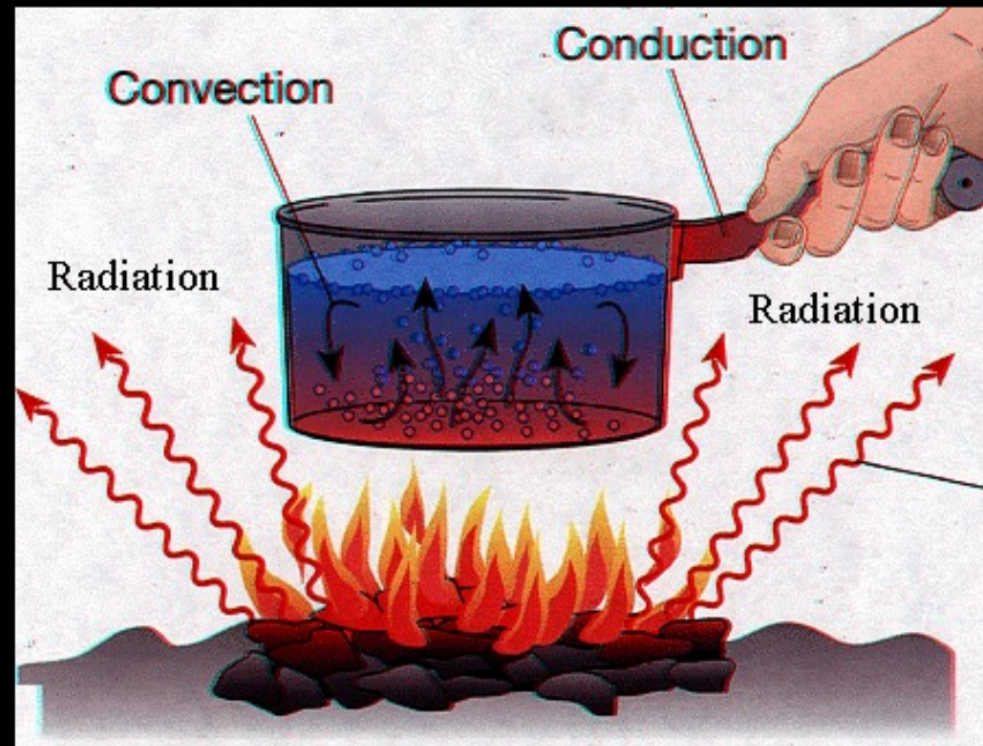


Heat!



Heat Transfer

The Basics...

- Heat moves from warmer places to cooler places.
- Hot objects in a cooler room will cool down.
- Cold objects in a warmer room will heat up.

