

KINDERGARTEN
EXTREME EARTH: UNIT 8

CONCEPTS AND ENDURING UNDERSTANDINGS:

Unit: Extreme Earth

Time Frame: Five Weeks

Key Concepts: weather and climate, weather forecasting, recycling, landforms

ESSENTIAL QUESTION: How do changes in the environment affect our earth?

Great Idea: Earth is the only inhabitable planet in our solar system. Earth is subjected to many changes due to man and forces of nature. Sometimes the weather is typical and other times extreme weather can occur. The national weather service helps people to prepare and respond to Earth's changing weather.

GUIDING QUESTIONS:

1. What is Earth?

- Identify Earth's position in the Solar System.
- Identify and match objects in Earth's environments.
- Compose a model of Earth.
- Create or dramatize natural features.

2. What changes occur to the earth?

- Define and illustrate a polluted environment.
- Create a poster to promote the 3R's- reduce, reuse, recycle.
- Create or dramatize human-made features.
- Define and illustrate signs of spring.
- Sequence the growth pattern of a plant.
- Illustrate changes that occur in the four seasons.
- Sequence the water cycle.

3. What are the natural changes to the earth?

- Observe and Record changes of our earth's features. (earthquake, forest fire, avalanche, mud slide, volcano, and erosion)
- Demonstrate how rainbows are formed.
- Observe the effects of wind by conducting an experiment.
- Record facts about a tornado.
- Observe a tornado and record observations.
- Identify and create a blizzard.
- Identify key details about thunder and lightning.
- Observe and explain the effects of heat and drought.
- Create and illustrate a tsunami.

4. What ways do we prepare for changes to the earth?

- Define and identify the causes of floods in order to properly prepare.

- Define and track weather .
- National Weather Service weather reports.

Lesson Sequence

Students will:

1. Identify Earth's position in the solar system.
2. Identify and match objects in the Earth's environment.
3. Define and illustrate a polluted environment.
4. Create a poster to promote the 3R's-reduce, reuse, recycle.
5. Compose a model of the Earth.
6. Create or dramatize human-made features.
7. Create or dramatize natural features.
8. Observe and record changes of Earth's features.
9. Define and illustrate signs of spring.
10. Sequence the growth pattern of a plant.
11. Illustrate changes that occur in the four seasons.
12. Define and track weather.
13. Sequence the water cycle.
14. Demonstrate how rainbows are formed.
15. Observe the effects of wind by conducting an experiment.
16. Record facts about a tornado.
17. Observe a tornado and record observations.
18. Identify and create a blizzard.
19. Identify key details about thunder and lightning.
20. Observe and explain the effects of heat and drought.
21. Define and identify the causes of floods in order to properly prepare.
22. Create and illustrate a tsunami.
23. Present a weather report to warn the community about an extreme weather event.

CONTENT STANDARDS

Next Generation Science Standards
K. Earth's Systems https://www.nextgenscience.org/dci-arrangement/k-ess2-earths-systems
K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time.
K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.
K. Earth and Human Activity https://www.nextgenscience.org/dci-arrangement/k-ess3-earth-and-human-activity
K-ESS3-1. Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.
K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.
K-ESS3-3. Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.
K. From Molecules to Organisms: Structures and Processes https://www.nextgenscience.org/dci-arrangement/k-ls1-molecules-organisms-structures-and-processes
K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.
K. Weather and Climate https://www.nextgenscience.org/topic-arrangement/kweather-and-climate
K-PS3-1. Make observations to determine the effect of sunlight on Earth's surface.
K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time.

