



Greenhouse effect: A model of the Earth

Materials needed: 2 jars, powerful lamp, 2 thermometers, polyethylene film, ice cubes.

Demonstrate the following experiment to the students:

- Construct a model of the Earth bounded by the sun, with the heat radiated back being partially reflected by the atmosphere. For this purpose, use the two jars, the lamps and the polyethylene film.
- Place a thermometer in each jar.
- Cover one jar with the polyethylene film — this corresponds to the increased amount of “greenhouse gases” enveloping the Earth.
- Heat the two jars using a lamp placed at an equal distance (20-30 cm) from the glasses — the lamp plays the role of the Sun.
- Read and record the rise in temperature every 5 minutes in half-hour increments. Compare and comment on the results.
- Repeat the experiment by placing ice cubes in both jars. You could also place a few pebbles, thereby simulating and tracking the rise in sea level due to the melting of ice from the poles and high mountains.
- Discuss the observed differences in the two jars.

