How Does Heat Transfer?

Think About It!

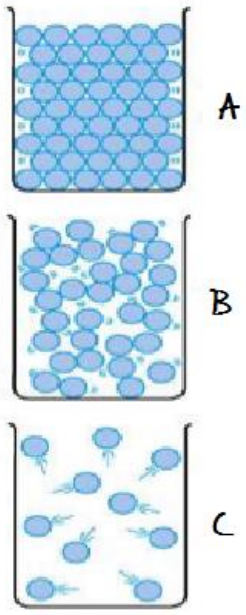
What are some places that we get heat energy from?

How does heat energy transfer from one object to another?

Heat Energy!

How is heat energy related to temperature? How is heat energy related to the movement of particles?

Use the image below to answer the following questions:



Which of the beakers to the left has particles that are moving faster?

Which beaker has more heat energy? How can you tell?

What is equilibrium? What is the relationship between heat transfer and equilibrium?

Now that you know all about heat energy, you're ready to move onto... conduction!

Conduction!

What is conduction? Can objects conduct heat if they are not touching?

Why do you think that oven gloves are not made out of metals, such as aluminum foil? Does it matter what material we use when making oven gloves?

Watch the conduction video on the website. Draw how the molecules in both an insulator, like a wooden stick, and a conductor, like a metal pole, move when they transfer heat by conduction.

Now that you know all about conduction, you're ready to move onto...convection!

Convection!

What is convection? What types of materials does convection occur in?

How is water near the top of a pot of boiling water heated up? How does convection cause heat energy to be transferred to this part of the water?

What is the relationship between convection and wind? What causes the wind to blow in different directions during the day and the night?

Watch the convection video on the website. Draw how molecules in a beaker move during the convection of heat. What causes some particles to rise and others to sink?

Now that you know all about convection, you're ready to move onto...radiation!

Radiation!

What is radiation? What direction does radiant heat energy move?

Radiated heat energy warms an object when the object absorbs the heat energy. If you wanted to absorb more heat energy while you are outside, what color clothing should you wear? Why?

Using the information on the website, draw how heat energy radiates from the Sun to the Earth.

Congratulations! You're an expert on heat transfer!