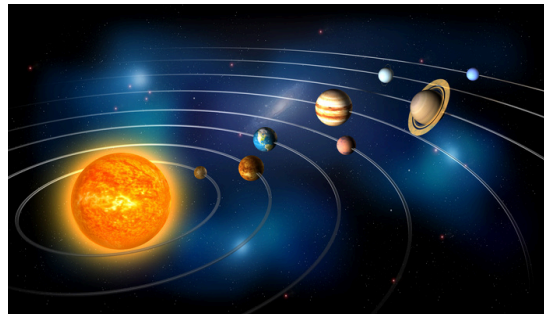
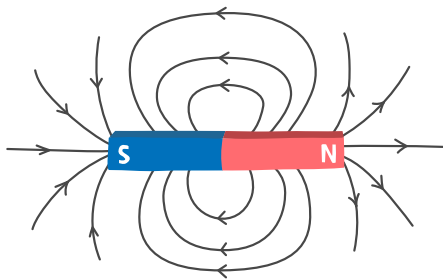


# MS-PS2 California Grade 8 Science Full Standard

## Preferred Integrated Model

- ✓ **Motion and Stability: Forces and Interactions**
- ✓ **Complete Standard for California 8<sup>th</sup> Grade Preferred Integrated Science Instruction Model**
- ✓ **Save you over 75%**



# UPGRADE to the Bundle

## California Grade 8 Science Full Year Science Curriculum

### Preferred Integrated Model

- ✓ Complete Curriculum for California 8<sup>th</sup> Grade Preferred Integrated Science Instruction Model
- ✓ Over 150 Resources Included, Grouped into Standard and Presented in the Preferred Order According to the California Department of Education
- ✓ Save you over 75%



Everything You Need to Teach 8th  
Grade Science in California using the  
Preferred Model

- Lesson Bundles
- Lessons in PowerPoint and Google
- Homework and/or Worksheets Provided for Many Lessons
- Teacher and Student Versions of Each Lesson
- Many Activities, Projects, Review Activities, STEM Challenges



### NGSS Included

- MS-LS3 Heredity: Inheritance and Variation of Traits
- MS-LS4 Biological Evolution: Unity and Diversity
- MS-ESS1 Earth's Place in the Universe
- MS-ESS3 Earth and Human Activity
- MS-PS2 Motion and Stability: Forces and Interactions
- MS-PS3 Energy
- MS-PS4 Waves and their Applications in Technologies for Information Transfer
- MS-ETS1 Engineering Design



**CLICK HERE**



Save 75% and get the FULL  
Year Curriculum

# Resources Included

## MS-PS2-1

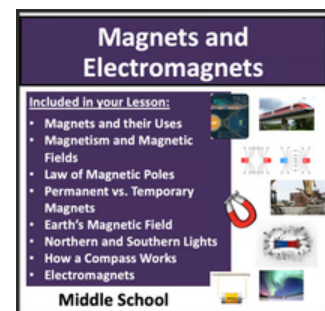
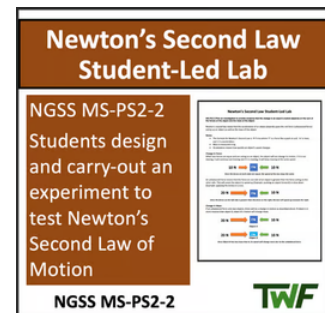
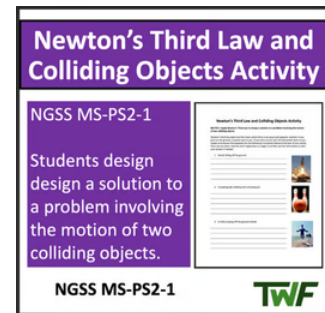
- Newtons Laws of Motion – Lesson
- Newton's Laws Identification Worksheet
- Newton's Third Law and Colliding Objects - Activity
- Crash Course Video Worksheet Newtons Laws
- Isaac Newton - Reading

## MS-PS2-2

- Newtons Laws of Motion – Lesson
- Newton's Second Law Student-Led Lab
- Newton's Laws Identification Worksheet
- Newtons Laws of Motion Word Search and Scramble Activity
- The Newtonian Adventures - Story Prompt

## MS-PS2-3

- Magnets and Electromagnets – Lesson
- Motors and Generators – Lesson
- Magnets and Electromagnets - Reading
- Electricity and Magnetism Word Search and Scramble Activity



