



NOAA Boulder Teaching Resources: 4th Grade Guide



Student Activities

[Adjusting to Climate Extremes](#) Story Map: Learn some of the ways water is changing in the Arctic, ocean, and atmosphere

Data in the Classroom: [Investigating Sea Level](#)
[Sea Level Rise Viewer](#)
[Investigating El Nino](#)

Printable Activities: [Beat the Uncertainty Game](#)
[Instructions](#), [Checklist](#), [Booklet](#)
[Weather Where I Live](#)
[Weather in the World](#)

Videos

[Ask a Scientist:](#)

How do you study climate?
What are tree cores?
What can we learn from tree rings?
What are greenhouse gases?
Why is Arctic ice melting?

Bite Sized Science [Tracking Greenhouse Gases](#)
[Atmospheric Tomography Mission](#)
[Threats in Motion](#)

Tour the [Global Monitoring Laboratory](#)

SOS Explorer Mobile

Science on a Sphere Explorer Mobile is a free app from NOAA. Put it on a Chromebook or tablet [here](#).

PALEOMAP Observe continents shifting over 750 million years
Temperature Anomaly See how the temperature on Earth has changed since 1880

Carbon Dioxide Concentration Look at CO₂ in the atmosphere

Sea Surface Currents Watch changes in ocean temp and currents

Vegetation See the changes of the plants on land due to the seasonal changes of Earth's temperature and sunlight

Human Transportation See roads, shipping and plane routes

Standard	Meeting the Standards	NOAA Science
<ul style="list-style-type: none"> Earth has changed over time. 		<ul style="list-style-type: none"> Scientists can study the climate of the past.
<ul style="list-style-type: none"> Four major earth systems interact. 		<ul style="list-style-type: none"> NOAA scientists study the interaction between the oceans, land, atmosphere, and vegetation.
<ul style="list-style-type: none"> Energy and fuels that humans use are derived from natural sources and their use affects the environment in multiple ways. 		<ul style="list-style-type: none"> NOAA scientists study the short term and long term impacts of burning fossil fuels.
<ul style="list-style-type: none"> A variety of hazards result from natural process; humans cannot eliminate natural hazards but can reduce their impacts' effect. 		<ul style="list-style-type: none"> NOAA scientists research the impacts of severe weather, changing oceans, greenhouse gases, and particulate matter in the atmosphere.

Request a Virtual Visit with a NOAA Boulder Scientist [here](#).



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