



Items to be purchased:

These items should be purchased. Any source is fine. Prices given are for budgeting purposes and subject to change based on suppliers.)

General Supplies (Also used in other science courses.)

- Mead Quadrille Notebook (for labs)
 - Each student needs their own notebook. It can be used in multiple courses.
- Composition or Note-taking notebook (for homework)
- Blue or Black indelible ink pen
- Pencils
- Ruler with both inches and centimeters
- Scientific calculator (also used in upper level math courses)
 - [TI-30XIIS is strongly recommended](#) (\$12)
- Digital Scale (3000g capacity and 0.1 g specificity are the minimum requirements)
 - Recommended: [Fuzion digital scale](#) (\$16)
- 100 mL graduated cylinder
 - Recommended: [100 mL graduated cylinder](#) (\$9)
- Thermometer: One of two options (needs to read Celsius and measure as low as 15°C)
 - Highly recommended: [Scientific](#) (\$13) OR
 - Recommended: [Digital meat](#) (\$11)
 - Please note: A regular thermometer used for taking one's temperature will not work. The range is not sufficient.

Physics Supplies (Supplies specific to this course.)

- Digital stop watch (used in multiple labs)
 - Recommended: [Digital stop watch](#) (\$9, multiple labs)
- Matchbox car and 6 ft. of Hot wheels track (used in multiple labs)
 - Recommended: [Hot wheels track](#) (\$12)
- Fruit Battery Science Kit (for use in multiple labs)
 - [Fruit battery science kit](#) (\$9)
 - Note for students re-using this kit after older siblings: The LED lights burn out quickly. Please test them with a battery to insure that at least one works. If they have all burnt out, order replacement lights or a new kit.
 - Recommended: [Replacement LED lights](#) (\$4)
- 2 in. Iron or Steel Nail (NOT galvanized, NOT aluminum) (any hardware store)



Materials by Lab

What follows is a list of materials divided by lab. The majority of the materials are common household items. Students should ensure that all materials are ready before work is begun on each lab throughout the year. Students should always bring their calculator and lab notebook to class. Items from the purchase list above are underlined.

Unit 1: Pendulum Lab

- Ruler
- Masking tape
- 1 yard of string
- Paper clip
- 3-6 1" washers; hardware nuts; or a similar item

Unit 2: Accuracy vs Precision Activity

- Sheet of paper
- Ruler

Unit 3: Velocity Lab

- 2 toy cars or small balls of different types (Ex. hot wheel cars, baby toy car, golf balls)
- Books/boxes that can be stacked 4 inches high
- 12" long piece of cardboard that can be used as a ramp
- Digital stopwatch
- Ruler
- Tape (masking is best)

Unit 4: Calculation Practice

- No supplies needed

Unit 5 - Ptolemy Reading Discussion and Models of the Universe Debate

- No supplies needed

Unit 6 - Law of Inertia Lab (Newton's 1st Law)

- Cup
- Index card
- 7 pennies

Unit 7 - Advanced Second Law Calculations

- No supplies needed



Unit 8 – Galileo’s Gravity Experiment

- 6 feet of hot wheels track
- Hot wheels car
- Digital stopwatch
- Thin 6 ft. length of cardboard (to stabilize the hot wheels track so that it remains straight)
- Masking tape
- Books/Boxes that can stack at 8 in., 6 in., 4 in., and 2 in.
- Metric ruler/measuring tape

Unit 9 – Atwood Machine

- Digital scale (measures up to 3 kg)
- 4 ft. String/cord
- 3 soup/bean cans of the same size (or a similar object)
- 1 condensed soup can (or a similar object)
- 1 dry sponge (or a similar object)
- Masking tape
- Note: The Atwood machine will occupy about a 2.5-3 ft long section of table that is about the width of a can. It is fine if students have other things (computer, textbook, etc.) on the table. Part of the machine must hang off the table, which is why students put the machine on the floor.

