



What's the Weather?

K-2 Investigating Earth and Sky Virtual Field Trip



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This is a supplementary educator guide to assist parents and teachers with the asynchronous portion of the virtual field trip. To reserve your virtual exhibit exploration experience, please fill out the [Virtual Field Trip Request Form](#).

All associated activity guides can be found with the attached documents found on our [website](#). Additional resources can be found at the end of this guide.

What is weather?

Weather is the state of the atmosphere with respect to temperature, humidity, presence of storms, and whether clouds are present at a certain time in a specific location. Weather refers to the tracking of short term meteorological events, where climate refers to the weather conditions over a long period of time and the patterns those conditions follow.

Connection to the Next Generation Science Standards

During this virtual field trip, your young scientists will learn about the roles of water on Earth. This field trip directly aligns with the Next Generation Science Standards and is a continuation from the lessons presented in [Mystery Science](#). Together, *What's the Weather* and Mystery Science covers the Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts from K-ESS2-1.

After this field trip, your Kindergartener should be able to explain these endpoints in their own words: Identify and name types of weather, note that temperature and weather follow patterns through the year, and how weather patterns relate to the seasons, clouds, and storms.

K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time.

Disciplinary Core Ideas: ESS2.A

Students will learn that weather is a combination of sunlight, wind, snow or rain, and temperature in a particular region at a point in time. People, like scientists, measure these conditions to describe and record the weather and to notice patterns over time.

Science & Engineering Practices: Obtaining, Evaluating, and Communicating Information







Students will draw on prior knowledge and experiences to collect, record, and share observations. They will accomplish this through interactive matching games, drawing activities, videos, quizzes, and hands-on activities designed with minimal cost to the student, if any.

Crosscutting Concepts: Patterns

Students will observe weather patterns as they work through the activities in Nearpod, while learning about the types of weather, what weather is associated with each season, what clouds are, how storms are formed, and what happens when it rains too much.

Nearpod Field Trip Outline

1. Welcome and Introduction to your Virtual Field Trip - What's the Weather (Slides 1-3)
 - a. Press the play button in the bottom left corner to play an audio transcription of the questions that students will be able to answer by the end of the field trip.
 - What does weather look like?
 - What does weather feel like?
 - Where do clouds come from?
 - How are storms made?
 - Can it rain too much?
 - b. **Draw It**
 - Students will draw what they believe weather to be.
2. What is Weather? (Slides 4-5)
 - a. **Video: What Is Weather?**
 - Students will watch the video from Anu Club explaining the different types of weather, what causes weather, and the difference between weather and climate.
 - b. **Matching Pairs**
 - Students will match the written words to the image that depicts the type of weather.

	rainy		snowy		cloudy
	windy		sunny		stormy

3. Weather Watcher (Slides 6-9)

a. **Video: Be a Weather Watcher**

- Students will watch a video from SciShow Kids that reviews the different types of weather and how to track changes in weather.

b. **Poll:** Do scientists track weather?

- This quick assessment serves as a segue into the scientific investigations the students will observe and/or conduct about weather patterns.

c. **Draw It**

- Students will look outside their window to observe what the weather looks like on that day, and then draw it as best as they can on the screen.

4. Tracking Weather (Slide 10)

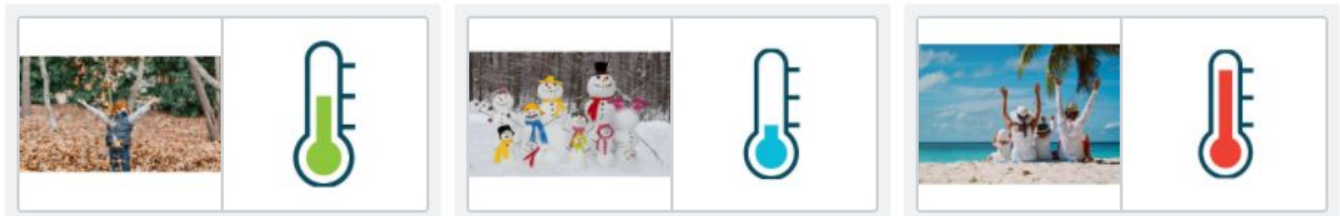
- #### a.
- Press the play button in the bottom left corner to play an audio transcription explaining the *Our Weather Graph* worksheet for tracking weather and temperature over the course of 10 days.

