

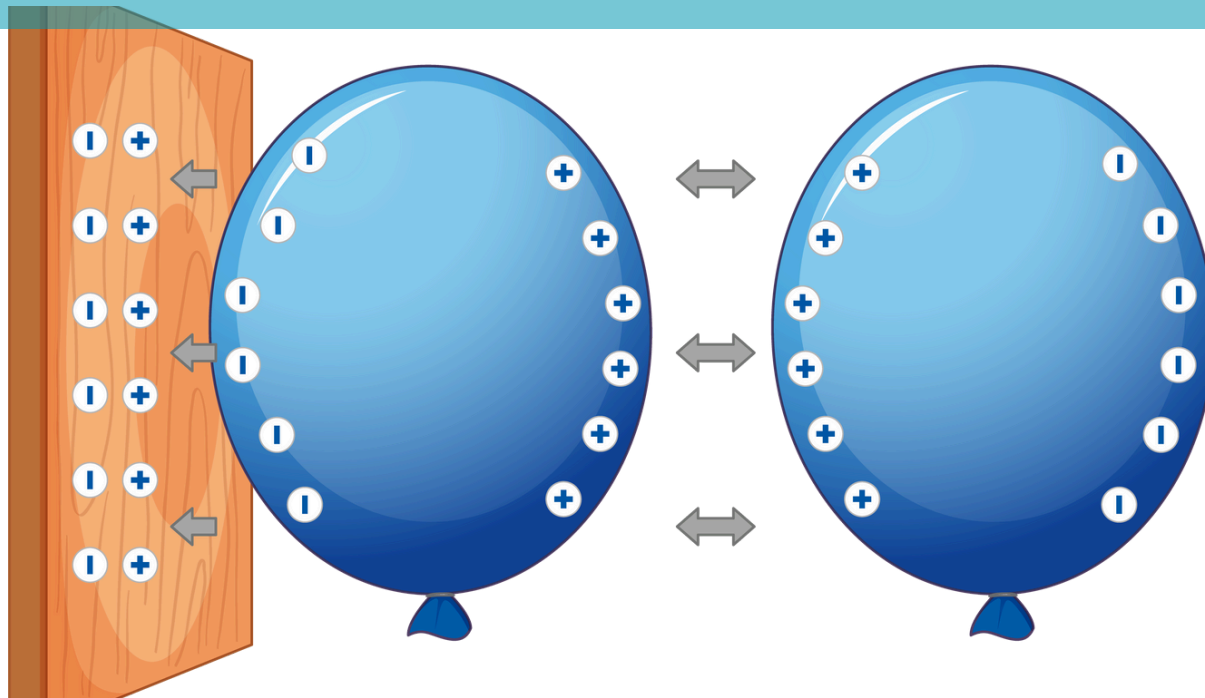
NGSS MS-PS2-5

Curriculum Bundle

Force at a Distance: Magnetic & Electric Fields

✓ 2 Lessons, 7 Activities

✓ Everything You Need to Teach NGSS MS-PS2-5

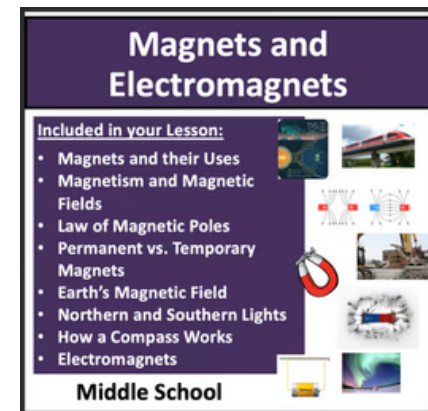
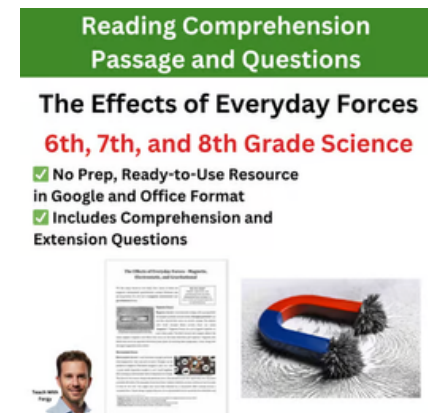
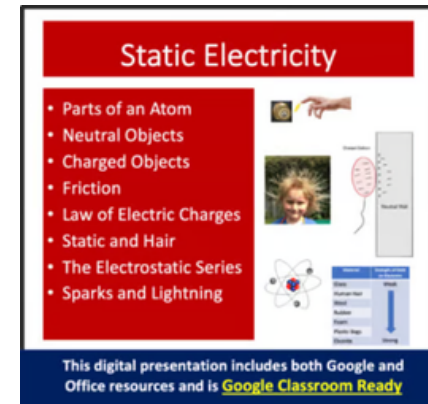


Resources Included

✓ 2 Lessons

✓ 7 Activities

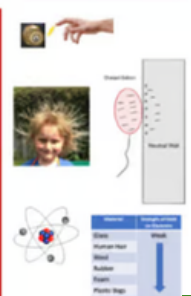
- Magnets and Electromagnets – Lesson
- Static Electricity - Lesson
- Magnets and Electromagnets - Reading
- Effects of Everyday Forces - Reading
- Forces at a Distance – 4 Student-Led Activities
- ElectroQuest- The Spark of Discovery - Story Prompt
- Bill Nye – Static Electricity Video Worksheet
- Static Electricity Word Search and Scramble – Activity
- Static Electricity - Lab Station Activity



