

Curious About Our Clouds and Weather?

Activities and challenges for families and caregivers

Have you ever gazed up at the sky, watching the clouds move and change shapes? Have you wondered what clouds can tell you about the day's weather? Have you wondered why the weather can be different from one day to the next and for each season? What's the difference between weather and climate? Check out several of these activities, challenges, or websites to uncover some answers.

Challenges

<p>Cloud Observations Draw or take photos of clouds throughout two or more days. Write about what you observe. Check out the cloud identification chart below as you do your observations. How are the clouds the same or different over the days? How do clouds link to storms?</p>	<p>Weather Forecasts Look at a newspaper or online to find out the weather forecast for your city, town or rural area for a week. What information does the forecast give you? Choose another city, town or rural area in Colorado and find out how the weather forecast compares with where you live. How was the weather each day the same or different when compared with the weather forecast prediction? Write notes for your two areas each day.</p>	<p>Storms and Safety You decide to play outside in the summer. A storm comes in quickly with thunder and lightning. What actions should you take? Make a list of safety precautions to give to your friends if a storm comes near you. What safety precautions would you take for a tornado? How would your list of safety precautions be different for winter activities such as skiing or snowshoeing in the mountains? You may want to look at the videos and resources below to help make your lists.</p>
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Activities: Make Models to Investigate

- [Make a Cloud in a Jar](http://www.youtube.com/watch?v=oq5yVILTsmI). www.youtube.com/watch?v=oq5yVILTsmI
- [Make it Rain in a Jar](http://www.sciencefun.org/kidszone/experiments/make-it-rain/). www.sciencefun.org/kidszone/experiments/make-it-rain/
- [Create Convection Currents](http://www.exploratorium.edu/snacks/inverted-bottle) with colored water. What happens when warm and cold air or water meet in the atmosphere or water near us? www.exploratorium.edu/snacks/inverted-bottle
- [Make a Tornado in a Bottle](http://www.stevespanglerscience.com/lab/experiments/soda-bottle-tornado/). www.stevespanglerscience.com/lab/experiments/soda-bottle-tornado/
- [Build Magnetic Atmosphere Layers](http://www.exploratorium.edu/snacks/magnetic-atmosphere-model). Levitating magnets show how Earth's atmosphere stacks up. www.exploratorium.edu/snacks/magnetic-atmosphere-model
- [4-H activities on rain, lightning, clouds, temperature, tornadoes, and air](https://www.cocorahs.org/Content.aspx?page=lessonplans). <https://www.cocorahs.org/Content.aspx?page=lessonplans>

Design Challenges

- Build [Easy Homemade Weather Instruments](https://sciencing.com/easy-homemade-weather-instruments-kids-7974126.htm). Build a thermometer, rain gauge, barometer, anemometer, wind vane. <https://sciencing.com/easy-homemade-weather-instruments-kids-7974126.htm>

Go Outside to Observe and Collect Data, with Citizen Science

Weather (precipitation)

- [CoCoRaHS](https://www.cocorahs.org/) Community Collaborative Rain, Hail & Snow. Measure and report daily precipitation of rain, hail, snow. <https://www.cocorahs.org/>

Clouds

- [Cloud Identification Chart](https://observer.globe.gov/documents/19589576/fcba15f2-4958-4b7f-99a0-f92d89208020). Take this chart outside to identify clouds you see. <https://observer.globe.gov/documents/19589576/fcba15f2-4958-4b7f-99a0-f92d89208020>
- [GLOBE Observer Free Cloud App](https://observer.globe.gov/about/get-the-app). Free app to identify and share observations with scientists. <https://observer.globe.gov/about/get-the-app>. [Getting Started](https://www.youtube.com/watch?v=cZM3PO5hoHU&feature=youtu.be) www.youtube.com/watch?v=cZM3PO5hoHU&feature=youtu.be

Interactive Online Activities

- [Cloud Concentration Game](http://eo.ucar.edu/webweather/concentration/concen2.html) (UCAR). <http://eo.ucar.edu/webweather/concentration/concen2.html>
- [Wild Weather Adventure](https://spaceplace.nasa.gov/wild-weather-adventure/en/) (NASA). <https://spaceplace.nasa.gov/wild-weather-adventure/en/>
- [Cloud Matching Game](https://scied.ucar.edu/clouds/cloud-matching-game) (UCAR). <https://scied.ucar.edu/clouds/cloud-matching-game>
- [Cloud Sorting Activity](https://scied.ucar.edu/cloud-sorting-game) (UCAR). <https://scied.ucar.edu/cloud-sorting-game>
- [Weather and Climate: 13 online interactive activities](http://www.scholastic.com/teachers/activities/teaching-content/weather-and-climate-13-studyjams-interactive-science-activities/) (Scholastic). www.scholastic.com/teachers/activities/teaching-content/weather-and-climate-13-studyjams-interactive-science-activities/

Videos, Websites, Articles to Learn Why, What, and How

- [How Lightning Works](http://www.youtube.com/watch?v=9K-v-RJ-z2A) (2:56 minutes) www.youtube.com/watch?v=9K-v-RJ-z2A
- [What's a Tornado?](http://www.youtube.com/watch?v=-s3UwOq1P1E) (3:50 minutes) www.youtube.com/watch?v=-s3UwOq1P1E
- [How do Tornadoes Form?](https://ed.ted.com/lessons/how-do-tornadoes-form-james-spann) (TED Ed- 4:11 minutes) This video and other resources are for older students. <https://ed.ted.com/lessons/how-do-tornadoes-form-james-spann>
- [What is Hail? How is Hail Formed and Why does It Happen?](http://www.youtube.com/watch?v=6M-ycZLSF1w) (3:22 minutes) www.youtube.com/watch?v=6M-ycZLSF1w
- [Clouds and How They Form](https://scied.ucar.edu/learning-zone/clouds/how-clouds-form). (website) <https://scied.ucar.edu/learning-zone/clouds/how-clouds-form>
- [Types of Clouds](https://scijinks.gov/clouds/) (website) <https://scijinks.gov/clouds/>
- [Blizzards](https://scied.ucar.edu/learning-zone/storms/blizzards) (article for kids) <https://scied.ucar.edu/learning-zone/storms/blizzards>
- [Avalanche 101](http://www.youtube.com/watch?v=wcr1SI-T9S0) (National Geographic- video 2:50 minutes) www.youtube.com/watch?v=wcr1SI-T9S0
- [Avalanche Awareness Program](http://www.youtube.com/watch?v=mpja4Urtcqc) (video 10:22 minutes) Describes avalanche conditions and safety. www.youtube.com/watch?v=mpja4Urtcqc

These and more at <http://csencolorado.org/> Family and Caregiver Investigations.