

Course Materials List

Physical Science 8 A

Lesson Title	Materials Needed
The Metric System	A paperclip A coffee mug A pencil A cup
Studying Science	Paper Colored pencils or crayons
History of Physical Science - Classical Antiquity	A 4 inch by 4 inch piece of aluminum foil. A bowl with water. Pennies.
The Scientific Method	4 Index cards 4 Paperclips Scissors A Small rubber ball A Yardstick Tape
Measuring Distance, Area, Volume	A ruler 3 rectangular objects 2 triangular objects 3 - 3 dimensional rectangular objects A measuring cup
Mass, Volume, and Density	A calculator A metric ruler A triple beam balance or other scale (preferably one that measures in grams) 10 household objects 2 - 4 oz. cups Cotton balls Rice A can of diet soda A can of regular soda
Variable and Constant Factors	3 cups of root beer 2 cups of vanilla ice cream 2 Apples 3 Lunch boxes
History of Physical Science - The Renaissance	A ball

Matter	Water Corn starch A plastic bag or cup
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Lesson Title	Materials Needed
The Transformation of Energy	Glass jar Sand Thermometer
Balanced and Unbalanced Forces and Vectors	a metric ruler a protractor Graph Paper Soccer ball
Kinetic Energy and Potential Energy	A Yo-yo
The Law of Conservation of Energy	ball or marble
Energy	A ball A pencil
Force	Paper Comb Basketball Small ball Matchbox car
Center of Gravity	A pen A broom A paper plate A heavy object A pencil A crayon A chair
Mass, Weight and Gravity	2 pieces of paper

Lesson Title	Materials Needed
Newton's Third Law of Motion	A soccer ball A desk A paper
Newton's First Law of Motion	A stack of about twenty coins A glass An index card
Work	A chair A paper Books
Projectiles	A water fountain A ball

Acceleration	A toy car Bubble gum A stop watch A calculator
Velocity	A calculator A stopwatch Tape A compass
Friction	A toy car A 3 foot long piece of cardboard A stop watch A towel A piece of rug
Newton's Second Law of Motion	A piece of cardboard A toy car Tape A meter stick A calculator

Lesson Title	Materials Needed
Inclined Planes and Mechanical Advantage	A cardboard box Material to make a ramp less than 4 feet Material to make a ramp greater than 8 feet 5 textbooks
Wedge	An apple A fork A sharp, wide knife A sharp, thin knife A chisel
Levers	A 12" ruler 1 quarter 1 nickel A triangular shaped piece of wood
Gears	Cardboard - it can be thick or thin cardboard Pen Compass Scissors strong enough to cut the cardboard Five to eight round items of different sizes
Centrifugal and Centripetal Force	Penny Balloon
Screw	3 different size screws A large plastic bottle Glue

	<p>Tape A thin cardboard Scissors A pencil</p>
Pulley	<p>two broomsticks a rope two helpers</p>
Wheels and Axles	<p>old-fashioned pencil sharpener several books a long piece of strong twine Pail 2 chairs broom handle pennies ruler rope</p>

Lesson Title	Materials Needed
Wave Types	<p>a rope about 10 to 20 meters long a meter or yard stick a watch that records seconds a helper a slinky</p>
Sound	<p>two rocks tub of water</p>
Wave Velocity	<p>Jump rope 2 to 12 inch sections of string Pan of water</p>
The Speed of Sound	<p>piece of bamboo piece of PVC pipe empty pop bottle ten meters of string two paper cups tin cans two paper cups</p>
Loudness and Pitch	<p>a ruler</p>
Wave Parts, Period and Frequency	<p>Large flat pan 3 marbles water</p>
Waves as Moving Energy	<p>slinky a speaker piece of paper several grains of uncooked rice</p>

	coffee can paper clips
Transmission, Absorption and Reflection of Sound Waves	two cardboard tubes heavy tape a clock a sheet of paper a large piece of cloth a sheet of metal a piece of cardboard a piece of slate a pillow

Lesson Title	Materials Needed
Refraction and Dispersion of Light	prism
Transparent Materials and Refraction	a penny a small bowl water A cup
Color	Prism Flashlight Small clear lid Dish washing soap spoon straw
Illumination and Reflection	shiny soup spoon two mirrors
Light	Flashlight Plastic tubing 4 index cards knitting needle (optional)