Compasses and Invisible Ink

Challenge: To create a hidden message using invisible ink and to create a compass using magnets.

Goal: To teach kids about magnetism, teamwork, and thermal energy.

Discussion Points:

- Why does the heat make the message appear?
- What is magnetism?
- What are examples of magnets?
- How does magnetism make compasses work?
- Why do the paper clips point north in water but not out of water?

Materials:

- Paper clips
- Petri dishes
- Wax paper (cut in circles)
- Magnets
- Water
- Paper
- Milk
- Paper bowls
- Iron
- Golden EYE Coins
- Scavenger hunt directions
- "Quills" (q-tips/feathers)

Steps:

1. Have the students start with a piece of paper and milk. They will write a secret message in invisible ink. Make sure their names are on the paper for when you pass back there secret messages.
2. The station leader will collect the paper and pass out the materials for the compass as listed above. A second leader will iron the messages to make the messages appear while the kids build their compasses.
3. To build the compass have each student magnetize their paper clip by rubbing a magnet over it about 30-50 times. Then stick the paper clip through the wax paper.
4. Pour water in the Petri dishes and place the wax paper/paper clip inside. Cover the Petri dish.
5. To test their compasses, students will be given a list directions leading them to a special prize (golden EYE coins).