

# Study guide-Magnets

Test date: \_\_\_\_\_

Vocabulary quiz date: \_\_\_\_\_

## Standards and elements of the unit: S3P2.

Students will investigate magnets and how they affect other magnets and common objects. **Elements: S3P2. a. Investigate to find common objects that are attracted to magnets. Elements: S3P2. b. Investigate how magnets attract and repel each other.**

### Vocabulary:

*Attract*-to pull toward, like the N pole of one magnet and the S pole of another

*Magnetic*-describes things that attract objects containing iron

*Magnet*-a metal object that attracts other metal objects

*Repel*-to push away, like the north of two magnets

*Electromagnet*-a magnet that can be turned off and on

*Generator*-a machine that uses a magnet to make electricity

### Understanding:

Magnets are attracted to items that contain iron, nickel and cobalt are attracted to magnets. If an object does not contain these metals, the magnet will not be attracted to it. Not all metal objects contain these metals. Other materials such as glass, plastic and wood aren't attracted

Electromagnets are magnets that can be turned off and on (temporary magnets). They are useful when pick up something heavy and moving it to another area-think about junkyards and moving large cars around.

Generators-use magnets and coils of wires to create electricity.

Some minerals are magnetic-magnetite.

Some uses for magnets-compasses, electromagnets, generators, picking up objects, sorting objects

Magnets are objects that produce an area of magnetic force called a magnetic field. Magnetic fields by themselves are invisible to the human eye.

Most metals however are not attracted to magnets, these include copper, silver, gold, magnesium, platinum, aluminum and more..

Magnets have a magnetic north pole and a magnetic south pole. If the same pole of two magnets are placed near each other they will push away (repel), while if different poles are placed near each other they will pull together (attract).

Magnetic objects must be inside the magnetic field to respond, which is why you may have to move a magnet closer for it to have an effect.

The Earth's core is believed to be a mix (alloy) of iron and nickel, giving the Earth its own magnetic field.

Magnetic compasses use the Earth's magnetic field to help navigate in north, south, east and west directions.

### Steps to making a temporary magnet

- 1 Gather materials-battery, copper wire, iron nail or screw.
2. Wrap the wire around the iron nail.
3. Run an electric current through the wire (like from the battery we used in class). Make sure to complete the circuit-connect the wire to both parts of the battery.
4. Pick up objects with iron in them (paper clips etc...)
5. You can turn off the magnet by disconnecting the wire from the electricity source.