

# Weird and Wonderful Weather

Grades 3-5 (6 book set w/project)

Did you know that people have been trying to predict the weather for 3,000 years? But weather is one of those things that we cannot control even though it affects us each and every day. Explore, create and investigate the weird and wonderful weather of our world. Read fun facts, journey on mini missions, even harness a hurricane!

**Books in this set:** 50 Things You Should Know About Weather; A Journey Through Weather; What on Earth?: Wind; What on Earth?: Water; How Could We Harness a Hurricane?; Weather in 30 Seconds; Mac Makerson Chocolate Milk Tornado

**Learning Objectives:** Students will understand water and the water cycle and how it relates to weather and how humans impact the weather system on Earth.

**Essential Questions in This Unit:**

- Why is it important to learn about water?
- Why is water essential for sustaining life on Earth?
- How does water shape our planet?
- How is weather related to water?
- How do humans impact weather systems on Earth?
- Why is weather a system?

**Read to find out:**

1. How do we get the water we use every day?
2. What are ways that water moves and changes?
3. How does the water cycle impact the environment?
4. How does peoples' use of water affect the environment?
5. Why is the water cycle important?
6. What is our role in the water cycle?
7. Why does the quality of water in rivers and streams matter?
8. How would life be different if there were no water cycle?
9. Find evidence of the following statements in the texts:

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- A decorative border of black umbrellas surrounds the text. The umbrellas are arranged in a grid-like pattern, with a row of 20 umbrellas at the top, a row of 20 at the bottom, and vertical columns of 20 on the left and right sides.
- Cycles produce constant change on Earth.
  - Some events in nature have a repeating pattern.
  - Water plays a major role in shaping Earth's surface.
  - Natural resources can be affected by human interaction.
  - Local actions can have global effects.
  - Systems have cycles and patterns.
  - Patterns can be studied and used to make predictions.
  - Tools help us collect data. Weather is a powerful force of nature.
  - Weather affects all life on Earth.
  - Changes in weather affect our daily lives.

10. How do changes in one part of Earth's systems affect other parts?

11. Why is weather a system?

12. How does geography play a role in natural events?

13. How is weather related to water?

14. How do we determine weather patterns?

15. What role does the sun play in weather conditions?

16. What role does wind have in weather?

17. How can we use weather patterns to help explain our world?

18. How can weather be described?

19. How do tools help us collect data?

20. How are living things affected by weather?

21. Why are weather predictions not always right?

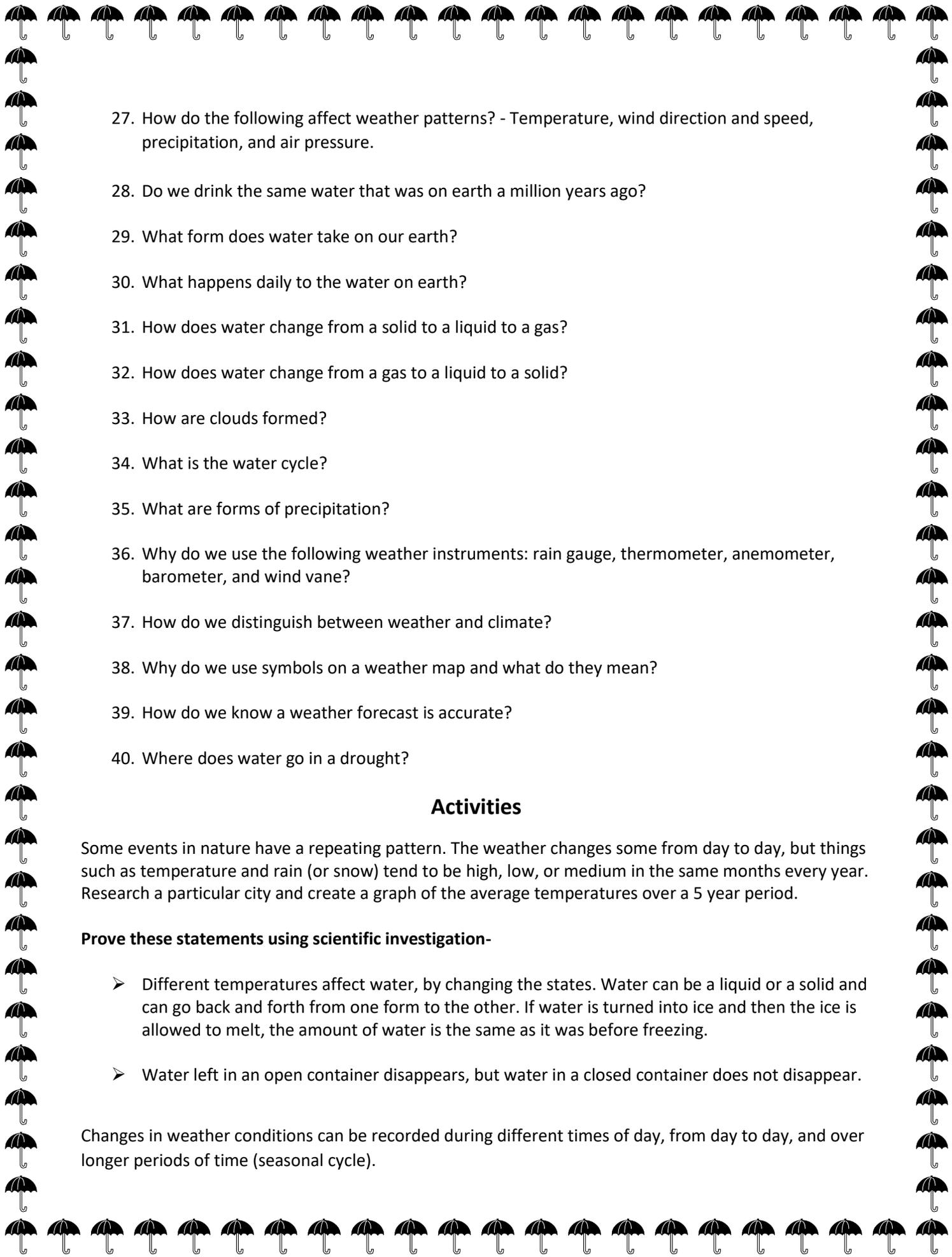
22. How do humans impact weather systems on Earth?

