



EXPLORE PHYSICS

CURRICULUM GRID

| EXPERIMENT | LEARNING GOALS | AP PHYSICS | IB DIPLOMA | NGSS | NYS | UK(E) | FORCES, MOTION AND INTERACTIONS | WAVES, OSCILLATIONS AND ELECTROMAGNETIC RADIATION | ENERGY AND ENERGY TRANSFERS | STRUCTURE AND PROPERTIES OF MATTER |
|---|--|--------------------|------------|----------|------------------------|---------|---------------------------------|---|-----------------------------|------------------------------------|
| COLOR AND TEMPERATURE | To explore the relationship between surface color, wavelength and color temperature. | 2: 5.B.6.1/6.F.1.1 | B.1/E.5 | HS-PS4-3 | HS-PS4-3/ HS-ESS1-3 | KS3/4/5 | | | | |
| THE INCLINED PLANE | To investigate the relationship between incline height and the resultant acceleration due to gravity. | 1: 3.B.1.1 | A.2 | HS-PS2-1 | HS-PS2-1 | KS3/4/5 | | | | |
| THE REFRIGERATOR DOOR | To demonstrate the effects of temperature on the gas/air pressure through the use of a refrigerator. | 2: 7.A.3.2/3 | B.3 | HS-PS3-4 | HS-PS1-9/ HS-PS3-4 | KS3/4/5 | | | | |
| SHM: SPRING-MASS SYSTEM | To investigate the influence of mass on the period of oscillation of a spring-mass system. | 1: 3.B.3.1/2/3 | C.1 | HS-PS3-3 | HS-PS3-3 | KS3/4/5 | | | | |
| THE SIMPLE PENDULUM | To investigate the effect of pendulum length on its period of oscillation. | 1: 3.B.3.1/2/3 | C.1 | HS-PS3-3 | HS-PS3-3 | KS3/4/5 | | | | |
| TIME OF FLIGHT | To demonstrate that time of flight for a projectile does not depend on the horizontal velocity at which a projectile is launched. | 1: 3.A.1.1/2/3 | A.1 | HS-PS3-3 | HS-PS3-3 | KS3/4/5 | | | | |
| MAGNETIC EFFECTS OF DC AND AC CURRENTS | To explore the effect of an electrical current flowing through a solenoid on the magnetic field produced by the solenoid. | 2: 2.D.2.1 | B.5/D.2 | HS-PS2-5 | HS-PS2-5 | KS3/4/5 | | | | |
| COEFFICIENT OF RESTITUTION | To investigate the behavior of a bouncing ball by measuring the time between consecutive bounces for a range of release heights. | 1: 5.B.1.1/2 | A.1/A.3 | HS-PS3-3 | HS-PS3-3 | KS3/4/5 | | | | |
| INTERNAL RESISTANCE OF A BATTERY | To investigate the effect of the current flowing through a battery on the effective voltage across an external resistor and to measure the internal resistance and emf of a battery. | 2: 5.B.9.7 | B.5 | HS-PS3-3 | HS-PS3-3/PS3-6 | KS5 | | | | |
| ELECTRICAL PROPERTIES OF COMPONENTS | To investigate the relationship between current and voltage for a resistor, filament bulb and diode. | 2: 4.E.5.1/2 | B.5 | HS-PS3-3 | HS-PS3-3/PS3-6 | KS3/4/5 | | | | |