Magnetic or Non-magnetic

Simple STEM Activities You Can Do at Home

Purpose:	The purpose of this activity is for students to investigate different attributes of rocks and then use these attributes to build something useful.
Standard:	**S1P2. Obtain, evaluate, and communicate information to demonstrate the effects of magnets on other magnets and other objects.** b. Plan and carry out an investigation to demonstrate how magnets attract and repel each other and the effect of magnets on common objects.
Materials:	Magnet, assortment of household materials such a paperclip, hairpin, rock, pencil, scissors, fork or spoon, plastic cup, penny etc.
Procedures:	How to do: 1. After learning about magnets, test each object in your bag to see whether it is magnetic or non-magnetic. 2. If possible, find 4-5 additional objects of your own and test each one to see if it is magnetic or non-magnetic. 3. Group your objects into a magnetic and non-magnetic group. 4. If possible, sketch each object and label it as magnetic or non-magnetic. 5. What features (characteristics) do the objects in each group share in common? 6. Explain why you think some objects are magnetic and other are not.
Science Behind It:	**Magnets** are objects that have an unusual ability to attract and repel certain materials. Magnets have two poles that are called the north pole and the south pole. The **poles** are areas near the opposite ends of a magnet where the magnetic force is the strongest. The area of space near a magnet where the magnet exerts force is called the **magnetic field**. Magnets are useful in lots of ways. Their attractive properties are used to stick things on other objects like refrigerators. They are also used to help power speakers in stereos and store data in computers. In addition, the force generated by the attractive pull or repulsive push of magnets can be used to help move objects from one place to another. For example, electromagnetic trains like the Shanghai MAGLEV train in China use magnetic repulsion to "float" the train on top of its track. Since it doesn't take much energy to push a floating train down a track, the Shanghai MAGLEV is one of the fastest trains in the world and can reach speeds of 430 km/hr (270 miles/hr). In this activity, your task is to use your magnet to test whether different objects are magnetic or non-magnetic. Magnetic objects will attract to the magnet and non-magnetic objects will not. Try out different objects from around your house and see which ones are magnetic or non-magnetic.
Questions to Ask:	1. Describe 2-3 ways that magnets can be useful or helpful. 2. Why do you think some objects are magnetic but most objects are not?