23. What are clouds? Describe the physical characteristics of clouds. Compare and contrast different types of clouds.

24. How can wind speed be measured?

25. How and why do we predict the weather?

26. What instruments are used to predict the weather?

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27. How do the following affect weather patterns? - Temperature, wind direction and speed, precipitation, and air pressure.
28. Do we drink the same water that was on earth a million years ago?
29. What form does water take on our earth?
30. What happens daily to the water on earth?
31. How does water change from a solid to a liquid to a gas?
32. How does water change from a gas to a liquid to a solid?
33. How are clouds formed?
34. What is the water cycle?
35. What are forms of precipitation?
36. Why do we use the following weather instruments: rain gauge, thermometer, anemometer, barometer, and wind vane?
37. How do we distinguish between weather and climate?
38. Why do we use symbols on a weather map and what do they mean?
39. How do we know a weather forecast is accurate?
40. Where does water go in a drought?

### Activities

Some events in nature have a repeating pattern. The weather changes some from day to day, but things such as temperature and rain (or snow) tend to be high, low, or medium in the same months every year. Research a particular city and create a graph of the average temperatures over a 5 year period.

#### Prove these statements using scientific investigation-

- Different temperatures affect water, by changing the states. Water can be a liquid or a solid and can go back and forth from one form to the other. If water is turned into ice and then the ice is allowed to melt, the amount of water is the same as it was before freezing.
- Water left in an open container disappears, but water in a closed container does not disappear.

Changes in weather conditions can be recorded during different times of day, from day to day, and over longer periods of time (seasonal cycle).



Repeated observations can show patterns that can be used to predict general weather conditions. For example, temperatures are generally cooler at night than during the day and colder in winter than in spring, summer or fall. What other generalizations can you make about weather based on observing patterns?

How can a local action have a global effect? Research a specific event and present to the class.

Choose a weather instrument and make one by hand. Write an explanatory text on your instrument and how it works, who uses it and why. (Rain gauge, thermometer, anemometer, barometer, and wind vane)

Don't forget to make a chocolate milk tornado!

**For more information on this topic, please refer to the books below:**

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| 9781609929206 | 50 Things You Should Know About Wild Weather |
| 9781633222465 | How Can We Harness a hurricane               |
| 9781609929275 | Journey Through the Weather, A               |
| 9781782404880 | Know it All Weather in 30 Seconds            |
| 9780760353455 | Mac Makerson and the Chocolate Milk Tornado  |
| 9781682970195 | Water  |
| 9781682970188 | Wind   |