Making a Solar Desalinator

Background
Most of the Earth’s surface is covered with salty ocean water. Ocean water can be used for drinking water and other purposes if the salts are first removed. Solar energy can be used to evaporate water from seawater, leaving the salts behind. The evaporated water can then be condensed into freshwater.

Can you get water from the Earth's largest desert? Yes! Libya's “great human-made rivers” are an ambitious effort to supply freshwater. The multibillion-dollar project uses two pipelines to carry water from large aquifers beneath the Sahara to farms and cities near the Mediterranean. Some scientists, however, fear that pumping aquifers near the Mediterranean could draw in salt water from the sea, contaminating the freshwater.

What to Do
1. Pour water into the bowl until it is about one-third full. Add salt to the water and stir. Make sure the water tastes salty.
2. Place the glass or cup in the center of the bowl. Do not let any of the salt water get into the cup.
3. Cover the bowl with plastic wrap, and seal it with a large rubber band or tape.
4. Set a small weight or rock in the center of the plastic wrap. The wrap should dip toward the glass or cup but not touch the edges.
5. Put the “desalinator” in a spot where it receives direct sunlight.

Materials
- water
- bowl
- salt
- heavy glass or ceramic cup with sides at least 1 inch (2.5 cm) shorter than the sides of the bowl
- clear plastic food wrap
- tape or large rubber band
- small rock or weight

Source: Florida Solar Energy Center at www.fsec.ucf.edu
GeoLab Activity
continued

✓ Lab Activity Report

1. Identifying After 24 hours, how much water is in the cup? How much is in the bowl?

2. Describing What does the water in the cup taste like?

3. Drawing Conclusions How did the water get into the cup? What happened to the salt?

Assessment Checklist
Assess your GeoLab using the checklist below:

☐ Followed directions and safety procedures
☐ Constructed the solar desalinator correctly
☐ Collected water in the cup of the desalinator
☐ Explained lab results in complete sentences
☐ Cleaned up work area

GOING FURTHER

Find three countries in North Africa, Southwest Asia, or Central Asia that get some of their drinking water from desalination. Fill out the following table about each country.

<table>
<thead>
<tr>
<th>Country</th>
<th>Percent drinking water from desalination</th>
<th>Type of desalination used</th>
<th>Other means of obtaining drinking water</th>
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