

3-D MAGNETIC FIELD

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GRADE LEVEL: Appropriate for grades 6-8.

OVERVIEW: The students will be able to make and/or see a magnetic field.

PURPOSE: Help students gain an understanding of magnetic fields to prepare for understanding of magnets and electricity.

OBJECTIVES: Students will be able to understand what a magnetic field looks like.

BACKGROUND INFORMATION:

You will need to cover the basic concepts of magnetism before doing this project or use this project to help students understand magnetism. You will need the following materials:

RESOURCES/MATERIALS:

PHYSICAL SCIENCE TEXT BOOKS; ENCYCLOPEDIA, ANY OTHER RESOURCES THAT RELATE TO MAGNETISM AND ELECTRICITY THAT ARE AVAILABLE.

MATERIALS:

1. Small juice drink bottle.
2. 15mm by 120 mm test tube.
3. Glue that will hold glass to metal.
4. Iron filings.
5. 12mm by 75 mm cow magnet
6. cotton balls

ACTIVITIES AND PROCEDURES:

Take the small juice drink bottle, drill or poke a hole 15 mm in diameter in the lid. Push the 15mm by 120 mm test tube through the hole you have made. Glue in place. Remove the contents of bottle first, hopefully by drinking it. Wash the bottle out and dry it. Put your iron filings in the clean bottle. Replace the lid with the test tube glued in. Tighten up well. Put a cotton ball in the bottom of the test tube. This will protect the

test tube from the magnet then drop in the magnet. Put your thumb over the top of the test tube and move the bottle around so the iron filings are attracted to the magnet. You now have a 3-D magnetic field.

CROSS-CURRICULUM IDEAS:

English: Write a descriptive story of what you see.

Art: Draw and color a magnetic field, make a two dimensional magnetic field.