


WEATHER VS. CLIMATE

Garden

Grades Pre-K–2 • 45 mins

Fall, Winter, Spring, Summer • Indoor and Outdoor 

NEW!

GRADES PRE-K–2

SCHOOL PARTNER
LESSON PLAN

SUBMITTED BY

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ESSENTIAL QUESTIONS

- Big Idea: Weather and climate affects the kinds of plants farmers can grow.
- Big Question: Can any plants grow right now in Texas?

MATERIALS

- Large print climate zone map
- Weather tools: rain gauge, large student-friendly thermometer, soil thermometer
- Clothes or pictures of clothes for different climates
- Pictures of native plants and animals for different locations
- Seed packets with climate map on the back and clues for seasons (F= Fall/S=Spring etc)
- Basic garden tools

VOCABULARY

- Air/aire
- Calm/calma
- Clear/despejado
- Cloudy/nublado
- Cold/frío
- Hot/caliente
- Icy/helado
- Mild/templado
- Rainy/lluvioso
- Temperature/temperatura
- Thermometer/termómetro
- Weather/tiempo
- Windy/viento

ASSESSMENT

- Farm & Food journals for tracking and note-taking (optional)



CREATED BY

Cunningham Elementary School
and Partners for Education in 2022

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PREPARATION (15 MINS)

Weather is what we experience on a daily basis. It helps us decide what we should wear for the day or what to bring on an upcoming getaway in the next week. Weather is a prediction based on a variety of data collected in a variety of ways from ground stations to radars and weather maps are created to help us understand what to expect based on the evidence compiled by meteorologists. Weather includes sunshine, rain, cloud cover, winds, hail, snow, sleet, freezing rain, flooding, blizzards, ice storms, thunderstorms, steady rains from a cold front or warm front, excessive heat, heat waves and more. By collecting meteorological data, like air temperature, pressure, humidity, solar radiation, wind speeds and direction etc.

TEACHER BACKGROUND

- Meteorologists take real-time measurements of atmospheric pressure, temperature, wind speed and direction, humidity, precipitation, cloud cover, and other variables. Weather is the day-to-day state of the atmosphere, and its short-term (minutes to weeks) variation.
- Climate on the other hand allows us to see long term patterns in weather data collected over time. *Note: Time in relation to climate is usually no less than thirty years. Climate can tell us many things from seasonal information and planting zones to increases in global temperatures or carbon dioxide.

LESSON DESCRIPTION

- Students will identify how weather and climate affect our plants.
- Students will also discover which plants they can grow in their micro-climate and weather/season.

LEARNING OBJECTIVES

- Know that weather occurs over a short period of time & can be observed
- Identify how temperature changes and precipitation cause changes in growth and behavior of plants
- Identify which seeds to appropriately plant for the current weather/season

Content Learning Objectives

Weather and Season, Climate and Geography

WSCG.1.2 Describe what foods grow nearby and what foods come from other places.

Life Skills Learning Objectives

Personal Life Skills

PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.

Community Life Skills

CLS.2 Students cooperate and communicate well with each other.

ACADEMIC STANDARD CONNECTIONS

Texas Essential Knowledge and Skills (TEKS) for Science, Elementary, Revised 2022

K.2 Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to:

- (A) ask questions about organisms, objects, and events observed in the natural world
- (C) collect data and make observations using simple tools

K.3 Scientific investigation and reasoning. The student knows that information and critical thinking are used in scientific problem solving. The student is expected to:

- (B) make predictions based on observable patterns in nature
- (C) explore that scientists investigate different things in the natural world and use tools to help in their investigations

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

1.2 Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to:

- (A) ask questions about organisms, objects, and events observed in the natural world
- (C) collect data and make observations using simple tools

1.8 Earth and space. The student knows that the natural world includes the air around us and objects in the sky. The student is expected to:

- (A) record weather information, including relative temperature such as hot or cold, clear or cloudy, calm or windy, and rainy or icy
- (C) identify characteristics of the seasons of the year and day and night

