Engineering Institutes:
Magnetic Mayhem

Lesson: Magnetic Mayhem
Grade Level: 2nd Grade
Standard Connection: PS.2.1 Changes in motion

This topic focuses on observing the relationship between forces and motion. Some forces act without touching, such as using a magnet to move an object or objects falling to the ground.

Materials/Technology

- Magnets on a stick
- Magnet investigation sheet
- Magnetic and Non-Magnetic Materials (Marble, Paper Clip, Pipe Cleaner, ETC)
- Projector and Computer

Vocabulary/Definitions:
Magnet: A piece of metal or an object that can pull certain types of metals towards itself.
Attract: Draws something in.
Repel: Push away
Investigate: to look at carefully and closely.

Procedure:
Topic Introduction:
Who here has used a magnet before? Where was it? On your refrigerator? What did you use the magnet for? What did you use the magnet for?

Magnets stick to things that are magnetic, like your refrigerator. Today we are all going to try to discover, as much about magnets as possible. We know that magnets can stick to things like your refrigerator, but what else do they stick to? And what don't they stick too?

Activity 1: Magnets vs Non-Magnets
1. What makes something magnetic? Now we are going to be scientist and make some predictions about which of these objects are magnetic. Now you are going to sort through the objects in the bag with the people at your table and place them in the appropriate category.
2. Let the students talk for about a minute. Ask about their predictions.
3. Give each group of students their testing magnets. Have them test each object.
4. Ask the students If their predictions were right. Was anyone surprised?

Explanation for Activity 1:
Explain that things that are magnetic generally have metal called iron in them. There are a lot of different kinds of metal and iron is just one kind. Where else have you heard of iron before? Do you know what else has iron in it?

Activity 2: Magnet Investigation
Lesson: In ancient times, the Greeks and Romans thought that magnets were magic because of how they were attracted to some metals.

Challenge: When a material is magnetic you will feel a "pull" when you put the magnet near the object. This means the material is magnetic.

Lesson: Investigate which objects are magnetic and which are not.

Procedure:
1. The teacher will explain to the students that they will have the opportunity to explore the museum to see what exhibits etc., are magnetic and which are not.
2. The teacher will let the teachers and students know they have 15 minutes to explore the museum and find 4-6 items that are magnetic and 4-6 items that are not magnetic.
3. The teacher after the 15 minutes are up will have the students discuss some of the items that were found around the museum.

Ending discussion question
- Have the students hunt for tools and everyday items that have magnets in them.
- Ask the questions: How do magnets help us every day? How do we use them? Discuss the items with your child.
- Have the students design their own machine that uses magnets, using pictures and design it, if possible.

Toy Story Movie:
Do you remember when the toys are at the landfill, riding on the conveyor belt? (Let the students watch video).
Questions:
What made slinky stick to the top of the conveyor belt?
Why didn't anyone else stick to the conveyor belt?
What did they have to do in order to get to the top of the conveyor belt?