For Creative Minds

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Easy Weather Observations

This entire book is designed to help very young children develop observation and critical thinking skills. As parents and care givers, there are some really easy things to help spur observations along at no or little cost.

If you have an outdoor thermometer…

- You can track and chart hourly temperature changes during the day to determine the warmest or coldest time of day. Discuss with children how that might affect when they prefer to play outside or how they should dress.
- You can also track and chart daily temperatures taken at the same time of day over a period of a few days. How do those temperatures change from day to day? Is there any kind of weather system (like a cold front) that may affect those temperature changes?
- If charting temperatures, consider charting and comparing daily temperatures during different seasons of the year to discuss how seasons affect temperatures in your area.

One of the easiest things to observe without any tools is clouds. These observations may be made by going outside, looking out the window, or even when driving down the road.

- Simply ask children to describe the clouds they see.
- How much of the sky is covered by clouds? Meteorologists divide the sky into eighths to discuss the amount of cloud cover. A 0/8 means no clouds at all, 1/8 means one eighth of the sky is covered, and 8/8 means the sky is completely cloud covered. For very young children who do not yet understand fractions, they can describe cloud cover as “a little, some, or lots.” Depending on the child, you can introduce some of the easier fractions, like a quarter or half.
- Big, fluffy cumulus clouds sometimes have shapes that look like animals or objects. Young children often enjoy watching clouds looking for shapes.
- Use a cloud chart or the cloud images on the next page to identify the types of clouds you see.
- Point out rain clouds and discuss how we can tell from some clouds when it is going to rain.
- Point out and discuss how some clouds are lower or higher than other clouds and that they may move at different speeds.
- Ask “open” questions about visible clouds like “how do you think the clouds are moving like that?”

Watch or listen to local weather reports. Ask children what kind of clothes they will need to wear for the weather that day.

Use weather apps to see radar images for your area.

The Six Parts of Weather

Weather is made up of six different parts. Each part is measured with a different type of tool. You can now purchase weather stations for home or classroom, or you can make your own using a kit. There are a wide variety of simple "DIY" tool options available online, too.

Temperature: How hot or cold something is. It can be measured with a thermometer.

Do you like it hot or cold?

Atmospheric pressure: The weight of air pressing down on the earth. It can be measured with a barometer.

Clouds: A collection of water droplets floating in the sky, usually seen as gray or white. There are a wide variety of different formations.

Cloud charts can help identify the types of clouds in the sky.

How can you tell which direction the wind is blowing?

Wind: The movement of air. The speed and can be measured with an anemometer. The direction can also be shown with a wind vane.

Humidity: Very small drops of water (vapor) that make the air feel wet. Can be measured with a hygrometer.

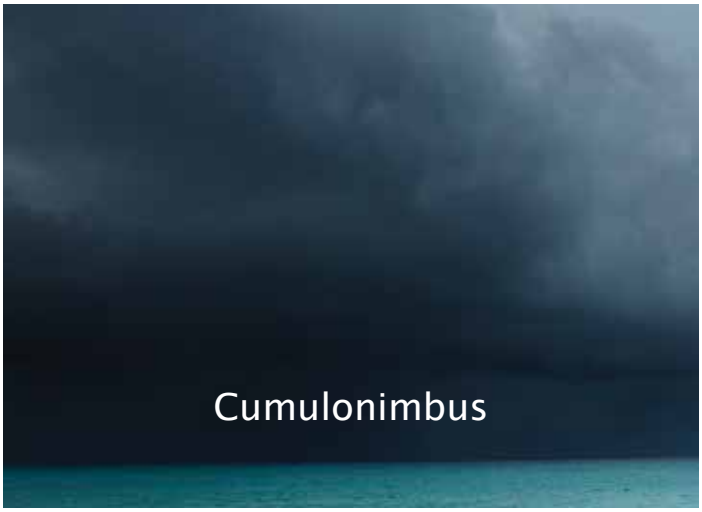
Can it be humid without precipitation? Why or why not?

