

Where's Up?

Science Standard I

Objectives 1 & 2

Connections

Science Standard III:

Students will understand that magnetism can be observed when there is an interaction between the magnetic fields of magnets or between a magnet and materials made of iron.

Objective 1:

Investigate and compare the behavior of magnetism using magnets.

Objective 2:

Describe how the magnetic field of Earth and a magnet are similar.

Intended Learning Outcomes:

1. Use Science Process and Thinking Skills
2. Manifest Scientific Attitudes and Interests

Content Connections:

Language Arts VII, VIII; Math IV

Background Information

- You can make a compass by creating a magnet.
- Earth is a magnet.
- By rubbing a magnet in the same direction over a needle, a magnet is created.

Invitation to Learn

Ask, "Why does a compass point north?"

Instructional Procedures

1. Pass out needles and magnets.
2. Have half of the class stroke needles on the north end of the magnet and the other half stroke needles on the south end.
3. Place needles on floating Styrofoam disks in water-filled plates.
4. Have students journal results.
5. Rearrange students in different groups and compare results.

Materials

- Needles
- Magnets: bars, rings horseshoes, etc.
- Styrofoam plates
- Water pitcher
- Water

Possible Extensions/Adaptations/Integration

- Measure the distance, in centimeters or inches, that different magnets affect a compass.
- Allow students with special needs to think and respond to journaling activities as a homework assignment with parents. Also allow them to share their results with class members as part of the Language Arts Core Curriculum.

Assessment Suggestions

- Have students design an experiment to test compared results.

Additional Resources

Books

Usborn Science Activities- Vol. 1, by Joan and Maurice Martin (Usborn Publishing Ltd, Usborn House, 83-85 Saffron Hill, London, EC1N 8RT, England. Copyright 1992, www.edcpub.com or www.ubah.com); ISBN 0-7460-0698-5

Usborn Science Activities-Science With Magnets, by Joan and Maurice Martin (Usborn Publishing Ltd, Usborn House, 83-85 Saffron Hill, London, EC1N 8RT, England. Copyright 1992, www.edcpub.com or www.ubah.com); ISBN 0-7460-1259-4

World Book, Young Scientist-Light & Electricity-Magnetic Power, by Hemesh Alles (World Book Inc., 525 West Monroe Street, Chicago, Illinois 60661. Copyright 1992); ISBN 0-7166-2791-4

The World Book Student Discovery Encyclopedia- Vol. M, (World Book Inc., 233 N. Michigan Ave., Chicago, Illinois 60601. <http://www.worldbook.com>, 1-800-975-3250. Copyright 2000); ISBN 0-7166-7400-9

Web site

Fifth Grade USOE SciberText:

<http://www.usoe.k12.ut.us/curr/science/core/5th/sciber5/index.htm>

Video

The Magic of Magnetism, (100% Educational Videos; 4921 Robert J. Matthews Pkwy, El Dorado Hills, California 95762, <http://www.schoolvideos.com/index.cfm>); VHS Product #1010S, DVD Product #SI401

Family Connections

- Students check out five marked and magnetized needles and classify according to polarity.
- Create a compass course for students and parents to complete after school.
- Have teams create a compass course to be exchanged with another team.
- Share journal results with parents.
- Allow students with special needs to think and respond to journaling activities as a homework assignment with parents.