OHIO energy PROJECT

Name: _____

Global Warming by Shelly Buchanan

Reading Discussion Questions Answer Key

NOTE: This answer key gives MORE information than is in the book. This is to help guide the students to a deeper understanding and clarification of the issues during your discussions.

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1. What is the difference between *climate* and *weather*?

   Climate is the average weather for an area or region over time. It is the clothes in your closet for how you dress during the whole year.

   Weather is the outdoor conditions of a place on one day. It includes temperature, cloud cover and precipitation at different times. The weather for the day helps you decide what to wear.

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2. Describe the climate of Ohio.

   Summers are hot and humid. Winters are cold with snow. Tornadoes and thunderstorms occur in the state. Average rainfall is 42 inches.

   Describe the weather (where you are) today?
   Depends on day, time and season. Check out the window or online.

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3. List 3 ways carbon or carbon dioxide is released into the atmosphere?

   - Burning fossil fuels and forest fires

   - Animals exhale carbon dioxide

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

   How is it removed from the atmosphere? Plants absorb carbon dioxide to make food.

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4. Explain how the Earth's atmosphere acts like a greenhouse.

   A greenhouse has a glass or plastic roof and walls. This traps the heat from the sun, creating warmth in the house. Carbon dioxide in the atmosphere traps the sun's heat the same way. The sun's rays stream through the atmosphere warming the ground and air. Some heat but not all escapes into space.

5. What are some causes of global warming?

a. Since the Industrial Revolution began 150 years ago and the increase in burning fossil fuels, the amount of carbon dioxide in the atmosphere has increased 30%.

b. Trees remove Carbon Dioxide from the atmosphere. What are 2 other problems with deforestation? Habitat loss   Loss of topsoil and landslides

c. More farms mean less forests. What other greenhouse gases do farms contribute?

Fertilizers – nitrous oxide   Farm animals and cattle - methane

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6. Warmer temperatures cause warmer water. That means there is more evaporation. How is this connected to hurricanes and lightning strikes? With more water vapor in the air, there will be more rain and extreme storms. More water in the air also means more lightning.

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7. What is the connection between shrinking Antarctic sea ice, penguins and phytoplankton?

Phytoplankton is the beginning of many ocean food chains. They cannot live in warming waters. Their population has shrunk by 40%. Fish eat phytoplankton. Fish populations are down. Penguins depend on fish for food. Less food means lower reproduction rate and fewer penguins.

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8. Rising sea level is a threat to our coastlines. Look at a map of the United States. List four cities that will lose land area due to rising sea levels. Include one from Ohio.

Ohio – Cleveland or Toledo (Lake Erie)

Any coastal city–Examples: Miami, New York City, San Francisco or Los Angeles

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9. Explain to someone how global warming may cause food shortages.

Our food crops may slow down growth due to floods, drought or too much heat. Scientists predict excess carbon dioxide helps plants grow at first but then slows and stops growth.

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10. What can you do in your community to conserve energy and reduce your carbon footprint?

Various Answers: try to use renewable energy, wear a sweatshirt instead of turning up your heat, recycle, use energy efficient light bulbs, use public transportation, buy fewer things