Exploring Temperature

Most of a school’s energy is used to control the temperature of the air in the buildings. Students and teachers work better when they are comfortable—not too hot or too cold.

What is a comfortable temperature? It depends on what you’re doing. You can be comfortable in very cool weather with just a shirt and shorts if you’re playing soccer. The people sitting in the stands might need a jacket. It depends on the season, too. A day that feels cool in the summer might feel very warm in the middle of winter.

1. Heat flows from hotter objects to cooler objects. Heat flows until everything is in balance. That means the objects in your classroom are at the same temperature. Touch objects made of the materials listed below and circle how they feel. Do they feel hotter than the air, colder than the air, or the same?

   - Metal   hotter colder the same
   - Glass   hotter colder the same
   - Plastic hotter colder the same
   - Wood    hotter colder the same
   - Fabric  hotter colder the same

2. Using a thermometer, record the temperature of the things listed in Fahrenheit (F) and Celsius (C) scales.

   - Human Body  98.6°F  37°C
   - Classroom Air  ______°F  ______°C
   - Outside Air  ______°F  ______°C
   - Ice Water  ______°F  ______°C
   - Warm Water  ______°F  ______°C

3. Fill a container with water the same temperature as the air in the classroom. Use the thermometer to find the temperature. How does it feel compared to the air?

   - Air  ______°F  ______°C too warm too cool just right
   - Water ______°F  ______°C too warm too cool just right

4. Do you usually like the air to be hotter or colder than your body? Why?

5. When might you want water to be colder than your body?

6. When might you want the water to be the same temperature or warmer than your body?