TEKS K.8 Earth and space. The student knows that there are recognizable patterns in the natural world and among objects in the sky. The student is expected to:

(A) observe and describe weather changes from day to day and over seasons.

(B) identify events that have repeating patterns, including seasons of the year, and day and night; and

(C) observe, describe, and illustrate objects in the sky such as the clouds, Moon, and stars, including the Sun.

Background Knowledge

Students should be able to identify the four seasons and the repeating patterns they follow. They should be able to describe how the weather changes with the seasons through drawings, verbal discussion, words, and acting out. Teachers should give students opportunities to talk about weather conditions and record the changes in weather and seasons throughout the entire year.
Students should also be able to recognize the patterns that occur with day and night. Students should be provided opportunities to observe, describe, and illustrate objects that occur in the daytime and nighttime skies, either through direct observation, like clouds, or through graphic images. They should understand that some objects in the sky can be seen during both daytime and nighttime while others cannot. Some objects can be seen just in the daytime sky, and some just in the nighttime sky.

Essential Questions

How does the weather change from season to season?
(It is usually rainy and warm in spring, hot and dry in summer, warm to cool in the fall, and windy, rainy, and cold in the winter.)

What patterns repeat outside every day?
(The Sun rises in the morning and sets in the evening. The Moon rises in the evening and sets in the morning.)

What patterns repeat every year that we can observe as a change in the weather?
(The seasons form patterns that repeat every year and can be observed and identified by changes in the weather.)

What objects can we observe in the sky during the day and at night?
(We can see the Sun and clouds during most days and the Moon and stars during most nights. Sometimes we can see the Moon in the sky during the day and clouds in the sky at night.)

Making Rainsticks

Objective:

Observe and describe weather changes from day-to-day and over seasons.

Materials:

Crayons, paints, tissue, construction paper, fabric
Cardboard tubes or lightweight poster board
Aluminum foil
Scissors
Glue or tape
Dried beans or rice

Bringing The Rain To Kapiti Plain By Verna Aardema

Background Information:

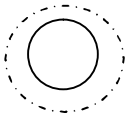
A rainstick is a musical instrument from South America that when played, was supposed to bring about rainstorms. Rainsticks were traditionally made from the wood skeleton of a cactus. Thorns from the cactus were pressed into the deadwood skeleton and filled with small pebbles. It was the pebbles hitting the thorns as they fell down inside the tube that created the rain-like sound. Students can make their own version of a rainstick using sturdy cardboard tubes, aluminum foil, and dried beans or rice.

How to Conduct:

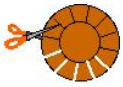
1. Collect enough cardboard tubes for each student in the class. (Wrapping paper, poster, or mailing delivery tubes work well.)

2. Have students decorate the outside of the cardboard tubes using crayons, paints, tissue, construction paper, or even fabric. Encourage them to be creative.

3. If the cardboard tubes do not have caps, make some out of lightweight poster board.
   a. Place the end of the tube down on the poster board and lightly trace the outline of the tube. Add at least a ¼ inch margin and draw another circle around the first circle.



   b. Make small cuts in the margin just up to the original circle so you can bend up the tabs to glue them to the tube. Glue or tape a circle securely over the end of the tube so one end is completely sealed off. Keep the other end open for now.



4. Cut a piece of aluminum foil about 1½ times the length of the cardboard tube, and crush the foil lengthwise so it resembles a long rope.
5. Twist the "rope" of aluminum foil so it is shaped like a spring and slip it completely inside the cardboard tube.

6. Put ½ cup of dried beans or rice into the open end of the tube.
7. Have students test the sound by covering the open end of the tube with their hand and turning it over. Students can add or remove some beans (or rice) until they find a sound they like.
8. When finished, have students cap off the open end of the tube with the other circle of poster board.
9. Students can now turn the rainstick over and over again to listen to the rain.
10. Read the book, "Bringing the Rain to Kapiti Plain by Verna Aardema."
11. Students should demonstrate how to use, concerve, and dispose of natural resources and materials as directed.

Seasons Collage

Objective:

To identify events that have repeating patterns, including seasons of the year.

Materials:

Poster board per student
Scissors
Magazines, calendars, fliers, or newspapers for pictures

How to Conduct:

1. Give each student a piece of poster paper, and have them fold it two times to divide the paper into four equal quadrants.
2. Tell students to write "Spring" at the top of the first quadrant, "Summer" at the top of the second quadrant, "Fall" at the top of the third quadrant, and "Winter" at the top the last quadrant.
3. Have children cut out pictures from old magazines, calendars, fliers, or newspapers that depicts each of the seasons and glue them in the correct category.
4. As an alternative, have students draw pictures that depict each of the seasons.
5. Students should demonstrate how to use, concerve, and dispose of natural resources and materials as directed.

Wind Sock

Objective:

To observe and describe weather changes from day-to-day.

Materials:

Construction paper per student
Single hole punch
Crayons, paint or stickers
Glue, tape or staples
Material or tissue paper for streamers
Yarn (3–4, 12″ pieces per student)
Safety goggles (Talk with students about safety when using the materials and identify the need for goggles)

How to Conduct:

Have students make a wind sock—a common weather tool—to make daily wind measurements.

1. Give each student a piece of construction paper, and have them decorate the paper using crayons, paint, or stickers.
2. Have students glue long streamers along the bottom edge of the construction paper.
3. Have students roll the construction paper into a tube.
4. Tape, glue, or staple the ends of the construction paper together.
5. Punch three or four evenly spaced holes around the top edge of the tube.
6. String 12 inches of yarn through each hole and tie the ends together in one knot.
7. Hang the wind sock somewhere outdoors to measure the amount of wind.

Background Information:

A wind sock is a common weather instrument used for measuring wind speed and direction. A wind sock points in the opposite direction of the wind; therefore, if a wind sock points north, it means the wind is blowing from the south. The movement of a wind sock indicates how fast the wind is blowing. If there is little wind, the wind sock barely moves, but if the wind sock sticks out horizontally in a straight line, the wind must be blowing hard. This type of information is useful to people flying planes, maneuvering ships, or driving large trucks or buses in mountainous areas. That is why wind socks are often used at airports, seaports, and other open areas like highways and mountainous regions.

Weather Day-to-Day and Season-to-Season

Have students observe other weather patterns that occur along with the wind, such as the presence of clouds or the presence of strong winds right after the weather is rainy and turns cold.
Have students copy the chart in their notebooks and record the weather conditions each day for a week to describe daily and weekly weather changes. Have them do this every day a month and look for patterns in the weather.

This can be done as a class project all year with different students recording the information on a large chart each week. Students can observe and describe weather day-to-day and from season to identify patterns used to predict the weather.

This Week's Weather (Dates:)					
	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
Temperature					
Wind Speed	light moderate gusty	light moderate gusty	light moderate gusty	light moderate gusty	light moderate gusty
Cloud Cover	None Partly cloudy Cloudy	None Partly cloudy Cloudy	None Partly cloudy Cloudy	None Partly cloudy Cloudy	None Partly cloudy Cloudy
Precipitation	Snowy Rainy Thunderstorms Partly sunny Sunny	Snowy Rainy Thunderstorms Partly sunny Sunny	Snowy Rainy Thunderstorms Partly sunny Sunny	Snowy Rainy Thunderstorms Partly sunny Sunny	Snowy Rainy Thunderstorms Partly sunny Sunny