Critical Thinking Skills

Water Conservation Big Book

Conservation: Fresh Water Resources – Conservation: Ocean Water Resources – Conservation: Waterway Habitat Resources – **All three**

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								
• List Details/Facts	✓	✓	✓	✓	✓	✓	✓	✓
• Recall Information	✓	✓	✓		✓	✓	✓	✓
• Match Vocab. to Definitions	✓	✓	✓	✓	✓		✓	✓
• Define Vocabulary	✓	✓			✓	✓		
• Label Diagrams	✓							✓
• Recognize Validity (T/F)	✓		✓		✓	✓	✓	
LEVEL 2 — Understanding								
• Demonstrate Understanding			✓		✓	✓	✓	✓
• Explain Scientific Causation				✓	✓	✓	✓	✓
• Rephrasing Vocab. Meaning		✓	✓	✓				
• Describe		✓	✓	✓	✓	✓	✓	✓
• Classify Into Scientific Groups		✓	✓	✓	✓	✓	✓	✓
LEVEL 3 — Applying								
• Application to Own Life	✓	✓	✓			✓	✓	✓
• Model Scientific Process	✓		✓		✓	✓	✓	✓
• Organize & Classify Facts	✓	✓	✓	✓	✓	✓	✓	✓
• Utilize Alternative Research Tools								✓
LEVEL 4 — Analysing								
• Distinguish Roles/Meanings					✓	✓		✓
• Make Inferences		✓	✓	✓	✓	✓	✓	✓
• Draw Conclusions Based on Facts Provided		✓	✓	✓	✓	✓	✓	✓
• Classify Based on Facts Researched		✓	✓	✓			✓	✓
LEVEL 5 — Evaluating								
• State & Defend an Opinion	✓	✓	✓	✓	✓	✓	✓	✓
• Justify Choices for Research Topics	✓		✓		✓	✓	✓	✓
• Defend Selections & Reasoning		✓	✓	✓	✓	✓	✓	✓
LEVEL 6 — Creating								
• Compile Research Information								✓
• Design & Application	✓							✓
• Create & Construct	✓	✓	✓		✓		✓	✓
• Imagine Self in Scientific Role								✓

Based on Bloom's Taxonomy

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📖 *Before You Read*

Conservation: What We Can Do

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

a) **What are ice bergs made of?**

- ⭘ **A** solid salt water.
- ⭘ **B** solid fresh water.
- ⭘ **C** liquid salt water.
- ⭘ **D** liquid fresh water.

b) **Which of these is *not* a possible solution to a shortage of fresh water?**

- ⭘ **A** Use less water.
- ⭘ **B** Find more water.
- ⭘ **C** Drink less water.
- ⭘ **D** Transport water.

c) **Most fresh water is used to:**

- ⭘ **A** irrigate crops.
- ⭘ **B** supply factories.
- ⭘ **C** wash clothing.
- ⭘ **D** take baths.

SAMPLE

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

a) Some farmers use underground water to irrigate crops.

TRUE **FALSE**

b) Some household water could be used twice.

TRUE **FALSE**

c) Some people collect rainwater that falls on their roof.

TRUE **FALSE**

d) "Desalination" means dissolving salt in water.

TRUE **FALSE**

e) Fewer than 10% of homes, worldwide, have no water faucet.

TRUE **FALSE**

NAME: _____

Conservation: What We Can Do

There are many things that can be done to help solve the problem of the shortage of fresh water. None of these will probably be a solution by itself. First we will look at water **conservation**. It is often possible to get the same benefit from a smaller amount of water. The only thing we can't do is drink less water, and that is a very small part of the world's water need.

Seventy per cent of fresh water is used to irrigate crops. Only the roots of plants need water, but when plants are watered by flooding the fields or by spraying with sprinklers, much of the water either misses the roots or evaporates. **Drip irrigation** can prevent much of this loss by carrying water in hoses to each plant and dripping it just above the roots from many outlets. Fertilizer can also be added to the drip water, reducing hazardous runoff into streams. Some farmers further prevent evaporation loss by covering the ground with sheets of plastic that has holes for the plants to grow out of.