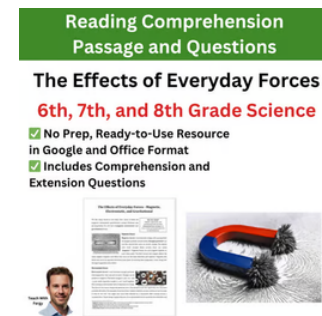
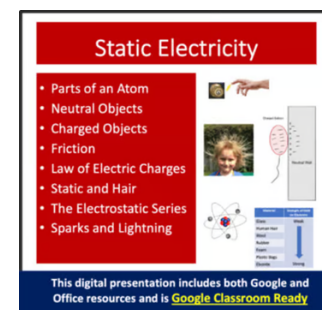
# Resources Included

## MS-PS2-4

- Gravitational Interactions - Mass and Distance – Lesson
- Orbit Rope Model Activity
- Crash Course Video Worksheet Compilation - GRAVITY
- Crash Course Video Worksheet - The Gravity of the Situation

## MS-PS2-5

- 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 8th Grade Science in California using the Preferred Model for MS-PS2

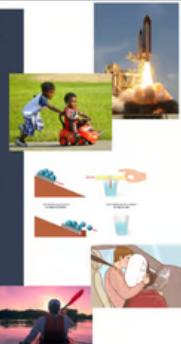
## Complete Lessons

### Newton's 3 Laws of Motion Lesson MS-PS2-1 & MSPS2-2

**Included in your Lesson:**

- Forces and Net Force
- Newton's First Law
- Newton's Second Law
- Newton's Third Law
- Multiple Applications for Each Law
- Student Worksheet

**Middle School**



### Motors and Generators

**Included in your Lesson:**

- Motors
- Generators
- Electricity Generation through fossil fuels, nuclear and wind
- Electric Motors
- Electric Vehicles

**Middle School**



### 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**



### Gravitational Interactions Mass & Distance Lesson

- ✓ **Comprehensive Content Overview** – Cover what gravity is, the relationship between gravity and mass as well as gravity and distance, the moon and tides, and gravity's role in the solar system.
- ✓ **Student-Friendly Format** – Clear visuals and comparisons support understanding of complex concepts.

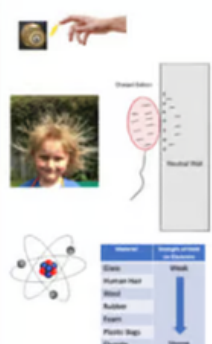


### Static Electricity

**Included in your Lesson:**

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

**Middle School**



| Material     | Charge when rubbed |
|--------------|--------------------|
| Glass        | Positive           |
| Human Hair   | Positive           |
| Wood         | Neutral            |
| Rubber       | Negative           |
| Acorn        | Negative           |
| Plastic Wrap | Negative           |
| Styrofoam    | Negative           |

# Everything You Need to Teach 8th Grade Science in California using the Preferred Model for MS-PS2

## Activities

**Newton's Third Law and Colliding Objects Activity**

NGSS MS-PS2-1

Students design a solution to a problem involving the motion of two colliding objects.



### Crash Course Physics #5 Newton's Laws

- ✓ Classroom Ready - Just Print and Go!
- ✓ Active Engagement - Keep Students' Attention
- ✓ Direct Video Link Included



### The Newtonian Adventures- Unleashing the Power of Physics

Story Prompt



### ElectroQuest - The Spark of Discovery



**Newton's 3 Laws Identification Worksheet**

NGSS MS-PS2-1 and PS2-2

Students analyze 10 different real-life situations and determine which of Newton's 3 Laws can be used to explain what is happening.



### Newton's Second Law Student-Led Lab

NGSS MS-PS2-2

Students design and carry-out an experiment to test Newton's Second Law of Motion



### 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



### Crash Course Astronomy #7 The Gravity of the Situation

- ✓ Classroom Ready - Just Print and Go!
- ✓ Active Engagement - Keep Students' Attention
- ✓ Direct Video Link Included



### 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



### Newton's Laws of Motion Word Search and Scramble

- THREE Activities in One!
1. Basic 22-Term Word Search
  2. Scrambled Words Word Search
  3. Word Scramble and Define Activity



### Electricity and Magnetism 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

### Crash Course KIDS GRAVITY Compilation

- ✓ Classroom Ready - Just Print and Go!
- ✓ Active Engagement - Keep Students' Attention
- ✓ Direct Video Link Included



**Static Electricity Lab Station Activity**



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

**Sir Isaac Newton Famous Scientist Reading Comprehension Article**



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

**Magnets and Electromagnets - Scientific Reading Comprehension Article**



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

**Orbit Boop Model Activity**

Objective: Model gravitational attraction using a boop as a demonstration to explore how mass and distance affect force.