Everything You Need to Teach NGSS MS-PS2-5

Static Electricity

- Parts of an Atom
- Neutral Objects
- Charged Objects
- Friction
- Law of Electric Charges
- Static and Hair
- The Electrostatic Series
- Sparks and Lightning



This digital presentation includes both Google and Office resources and is **Google Classroom Ready**

Reading Comprehension
Passage and Questions

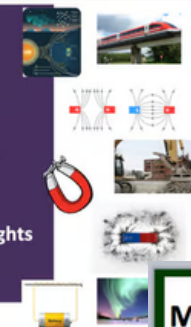
The Effects of Everyday Forces
6th, 7th, and 8th Grade Science

- ✓ No Prep, Ready-to-Use Resource in Google and Office Format
- ✓ Includes Comprehension and Extension Questions

Magnets and Electromagnets

Included in your Lesson:

- Magnets and their Uses
- Magnetism and Magnetic Fields
- Law of Magnetic Poles
- Permanent vs. Temporary Magnets
- Earth's Magnetic Field
- Northern and Southern Lights
- How a Compass Works
- Electromagnets



Middle School

Magnets and Electromagnets - Scientific Reading Comprehension Article



Improve your students Scientific Literacy and Analysis Skills, use as an Emergency Substitute Plan or create Applicability

Static Electricity - Electrostatics
Word Search and Scramble

THREE Activities in One!

1. Basic 25-Term Word Search
2. Scrambled Words Word Search
3. Word Scramble and Define Activity



TWF



ElectroQuest - The Spark of Discovery



Story Prompt



Static Electricity Lab Station Activity



7 Lab Station Activities to get your kids out of their seats and engaged in their learning

Magnetic Field Mapping with Iron Filings

Objective: Investigate how magnets exert forces at a distance and visualize magnetic fields.

Materials: Bar magnets, paper, iron filings, compass (optional).

Procedure:

- Students place a bar magnet under a sheet of paper and sprinkle iron filings on top.
- They gently tap the paper and observe the pattern that forms.
- Students draw the shape of the field and identify areas of strongest force.
- Students design their own comparison (e.g., "What happens with two magnets?" "What if they reverse the poles?"). Record findings.

2. Charged Tape Investigation

Objective: Demonstrate how electric charges can exert forces without contact.

Materials: Clear plastic tape, ruler, paper, scissors.

Procedure:

- Students create "chargers" by sticking two pieces of tape together, pulling them apart quickly, and then observing how they repel or attract other pieces of tape.
- They test interactions between different combinations (e.g., + vs. +, + vs. -).
- Students document which combinations repel or attract and hypothesize why.

Student Lab Document: Students plan and test variables (e.g., tape material, placement, distance) and record results in a data table.

3. Balloons and Pith Ball Electrostatic Test

Objective: Observe how static electricity exerts a force on an object without touching it.

Materials: Balloons, string, small pieces of aluminum foil or pith balls.

Procedure:

- Students rub a balloon on their hair or a wool cloth to build up static charge.
- They suspend a pith ball or foil piece from a string.
- Students bring the balloon close and observe the movement of the pith ball.
- Students test different distances and materials and record how far the ball moves.

Student Lab Document: Students modify variables (e.g., charge time, type of material, distance) and record results.

4. Aluminum Can Race

Objective: Observe how static electricity exerts a force on an object without touching it.

Materials: Aluminum cans and balloons.

Procedure: Using only the electrostatic push from the balloons created by rubbing it on their hair, students plan and test variables (e.g., charge time, type of material, distance) and record results.

Procedure:

- Students get into small groups.
- Place disks or balloons on their hair or a wool cloth to build up static charge.
- Students rub a balloon on their hair or a wool cloth to build up static charge.
- Using only the electrostatic push from the balloons, students must push the can across the track.

Student Lab Document: Students modify variables (e.g., charge time, type of material, distance) and record results.

Winning team moves on to the next round. Losing team is eliminated.

The Standard is Explained and the Resources it Incorporates are Outlined

California Preferred Integrated NGSS Course Model – Grade 8 MS PS2 Motion and Stability: Forces and Interactions

MS PS2-5: Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.

Examples of this phenomenon could include the interactions of magnets, electrically charged strips of tape, and electrically charged pith balls. Examples of investigations could include first-hand experiences or simulations

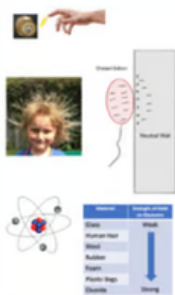
Assessment Boundary: Assessment is limited to electric and magnetic fields and limited to qualitative evidence for the existence of fields.

Resources:

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Reading Comprehension Passage and Questions

The Effects of Everyday Forces

6th, 7th, and 8th Grade Science

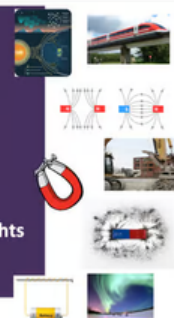
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- How a Compass Works
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Middle School

Who is this Bundle for?

- **Teachers who teach middle school science and use the NGSS**
- **Teachers who want multiple resources at their fingertips including lessons and a variety of activities, in order to meet the standard**
- **Teachers who don't have time to develop their own resources or organize what to teach and when**