SEAWATER SALT MINING
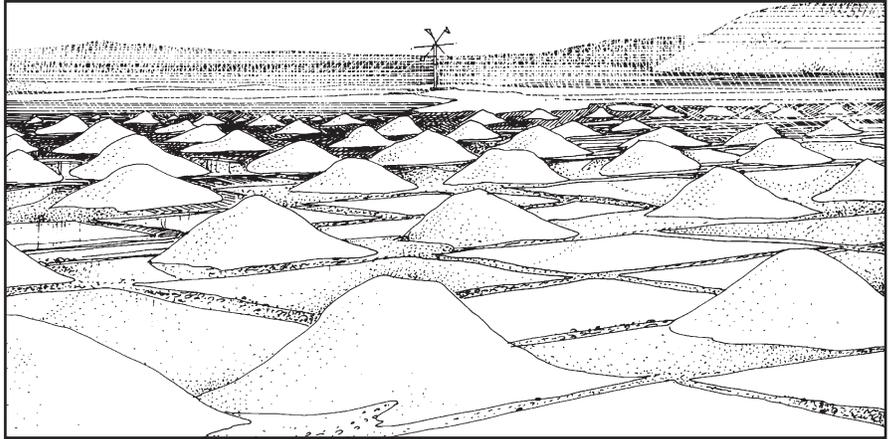

POINT OF INQUIRY

Where does salt come from?

CONCEPT

Most mineral resources can be used in many ways.

LEARNING OUTCOME
The students will observe and analyze the process of evaporation and salt extraction.

CURRICULUM FOCUS:
Science

SKILLS/PROCESSES:
experiment, observe, record, analyze

KEY VOCABULARY:
crystallize, evaporation, extraction, halite, harvester, solar

MATERIALS:
per group of students—foil pie plate, 1-1/2 tablespoons (22 mL) salt, 1/2 cup (120 mL) hot water, hand lens, sunny spot or hot light to speed evaporation, "Seawater Salt Mining" worksheet for each student

Background

Salt produced from seawater is called Solar Salt. This kind of salt processing can be found in Utah at the Great Salt Lake, and in California in both the San Francisco Bay and San Diego Bay areas. This kind of salt processing requires lots of sunshine and wind, and very little rain. Ponds are set up that hold salt water. When most of the water has evaporated out of the pond, the contents are moved to a crystallizing pond. There the rest of the water evaporates, and a salt bed is formed. The salt then is removed with special machines called harvesters. The salt is washed and shaken through screens to separate the crystal sizes. It is then packaged for sale. The United States produces about twenty-four million tons of salt each year.

Preparation

Obtain materials and copy the "Seawater Salt Mining" worksheet for each student.

Learning Activity

Ask students the following questions to assess their knowledge of the subject and to stimulate interest in the activity:

How do you think salt was first used? What do we use salt for now? What is the mineral name for salt? (halite)

1. Mix the salt and water until the salt dissolves. Record the amounts of water and salt used in Part 1 of the worksheet.

2. Splash or drip the salt solution with your fingers into a foil pie plate, making tiny "ponds." Place in warm or sunny place.

3. Wait a few days for the water to evaporate and leave salt deposits.