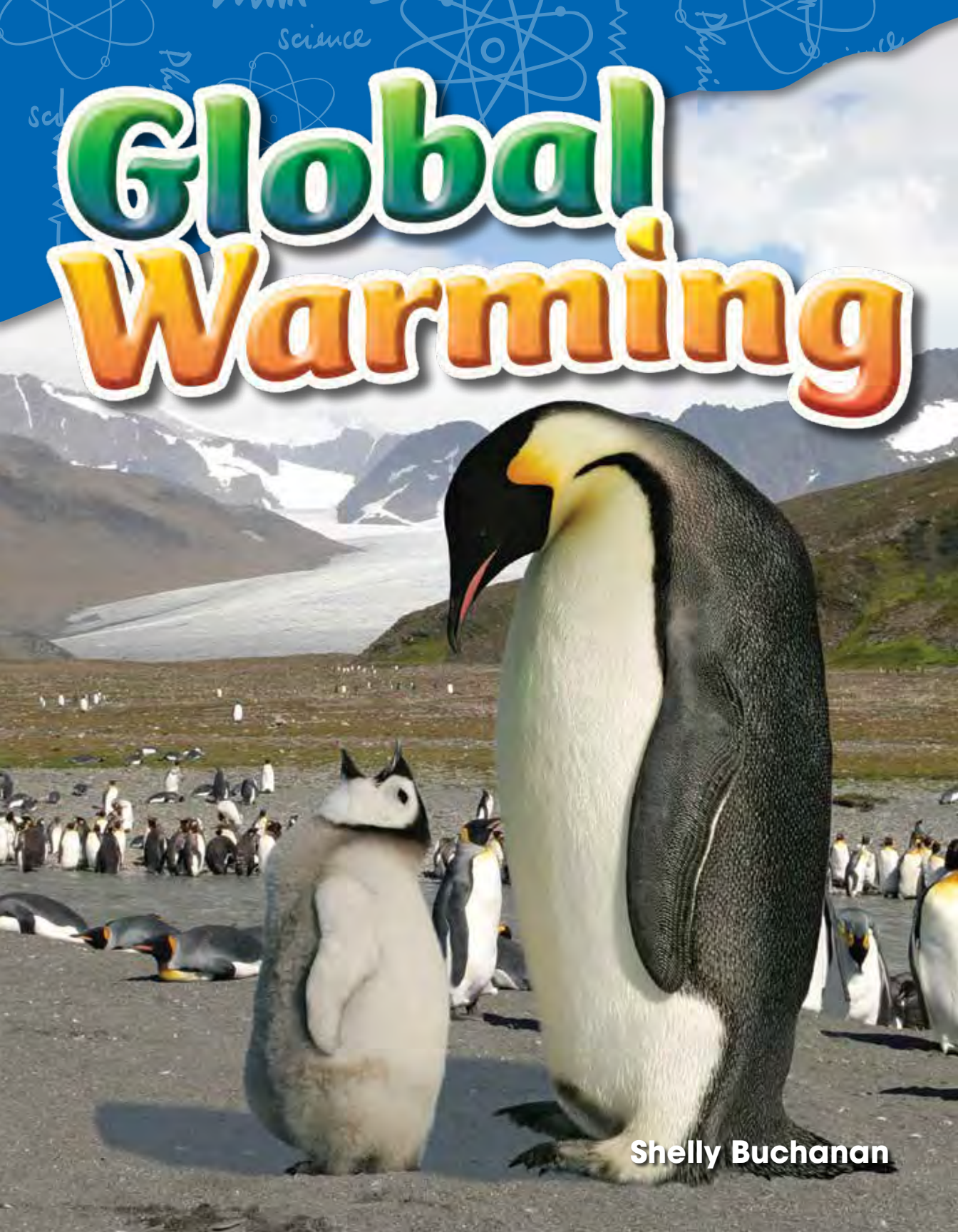
Global Warming



Shelly Buchanan

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It's Getting Warmer

Earth is warming up. Most of this warming has happened over thousands of years. But things have sped up in the last one hundred years. Earth's average temperature has risen one full degree. That might not sound like much, but it can affect Earth's oceans, land, plants, and animals. This change is known as *global warming*. But to understand the process, there are a few things we must look at first—**weather** and **climate**, the carbon cycle, and the **greenhouse effect**.

Little Ice Age

Earth naturally goes through gradual warming and cooling periods. Between 1300 and 1870, Earth experienced a cooling period known as the *Little Ice Age*. During this time, average temperatures dropped and the world got a little colder.

