

S3P2: Magnets

Dates: 12/15 -1/15

Key Terms

Magnet²

Attract²

Repel²

Poles²

Iron²

Generator³

Bar Magnet³

Horseshoe Magnet³

North Pole³

South Pole³

Compass²

Magnetite³

Magnetic²

Magnetic Materials²

Electromagnet³

Temporary Magnet³

Different¹

Strong¹

Weak¹

Investigate²

Affect²

Effect²

Framework for Teaching:

Students Will Be Able To:

1. Classify objects based on if they are attracted to magnets. (i.e. metals, non-metals, etc.)
2. Describe scenarios when two magnets are attracted and repelled.
3. Observe and explain attraction and repulsion of two magnets.
4. Write a detailed account of magnetic phenomenon. (use videos or demos to support this)

For the teacher to know for their own understanding and to avoid misconceptions:

1. Do not use the word repulsion for an object that is not attracted to a magnet. Repulsion occurs between 2 or more magnets under certain conditions.
2. Opposite poles attract, like poles repel. (Poles are North and South. This is not geographic in nature; however it explains how compasses work)
3. Magnets produce fields and therefore can cause a push or a pull (i.e. force).
4. Magnetic fields are three dimensional; which explains why two magnets will often rotate around to attract.
5. Attract = Pull, Repulsion = Push. These words describe forces.

Activities (Suggestions)

- ✓ That Magnetic Dog (Picture Perfect)
- ✓ Station Lab: 1. Magnet with magnetic and non-magnetic objects. Have students classify each and provide an explanation for each object (i.e. similarities/differences). 2. Two magnets. Have students put magnets in different orientations (Parallel, perpendicular, rotated, etc.) They should then document observations and look for patterns.

Notes:

Students should be transitioning into writing longer explanations and lab reports. Work on the format with them and coach them through what good scientific writing looks like. Introduce writing lab reports in the passive voice. This unit is very hands on and demonstration friendly. Have students write about their observations. Provide text to support what they observe either prior to or after they observe a phenomenon. This teaches them to support their curiosity. Text is a tool for inquiry.