

Prep Notes	A concrete or solid floor is best for this, and it works best if the floor is a different temperature than the room. In a cool region, a concrete slab floor would work well, or a wood or solid floor, but a carpet might not. A hot or cold sidewalk or outdoor slab would work well.
Materials	Piece of rug/carpet, preferably somewhat plush/thick, bigger than a human foot. Piece of aluminum foil, bigger than a human foot.
Teacher Background	Heat can be transferred from a source to a destination in three distinct ways: conduction, convection, and radiation. This project focuses on conduction – the transfer of heat directly from one material to another, as when you touch a hot object. (Convection and radiation are defined below.)
Opener Ideas	<ul style="list-style-type: none"> What does a train conductor do? (transfers passengers to their destinations) How and where do you feel heat? How is transferred to you?
Grammar	<ul style="list-style-type: none"> Conductor: a material which <u>permits</u> the flow of energy (like heat, electricity, etc.) Insulator: a material that <u>resists</u> the flow of energy Thermal: “heat” - anything relating to heat energy Conduction: transfer of heat directly from one material to another (as opposed to <u>convection</u>, which relies on air (or liquid) movement to transfer heat, and <u>radiation</u>, which does not require any substance between the heat source and destination (e.g., the sun “radiates” heat directly to us)
Scientific Method	
Observations	...about heat transfer, how we “feel” or perceive heat (see opener ideas, above)
Question	Will aluminum foil conduct heat better than carpet?
Hypotheses	“Yes” or “no”
Experiment (Procedure)	<ul style="list-style-type: none"> Put the foil square and rug square on the floor, side by side, and let sit for 10 minutes (unless you're using a very hot or cold floor, in which case the time is less important) Put one bare foot on the aluminum foil and the other on the rug/carpet Observe the difference in the feel of the temperature of the two
Results	The aluminum foil should be colder (if the ground below is colder)
Conclusions	Aluminum foil conducts heat better than carpet
More	
	You could try several materials, including a piece of styrofoam (like XPS/Dow Board), cardboard, thick metal plate, etc.