



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 bulbs and diode.	2: 4.E.5.1/2	B.5	HS-PS3-3	HS-PS3-3/PS3-6	KS3/4/5				
MELTING POINT OF A SOLID	To measure the melting point of a solid from its cooling curve as it changes state from a liquid to a solid.	2: 5.B.4.1/2	B.1	HS-PS1-3	HS-PS1-3	KS4/5				
SPECIFIC HEAT CAPACITY	To measure the effect of adding a hot metal block to cold water on the temperature of the water-block mixture and to find the specific heat capacity of the metal block.	2: 5.B.4.1/2	B.1	HS-PS3-4	HS-PS3-4	KS4/5				
SPEED OF SOUND	To investigate the effect of target distance on ping-echo time for an ultrasonic sound wave and to measure the speed of sound in air.	2: 6.A.2.2	C.2	HS-PS4-1	HS-PS4-1	KS3/4/5				
WAVE PROPERTIES	To investigate the effect of sound wave amplitude on loudness and sound wave frequency on pitch.	2: 6.A.1.2	C.2	HS-PS4-1	HS-PS4-1	KS3/4/5				
WAVE INTERFERENCE	To investigate the effect of the phase difference between 2 sound waves on their combined loudness.	2: 6.C.1.1/2	C.3/C.4	HS-PS4-1/PS4-5	HS-PS4-1/PS4-5	KS3/4/5				