

## Chapter 4

Use with Section 2

## ENRICHMENT

## ● Liquids and Gases

## Water Desalinization

Water is an essential component of all organic matter. The human body is composed primarily of water and would cease to live without it. In fact, your body can go longer without food than without water. So, it should come as no surprise that people have spent, and continue to spend, a considerable amount of time figuring out where the water we need to live will come from.

Water comes from many different places. It exists in its liquid state in the oceans, lakes, rivers, and wetlands of the world. Water exists in its solid state as ice, found throughout the world's polar regions. In its gaseous state, water exists as a vapor in the air. Water vapor is measured as a ratio of the amount of water in the air over the total amount of water the air would be able to hold at that given temperature. If you have ever watched the weather report on the news, you probably have heard the term for this; it is the *relative humidity*.

Unfortunately for certain regions of the world, their climate is arid and most of the water in their lakes and oceans is too salty to drink. Scientists and engineers have worked diligently to try to find ways to use the salty water for human consumption and crop irrigation. Currently, these regions have places called desalinization plants. Desalinization plants are buildings that house equipment used to separate the salt from the water. Most desalinization plants use a sophisticated system of heating the water until it evaporates and then cooling it so it condenses. This procedure separates the salt because it is left behind when the water evaporates.

## Design Your Own Desalinization Plant

### Materials



- ice
- glass bowl
- pot
- hot plate
- water
- salt
- glass or cup

*Using these materials and what you know about the properties of water, can you design your own desalinization plant? Describe how you set up your desalinization plant. Include what worked and what didn't work.*

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