Materials (per group):

- A ball of paper or light tape (1.5 meters)
- A heavy object (like a large rubber ball or weights) to represent the Sun
- A smaller object (like a tennis ball) to represent a planet
- Paper or chalk to mark positions

Procedure:

1. Place the "Sun" in the center of the room.
2. Tie one end of the string to the "Sun", and the other to a fixed point near the "Sun".
3. Hold the planet in a circle and swing it around the Sun in a circle.
4. The teacher will observe the planet's orbit and mark the path.
5. The teacher will observe the planet's orbit and mark the path.

Discussion Questions:

1. Why does the "planet" move around the "Sun" instead of flying away?
2. What happens when the planet is further from the Sun?
3. What would happen if gravity disappeared if the string was cut?

Extension Questions: KEY

1. Why does the "planet" move around the "Sun" instead of flying away? Answer: The string represents gravity keeping the planet in orbit.
2. What happens when the planet is further from the Sun? Answer: The string is longer and the planet moves slower.
3. What would happen if gravity disappeared if the string was cut? Answer: The planet would fly off in a straight line.

# 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

**Note:** There are resources that overlap between the standards. Simply choose the order that best fits your classroom. Also, there are more resources here than you will most likely decide to use. I have provided extra so you can make the best decision for your students on what is best to include.

**MS PS2-1: Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.**

Examples of practical problems could include the impact of collisions between two cars, between a car and stationary objects, and between a meteor and a space vehicle.

*Assessment Boundary:* Assessment is limited to vertical or horizontal interactions in one dimension.

### Resources:

- Newton's Laws of Motion – Lesson
- Newton's Laws Identification Worksheet
- Newton's Third Law and Colliding Objects - Activity
- Crash Course Video Worksheet Newton's Laws
- Isaac Newton - Reading

**MS PS2-2: Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.**

Emphasis is on balanced (Newton's First Law) and unbalanced forces in a system, qualitative comparisons of forces, mass and changes in motion (Newton's Second Law), frame of reference, and specification of units. *Assessment Boundary:* Assessment is limited to forces and changes in motion in one-dimension in an inertial reference frame and to change in one variable at a time. Assessment does not include the use of trigonometry.

### Resources:

- Newton's Laws of Motion – Lesson
- Newton's Second Law Student-Led Lab
- Newton's Laws Identification Worksheet
- Newton's Laws of Motion Word Search and Scramble Activity
- The Newtonian Adventures - Story Prompt

**MS PS2-3: Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.**

Examples of devices that use electric and magnetic forces could include electromagnets, electric motors, or generators. Examples of data could include the effect of the number of turns of wire on the strength of an electromagnet, or the effect of increasing the number or strength of magnets on the speed of an electric motor. *Assessment Boundary:* Assessment about questions that require quantitative answers is limited to proportional reasoning and algebraic thinking.

### Resources:

- Magnets and Electromagnets – Lesson
- Motors and Generators – Lesson
- Magnets and Electromagnets - Reading
- Electricity and Magnetism Word Search and Scramble Activity

**MS PS2-4: Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.**

Examples of evidence for arguments could include data generated from simulations or digital tools; and charts displaying mass, strength of interaction, distance from the Sun, and orbital periods of objects within the solar system. *Assessment Boundary:* Assessment does not include Newton's Law of Gravitation or Kepler's Laws.

### Resources:

- Gravitational Interactions - Mass and Distance – Lesson
- Orbit Rope Model Activity
- Crash Course Video Worksheet Compilation - GRAVITY
- Crash Course Video Worksheet - The Gravity of the Situation

**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:

- 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

# Who is this Bundle for?

---

- Teachers who teach grade 8 science in California and who use the ‘Preferred Integrated Model’
- Teachers who want a variety of resources at their fingertips in order to meet the standards
- Teachers who don’t have time to develop their own resources or organize what to teach and when