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MAGNETISM:
THE INVISIBLE FORCE

What if you had an invisible force that could push, pull, and even help you find your way? Magnets have been shaping our world for centuries, from ancient navigators using lodestones to modern technology like electric motors. In this lesson, we'll explore the power of magnetism and uncover the secrets behind this mysterious force!

Recommended Reading

- *Magnets Push, Magnets Pull,* by David A. Adler
- *Physics for Curious Kids,* by Laura Baker, pp. 22-23
- *Electricity and Magnetism,* by Cody Crane, ch 3-4
- *Magnet: How William Gilbert Discovered the Earth Is a Great Magnet,* by Darcy Pattison
- *Attract and Repel,* by Jennifer Boothroyd

ACTIVITY Magnet Quest

In this lab, you'll become a magnet detective, embarking on a quest to discover which items in a mystery bin are magnetic and which ones aren't! Use your observations and a magnet to test each object and discover the invisible force of magnetism at work.

SUPPLIES

- Bar magnet
- A bin of mixed items, such as:
    - Paperclip
    - Wooden pencil
    - Aluminum foil
    - Key
    - Penny
    - Nail
    - Stone
    - Wooden block
    - Plastic spoon
    - Steel spoon
    - Rubber eraser
    - Rubber band
    - Small toy car
    - Cotton ball
    - Aluminum can
    - Coin
    - Screw
    - Clothespin
    - Button
    - Piece of cardboard
    - Plastic bottle cap
    - Mason jar
    - Mason jar lid

INSTRUCTIONS

1. Ask a parent to help you put together a bin of mixed items, you can test as part of your magnet quest.
2. Look at the bin of mixed items and fill out the first column of your worksheet, writing down the name of each item.
3. In the second column, make a hypothesis about whether each item is magnetic (Yes) or not magnetic (No).
4. Pick up one object and bring the magnet close to it. Observe what happens. Does the object stick to the magnet?
    - If yes, it is magnetic!
    - If no, it is not magnetic.
5. Record your results in the third column of the worksheet.

Name of item	Hypothesis	Results
	Is it magnetic? (yes or no)	

QUESTION:

What is a magnet?

ANSWER:

A magnet is any material that produces a magnetic field and attracts certain metals.

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QUESTION:

What are the poles of a magnet? How do they interact?

ANSWER:

The poles of a magnet are the north pole and south pole. Opposite poles attract, while like poles repel.

LESSON 30

LESSON 30: DICK FRANCIS

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Lesson 30 Quiz

1. **What is a magnet?**

   A) A material that produces heat
   B) A material that attracts certain metals
   C) A material that shines in the dark
   D) A material that dissolves in water

2. **Lodestone was the first naturally magnetic material discovered.**

   A) True
   B) False

3. **How does a compass work?**

   A) It follows the direction of the wind.
   B) It uses Earth's magnetic field to point north.
   C) It measures the temperature of the ocean.
   D) It detects the position of the moon.

4. **What is the invisible area around a magnet where its force can act called?**

   A) Gravity field
   B) Electric field
   C) Magnetic field
   D) Wind field

5. **What are the two poles of a magnet called?**

   A) Left and right
   B) Positive and negative
   C) North and south
   D) Top and bottom

6. **Magnets only attract iron and do not affect any other metals.**

A) True
B) False

7. **What happens when you try to push two north poles of a magnet together?**

A) They disappear.
B) They create electricity.
C) They stick together.
D) They push away from each other.

8. **If you break a magnet in half, what happens?**

A) You get two smaller magnets, each with a north and south pole.
B) The magnet stops working.
C) One piece becomes all north, and the other all south.
D) The magnet turns into iron dust.

9. **What does Earth's magnetic field do?**

A) Makes the oceans move
B) Controls the weather
C) Helps plants grow
D) Protects us from harmful radiation