

HEAT TRANSFER SKIT

Based on “The Carbon Cycle Skit” from “Dr. Art Does Science”

This skit is designed to be performed 3 times consecutively, with only the Moderator having a script. As in the Carbon Cycle Skit from Dr. Art Does Science, the first time the skit is performed the Moderator tells each actor what to do and say. The second time the actors say their own lines with any help they need from other actors or the Moderator. The third time, the audience says the lines for the actors as they go through the appropriate motions.

CAST OF CHARACTERS: (*Lined up like a chorus line in this order*)

Air #2, Air #1, Heat Wave #1, Fire, Heat Wave #2, Wire #1, Wire #2, Wire #3. Moderator moves as needed.

PROPS: Words on sentence strips: convection, radiation, conduction; paper fire, paper heat waves, 2 sets of maracas or other noisemakers, metal pipe long enough for 3 actors to line up with their hands on it.

MODERATOR

The fire radiates heat in all directions. When heat energy from the fire comes in contact with air molecules, it excites them and they start to move.

ACTORS

Fire: I am the fire. I give off heat energy. (*Gestures towards Heat Wave #1 and Heat Wave #2*)

Heat Wave #1: I’m a heat energy wave. I radiate heat outwards and hit the air molecules. (*Vibrates wave; then moves to agitate Air #.*)

Air #1: I am air. When I get heated, I need more space. (*Stands, shakes maracas, lifts arms over head.*)

Air #2 moves in to bottom space.

Air #2: I am air. When I get heated I need more space. (*Stands, shakes maracas with hands down.*)

The air molecules move more rapidly and expand, becoming less dense. As they rise, they cool. Cold air is denser, and is pulled down by gravity.

Air #1: When my molecules cool they sink. (*Air #1 starts to play maracas, rotating them down.*)

Warm air rises, then cools and falls.

(*Air#2 starts to rotate maracas at the opposite point of the circle from Air #1. When Air#1's maracas are at the top of the circle, Air#2's maracas are at the bottom.*.)

Wave#2: I'm a heat energy wave. I radiate heat outwards and hit the molecules in solids. (*Wiggles wave prop.*)

When fire radiates heat that comes in contact with a metal wire, the wire's closely packed molecules are also activated.

Wire #1, Wire #2, Wire #3: We are the wire.

Metal conducts heat along the wire.

Wire #1: I am near the heat. When heat energy reaches me, ow! I get more energy and pass it on. (*Wire #1 strikes Wire #2*)

Wire #2: Ow! I feel the heat. When heat energy reaches me, I get more active and pass it on. (*Wire #2 strikes Wire #3*).

Wire #3 Ow! I feel the heat. When heat energy reaches me, I get more active and pass it..*(strikes at air)*

These are three ways that heat transfers: convection in air and water, conduction in solids, and radiation through space.