

SPEED MELTING ACTIVITY

Construction Context

Conduction, convection and radiation are all methods for transferring heat energy from one thing to another. Buildings are constructed to prevent all three of these from effecting the temperature of the inside space.



Materials

- Frying pan and hot plate
- Hair dryer
- Heat lamp
- Optional materials: [Pyranometer](#)

Activity Description

Melt an ice cube using conduction, convection, and radiation. To cover the three methods, use a frying pan for the conduction based melt, a hair dryer for the convection based melt and a heat lamp for the radiation based melt.

Science Concepts

Convection, conduction, and radiation

Next Generation Science Standards

Scientific and Engineering Practices

- Asking questions/defining problems
- Planning and carrying out investigations

Crosscutting Concepts

- Cause and effect: Mechanism and explanation

Reflection Questions

1. What happens if you hold the hair dryer closer or farther from the ice cube?
2. What happens if you hold the heat lamp closer or farther from the ice cube?
3. What happens if the frying pan's heat source is turned up or down?
4. Do the three methods scale the same? (I.E. does putting the heat lamp 1 inch away yield the same effect as turning the frying pan on high?)