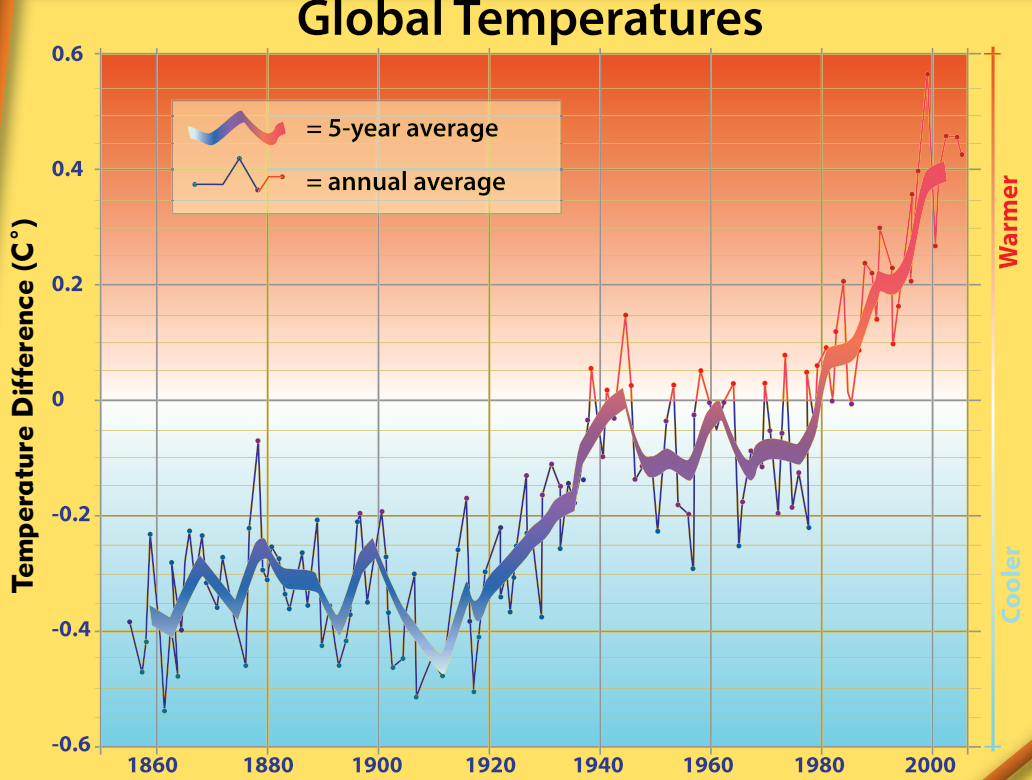


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Weather vs. Climate

Weather is the outdoor conditions of a place on one day. Weather can change in just a few hours. Weather forecasters tell about the possible temperature and cloud cover for a place at different times.

Climate is the average weather for an area or region over time. For example, Montana has a snowy climate. Hawaii is known for its tropical climate. Put simply, the difference between weather and climate is time.