- Students can use markers or colored pencils to track daily temperatures.
- The *Our Weather Graph* worksheet can be downloaded from the Additional Resources under this Virtual Field Trip.

5. Temperature Patterns (Slides 11-15)

a. **Matching Pairs**

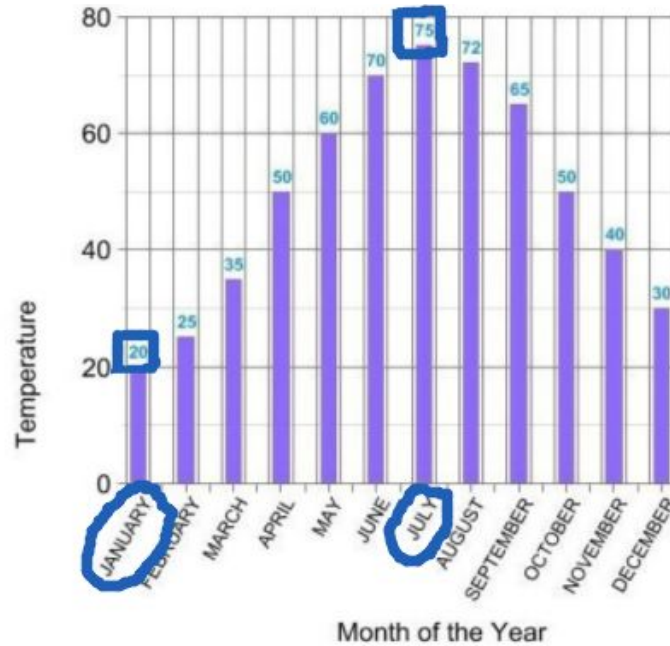
- Students will match the pictures of the seasons to the corresponding thermometer.



b. **Draw It**

- Students will compare the numbers on the graph to the qualitative descriptions of temperatures and draw a shape that corresponds to the particular descriptions.

○ Sample response:



c. **Poll:** Does the temperature follow a pattern through the year?

○ This quick assessment serves as a segue into the scientific investigations the students will observe and/or conduct about weather patterns.

d. **Quiz**

○ Q: How many seasons are there?

A: 4

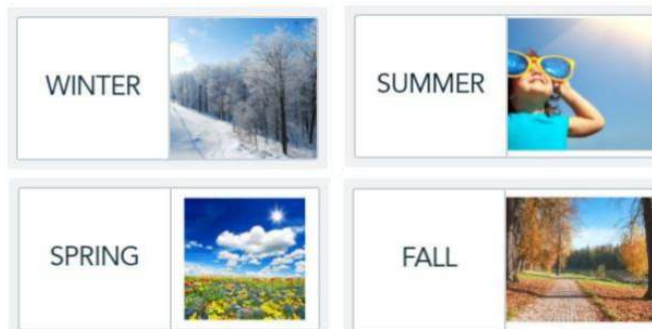
○ Q: What are the names of the seasons? Click the 4 right answers.

A: Winter, Summer, Spring, Fall

6. Seasons (Slides 16-20)

a. **Matching Pairs**

○ Students will match the written season names to the images of the weather found in the seasons.



b. **Draw It**

- Students will draw the weather for their favorite season. Acceptable drawings include stick figures in weather appropriate outfits, clouds, rain, storms, snowmen, etc.

c. Press the play button in the bottom left corner to play an audio transcription explaining the instructions for the following slide.

d. **Fill in the Blanks**

- Students will answer the question: What did the four pictures on the previous slide share? Drag and drop your answers into the box.

