



PROCEDURES

1. Show the students the setup for the experiment (see Figure S1 in Student Worksheet). Choose an experiment site with good lighting, preferably outside.
2. Form students into groups of three. Give each group the materials necessary to perform the experiment, including the Student Worksheet. The worksheet has the instructions how to set up and conduct the experiment, but you can guide them through it.
3. Have the students take the boxes to the experiment site. Do it outdoors, if possible, or in part of a classroom where sunlight comes clearly through the windows. The activity can be done in the classroom, because infrared radiation passes through a glass window, unlike, for example, ultraviolet radiation.
4. The students need to make sure the spectrum is wide enough for the thermometer array to sample different colors. They may have to tilt the box a little by placing rocks or books under one side to produce a sufficiently wide spectrum (about 5 cm wide).
5. Make sure that the students place the third thermometer just beyond the red end of the spectrum. The wavelengths of sunlight past red are condensed to a small region; if the thermometer bulb is too far out, it will not record any temperature change. Have students tape the thermometers in place so that they are easily read and will not move during the experiment.
6. Remind the students to record their results on their worksheets.

Teaching Tip

You can also try to see if the students can feel the infrared light. Have one student in the group close his or her eyes and have their finger outside the spectrum of light. Another student moves their hand toward the light. The one with closed eyes says when he/she feels warmth from the light.