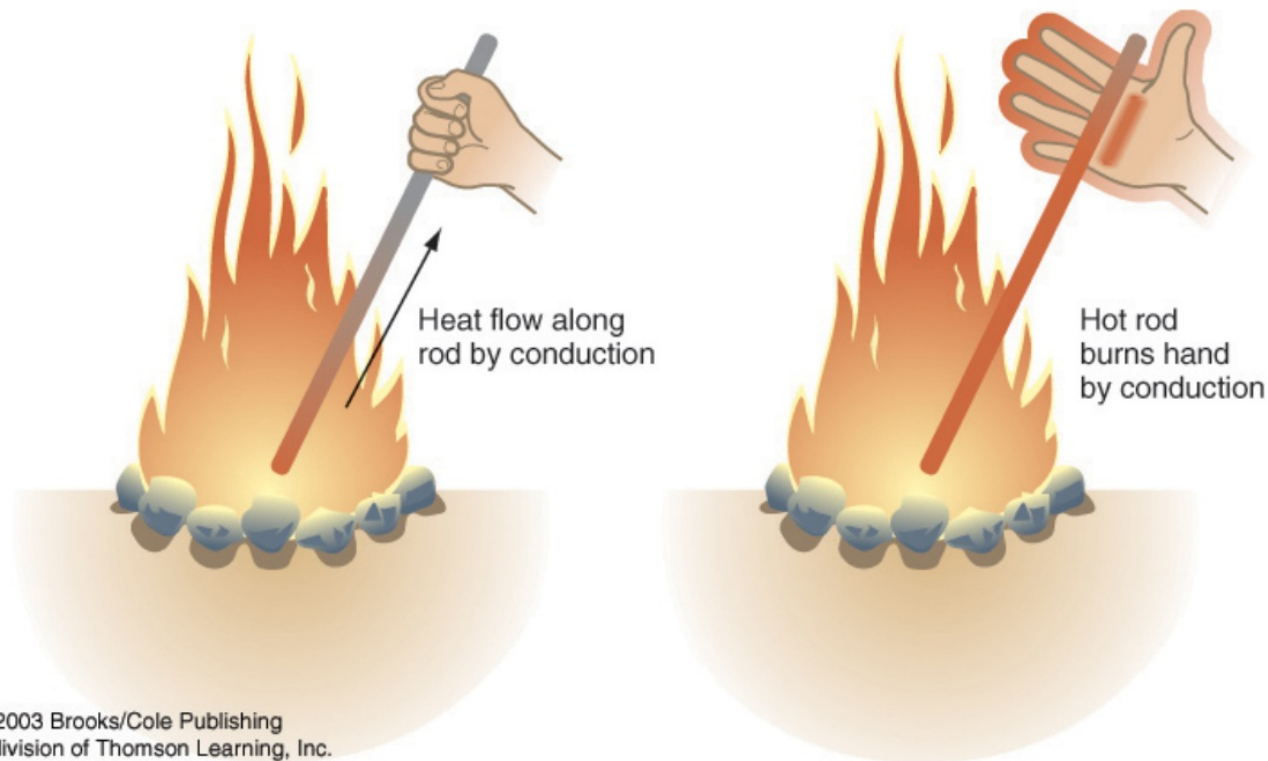
If a cup of coffee and a red popsickle were left on the table in this room what would happen to them? Why?



3 Important Concepts: Convection, Conduction, and Radiation



Conduction: Moving heat energy between two objects that are touching. Conductors transfer heat energy easily.



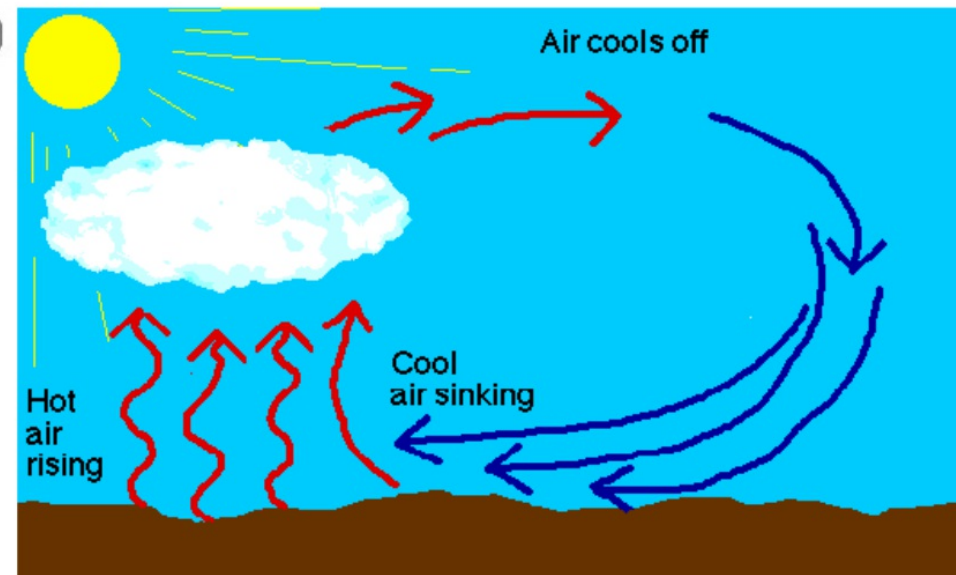
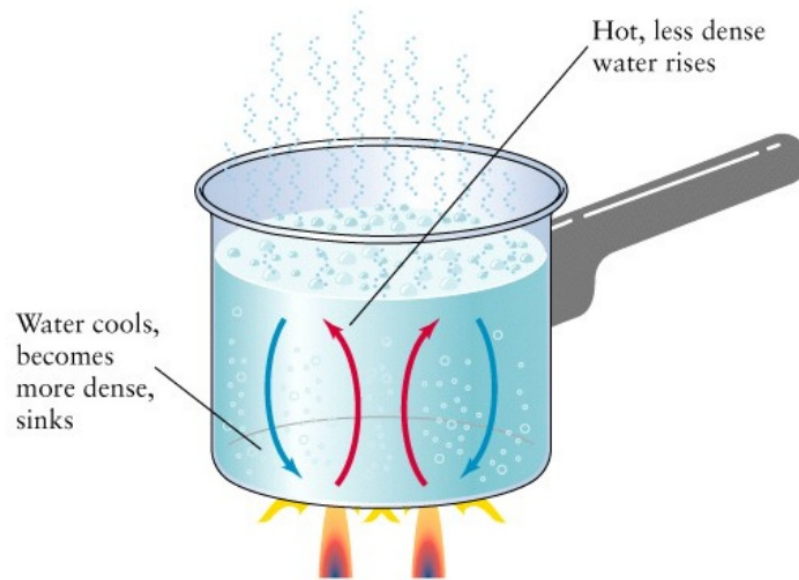
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Why does metal
feel colder than
wood, if they are
both at the same
temperature?

