



ODYSSEYWARE®

2010-2011 Science Lab List

Physics

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PHYSICS (2010): UNIT 1 - KINEMATICS

Assignment Number	Assignment Title	Project Summary and Supply List
2	Experiment: Making a Soda Straw Balance	<p>Your goal for this assignment is to experiment with using materials from around the house to make a fairly accurate balance.</p> <p>Supply List:</p> <ul style="list-style-type: none"> • screw • paper straw • 2 microscope slides • needle • ruler • razor blade or scissors • small wood block • tongue depressor • clothespin • paper
5	Experiment: Oleic Acid	<p>Your goal for this assignment is to gain more experience in using scientific notation in determining the size of a molecule by measuring the thickness of a molecular layer.</p> <p>Supply List:</p> <ul style="list-style-type: none"> • 100 mL graduated cylinder • 50 mL graduated cylinder • large tray (or ripple tank) • 2 eye droppers • talcum powder • oleic acid • alcohol • meter stick
8	Report: Galileo	<p>Your goal for this assignment is to write a report on Galileo Galilei.</p> <p>Supply List: N/A</p>
16	Special Project	Special Project assignments are used by teachers to create their own projects if needed.

PHYSICS (2010): UNIT 2 - DYNAMICS

Assignment Number	Assignment Title	Project Summary and Supply List
2	Report: Isaac Newton	Your goal for this assignment is to write a report on Isaac Newton. Supply List: N/A
7	Experiment: Circular Motion	Your goal for this assignment is to perform an investigation of uniform circular motion. Supply List: <ul style="list-style-type: none"> • glass or plastic tube (the barrel of a ballpoint pen can be used for this part) • string • 2 stoppers • alligator clip • paper clip • 10 washers • stopwatch
10	Experiment: Explosion	Your goal for this assignment is to perform an investigation into the conservation of momentum in an explosion. Supply List: <ul style="list-style-type: none"> • 2 carts (one with a spring) • 2 clamps • table, 1 1/2 m. long • 2 boards • meter stick • assorted standard masses
13	Report: Solar System	Your goal for this assignment is to briefly outline the chronological development of the theory and dates of the men who proposed the models of the system. Also prepare a detailed report of the life and times of Johannes Kepler and the steps taken that led him to each of his planetary laws of motion. Supply List: N/A
14	Experiment: Kepler's Law	Your goal for this assignment is to perform an investigation of Kepler's Second Law. Supply List: <ul style="list-style-type: none"> • sharp pencil • small ruler
16	Special Project	Special Project assignments are used by teachers to create their own projects if needed.

PHYSICS (2010): UNIT 3 - WORK AND ENERGY

Assignment Number	Assignment Title	Project Summary and Supply List
2	Report: Nuclear Energy	Your goal for this assignment is to write an unbiased report on the pros and cons of nuclear power plants. Supply List: N/A
6	Experiment: Simple Machines	Your goal for this assignment is to use a lever as a simple machine, and calculate its mechanical advantage and efficiency. Supply List: <ul style="list-style-type: none"> • meter stick • string • weights
10	Experiment: Latent Heat	Your goal for this assignment is to perform an investigation of the latent heat of fusion. Supply List: <ul style="list-style-type: none"> • aluminum calorimeter (or an aluminum tumbler and a Styrofoam cup) • analytical balance • paper towel • crushed ice • Celsius thermometer • cardboard lid
13	Special Project	Special Project assignments are used by teachers to create their own projects if needed.

PHYSICS (2010): UNIT 4 - INTRODUCTION TO WAVES

Assignment Number	Assignment Title	Project Summary and Supply List
2	Experiment: Wave Speeds	<p>Your goal for this assignment is to perform an investigation of the effect of the medium on wave speeds.</p> <p>Supply List:</p> <ul style="list-style-type: none"> • Slinky® • stopwatch or sweep second hand • meter stick
3	Experiment: Pulses	<p>Your goal for this assignment is to perform an investigation of pulses.</p> <p>Supply List:</p> <ul style="list-style-type: none"> • Slinky®
6	Experiment: Waves	<p>Your goal for this assignment is to perform an investigation and observe the reflection of waves from a barrier in a ripple tank.</p> <p>Supply List:</p> <ul style="list-style-type: none"> • ripple tank with dampers • high intensity light source • white paper • protractor • electrical wave generator • paraffin blocks • thick wooden dowel
7	Experiment: Bending Waves	<p>Your goal for this assignment is to perform an investigation to observe the bending of waves across the boundary between "different media" by using a submerged glass plate in the ripple tank to change the depth of the water.</p> <p>Supply List:</p> <ul style="list-style-type: none"> • ripple tank • light source • white paper • wave generator • glass plate • washers • paraffin blocks
10	Experiment: Doppler Effect	<p>Your goal for this assignment is to perform an investigation and observe the Doppler effect with water waves.</p> <p>Supply List:</p> <ul style="list-style-type: none"> • ripple tank • light source • white paper • wave generator
12	Special Project	Special Project assignments are used by teachers to create their own projects if needed.