- Did they all have grass? **No**
- Did they all have sunshine? **No**
- Did they all have clouds? **Yes**

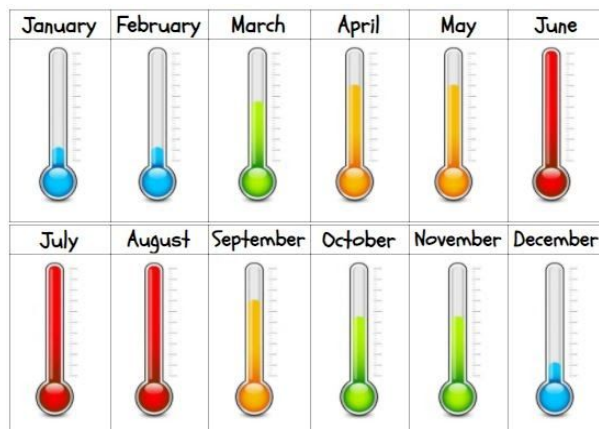
e. **Fill in the Blanks**

- Students will answer the question: What did the four pictures on the previous slide share? Drag and drop your answers into the box.

- We can find the clouds in the **sky**.
- Clouds are found in every **season**.
- Clouds are made from **water** droplets.
- Clouds can make it **rain**.
- Clouds can **block** the sun.

f. The *Comparing Seasons* worksheet includes additional activities for students to visually describe the different seasons by scenery and relative temperatures.

- Sample response:



Need a break?

This is a great time during the virtual field trip to take a break if you or your students need to get away from the screen. Don't worry, when you return, we will pick back up where we left off and continue the virtual field trip!

5. What Are Clouds? (Slides 21-26)

- a. Press the play button in the bottom left corner to play an audio transcription explaining that clouds are made of condensed water droplets. Water droplets that become too heavy fall back down to the ground as precipitation in the form of rain, snow, sleet, or hail.

b. Video: Cloud in a Bottle

- Students will watch a video that demonstrates how to create a cloud in a bottle.
- The *Cloud in a Bottle* activity guide can be downloaded from the Additional Resources under this Virtual Field Trip.

c. Video: Shaving Cream Clouds

- Students will watch a video that models how a cloud saturated with water creates precipitation.
- The *Shaving Cream Clouds* activity guide can be downloaded from the Additional Resources under this Virtual Field Trip.

d. Video: What Causes a Thunderstorm?

- Students will watch a video that explains how thunderstorms are created by moisture, unstable air, and lift.

e. Video: Convection Currents

- Students will watch a video that models how warm air masses and cold air masses circulate in the atmosphere.
- The *Convection Currents* activity guide can be downloaded from the Additional Resources under this Virtual Field Trip.

f. Quiz

- Q: Where do clouds come from?

A: Water in the air

○Q: Where does rain come from?

A: The clouds

○Q: Which way does rain fall?

A: Down

○Q: What 3 things are needed to make a storm? Click the 3 correct answers.

A: Water or moisture, Lift, Unstable air

○Q: What happens to the rain after it falls?

A: It makes puddles

○Q: Can it rain too much?

