meaningful feedback): yes
X	Higher level learning and teaching: yes
Assessment	
X	Project based: yes
X	Writing prompt: yes
X	Portfolio: yes
X	Observation: yes
X	Quiz: yes
X	Technology based: yes
X	Test: yes
	Student created test: no
X	Presentation: Yes
x	Journal: yes
x	Think, pair, share: yes
x	Summary: yes
x	Oral questioning: yes
	Analogy: no
x*	Powerpoint, or movie maker: no (*Some students chose to create infomercials for tourism projects)
Authenticity	
x	Various activities: yes
x	Inquiry, research and evidence: yes
x	Evidence of time management and planning: yes
x	Problem solving strategies: yes
Summary of Unit:	

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