2.2 Scientific investigation and reasoning. The student develops abilities necessary to do scientific inquiry in classroom and outdoor investigations. The student is expected to:

- (C) collect data from observations using scientific tools

2.8 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) measure, record, and graph weather information, including temperature, wind conditions, precipitation, and cloud coverage, in order to identify patterns in the data
- (B) identify the importance of weather and seasonal information to make choices in clothing, activities, and transportation

*Lesson Sequence**Engage***Cultivate Curiosity(5–10 mins):**

- Opening ritual: Gratitude: I'm grateful the weather changes!
- Word of the Day: Weather! "What we see!" (students repeat)
- Introduce the Big Question: Can any plant grow right now in Texas?
- Invite students to Turn and Talk, reminding them to give both partners a time to share & to use the sentence stem, "think that _____ because"
- Bring the class back together to share out—option to have students share what their partner said here.
- Remember to not immediately clarify all misconceptions—allow for all ideas to come to the table and let the lesson clarify. Clear anything up at the end if needed.

*Explore***Root Around (5–10 mins):**

- With you, students will examine seed packets to determine what type of weather they like to grow in.
- Remember to reference the big question often by asking probing questions, such as "Would this seed like to be planted in the weather we are having today? How do you know?/What on the seed packet tells you that?"
- *Seed packets may need to be adapted to support success.
- Optional: Have students physically touch the place on the map that the seeds would like to be planted.
- Reference the Texas seasonal map

*Explain***Grow Understanding (5–7 mins):**

- Show the map & ask students—Would you prefer to live where it is mostly cold with snow like Alaska, or mostly warm with no snow and lots of rain like Puerto Rico?
- Share that plants also have preferences about weather—some plants prefer to grow during warmer seasons, while others are just fine growing in the cold!
- We are going to explore what kind of plants we can plant in Texas during our fall weather & see what the plants already in our garden might need!
- Once you've explored the seed packets & found seeds that like the weather in Texas right now, plant those seeds in the garden.

Elaborate **Observe The Fruits (5–10 mins):**

- With their teacher, students will practice the skills they have learned such as watering, weeding, etc.
- Students can check on plants to determine if they need help growing—should they be watered? Are they too close to their neighbors? Are there any bugs nearby that may be harming the plant?
- The teacher may guide students with the weather tools—student-friendly thermometer, soil thermometer, rain gauge, etc.
- Optional: Students may use their farm & food journal to track what they would like to add or grow in their school garden in the coming seasons.

Evaluate **Reflect (5 mins):**

- Bring the group back together to address the Big Question: Can all plants grow right now in Texas?
- Invite students to Turn & Talk (with a new partner?), reminding them to allow both partners to share equally & using the sentence stem.
- Support student conversations as needed & offer time for all to share out their ideas.
- If any misconceptions arise, invite other students to share their ideas in response to each other before immediately correcting them.

**ADAPTING FOR INDOORS**

This activity can be easily adapted for indoor learning. Exclude the weather tools for indoor learning, and rather than planting seeds you can create 'seed tape' to plant in the garden the next time you can go outside. Look up how to make seed tape with paper strips, a squirt bottle, and some rulers to measure out the proper seed spacing.

CONNECTIONS TO KITCHEN LESSONS

Could connect to cooking what is currently in season in the garden or what the garden has an abundance of.

POSSIBLE EXTENSIONS

- With their teacher, students will practice the skills they have learned such as watering, weeding, etc.
- Students can check on plants to determine if they need help growing—should they be watered? Are they too close to their neighbors? Are there any bugs nearby that may be harming the plant?
- The teacher may guide students with the weather tools—student-friendly thermometer, soil thermometer, rain gauge, etc.

ADDITIONAL RESOURCES

- Texas Ag Planting Guide or your regional planting guide
- A map of your local watershed and rainfall totals