



Critical Thinking Skills



Conservation: Fresh Water Resources

Skills for Critical Thinking	Reading							Hands-on Activities
	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	
LEVEL 1 Remembering <ul style="list-style-type: none"> List Details/Facts Recall Information Match Vocab. to Definitions Define Vocabulary Label Diagrams Recognize Validity (T/F) 	✓	✓	✓	✓	✓	✓	✓	✓
LEVEL 2 Understanding <ul style="list-style-type: none"> Demonstrate Understanding Explain Scientific Causation Rephrasing Vocab. Meaning Describe Classify Into Scientific Groups 	✓	✓	✓	✓	✓	✓	✓	✓
LEVEL 3 Applying <ul style="list-style-type: none"> Application to Own Life Model Scientific Processes Organize & Classify Facts Utilize Alternative Research Tools 	✓	✓	✓	✓	✓	✓	✓	✓
LEVEL 4 Analysing <ul style="list-style-type: none"> Distinguish Roles/meanings Make Inferences Draw Conclusions based on Facts Provided Classify Based on Facts Researched 		✓	✓	✓	✓	✓	✓	✓
LEVEL 5 Evaluating <ul style="list-style-type: none"> State & Defend an Opinion Justify Choices for Research Topics Defend Selections & Reasoning 	✓		✓	✓	✓	✓	✓	✓
LEVEL 6 Creating <ul style="list-style-type: none"> Compile Research Information Design & Application Create & Construct Imagine Self in Scientific Role 	✓	✓	✓					✓

Based on Bloom's Taxonomy



How Climate Change Can Affect Fresh Water

1. Circle the word **TRUE** if the statement is TRUE or Circle the word **FALSE** if it is FALSE.

a) Earth's average temperature is getting warmer.

TRUE **FALSE**

b) The greenhouse effect explains how plants use sunlight to make food.

TRUE **FALSE**

c) Carbon dioxide is a greenhouse gas.

TRUE **FALSE**

d) Ice caps at the North and South Poles use fresh water.

TRUE **FALSE**

e) Polar ice caps are getting larger.

TRUE **FALSE**

f) Ocean levels are rising.

TRUE **FALSE**

g) Rising temperature causes water to evaporate more slowly.

TRUE **FALSE**

h) Using gasoline as a fuel releases greenhouse gases.

TRUE **FALSE**

2. Put a check mark (✓) next to the answer that is most correct.

a) All of these are fossil fuels, *except*:

- A oil
- B coal
- C wood
- D natural gas

b) Where is most of Earth's fresh water?

- A in lakes
- B underground
- C in the oceans
- D in polar ice caps



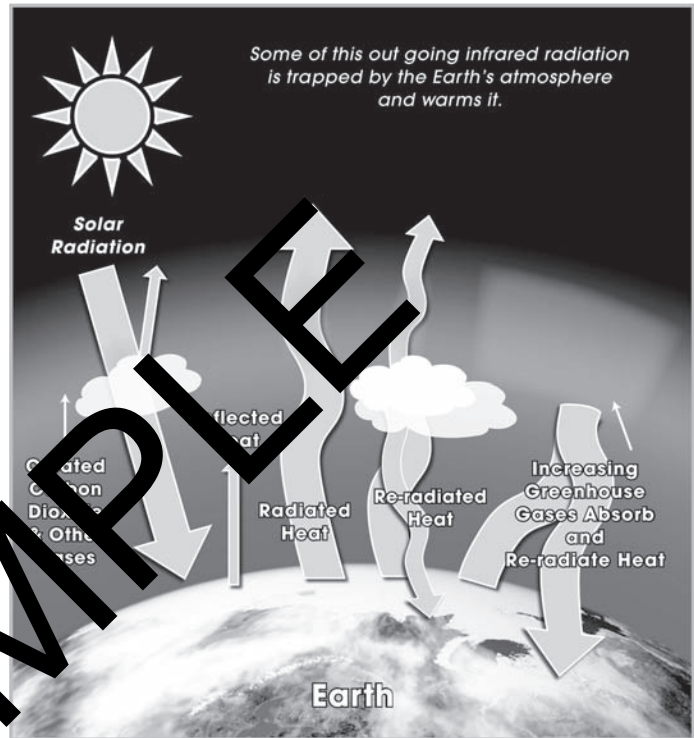
How Climate Change Can Affect Fresh Water

You may have heard of the **greenhouse effect**. It is the greenhouse effect that makes the inside of a greenhouse warm enough to grow flowers and vegetables when it is snowing outside. Sunlight passes easily through the greenhouse windows and warms the soil inside. The warm soil gives off heat, but heat does not pass through the glass as easily as the light did. The result is a higher temperature inside than outside.

The planet Earth also has a greenhouse effect. Some of the gases in the **atmosphere** act like the glass in greenhouse windows.

These gases are called **greenhouse gases**. They let sunlight in, which warms the Earth, but trap some of the heat the Earth gives off. So the greenhouse effect is a good thing. Without it, Earth would be too cold to support life.

But Earth may be in for *too much* of a good thing. The greenhouse effect is becoming greater, and Earth is becoming warmer. This is because people have



When a car is left in the sun with the windows closed, the inside gets hotter than the outside temperature. Explain how this happens in terms of the greenhouse effect.





How Climate Change Can Affect Fresh Water

been burning a lot of **fossil fuels** (coal, oil, and natural gas) over the past 100 years. When fossil fuels burn, some of the products are greenhouse gases.

When Earth's temperature rises, it affects all other parts of the climate, such as wind, precipitation, and air pressure. Some of the changes scientists can predict and some they cannot. They know what is going to change, but they often don't know how climate will change, how much it will change, or which parts of the world will be affected most.

This is what *is* known: The average temperature of Earth is increasing and will continue to increase for at least several decades. As temperatures rise, more and more of the fresh water that is now ice will melt. Most of this frozen water is near the North and South Poles, where it is in the form of ice and snow. Some of the ice is floating on the ocean, and some of it is in glaciers. So the total amount of liquid fresh water on Earth will increase. Most of it will run into the oceans, so the total amount of salt water will also increase. This will cause ocean levels to rise, causing problems for people living in low-lying coastal areas.

Higher temperatures will cause more evaporation of water from land and water. In hot, dry areas where water is scarce, it will become even scarcer. Average rainfall for the whole planet will also increase.

What *is not* known: It is not known how climate change will affect the distribution of fresh water on Earth. It is likely that some places with more water than they need will get even more, and places that don't have enough will have even less.

One coming change that cannot be predicted very well is how the path of ocean currents will change. Changes in currents will cause changes in the temperatures, rainfall, and wind direction for areas near oceans. It has also been suggested that storms, like hurricanes, might become more violent and more frequent.

To sum it up: Climate change is definitely happening. This change will increase the amount of fresh water. Some places on Earth will have more fresh water and some will have less, but it is too soon to know who will get more water and who will get less.