Social Studies https://marylandpublicschools.org/about/Documents/DCAA/SocialStudies/Framework/Kindergarten.pdf
2.0 People of the Nation and World: Students will understand how people in Maryland, the United States and around the world are alike and different.
A.1.a. Use experiences, such as class trips, classroom visitors, stories, and electronic media, to give examples of different choices people make about meeting their human needs for food, clothing, shelter, and other commonalities, such as recreation, stories, and music.
A.1.b. Give examples of qualities, such as customs, interests, skills, and experiences that make individuals and families in their immediate environment unique.
C.1.a. Identify, discuss, and demonstrate appropriate social skills, such as listening to the speaker, taking turns, settling disagreements, and reaching compromise at home and in school.
3.0 Geography: Students will use geographic concepts and processes to understand location and its relationship to human activities.
A.1.a. Describe a globe as a model of Earth showing land and water.
A.1.b. Describe how maps are models showing physical features and/or human features of places
A.1.c. Identify a location by using terms such as near-far, above-below, and here-there.

B.1.a. Recognize physical features as landforms and bodies of water using photographs and pictures.
B.1.b. Identify land forms, such as mountains and hills, and bodies of water, such as oceans, rivers, and streams.
B.1.c. Using photographs and pictures, recognize human-made features as modifications people have made to the land.
B.1.d. Identify human-made features, such as buildings, sidewalks, streets, and bridges.
D.1.a. Identify ways people adapt to the environment, such as wearing clothing that is appropriate to the weather.
D.1.b. Identify ways that people change their environment to meet their needs, such as planting crops or cutting forests.
4.0 Economics: Students will identify the economic principles and processes that are helpful to producers and consumers when making good decisions.
A.1.b. Identify situations where people make choices.
6.0 Social Studies Skills and Processes: Students shall use reading, writing, and thinking processes and skills to gain knowledge and understanding of political, historical, and current events using chronological and spatial thinking, economic reasoning, and historical interpretation, by framing and evaluating questions from primary and secondary sources.
A.1.a. Acquire new vocabulary through listening to and reading a variety of grade-appropriate print and non-print sources.
A.1.b. Discuss words and word meanings as they are encountered in texts, instruction, and conversation.
A.1.c. Make connections to prior knowledge and new vocabulary by listening, reading, and responding to a variety of texts.
B.1. Construct supporting questions that connect with the compelling question.
B.2. Identify key disciplinary concepts and facts associated with the supporting questions.
D.2.a. Engage in field work that relates to the topic/situation/ problem being studied and gather data.
D.2.b. Engage in field work that relates to the topic/situation/ problem being studied and make and record observations.
G.1.a. Present social studies information in a variety ways, such as plays, skits, posters, songs, poems, murals, and oral presentations.

Reading English Language Arts
https://www.marylandpublicschools.org/programs/Documents/ELA/Standards/Grades_PK_K_MCCR_ELA%20Standards.pdf
Reading: Literature
Key Ideas and Details
RL.K.1. With prompting and support, ask and answer questions about key details in a text.
RL.K.3. With prompting and support, identify characters, settings, and major events in a story.
Craft and Structure
RL.K.4. Ask and answer questions about unknown words in a text.
RL.K.5. Recognize common types of texts (e.g., storybooks, poems).
Integration of Knowledge and Ideas

RL.K.7. With prompting and support, describe the relationship between illustrations and the story in which they appear (e.g., what moment in a story an illustration depicts).
RL.K.9. With prompting and support, compare and contrast the adventures and experiences of characters in familiar stories.
Range of Reading and Level of Text Complexity
RL.K.10. Actively engage in group reading activities with purpose and understanding.
Reading: Informational Text
Key Ideas and Details
RI.K.1. With prompting and support, ask and answer questions about key details in a text.
RI.K.2. With prompting and support, identify the main topic and retell key details of a text.
RI.K.3. Analyze how and why individuals, events, and ideas develop and interact over the course of text.
Craft and Structure
RI.K.4. Ask and answer questions about unknown words in a text.
Integration of Knowledge and Ideas
RI.K.7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
Range of Reading and Level of Text Complexity
RI.K.10. Actively engage in group reading activities with purpose and understanding.
Reading: Foundational Skills
Print Concepts
RF.K.1.a. Follow words from left to right, top to bottom, and page by page.
Fluency
RF.K.4. Read emergent-reader texts with purpose and understanding.
Writing
Texts Types and Purposes
W.K.2. Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.
W.K.3. Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.
Research to Build and Present Knowledge
W.K.8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
Speaking and Listening
Comprehensions and Collaboration
SL.K.1.a. Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and text under discussion).
SL.K.1.b. Continue a conversation through multiple exchanges.
SL.K.2. Confirm understanding of text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.
SL.K.3. Ask and answer questions in order to seek help, get information, or clarify something that is not understood.

