

Heat Transfer!!!!!!!!!!



Heat is a form of energy

Heat tries to move from hot to cold

Matter has 3 phases: solid, liquid, and gas. Gases contain the most heat and solids the least.

It will stop moving once it is in "equilibrium", when the temperature of each item is the same

Insulation is material that tries to prevent or slow down the flow of heat.

Cold is used to describe something that has a lack of heat. When you cool something in the refrigerator, you are not adding cold, you are taking away heat.

Why do ice cubes melt?

Can you think of any examples of heat transfer in everyday life?

Make a Thermos!!!!



Object:

To design and construct a thermos from ordinary household items

Materials:

- aluminum foil
- cotton balls
- shredded paper
- tape
- 1 large plastic cup
- 1 small plastic cup
- straw
- any other desired filler

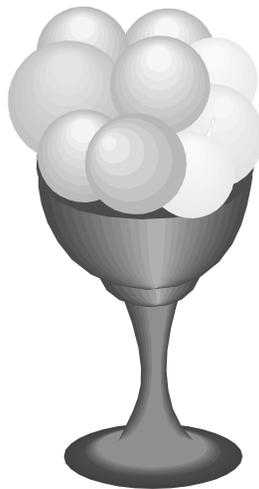
Directions:

1. Place smaller plastic cup inside the larger plastic cup and fill the gap between the two cups with desired insulation material (paper, cotton, foil, rice, beans, etc.)
2. Fill the smaller cup with hot or cold liquid and wrap the entire thing in aluminum foil
3. Use tape to seal the thermos if necessary
4. Make a hole in the top and insert a straw
5. Congratulations, you have made a thermos!! Test it to see how well it works.

Questions:

Why did you choose your insulation material? If you put hot water in your container and the water cools down, where does the heat go?

Make Ice Cream!!!!!!



Materials:

- Strong zip-loc freezer bags, pint and quart size
- Salt
- Whole Milk
- Vanilla
- Sugar
- Ice

Directions:

Add $\frac{1}{2}$ cup milk, 1 tablespoon sugar, and $\frac{1}{2}$ tablespoon vanilla to the smaller bag. Place the sealed bag into the larger bag and half fill the larger bag with ice and 6 tablespoons of salt. Seal the large bag and shake for 10 minutes!!!

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Open and enjoy. Add chocolate chips, nuts, fruits, etc. and get creative.

Questions:

In this case, what is hot and what is cold? Where is the heat transferring? Why did the milk turn solid? Why did the ice melt?