

List of resources

Motion

Constant speed walk/ constant acceleration walk

Line up students at regularly spaced intervals one meter apart in two parallel rows

Constant speed: Direct one student at a time to walk through the line of students at a constant speed; start the first trial at a slow speed and then ask them to increase their speed each successive trial

Constant acceleration: Direct one student at a time to walk through the line of students at a constant acceleration

Domino Lab – Conceptual Physics Lab manual

Walk the graph

Handout one graph per student (or group of students)

Heart Rate Lab

PASCO SPARK learning system & heart rate sensor

Students can use the sensor to determine heart rate before & after exercise, compare it with taking your pulse the regular method and compare to the average resting heart rates of men & women

Respiration Lab

PASCO SPARK learning system & spirometer

Students can use the sensor to measure airflow, pressure, and lung volume. Compare a student's airflow before and after exercise, investigate the lung volume of athletes vs. non-athletes, compare smokers versus non-smokers; determine total lung capacity

Projectile Motion

Blood Spatter Lab – I made my own “blood”, but you can order some as well

Forces

Newton's first law – egg & pan demo; index card, coin & cup of water

Newton's second law- marbles , ruler, cup

Newton's third law- balloon rocket

Work & Potential & Kinetic Energy- Edible Car Competition

Momentum & Collisions- PASCO air track

Thermodynamics (heat)- Nails & water; mixing hot & cold water

Electricity- Static electricity, Circuit lab

Magnetism- Magnetism station lab

Sound- Test tube music , PVC pipes

Light- Disappearing coin, Reappearing line, Mirror image, diffraction,

Physics “Olympics”

Paper tower

Laser shoot

Egg drop

Paper airplane

Bridge build

Bottle music

Physics in Biology & Medicine -Complementary Science Series Paul Davidovits Academic Press

Physics of the Human Body - Biological & Medical Physics, Biomedical Engineering Irving P Herman Springer publishing

Physics of the Body Cameron, Skofronick, Grant Medical Physics Publishing

Conceptual Physics Paul Hewitt Addison-Wesley Publishing

Physics Begins with an “M” John Jewett Longwood Professional Publishing