

# Invisible Force

## #1-Magnets

1. What is a magnet made of?
2. Read the Greek story/legend of how the first magnet was found and named.
3. What are the 3 main types of magnets?  
Permanent magnets,  
Temporary magnets  
Electromagnets
4. What are magnets used for?
5. Complete 3 magnet experiments, such as listed below:
  - a. Magnet treasure hunt - Place around the room objects that will and will not magnetize. See how many different objects they can pick up with their magnet. Suggest: nuts, bolts, tin foil, safety pins, etc.
  - b. Mineral rocks with iron - Lay various mineral rocks on a table and see if children can select the ones with iron in them and then try to pick them up with their magnet. (See resource #2 )
  - c. Move an object with a magnet - Have a friend hold a sheet of paper between his/her two hands, place paper clip on top of the paper and a magnet below. Move the paper clip from one end of the other and back again with your hand. Repeat this experiment by having your friend hold a plastic ruler, mirror, cardboard, etc instead of paper. Did it work?
  - d. Create a magnet - Stroke a steel nail against the magnet 25-30 times. Stroke it in only one direction.
    - How many paper clips can you pick up at one time?
    - Is the nail as strong as your magnet?
6. Read/memorize Hebrews 7:19 and James 4:8

### Helps

1. A magnet is made of magnetite, a natural magnetic material that will create a magnetic field. A magnetic field is the force surrounding a magnet that draws objects to the magnet. You can feel this force when using a magnet.
2. Many year ago there was a shepherd named Magnes. Each day he kept watch over his flocks. One cold, blustery day one of Magnes' lambs was missing from it mothers' side. Neither Magnes nor the mother could locate the little lamb. He looked behind rocks, in the thicket, near the stream, behind the bushes, and soon he realized it as really lost. He didn't believe a wild animal had stolen it or eaten it. He was sure he could find it, if only he looked in all the right places. He stood on a large rock so he could look upon the landscape of the pasture in hopes of finding "whitey," the lost little lamb. As Magnes stood on a rock his sandals stuck to the rock where the nails in his sandals were located. He had never noticed that strange power before. Over a period of days and weeks, he brought other metal objects to the "magic rock" and found that iron, regardless of the size, would stick to the "magic rock." He took some of the stone to his village and children, moms and dads played with it. It became know as "Magnes' stone." Today it bears part of his name in honor of his discovery – Magnet. We call his "magic stone" a lodestone, which is made of magnetite, a natural magnetic material.
3. (A) Permanent: once it is magnetized, it retains a level of magnetism. (B) Temporary: acts like a permanent magnet when it is within a strong magnetic field, but lose its magnetism when the magnetic field disappears. (C) Electro-magnet: a special wire which acts like a permanent magnet when electrical current is flowing in the wire. For more detail see resource #1.
4. Refer to resource #1.
6. Hebrew 7:19 "..... Christ makes us acceptable to God, and now we may draw near to him." James 4:8 "And when you draw close to God, God will draw close to you....." (Living Bible).



Grade 3

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