Hot and Cold air Balloon inflating

Objective: Will demonstrate and identify the effect of cold and hot temperature on molecule movement.

Materials

- Balloon
- Plastic bottle with a narrow mouth
- Hot water
- Ice water

Methods:

- Put the balloon onto the mouth of the narrow bottle so not air can get in or out
- Pour hot water into on jar, and pour ice water into the other jar.
- Fill these jars half way so they do not overflow.
- Put the bottle with the balloon on hot water, watch what happens
- Next, put the bottle into the ice water for a few moments, and watch what happens.

Explanation:

As the bottle rests in the hot water, the hot temperature heats up the air and this makes the balloon to expand. Gases always expand when they are warm because heats give the gas molecules energy to expand more. As the bottle is put into cold water, the air cools down again. Cooler air does not have much energy, so the bottle and the balloon shrink. This means that hot air is less dense than cold air. Things that are less dense float on top of things that are denser.

Reference:

- Hobbs, Bernie , & Meerman, Ruben. (2011). *the experimental.* http://www.abc.net.au/science/experimentals/whoare.htm: Copyright Laws of Australia.
- Picture: http://i307.photobucket.com/albums/nn307/SLRAK/DSC_0929.jpg

Signs

- Energy
- Density
- Shrink
- Expand

Language:

The molecules in hot air expand and move quickly in hot temperatures. Molecules in cold air will condense and do not move in a fast rate.

Making this an experiment:

1.
2.
3.