

Name: _____

Date: _____ Class: _____

Experimenting with Solar Heaters: Part 2

Worksheet

Focus Question: How can we use engineering design to create a better solar heater?

1. In the space below draw an example of the engineering design loop.

2. Brainstorm variables you could change in the solar heater to increase its effectiveness.

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3. The variable my team will change is:

4. Explain how you will change this variable in your solar heater design.

5. In the space below, create a labeled diagram of your solar heater design.

6. Record the data from your experiment in the table below.

*Remember $c = 4.18 \text{ J/g}\cdot\text{C}^\circ$

Design	Mass (grams)	T_i (Celsius)	T_f (Celsius)	ΔT (Celsius)	Heat energy transferred $q = mc\Delta T$ (Joules)	Effectiveness (as compared to the standard)
	30					

7. Record the data from your experiment and from your classmates' experiments in the table below.

Group #	Design	ΔT (Celsius)	Heat energy transferred $q = mc\Delta T$ (Joules)	Effectiveness (as compared to the standard)
Control	Solar heater in direct sunlight			
1				
2				
3				
4				
5				
6				
7				

8. Which design changes do you think were the most successful in increasing the effectiveness of the solar heater? Support your answer with data from the experiments.