PHYSICS (2010): UNIT 5 - LIGHT

Assignment Number	Assignment Title	Project Summary and Supply List
3	Experiment: Light Angles	<p>Your goal for this assignment is to perform an investigation to study the angles that light makes as it is incident on a mirror.</p> <p>Supply List:</p> <ul style="list-style-type: none"> • small purse-sized rectangular or square mirror • pencil • flashlight • sheet of paper • ruler • protractor • ball bearing
4	Experiment: Water Refraction	<p>Your goal for this assignment is to perform an investigation to examine the refraction of light through water.</p> <p>Supply List:</p> <ul style="list-style-type: none"> • semicircular plastic dish • ruler • protractor • 15 pins • sheet of graph paper • corrugated cardboard
7	Experiment: Convergence	<p>Your goal for this assignment is to perform an investigation to observe convergence of waves, using a ripple tank.</p> <p>Supply List:</p> <ul style="list-style-type: none"> • ripple tank • rubber hose • wooden dowel • light source
11	Experiment: Light Observations	<p>Your goal for this assignment is to observe light through a single narrow slit and measure the width of the slit and the frequency of light.</p> <p>Supply List:</p> <ul style="list-style-type: none"> • razor blade • lamp • red filter • blue filter • meter stick • stand • liquid graphite • 2 glass slides
13	Special Project	Special Project assignments are used by teachers to create their own projects if needed.

PHYSICS (2010): UNIT 6 - SEMESTER REVIEW AND TEST

Assignment Number	Assignment Title	Project Summary and Supply List
N/A	N/A	N/A

PHYSICS (2010): UNIT 7 - STATIC ELECTRICITY

Assignment Number	Assignment Title	Project Summary and Supply List
3	Experiment: Static Electricity	<p>Your goal for this assignment is to witness the transfer of electrons from one object to another.</p> <p>Supply List:</p> <ul style="list-style-type: none">• glass wand• hard rubber wand• silk cloth• stand• pith ball• silk thread• wool cloth (or cat's fur)
11	Special Project	Special Project assignments are used by teachers to create their own projects if needed.

PHYSICS (2010): UNIT 8 - ELECTRIC CURRENTS

<i>Assignment Number</i>	<i>Assignment Title</i>	<i>Project Summary and Supply List</i>
2	Project: Research and Report	Supply List: N/A
10	Special Project	Special Prject assignments are used by teachers to create their own projects if needed.

PHYSICS (2010): UNIT 9 - MAGNETISM

Assignment Number	Assignment Title	Project Summary and Supply List
2	Experiment: Magnetic Fields	Supply List: <ul style="list-style-type: none"> • 2 bar magnets • 3 sheets of stiff cardboard • iron filings
6	Experiment: Induced Magnetic Fields	Your goal for this assignment is to determine the shape of the magnetic field around a long, straight wire. Supply List: <ul style="list-style-type: none"> • copper wire, about 1 m long • small porcelain lamp socket and bulb • wire cutter or 8-inch scissors • drycell • compass
11	Special Project	Special Project assignments are used by teachers to create their own projects if needed.

PHYSICS (2010): UNIT 10 - ATOMIC AND NUCLEAR PHYSICS

Assignment Number	Assignment Title	Project Summary and Supply List
5	Report: Early Atomic Physics	Supply List: N/A
12	Special Project	Special Project assignments are used by teachers to create their own projects if needed.

PHYSICS (2010): UNIT 11 - REVIEW

Assignment Number	Assignment Title	Project Summary and Supply List
17	Special Project	Special Project assignments are used by teachers to create their own projects if needed.

PHYSICS (2010): UNIT 12 - SEMESTER REVIEW AND TEST

Assignment Number	Assignment Title	Project Summary and Supply List
N/A	N/A	N/A

PHYSICS (2010): UNIT 13 - FINAL EXAM

Assignment Number	Assignment Title	Project Summary and Supply List
N/A	N/A	N/A