**Magnetic Graphing**

Created by: Lydia S. Smith

**Objectives**

K.6.B – Students will explore interactions between magnets and various materials

K.2.A – Students will ask questions about organisms, objects and events observed in the natural world

K.2.D – Students will record and organize data and observations using pictures, numbers and words

K.12.A – The Students are expected to construct graphs using real objects or pictures in order to answer questions

K.12.B – Students are expected to use information from a graph of real objects or pictures in order to answer questions

**Essential Understandings**

Magnets attract certain metals and can have different magnetic forces

**Materials/Resources**

This will be a group exploration. Children will do small group exploration and data recording, but will come together to report/show data by making a class graph using Excel.

Each group will need: individual science journals; Magnetic wands (one for each student), a small bar magnet and a horseshoe magnet; a box of large paperclips; a group data recording sheet.

Excel Class recording document to take group data

**Starter/Engagement**

Read aloud a nonfiction book about magnets. Talk with the kids about how magnets attract certain types of metals. Show the students the different types of magnets and ask if bigger magnets attract better than smaller magnets? Have them predict which magnet they think will attract the most paperclips and record their prediction in their science journals.

Students will work together in groups to test different magnets and their magnetic force. Give each group a set of magnets (bar, horseshoe and wand) as well as a box of large paperclips and a recording sheet. Each group goes to their workstation and conducts their experiment. They dip each magnet into a pile of paperclips. They then will count the number of paperclips stuck to the magnet and record that number on the recording sheet.

Once each group has tested each of the magnets, all of the groups will come together, and as a class the students will transfer their data to the excel charts and as a group, will use the graphs to compare the data recorded across all groups. Did some of the smaller magnets attract more paperclips? Does size matter? What other observations did they make during the experiment?