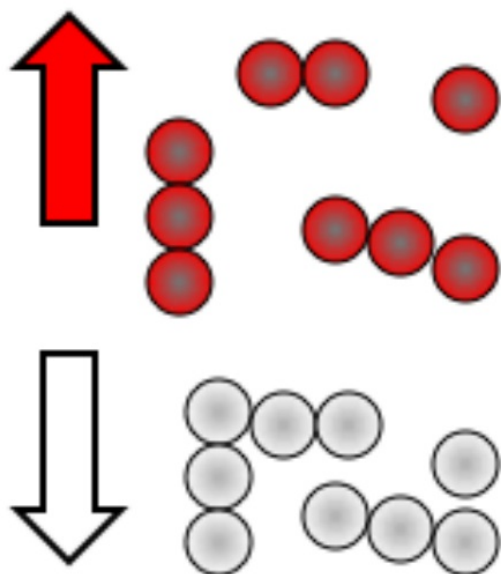
Metal is a conductor, wood is an insulator. Metal conducts the heat away from your hands. Wood does not conduct the heat away from your hands as well as the metal, so the wood feels warmer than the metal.

What happens to the particles in a liquid or a gas when you heat them?

Convection: Transfer of heat energy by the movement of large numbers of particles in the same direction in a liquid or gas.



Fluid movement



Cooler, more dense, fluids sink through warmer, less dense fluids.

In effect, warmer liquids and gases rise up.

Cooler liquids and gases sink.

Why is it windy at the seaside?

The land is warmer than the sea.



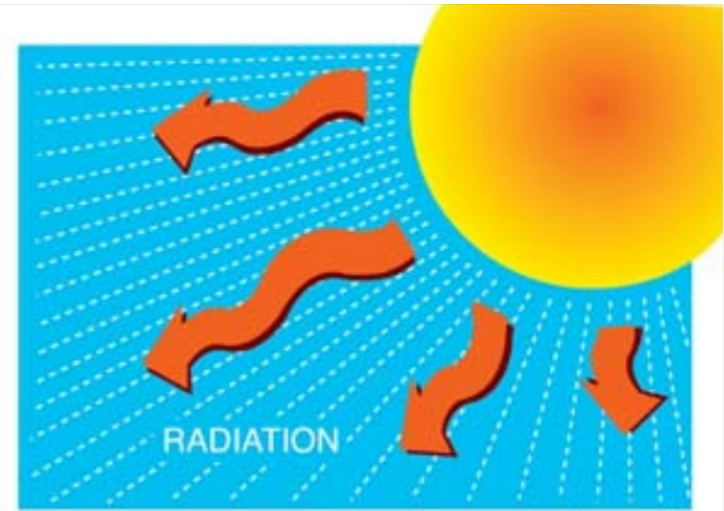
This land warms the air above it, and it rises.



The cold air from above the sea moves in to take the place of warm air that has risen.



How does heat energy get from the Sun to the Earth?



Radiation: Heat energy that travels as electromagnetic waves, only the object being heated absorbs energy.

Popcorn
Article
Example