Fresh water use in homes accounts for only about 15% of the total, but conserving this water can also make a difference. Many people now use "low-flow" toilets, shower heads, faucets, and other appliances. In general, these devices work just as well as the older kind and use about half as much water or even less.

mulch

capillary action

save 50% water

SAMPLE

STOP
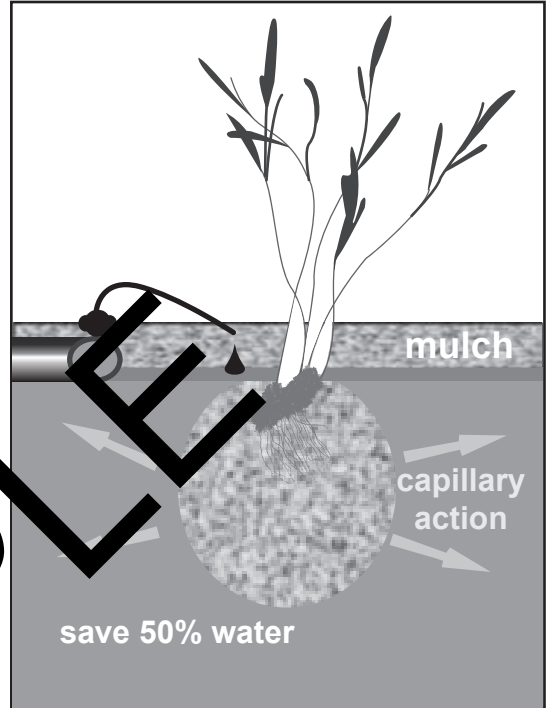
Explain briefly how drip irrigation saves water.

_____

_____

It is also possible to recycle household water that has been used for bathing, laundry, and dishwashing. This water, called "**graywater,**" is less contaminated than water containing sewage. It can be purified more easily than sewage-containing water and

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How Changes in Salt Water Could Change Our Lives

1. Look at the map of the United States.

In which city could rising global temperature cause the *most* people to move?

_____ **A** Las Vegas

_____ **B** Denver

_____ **C** Chicago

_____ **D** Miami

2. (Circle) the word **TRUE** if the statement is TRUE **or** (Circle) the word **FALSE** if it is FALSE.

a) Polar bear population has increased because of warmer temperatures.
TRUE   FALSE

b) If all the ice in Greenland melted, some countries would be completely under water.
TRUE   FALSE

c) Floating trash is spread evenly over the surface of the ocean.
TRUE   FALSE

d) Some types of ocean fish contain toxic chemicals.
TRUE   FALSE

e) Atolls are small floating islands.
TRUE   FALSE

SAMPLE
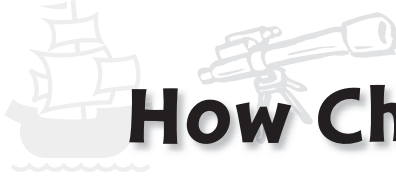
How Changes in Salt Water Could Change Our Lives

3. **Answer the questions in complete sentences.**

Describe *two* changes in the oceans that could change people's lives. For each ocean change, tell how people's lives would change.
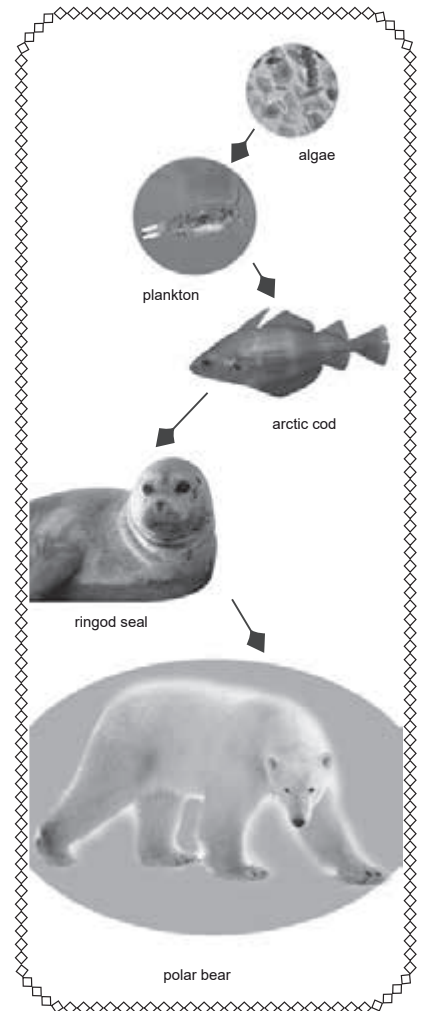
a. _____

_____

b. _____

_____

Extensions & Applications

An Arctic food chain is shown in the diagram.

a. How would the ringed seal population change if the polar bear population declined? Explain your answer.

_____

_____

_____

b. How would the Arctic cod population change if the polar bear population declined? Explain your answer.

_____

_____

_____

A Marine Food Chain

algae

plankton

arctic cod

ringed seal

polar bear