

Teacher/Leader names - Leslie Manney

Name of unit or general topic – Weather

NGSS Performance Expectations:

K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time. [Clarification Statement: Examples of qualitative observations could include descriptions of the weather (such as sunny, cloudy, rainy, and warm); examples of quantitative observations could include numbers of sunny, windy, and rainy days in a month. Examples of patterns could include that it is usually cooler in the morning than in the afternoon and the number of sunny days versus cloudy days in different months.] [Assessment Boundary: Assessment of quantitative observations limited to whole numbers and relative measures such as warmer/cooler.]

Science and Engineering Practices:

Analyzing and Interpreting Data- Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations.

*Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (K-ESS2-1)

Engaging in Argument from Evidence- Engaging in argument from evidence in K–2 builds on prior experiences and progresses to comparing ideas and representations about the natural and designed world(s).

*Construct an argument with evidence to support a claim. (K-ESS2-2)

Disciplinary Core Ideas:

ESS2.D: Weather and Climate-

*Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather and to notice patterns over time. (K-ESS2-1)

Cross Cutting Concepts:

Patterns-

*Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.

(K-ESS2-1) **Systems and System Models-**

*Systems in the natural and designed world have parts that work together. (K-ESS2-2)

Essential Question in kids language:

What is weather?

Why is it important to look for patterns in the weather?

Brainstorm and list possible vocabulary:

Content words: sunlight, wind, snow, rain, hail, precipitation, temperature, hurricane, tornado, thunder, lightning

Engineering words: analyze, interpret

Assessment opportunities

formative- journaling (pictures describing the weather, questions, observations)

summative-students will record and map the weather both individually and as a group and then analyze the data to look for patterns

List possible reading materials and other resources -

- The Cloud Book by Tomie DePaola
- What is Today's Weather by Jennifer Boothroyd
- Cat and Mouse in the Rain by Tomasz Bogacki
- The Wind Blew by Pat Hutchins
- Super Storms by Seymour Simon
- What Will the Weather be Like Today by Paul Rogers
- Weather Words and What They Mean by Gail Gibbons
- The Reasons for Seasons by Gail Gibbons

Notes:

This unit is meant to be taught 2 times a week for approximately four ½ weeks.

Students will collect weather data and add to Weather journals daily throughout the month.

Day 1

- Ask student the question “What is weather?” Give them think time and then have them turn and talk with a friend
- Generate a list, on chart paper, of student responses
- Discuss the list and identify vocabulary words to research
- Have students create a visual interpretation of what weather looks like to them. Give students the choice to work on this project individually or in small groups on larger paper.
(Materials needed-cotton balls, construction paper, glitter, scissors, glue, etc.)
- Read Weather Words and What They Mean by Gail Gibbons

Day 2

- Review of previous session
- Research previously identified vocabulary words with students on the Smartboard
- Create small posters for vocabulary words with definitions in kid friendly language, students will embellish the posters with pictures at the end of this session
- Talk about patterns ask students “What are patterns?”
- Ask students “Do you think the weather has patterns? What patterns do you think we might observe in the weather? Why might weather patterns be important? “Do you think our weather patterns might be different people in other places in the world?”
- Explain that we will use Number Corner Collector Chart to help us collect data about weather patterns throughout the month. Ask students “What is data collection?” Guide discussion until children understand that we will be collecting information such as temperature, sunny, windy, rainy, cloudy to look for patterns.
- Display a thermometer and teach students how to read the temperature.
- End session by having students embellish vocabulary posters.

Day 3

- Review previous session-vocabulary words
- Ask students “What is an observation?” Discuss what we might observe with relation to the weather. Explain to children that we will be “Weather Watchers” this month. We will be watching the weather to learn more about how it changes from day to day and how those changes affect the decisions we make.
- Read The Apple Pie Tree by Zoe Hall. Use the follow lesson plan, to guide book discussion: <http://www.scholastic.com/teachers/lesson-plan/apple-pie-tree-lesson-plan>
- Explain and hand out weather journals-students will create a weather journal in which they will describe in pictures how the weather changes from season to season. Students will also have room to write down our daily temperature and weather observations in their journals. They will also sketch a design of the shelter they will build that will reduce the warming effects of sunlight in an area. Template link: [My Weather Journal](#)
- Students will work on Spring and Summer pictures in their Weather Journals
- Collect weather data and add to Weather Journal

Day 4

- Review previous session-have student recall the 4 seasons
- Read The Reasons for Seasons by Gail Gibbons
- Watch BrainPop video about weather and take the quiz.
- Group discuss about the sun. “What does the sun provide us with?” “Why is the sun important?” “How does the sun affect the surfaces of the Earth (sand, rocks, water, soil)?” “What do people and animals do to protect themselves from the sun?”
- Tell students that they will engineer (give definition and have discussion about what an engineer is) a shelter for an ice cube. First they will draw a design and then they will have an opportunity to build a shelter to shade an ice cube from the sun. They should think about it tonight and tomorrow they will draw their design.
- Students will complete their Fall and Winter pages in their Weather Journal
- Collect weather data and add to Weather Journal

Day 5

- Review previous session- the sun effect on the Earth and what an engineer does
- Students will observe as teacher draws a design of an icecube shelter. Question and answer time as this is happening. Teacher will tell students about the materials that will be available to them when they construct their shelter.
- Students will have time to draw a design for their shelter
- Watch the following video about the sun: [Sun Video](#)
- Examine weather data collect this far and ask student how the weather has changed over time and look for patterns in the data
- Collect weather data and add to Weather Journal

Day 6

- Review previous session
- Read The Wind Blew by Pat Hutchins
- Students will have the majority of this session to construct their icecube shelter
- Review the material that will be available (sticks, craft sticks, pipe cleaners, variety of fabrics in different colors, tape, glue, string)
- Support students as needed throughout construction of shelters
- Collect weather data and add to Weather Journal

Day 7

- Talk about what worked well when construction icecube shelter and what was challenging
- Students will have additional time to complete structures if needed
- Extra work for students who have finished their structure: [Weather wordsearch](#), [Seasons coloring sheet](#),
- Read Cloudy With A Chance of Meatballs by Judi Barrett
- Discuss reality and fantasy with students
- Collect weather data and add to Weather Journals

Day 8

- Explain the process of testing icecube shelters
- Students will each set up their shelters outside in a sunny spot and will then be give an icecube.
- Students will place their icecube under their shelter
- Students will keep track of how many minutes it takes their ice cube to melt completely
- Pick up shelters and return to the classroom
- Group conversation about which shelter helped to protect the icecube from the effects of the sun.
- Conclusions will be made about which designs and which materials protected the icecube and which didn't.
- Collect weather data and add to Weather Journals

Day 9

- Review of weather unit
- Students will examine all of the data we have collected and look for patterns
- Students will compare similarities and differences in the data
- Class will discuss how these patterns are helpful and how they can be used
- Culminating activity- weather party
- Students will choose a season and dress in clothing that would be appropriate for that season.
- We will enjoy some snacks that are typically served at each season (spring-maple syrup Summer-icecream/popsicles Fall- Pumpkin muffins/apples Winter-Hot chocolate)
- Students will each share which season is their favorite and explain what the weather might be like and what they like to do in that season.

Extensions:

- Weather data could be collected over the course of the school year
- Wind speed data could be collected if the tools were available to do so
- Visit from a meteorologist
- Rainfall data could be collected in a rain gauge
- Shelters could be engineered to shade a specific amount of snow in the winter