

**Station 1 “Book Smarts”**

1. List the 4 principal greenhouse gases and their chemical formulas.
2. Which gas is the most heat-trapping per unit volume?
3. Describe how IR radiation is absorbed, radiated, and captured by earth. If you prefer, use a diagram with colors and captions to make this concept clear.
4. What evidence is that shows an increase in % CO<sub>2</sub> in the atmosphere?

**Station 2 “Chemistry Smarts”**

5. Draw structural formulas of the 4 principal greenhouse gases. You may use colors to enhance your presentation.
6. List the sources of each gas.
7. Is water a greenhouse gas? Why or why not?

**Station 3 “Society Smarts”**

8. What effects does industrialization in China have on global warming?
9. Why is baseball bat wood more difficult to obtain now?
10. How is malaria affected by global warming?
11. Can you list other economic & environmental consequences of global warming?

**Station 4 “Technology Smarts”**

12. Using a thermometer, household chemicals, a plastic bottle, vacuum pump, and IR light source, design a controlled experiment with a hypothesis to test the validity of anthropogenic warming of earth.

**Station 5 “Logic Smarts”**

13. Discuss the concepts of positive and negative feedback loops.
14. Connect to biological examples, such as H<sub>2</sub>CO<sub>3</sub> in blood & hormone regulation.
15. How do ice albedo, deforestation, and increasing air pollution connect to ideas of positive and negative feedback?
16. As sea ice melts in the Arctic Circle, Russia and Canada are placing claims on underground resource-rich arctic sea beds that connect to their continental shelf. Is this a case of positive or negative feedback? Explain your answer.

**Station 6 “Law Smarts”**

17. Describe the provisions of the Clean Air Act?
18. What recent Supreme Court decisions affect the enforcement of this law?
19. What are The Kyoto Protocol and The Montreal Protocol?
20. What are some proposed mitigation ideas for global warming?

Answer Sheet

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