

**Project FOCUS
Best Lessons
THIRD GRADE**

Title of Lesson: Conductors and Insulators

Theme: Physical Science

Unit Number: 3 **Unit Title:** Heat Energy

Performance Standard(s) Covered (enter codes):

S3P1b

S3P1d

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):

Heat

Conductor

Insulator

Learning Activity (Description in Steps)

Abstract (limit 100 characters): Conduct an experiment using different forms of insulation and discuss their effects

Details: After reviewing the concepts of insulators and conductors, split the students into groups. At the same time pass out a graduated cylinder with hot water (record the initial temperature) and surround it by one of the materials (tin foil, play dough, paper), and a thermometer. Take the stop watch and every 4 minutes record the temperature of each group. I ran the experiment for 16 minutes, but you may have to adjust depending on your allotted time. After the 16 minutes was up, we graphed the results. After explaining the graph, we talked about why the results turned out as they did. At the end of the experiment, I pulled out a cooler with popsicles and a plastic bag with popsicles. I let them choose which container would keep their popsicles cooler and why, and as they answered questions, I gave them a popsicles.

Materials Needed (Type and Quantity):

-something to heat water (I used a fondue pot)

-thermometers (# depends on the amount of groups)

-graduated cylinders (# depends on the amount of groups)

-tinfoil

-coffee filters (or paper of some sort)

-play dough

-stop watch

-popsicles

-cooler

-plastic bag

If more than three groups- you could possibly use sandpaper or some other type of material

Notes and Tips (suggested changes, alternative methods, cautions):

Play close attention to the initial temperature, and make sure to adjust the time accordingly. If the kids need to be occupied at all times or are worried about adjusting the temperature to be the same at the start every time, you can do them each one at a time.

Sources/References:

1)

2)

3)