

**Project FOCUS
Best Lessons
THIRD GRADE**

Title of Lesson: Gloves as Insulators

Theme: Physical Science

Unit Number: **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.

b. Investigate how insulation affects heating and cooling.

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

Thermal energy

Insulator

Learning Activity (Description in Steps)

Abstract (limit 100 characters): Students will determine how well different gloves insulate their hands from heat and cold.

Details:

1. Review the following background information with the class: Sometimes you don't want thermal energy to move from one object to another. You need an insulator. An insulator is a material in which thermal energy can't move easily. Its particles don't move much when particles from a hot object bump into them.
2. Explain that materials that provide thermal protection will keep the cold or heat from reaching your body. In this activity you will be trying different gloves to test how well they protect against the two extremes. Simply, you will test their insulating ability.
3. Show the students the two stations, one with cold items and one with hot or warm items.
4. Explain to the class that they will rotate through the stations.

5. Each student will wear every glove at the station and hold the cold or warm item in that hand and make a chart of their findings. They may want to use columns with headings of no change, feel it a little, and feel it a lot.
6. For the early elementary students, number or name the gloves in order to make an easier chart of their findings.
7. Have students share their results.
8. Ask the class which gloves would be the best choice to wear in the winter. Would their choice be the same if they had to handle something hot?
9. What are some items at home that are insulated to protect against the hot or cold conditions?

Materials Needed (Type and Quantity):

- Heating pad, or hand warmers
- Cool pack used in lunch boxes, or ice
- Latex gloves
- Wool gloves
- Rubber gloves
- Work gloves
- Driving gloves
- Miscellaneous winter gloves

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

- Caution: Be careful that the students do not get the heating pad wet, there is a risk of electric shock.

Sources/References:

- 1) Originally submitted by Bonnie Parker, edited by Jessica Valle (2010)
- 2)
- 3)