

1.3 Act 1 Conduction and Energy

(Edited version for public review)

Experiment 1: Room Temperature Washers placed in Hot Water

1. Scientists think of *energy* as the way to *cause changes* in a system. When you place room temperature washers into hot water, what *changed* about the water? What *changed* about the washers?
2. When you place room temperature washers into hot water, scientists would think of that as a *transfer of energy*. Where do you think the energy transferred from? Where do you think the energy transferred to? Why?
3. Do you think energy transferred more quickly through the washers or through the water in this experiment? What is your evidence?

Experiment 2: Hot Washers placed in Room Temperature Water

4. When you place hot washers into room temperature water, what *changed* ...
(Additional materials available in members' resources)
5. When you place hot washers into room temperature water, a *transfer of energy* ...
(Additional materials available in members' resources)
6. Do you think energy transferred more quickly through the washers or through the water in the second experiment? What is your evidence?

7. You decide to boil water to cook noodles. You place the pan of water on the stove and turn on the burner.

a. How does the behavior of the water molecules ...

(Additional materials available in members' resources)

b. What do you think is happening ...

(Additional materials available in members' resources)

8. Near the end of the *Heating Up* activity, you touched both a wooden (or plastic) surface and also a metallic surface.

a. Which *feels* colder to the touch: the wood or the metal? Does this mean they would be a different temperature if measured with a thermometer?

b. Do your best to explain why your hand feels cooler when touching metal in terms of energy transferred. Where is energy being transferred from and to as your hand touches metal?

Complete a particle diagram:

Hand	
Before touch	After touch

Metal	
Before touch	After touch

c. Do you think ... (Additional materials available in members' resources)

11. If you feel feverish, why can't ...

(Additional materials available in members' resources)

