



HOT NATURED

Why is Venus so hot?

Materials

- 2 outdoor thermometers
- 1 jar tall enough to hold one of the thermometers
- 1 lid for the jar



Procedure

- Put one thermometer inside the jar and close the lid.
- Place the second thermometer and the jar near a window in direct sunlight.
- Record the temperature on both thermometers after 20 minutes.

Results

It is hotter inside of the jar than outside of the jar.

Why?

Solar radiation includes both visible and infrared light waves. Visible waves make up the colors seen in rainbows—red, orange, yellow, green, blue, and violet. Infrared waves are given off by hot objects and cannot be seen by the human eye but can be felt as heat. The glass jar and the atmosphere on Venus are similar in that they do not allow infrared waves to pass through them. Instead, they absorb the infrared waves and radiate the energy as heat. The atmosphere on Venus contains 100,000 times as much carbon dioxide as that found in the Earth's atmosphere. The trapped infrared waves warm the planet's surface to more than 800.6 degrees Fahrenheit. At this temperature, a self-cleaning oven turns food to dust. On Venus' hot surface, rocks glow red, like coils in an electric oven.

This activity was adapted from [Astronomy for Every Kid](#).