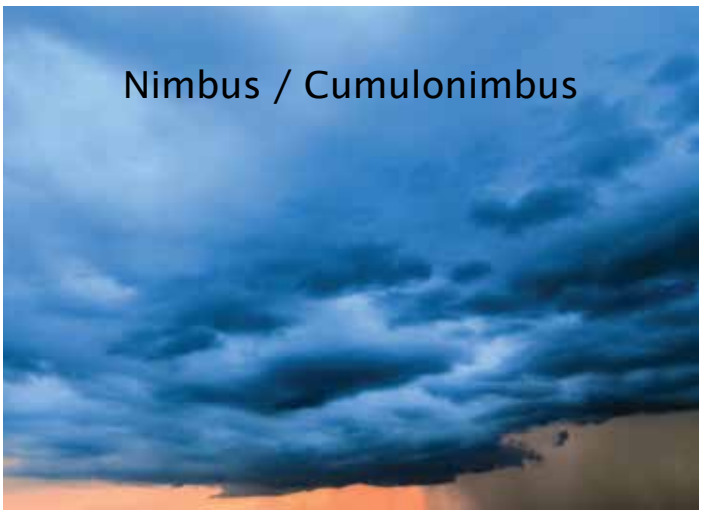
What's your favorite type of precipitation?

Precipitation: Water falling from clouds as rain, sleet, hail, or snow. The type of precipitation depends on the temperature. Some people use a rain gauge to see how much rain has fallen.

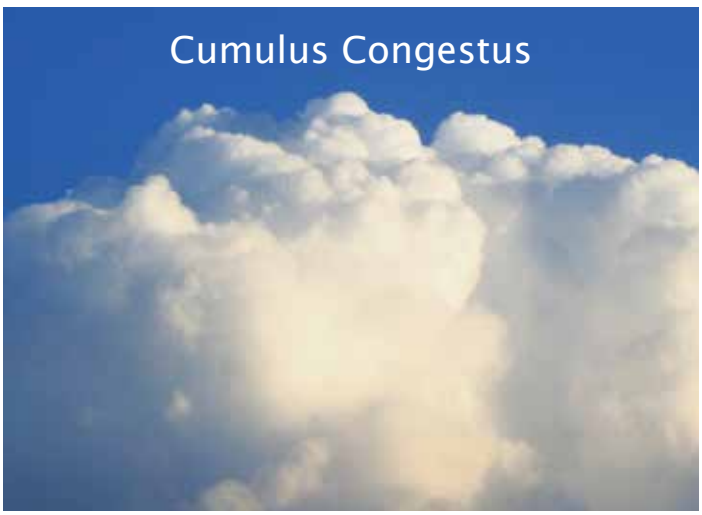
Clouds


Nimbus


Cumulonimbus


Nimbus / Cumulonimbus


Strato Cumulus


Cumulus Congestus


Cirrus

Weather, Climate or Seasons?

Weather can change slowly or quickly and is the combination of temperature, atmospheric pressure, wind, humidity, precipitation, and clouds at any given moment. Weather can change very quickly with a storm rolling in and it can even be sunny on one side of the street and raining on the other!

Climate is the average weather in an area over many years, not just a few days. A climate may be hot but there could still be cold days. The farther a location is from the equator, the cooler the climate. There can be warm weather in cool climates and there can be cool weather in hot climates. Deserts are dry climates and rainforests are wet, humid climates.

Areas close to the equator (tropical) have two seasons a year (rainy or dry). Areas that are farther from the equator (temperate or polar) have four seasons a year (winter, spring, summer, and autumn). The season depends on the Earth's orbit around the sun and the tilt of the Earth and gives us expected weather associated with that time of year. We can expect the daily weather to vary based on the season.

See if you can answer these questions about weather, climate or seasons:

1. During which season do leaves turn colors and fall off trees?

2. Does the prediction of a storm refer to seasons, climate, or weather?

3. A desert receives little precipitation in a year and rainforests receive a lot. Is this related to seasons or climate?

4. During which season would you expect it to snow?

5. Some parts of the US and Canada get snow but Florida and southern California rarely get snow. Is this because of seasons or climate?

6. During which season would you expect the temperatures to be warmest?

7. During which season do plants and flowers begin to bloom?

8. Do meteorologists predict the season or weather?

Answers: 1-autumn/fall; 2-weather; 3-climate, 4-winter, 5-climate, 6-summer, 7-spring, 8-weather