

# Chemistry CP

## Racing Temperatures

Name: \_\_\_\_\_

Section: \_\_\_\_\_

You **must** complete this take-home lab with a parent or guardian in order to receive credit.

**What you need:** uncooked rice, table salt, 1-cup measuring cup, aluminum foil, baking sheet, two identical ceramic coffee mugs, thermometer (optional)

1. Read through the entire lab before proceeding.
2. Preheat the oven to 482°F (250° C).
3. Tear off two pieces of foil, each about half the size of the baking sheet. Place them side by side on the baking sheet.
4. Measure out 1 cup of rice and pour onto one of the foil sheets. Measure out 1 cup of salt and pour onto the other foil sheet.
5. Heat the rice and salt for 10 minutes in the oven.
6. Wearing oven mitts, pour the rice into one of the mugs and the salt into the other.
7. Use a thermometer to note which comes out of the oven at the higher temperature. If you don't have a thermometer, leave the rice and salt on aluminum foil and judge their cooling rates by cautious touch.

Which substance came out of the oven hotter?

Which substance cooled quicker?

Which has the higher specific heat capacity?

Why does the heated rice adhere to the sides of the mug?

Why do some people place grains of rice in their salt shakers?

Parent/guardian signature: \_\_\_\_\_

You can use the results of this experiment to create a heating pad. Use a clean sock, string, and the material with the higher specific heat. It can be heated in the microwave oven. (These make nice gifts, if you use fancy material and add a nice fragrance.)