**Interactive Reading (nonELL)**

Earth is warming. Sea levels are rising. There’s more carbon in the air, and Arctic ice is melting faster than at any time in recorded history. Scientists who study the environment to better gauge Earth’s future climate now argue that these changes may not reverse for a very long time—if they ever do.

*Predict: what are some reasons why the Earth might be warming?* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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People burn fossil fuels such as coal and oil for energy. This burning releases carbon dioxide, a colorless gas. In the air, this gas traps heat at Earth’s surface. The more carbon dioxide released, the more the planet warms. This is called *global warming*, and we can look at it on graphs. If our current use of fossil fuels doesn't slow, the long-term climate impacts could last *thousands* of years—and be way worse than scientists had been expecting.

*How would your life be different if we suddenly ran out of fossil fuels? Be specific.*

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*Climate* is the usual pattern of weather in a particular place: how much sunlight and rainfall it gets, how windy it is, and so on. The world's weather is entirely powered by the Sun. The temperature differences between one part of the world and another cause changes in air pressure: producing winds, storms, and even hurricanes. The Sun's heat also warms the oceans unevenly, driving ocean currents—which, in some ways, are like underwater winds—from one place to another.

*What is one reason why the climate in Mexico would be different than the climate in Chile?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

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Scientists believe that greater amounts of carbon dioxide in the atmosphere, and hotter temperatures on Earth, will significantly change the climate across the whole planet. This climate change is already beginning to happen in parts of the world. If you live in a chilly place such as Alaska or Greenland, you might think a bit of global warming sounds like a great idea. But climate change doesn't necessarily mean things will get hotter. Some places will be hotter some of the time, but most places will simply see more crazy and extreme weather. That could mean heavier rainfall on occasions, more snow in some places, longer periods of drought, more storms and hurricanes, and more frequent heat waves.

*What local examples of extreme weather do you remember? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

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Climate change is nothing new. Earth's climate has been changing regularly for hundreds of millions of years, sometimes getting colder and sometimes warmer. Everyone knows about Ice Ages—those periods of history when Earth was far colder than it is now. The climate change people talk about today seems to be different. Most scientists believe it is caused by humans’ *carbon footprints*, which is a way of describing how much polluting carbon dioxide each person puts in the air. The climate change we are seeing now is going to make the climate much more erratic—hotter in some places, cooler in others; drier in some places, wetter elsewhere. Is there a way to make a difference?

*Before you begin to explore how you impact climate change (and can change your impact), what are some thoughts you have to make a difference about climate change?*

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*Predict: what are some reasons why the Earth might be warming?*

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*How would your life be different if we suddenly ran out of fossil fuels? Be specific (give examples).*

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