Presentations of Knowledge and Ideas
SL.K.4. Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.
SL.K.5. Add drawings or other visual displays to descriptions as desired to provide additional details.
SL.K.6. Speak audibly and express thoughts, feelings, and ideas clearly.
Language
Conventions of Standard English
L.K.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
L.K.2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
Vocabulary Acquisition and Use
L.K.5. a. Sort common objects into categories (e.g., shapes, foods) to gain a sense of the concepts the categories represent.
L.K.5.c. Identify real-life connections between words and their use (e.g., note places at school that are colorful).
L.K.6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts.

Health
https://marylandpublicschools.org/about/Documents/DCAA/Health/Health_Education_Framework_July_2022.pdf
Standard 1.0 Mental and Emotional Health
A.1.a. Demonstrate positive communication among peers.

Physical Education
https://www.marylandpublicschools.org/about/Documents/DCAA/PE/MDPEFramework.pdf
Standard 6.0 Social Psychological Principles
C.1.a. Imitate socially acceptable behaviors of cooperation, respect, and responsibility to interact positively with others.

Mathematics
https://www.marylandpublicschools.org/about/Documents/DCAA/Math/MCCRSM/MCCRS_MKindergarten.pdf
Measurement and Data
K.MD.3 Classify objects into given categories; count the number of objects in each category and sort the categories by count (Limit category counts to be less than or equal to 10.).
K.G.A.1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.

Visual Arts

<https://www.marylandpublicschools.org/programs/Documents/Fine-Arts/Visual+Art+Standards+Grades+P-12.pdf>

Creative Expression and Production

3.1.c. Create artworks that explore the uses of color, line, shape, and texture to express ideas and feelings.



Dear Families,

We are beginning a new social studies and science unit called *Extreme Earth*. In this unit, your child will learn about how Earth is the only inhabitable planet in our solar system and how Earth is subjected to many changes due to man and forces of nature. Sometimes weather is typical and other times extreme weather can occur. The national weather service helps people to prepare and respond to earth's changing weather.

- Natural and Human-Made Features
 - Take a walk and spy for Natural and Human-Made Features.
 - Make a Natural and/or Human-Made Feature collage by cutting pictures from magazines.
 - Make a volcano. Use a paper cup to pour vinegar and dish soap into. You can also add red food coloring. Add baking soda when you are ready to observe the eruption.
- Water Cycle
 - Talk to your child about how there is “no new water” and how to conserve water in their house.
 - Conduct a water experiment. Use a clear glass. Mark the level of the water. Observe the water level going down over time. Talk about how water evaporated.
- National Weather Service
 - Watch the weather nightly with your child. Use the forecast to plan what clothes your child should wear to school.
 - Take a walk to observe the weather. Have your child give the weather report to the rest of the family based on what he/she observed.
 - Place a thermometer outside. Read the temperature together. Discuss whether the temperature indicates that it is cold, cool, warm, or hot.
- Safety Precaution for Extreme Weather
 - Create an extreme weather bin- Items could include: flashlight, bottle of water, extra batteries, first aid kit, blanket, can opener with nonperishable foods and radio.
 - Review meeting places for your family so that your child is aware where to go in case of an emergency.

Please ask your child to share with you about the fun activities completed during this unit!

Your Child's Kindergarten Teacher,