**Investigating Specific Heat Capacity** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Your task is to determine the relative specific heat capacities of four materials: brick, iron, olive oil and water. You will use a simulation to conduct the experiment, located here:

<https://phet.colorado.edu/en/simulation/energy-forms-and-changes>

Click the right-facing triangle inside the circle on the screenshot; it should play right in your web browser.

We’re not looking to actually calculate the specific heat capacity; we’re just trying to place the objects in the correct order, from lowest to highest values of *c*. (Please don’t cheat by looking up these values somewhere. Play fair!) You will be using a series of comparisons to determine their final order. Assume all materials have the same mass.

Before you begin, read through the directions and create a suitable data table to record your results.

1. Click the “Intro” icon to start the simulation.

2. Click the “Link Heaters” box in the top-right part of the screen. This will ensure the two heaters give out the same amount of energy per second.

3. Place two different materials on the stands by clicking and dragging them there.

4. Click and drag a thermometer from the top-left corner of the screen onto each material. The thermometer is correctly placed when the left-facing triangle turns the same colour as the material.

5. Click and hold one of the heater temperature controls, then drag it up towards “Heat” and hold it there. You should see the temperature change. When you let go of the heater slider, the materials will slowly cool down; if you need to heat them up again, just click, drag and hold the slider back up again.

6. When you’re done, click the orange Reset button in the bottom-right corner of the screen. You will have to re-check “Link Heaters” and add new thermometers to each object.

6. Go through all the possible combinations of materials, compare results, and rank them from lowest to highest value of *c*.

Data table:

Final ranking:

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lowest *c* value highest *c* value