Unit 10 –Energy Transfer Simulation

- No supplies needed

Unit 11 – Calculation Practice

- No supplies needed

Unit 12 – Hot wheels lab

- Hot wheels track
- Hot wheels car
- Digital stopwatch
- Digital scale
- Stack of books about 20 cm high (just under 8 inches)
- Masking tape
- Metric ruler

Unit 13 – Calculation Practice

- No supplies needed



Unit 14 - Final Exam Review

- No supplies needed

Unit 15 - Mendeleev Lab and Gold Foil Simulation

- Scissors

Unit 16 - Density Lab

- Digital Scale
- Graduated cylinder:
- Aluminum foil (about 10 g)
- 4 nails, screws, or similar metal hardware (identical brand/size or as similar as possible)
- 100 mL water
- Towel
- Cup

Unit 17 - Mixture Separation Lab

- Digital Scale
- ¼ cup or less sand or dirt
- about 1 T. poppy seed or fennel seed or rosemary leaves or another herb/tea leaves/etc. that floats
- about 3 T. salt
- Funnel or small strainer
- Coffee filter
- Spoon
- 4 small jars/cups
- Masking tape
- Water

Unit 18 - Melting Point Lab

- Thermometer
- Stopwatch
- 2 tablespoons butter
- Small glass jar/cup (to hold the butter)
- Large glass bowl
- Weight (coffee mug, bowl, etc., to prevent small jar from floating in water)
- Hot water (Boil right before class and keep as hot as possible)
- Bowl of ice (should be able to hold small jar)



Unit 19 – Kinetic Molecular Theory Simulation

- No supplies needed

Unit 20 – Practice Calculations

- No supplies needed

Unit 21 – Practice Calculations

- No supplies needed

Unit 22 – Buoyancy Calculation Lab

- Digital scale
- Large container filled with water (any shape, fill about half-way)
- Small section of bubble wrap OR 5-6 packing peanuts OR foam OR any material that can float
- Aluminum foil
- Washers/Nuts/Coins (They do NOT need to be the same; enough to sink your “raft”)
- Note: We will be wrapping the bubble wrap (or other floating material) in aluminum foil so that it makes a rectangular prism about 2 in x 3 in x ½ in. This prism is our “raft.” We will be putting the washers/nuts/coins on the raft until it sinks. Make sure you have enough washers/coins/etc. to sink your raft.

Unit 23 – Wave Simulation and Reflection Lab

- Flashlight (smaller is better) or laser light
- Hand mirror

Unit 24 – Interference Lab

- Scissors
- Manilla folder/cardstock/thin piece of cardboard
- Thumbtack/pin
- 3x3 inches aluminum foil
- Masking tape
- Ruler
- Space on a white wall OR white piece of poster board/white paper taped together
- Flashlight

Unit 25 – Voltaic Pile Experiment

- Fruit Battery Science Kit
- Vinegar



- Cup/jar
- Teaspoon
- Two of the three options:
 - 2-3 Index cards OR
 - Thin cardboard OR
 - Paper towel
- Scissors
- Electrical tape (recommended, especially for students re-using the kit)

Unit 26 - Creating a Circuit

- Fruit Battery Science Kit
- A combination of 2-3 of the following fruits/vegetables (They do not need to be the same)
 - Potatoes
 - Lemons
 - Oranges
 - Apples
 - Lemon juice (If none of the others are possible)
- Butter knife

Unit 27 - Equivalent Resistance Calculations

- No supplies needed

Unit 28 - Circuit Calculations

- No supplies needed

Unit 29 - Create a magnet

- Fruit Battery Science Kit
- 2 in. Iron or Steel Nail (NOT galvanized, NOT aluminum)
- 1 D battery
- 5-6 Small paperclips (recommended) and or other small pieces of metal
- Electrical tape (recommended but not required)

Unit 30 - Review

- Calculator