

## UNIT

### Unit Name: Weather & Climate

Subject: Earth and Space Science

Time Frame: Trimester 1

Grade: Kindergarten

Author: Egg Harbor Township STEM Committee

**UNIT SUMMARY-** The students will be able make observations to determine the effect of sunlight on Earth's surface (soil, sand, rocks, and water). They will also be able to use and share observations of local weather conditions to describe patterns over time. (Descriptions examples - sunny, cloudy, rain, and warm.) (Pattern examples – cooler in morning than afternoon, number of sunny days versus cloudy days in different month.) Assessment will be limited to whole numbers and relative measures such as warmer and cooler.

### UNIT RESOURCES

**Books: (begin this unit with any book on weather, not limited to the following)**

*Weather and the Seasons*

*Clouds*

*Changing Weather*

*Weather*

*Across the Seasons*

*Rainy Day, Sunny Day*

*Four Seasons*

*The Big Snow*

*The Big Storm. A Very Soggy Counting Book.*

### Internet Resource Links:

<http://www.nextgenscience.org/kwc-weather-climate>

[http://education.nationalgeographic.com/education/activity/extreme-weather-on-earth/?ar\\_a=1](http://education.nationalgeographic.com/education/activity/extreme-weather-on-earth/?ar_a=1)

[www.theweatherchannelkids.com](http://www.theweatherchannelkids.com)

<http://www.sercc.com/education>

<http://www.nssl.noaa.gov/education/students/>

<http://www.nws.noaa.gov/om/reachout/kidspage.shtml>

[http://star.spsk12.net/science/science\\_00.htm](http://star.spsk12.net/science/science_00.htm)

<http://www.scholastic.com/kids/weather/>

## STAGE ONE

### GOALS AND STANDARDS

- 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.]
- K-ESS3-2 Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather [Clarification Statement: Emphasis is on local forms of severe weather.]
- K-PS3-1. Make observations to determine the effect of sunlight on Earth's surface [Clarification Statement: Examples of Earth's surface could include sand, soil, rocks, and water] [Assessment Boundary: Assessment of temperature is limited to relative measures such as warmer/cooler.]
- K-PS3-2. Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area [Clarification Statement: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.]

### ENDURING UNDERSTANDINGS

- **Weather changes depending on the season.**
- **Weather changes depending on the time of day.**
- **Weather is different in different regions of the world.**
- **Scientists can record weather across different times and areas so that they can make prediction about what kind of weather might happen next.**
- **Earth's processes combine to make weather.**
- **Weather can be hazardous.**
- **Humans cannot eliminate natural hazards, but can take steps to reduce their impacts.**

**ESSENTIAL QUESTION** "How does weather effect your everyday life?"

### KNOWLEDGE AND SKILLS

#### Vocabulary:

**Temperature-** the Measurement of how hot or cold something is.

**Rain-** water that falls to the earth in drops. (Water condensed from atmospheric vapor and falling in drops.)

**Snow-** frozen precipitation formed by freezing water vapor

**Soil-** the ground or earth

**Sunny-** having lots of sunshine

**Cloudy-** having little or no sunshine

**Wind-** movement of air

#### Students will:

- **make observations to determine the effect of sunlight on the Earth's surface**
- **use tools and materials to design and build a structure that will reduce warming effect of sunlight on the Earth's surface**
- **use and share observations of local weather conditions to describe patterns over time**
- **ask questions to obtain information about the purpose of weather forecasting to prepare for and respond to severe weather**

## **STAGE TWO**

### **PERFORMANCE TASKS**

**Use tools and materials to design and build a structure that will reduce the warming effect of the sun on the Earth's surface. (Build a shade structure)**

#### **Materials:**

- **Misc. items from classroom (straws, paper, cardstock, cloth, boxes, etc.) Use your imagination**

#### **Directions:**

- **Students will work in small groups and design a structure (large or small) that will shade the earth**

### **OTHER EVIDENCE**

#### **Formative Assessments:**

- **Teacher questions**
- **Class discussions**
- **Related Math/STEM activities**
- **Related English Language Arts activities**

## STAGE THREE

### LEARNING PLAN

#### Activities, experiences, and lessons:

##### September/October –Weather charting and weather differences

- Track the weather each day
- Begin to relate patterns when appropriate (cloudy today, rain – etc)
- Incorporate Graphing (pictograph, line graph, etc.)

##### October/November – Shade Structure

- Students will work in small groups and design a structure (large or small) that will shade the earth. This can be as simple as an umbrella or as complex as a large structure.

#### Common Core State Standards Connections:

##### ELA/Literacy –

**RI.K.1** With prompting and support, ask and answer questions about key details in a text. (K-ESS3-2)

**W.K.7** Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-PS3-1),(K-PS3-2),(K-ESS2-1)

**SL.K.3** Ask and answer questions in order to seek help, get information, or clarify something that is not understood. (K-ESS3-2)

##### Mathematics –

**MP.2** Reason abstractly and quantitatively. (K-ESS2-1)

**MP.4** Model with mathematics. (K-ESS2-1),(K-ESS3-2)

**K.CC** Counting and Cardinality (K-ESS3-2)

**K.CC.A** Know number names and the count sequence. (K-ESS2-1)

**K.MD.A.1** Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K-ESS2-1)

**K.MD.A.2** Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. (K-PS3-1),(K-PS3-2)

**K.MD.B.3** Classify objects into given categories; count the number of objects in each category and sort the categories by count. (K-ESS2-1)