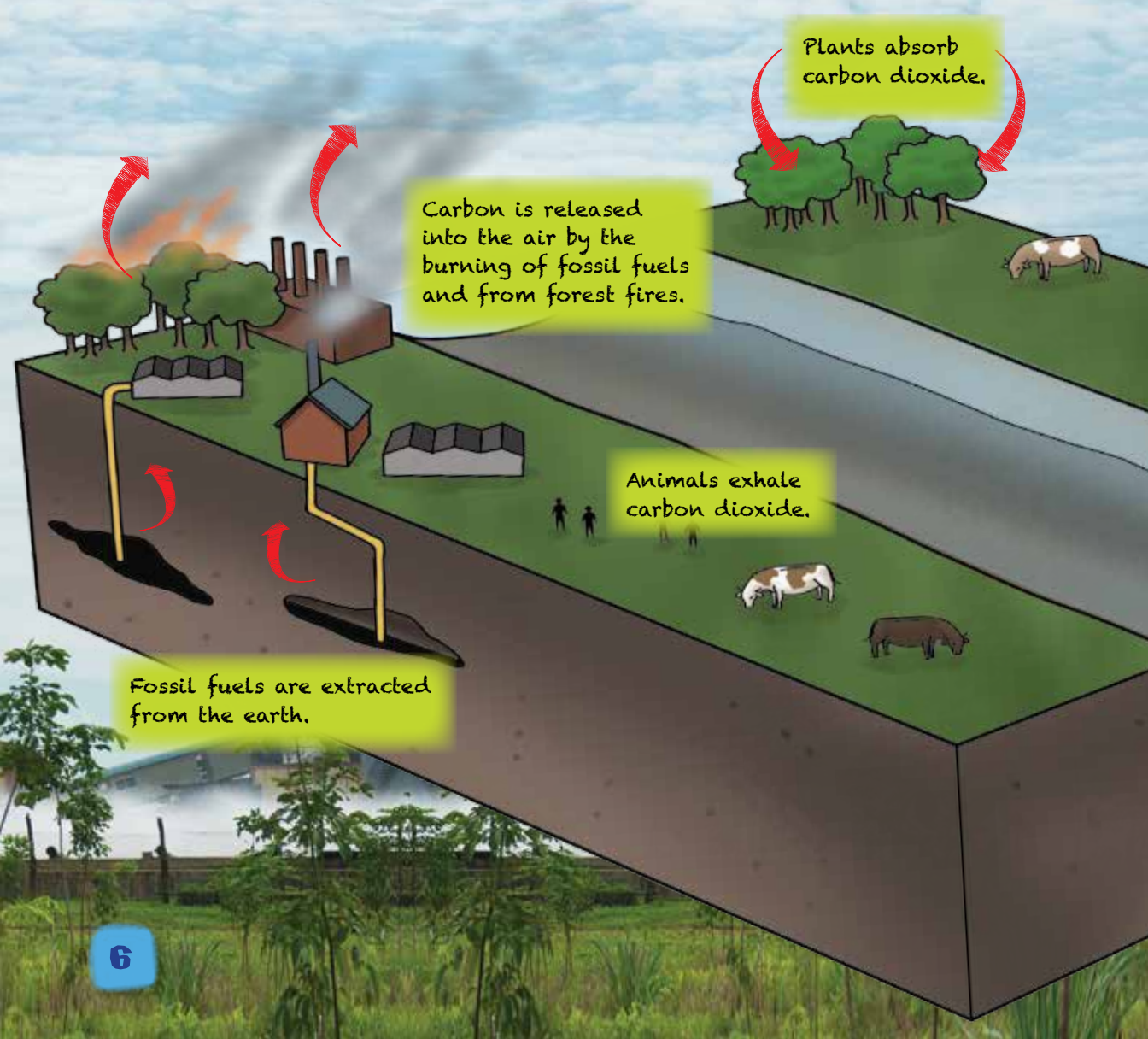


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The Carbon Cycle

Every living thing on Earth is made partly of carbon. Carbon moves through the **atmosphere**, land, and oceans. It's always on the move.

Carbon joins with oxygen to make **carbon dioxide** in the air and water. Plants on land and in the ocean absorb this gas to make food. Animals breathe in oxygen and breathe out carbon dioxide. Forest fires and erupting volcanoes release carbon dioxide, too.

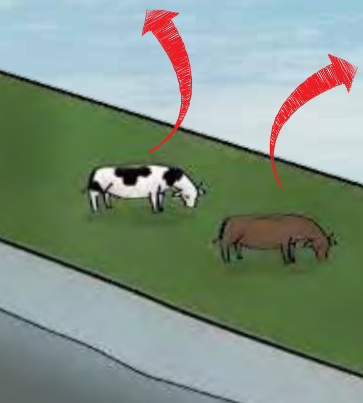


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When plants and animals die, carbon moves again. It rejoins the air as gas given off from animal decay. The carbon dioxide that does not move to the air goes into the ground. Dead plants and animals decay and compress over time. Some of this carbon turns into **fossil fuels**.

Most of Earth's carbon is found inside rocks and fossil fuels. Moving carbon out of these materials into the air is usually slow. It's a perfect balance for our planet. When people burn fossil fuels such as coal, natural gas, and oil to create power, carbon quickly moves into the atmosphere. This rapid release upsets the carbon cycle.

Scientists estimate that between 2000 and 2010, the world added about 100 billion tons of carbon to the atmosphere.



Carbon is released from dead plants, dead animals, and animal waste.

graphite

Carbon's Many Uses

In its diamond form, carbon is used for drilling and cutting. Other things made of carbon include graphite in pencils, lubricants for machinery, and charcoal.

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Think Like a Scientist

How does the greenhouse effect work? Experiment and find out!

What to Get

- 2 thermometers
- 2 trays
- plastic wrap
- potting soil