A: Yes

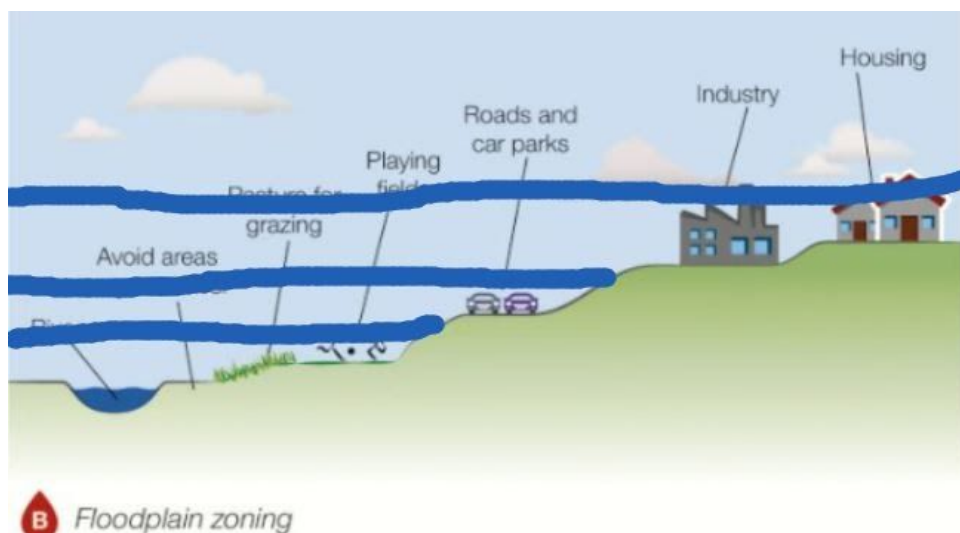
6. Extreme Weather (Slides 27-31)

a. Video: Flood by Jackie French

- Students will watch a storytelling of the children's book *Flood* by Jackie French and Bruce Whatley. It tells the story of the devastating floods in Queensland, Australia in 2011.

b. Draw It

- Students will draw 3 lines across the screen to indicate where the water would rise to in the event of a flood.
- Sample response:



c. Video: Why Do Floods Happen?

- Students will watch a video explaining that a flood is the result of heavy rainfall when the ground is already saturated, as well as the dangers of floods and how to prepare for a flood emergency.

d. Collaborate

What can you do to stay safe during a flood?

Type in or upload a picture of how you can keep your family and house safe from a flood.

- Students are asked to share their thoughts on how to stay safe during a flood. Other students who participate in the lesson can also leave their thoughts and compare their answers to the ones that are posted.
- e. Press the play button in the bottom left corner to play an audio transcription of an additional activity that they can do at home with their families to prepare for emergencies.
- The *First Aid & Emergency Checklists and Family Emergency Plan* worksheets can be downloaded from the Additional Resources under this Virtual Field Trip.

7. Final Words and Closing (Slide 32)

- a. Students have completed the Virtual Field Trip and are encouraged to explore science experiments at home with the Michigan Science Center's [Home Science Activities](#).

Additional Resources

Investigate clouds and atmospheric science further with the National Informal STEM Education Network [Exploring Earth: Investigating Clouds](#).

Activity Guides

The following Activity Guides have been included with the Virtual Field Trip. We recommend that you look through them and decide how and when to incorporate them within your schedule.

Cloud in a Bottle 10 Minutes

Materials:

- Empty single use bottle with screw cap
- Small amount of warm-hot water
- Match
- Adult assistance

Shaving Cream Cloud 10 Minutes

Materials:

- 1 clear glass
- At least 1 additional glass or bowl
- Water
- Food coloring
- Shaving cream
- Pipette or dropper (straws work too)
- Towels

Convection Currents 20 Minutes

Materials:

- Clear rectangular storage container filled 2/3 full of room temperature water
- Small container filled with hot water (film canister or condiment container)
- Small container filled with icy cold water
- Red and blue food coloring
- 2 sheets of aluminum foil to cover the tops of the small containers
- 2 rubber bands
- Pennies or marbles
- Pencil

Curriculum Connections

This virtual field trip is designed to be paired with the Mystery Science: [Weather Watching](#) curriculum.

Video References

Suppandi & Friends. 2019. What is Weather? For Kids – Weather Explained – Science For Kids – Things to Know About Weather. https://youtu.be/1ZyT_Aiey1U

SciShow Kids. 2016. Be a Weather Watcher – Science for Kids. <https://youtu.be/Uo8lbeVVb4M>

NOAA SciJinks. 2019. What Causes a Thunderstorm? <https://youtu.be/pcZn3dGWQ-U>

Mr Smede. 2018. Flood by Jackie French. <https://youtu.be/9jzrHJ-gHmU>

SciShow Kids. 2018. Why Do Floods Happen? https://youtu.be/Qe350nm_odA