



Resources for Remote Learning

Muddy Sneakers Science Exploration: Radiation Box

Radiation Box Experiment (Energy!)

Step 1: Question

Which will heat up more over _____ minutes: an object in the open air, or an object in the reflective “radiation box”?

Step 2: Hypothesis

I expect _____, because _____.

Step 3: Experiment

Use the instructions to build your radiation box. Once it is built, place it in the sun
Take the temperature of both cups of water (or objects), and record these temperatures in the table below. Put one cup of water (or object) in the radiation box, and put the other cup of water (or object) next to the radiation box in the open air. Record your starting time in the table.

At the end of your experiment, record the ending time in the table. Measure the temperature of the water (or object) in the open air first, and record it in the table. Then measure and record the temperature of the water (or object) in the radiation box.

Step 4: Analysis

	Radiation Box	In Open Air
Temperature at _____:_____ (starting time)		
Temperature at _____:_____ (ending time)		



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Change in Temperature		
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To find the Change in Temperature, subtract your starting temperature from your ending temperature. Do your math work below, then record each Change in Temperature in the table:

	Radiation Box	Open Air	Example:
Ending Temperature:	_____	_____	<u>92</u> °F
Starting Temperature:	- _____	- _____	- <u>60</u> °F
Change in Temperature:	= _____	= _____	= <u>32</u> °F

Step 5: Conclusion

How warm did your water (or item) get in the open air? In the radiation box?

Which cup of water (or item) had a bigger change in temperature: the water in the radiation box, or the water in the open air?

Write one reason you think this cup of water heated up more.

Look back at your hypothesis in Step 2. Was it proven correct? What evidence do you have to show this?