

Project FOCUS  
Best Lessons  
THIRD GRADE

**Title of Lesson:** Heat and Energy

**Theme:** Physical Science

**Unit Number:** [Click here to enter text.](#)

**Unit Title:** Heat Energy

**Performance Standard(s) Covered (enter code):**

S3P1. Students will investigate how heat is produced and the effects of heating and cooling, and will understand a change in temperature indicates a change in heat.

d. Use thermometers to measure the changes in temperatures of water samples (hot, warm, cold) over time.

[Click here to enter text.](#)

**Enduring Standards (objectives of activity):**

**Habits of Mind**

- Asks questions
- Uses numbers to quantify
- Works in a group
- Uses tools to measure and view
- Looks at how parts of things are needed
- Describes and compares using physical attributes
- Observes using senses
- Draws and describes observations

**Content (key terms and topics covered):**

Molecules

Heat

Energy

Thermometer

Temperature

**Learning Activity (description in steps)**

**Abstract (limit 100 characters):** [Click here to enter text.](#)

**Details:** At the start of class, ask the students about molecules and heat to see how much they know and if they understand the concept. Prepare a short description or show a video as I did to explain to them how molecules work in relation to heat. After explaining, have them write down their predictions of what will happen to their food coloring as it spreads in hot and cold water. Divide them into 4 groups (or however many you want) and give each group a different color of food coloring. Have a beaker of hot and a beaker of cold water for each group. Allow different students to help you because the more hands on the better. Let all the groups record the temperature of their water and write it down. Also, have them write down/draw observations as they watch the food coloring spread in the water. Once they are done writing observations, have a class discussion on what happened, why they think that happened, and if their predictions were correct. There are no safety precautions for this lesson. Just be sure that you put the food coloring in yourself to keep it from spilling on them, and that you pour all the water out to minimize the amount of mess.

**Materials Needed (type and quantity):**

Food coloring (color for each group)

Beakers

Water (for each group)

Thermometer

**Notes and Tips (general changes, alternative methods, cautions):**

Changes- you could use different liquids (oils, juices, etc.) and show how molecules (the food coloring) travel when they are warm or cold

**Sources/References:**

- 1) This is something I thought of when trying to plan a lesson to show them how heat moves molecules.
- 2) [Click here to enter text.](#)
- 3) [Click here to enter text.](#)