Fifth Grade

Learning About Science

This Year in 5th Grade You Will Learn:

- Chemical and Physical Changes
 Constant Reshaping of Earth's Surface
- 3. Magnetism and Magnetic Fields
- 4. Static and Current Electricity
- 5. Inherited Traits

What is Science?



Science is the study of the natural world.









Scientists do many things

- Observe
- Test or experiment
- Classify
- Make Conclusions
- Share their ideas

Scientists observe the natural world.



What do you see in this picture?

What do you observe about the this rock?



What questions might you ask about this rock?



In science, we test our questions.

• How could you test the rock?



Scientists measure the natural world.



How many pins?

Scientists classify the natural world.

Magnetic

Non-Magnetic





Scientists develop explanations to understand the natural world.



Magnets have a field of attraction around them. Some rocks are magnetic. Objects made of iron are attracted to a magnet.

Scientists develop conclusions to understand the natural world.

- When scientists finish their experimentation, they have gathered a lot of data.
- They look at this data to understand their experiments.
- When they understand the data they will write conclusions about what they learned.
- A conclusion is a judgment or understanding of the experiment.
 - What was learned from this experiment?
 - What can you say about the experiment?
 - Why is it important to have this knowledge?

Let's Do an Experiment with Magnets

- You have a 2 magnets in front of you.
- One has a "N" on one end and and "S" on the other end. What do these letters mean?
- Put the two "N" ends together. What happened?
- Put the two "S" ends together. What happened?
- Why do you think the magnets did this?

Continuing with the Magnet Experiment

- Now put the "S" of one magnet against the "N" of another magnet.
- What happened this time?
- What do you think will happen if you turn each magnet around touch the "N" of one magnet with the "S" of the other magnet?
- Try it.
- Why do you think the magnets did this?

Continuing with the Magnet Experiment

- Put the two magnets on the desk in front of you with both "N"s up.
- Slide one of the magnets toward the other magnet.
- What happened?
- Turn both of the them around so the "S"s are up and do the same thing.
- What happened?
- Why do you think the magnets did this.

Continuing with the Magnet Experiment

- Turn one of the magnets around so one end is showing "S" and the other end is showing "N"
- Make a prediction of what you think will happen when you slide one of the magnets toward the other magnet.
- Try it. Was your prediction correct?
- Why do you think the magnets did this?

Preparing for a Conclusion About the Forces of Magnets

Remember, a conclusion is a judgment or understanding of the experiment.

- What was learned from this experiment?
- What can you say about the experiment?
- Why is it important to have this knowledge?
- What did you learn about magnets and their forces?
 - That same forces repel each other.
 - That opposite forces attract each other.
 - These are called magnetic forces.
- What causes these opposite forces to do what they did?
 - There is an invisible force around the magnets.
 - They are called magnetic fields.
 - When magnetic fields touch each other, they will either repel or attract the other magnet by pulling it in or pushing it out.

Preparing for a Conclusion About the Forces of Magnets

Remember, a conclusion is a judgment or understanding of the experiment.

- What was learned from this experiment?
- What can you say about the experiment?
- Why is it important to have this knowledge?
- Why is this important knowledge to have?
 - We can build many things with magnets in them for pushing and pulling things.
 - If we want things to spin we can put the "N"s of two magnets together to make them push away. This is the way motors work.
 - If we want things to pull in we can put the "N" of one magnet against the "S" of another magnet.

We will learn many things about magnetic forces and magnetic fields in our study about magnets.

- At the end of this unit you will be able to say:
 - I can compare various types of magnets (e.g., permanent, temporary, and natural magnets) and their abilities to push or pull iron objects they are not touching.
 - I can investigate how magnets will both attract and repel other magnets.
 - I can compare permanent magnets and electromagnets.