

Chp 5-Review Questions. Uncovering Earth's System

1. How does water falling as snow atop a mountain eventually become a cloud?
2. What is unique about the behavior of water compared to other common substances?
3. How does the greenhouse effect influence the temperature of the atmosphere? Which properties of greenhouse gases in the atmosphere cause this effect?
4. How do we know that Earth was once entirely molten?
5. What are the different types of seismic waves? Why are seismic waves useful for probing Earth's interior structure?
6. Describe the interior structure of Earth.
7. The deepest wells and mines go down only a few kilometers. What, then, is the evidence that iron is abundant in Earth's core? That Earth's outer core is molten but the inner core is solid?
8. Describe the process of plate tectonics. Give specific examples of geographic features created by plate tectonics.
9. Explain how convection in Earth's interior drives the process of plate tectonics.
10. Describe the various ways in which Earth's surface is reshaped over time.
11. Describe Earth's magnetosphere. If Earth did not have a magnetic field, do you think aurorae would be more common or less common than they are today?
12. Ozone and carbon dioxide each make up only a fraction of a percent of our atmosphere. Why, then, should we be concerned about small increases or decreases in the atmospheric abundance of these gases?
13. What is the difference between ozone depletion and global warming?

Chp 5-Discussion Questions. Uncovering Earth's Systems

1. The human population on Earth is currently doubling about every 30 years. Describe the various pressures placed on Earth by uncontrolled human population growth. Can such growth continue indefinitely? If not, what natural and human controls might arise to curb this growth? It has been suggested that overpopulation problems could be solved by colonizing the Moon or Mars. Do you think this is a reasonable solution? Explain your answer.
2. In order to alleviate global warming, it will be necessary to dramatically reduce the amount of carbon dioxide that we release into the atmosphere by burning petroleum. What changes in technology and society do you think will be needed to bring this about?

Chp 5-Collaborative Group Exercises. Uncovering Earth's Systems

1. Using a ruler and self-stick or tape-on labels, create a scale model of Earth on the shortest member of your group. Use the group member's height in inches divided by Earth's diameter (12,800 km) as the scale factor. For example, if the selected group member is 65 in. tall then the 50-km maximum depth of Earth's crust is  $(65 \text{ in.} \div 12,800 \text{ km}) \times (50\text{-km}) = 0.25 \text{ in.}$  from the top of the head and 0.25 in. from the bottom of the feet.