



Solar Distillation

Grade Levels: 4-9

Background

Hydropower is considered a renewable energy source because the water on earth is constantly going through the water cycle because of the sun's energy. Here's another way we may be able to use the sun to make water more useful.

Vocabulary

▪distill: to turn something into a gas (vaporization) and then back into a liquid (condensation) to purify it

Questions

Can you distill clean water from muddy water?

Can you distill clean water from salty water?

Possible Hypotheses

You can/cannot make clean water from muddy water.

You can/cannot make clean water from salty water.

Materials

- 2 Large plastic containers
- Clear plastic wrap
- Masking tape
- 2 Small rocks
- 2 Small glasses
- 2 Tablespoons of dirt
- 2 Tablespoons of salt
- Water

Procedure

1. Fill both plastic containers with one inch of water. Mix the dirt into the water in one and the salt into the other.
2. Place one empty glass upright into the middle of each plastic container. Make sure it remains empty.
3. Cover both plastic containers tightly with plastic wrap and seal them with tape. Place a small rock in the middle of the plastic wrap directly over the glass but not touching it.
4. Place the stills in a sunny place for two hours. Examine any water that forms in the glass. Record your observations.



Analysis and Conclusion

Did the stills make clean water?

Real World Connection

Can you explain how they worked? Can you imagine a situation in which knowledge could save your life? It is estimated that over 1 billion people worldwide drink water that is unhealthy. How could your project help them?