

Physics

Assignment List

Unit 1: Motion

Lesson	Read Before Coming	# of Problems
01-01 Introduction, Units, and Uncertainty	1.1-1.4	18
Lab 01-01 Measurement and	2.1-2.2	14
01-02 Relative Motion, Distance, and Displacement		
Lab 01-03P Motion Graphs		
01-03 Speed, Velocity, and Graphs	2.3	15
01-04 Velocity vs Time Graphs	2.3, 2.8	15
Lab 01-05 Acceleration Investigation		
01-05 Acceleration	2.4, 2.8	12
01-06 Representing Acceleration with Equations Part 1	2.5-2.6	12
Lab 01-07P Acceleration of Gravity		
01-07 Representing Acceleration with Equations Part 2	2.7	11
01-08 Vector Addition (2 days) and	3.1-3.3	13
Lab 01-08 Independence of Vectors		
01-09 Projectile Motion (2 days)	3.4	15
Lab 01-09 Projectile Motion		
01-Review		19
01-Test		21

Unit 2: Forces

Lesson	Read Before Coming	# of Problems
Lab 02-01 Newton's Laws and 02-01 Newton's Laws	4.1-4.4	15
Lab 02-02 Apparent Weight and 02-02 Weight and Normal Force	4.3-4.5	15
Lab 02-03 Friction and 02-03 Friction (2 days)	5.1	13
Lab 02-04 Spring Constants Law		
02-04 Tension, Hooke's Law, and Equilibrium	4.5	10
02-05 Nonequilibrium and Fundamental Forces	4.6-4.8	12
02-Review		13
02-Test		21

Unit 3: Uniform Circular Motion & Torque

Lesson	Read Before Coming	# of Problems
03-01 Rotation Angle and Centripetal Acceleration and	6.1-6.2	17
Lab 03-01 Centripetal Force		
03-02 Centripetal Force	6.3	13
03-03 Kinematics of Rotational Motion	10.1-10.2	10
03-04 Torque	9.1-9.4	10
03-05 Moment of Inertia	10.3	10
03-Review		14
03-Test		21

Unit 4: Momentum

Lesson	Read Before Coming	# of Problems
04-01 Impulse and Momentum	8.1-8.2	15
Lab 04-01 Bumper Lab		
Lab 04-02 Conservation of Momentum		

04-02 Conservation of Momentum	8.3	12
Lab 04-03 Newton's Cradle Lab and 04-03 Elastic and Inelastic Collisions (2 days)	8.4-8.5	12
Lab 04-04 Angular Momentum and 04-04 Angular Momentum	10.5	11
04-Review		14
04-Test		21

Unit 5: Kepler's Laws and Gravity

Lesson	Read Before Coming	# of Problems
Lab 05-01 Elliptical Orbits and 05-01 Kepler's Laws of Planetary Motion (2 days)	6.6	11
05-02 Weight and Gravity	6.5	11
05-03 Satellites	6.6	9
Lab 05-03 Satellite Crash		9
05-Review		15
05-Test		21

Unit 6: Energy

Lesson	Read Before Coming	# of Problems
06-01 Work and Power and Lab 06-01 Power of a Push Up	7.1, 7.7	18
06-02 Types of Energy	7.2-7.4	12
Lab 06-03 Conservation of Energy		
06-03 Mechanical Energy Conservation	7.4	12
06-04 Work and Conservation of Energy	7.5-7.6	9
06-05 Simple Machines	9.5	10
06-06 Energy in Humans and the World	7.8-7.9	11
06-Review		15
06-Test		21

Unit 7: Static Electricity

Lesson	Read Before Coming	# of Problems
Lab 07-01 Create Static Electricity Lab		
07-01 Electric Charge	18.1-18.2	13
Lab 07-02 Coulomb's Law and 07-02 Coulomb's Law	18.3	12
07-03 Electric Field	18.4-18.5	14
07-04 Electric Potential	19.1-19.3	12
Lab 07-05 Equipotential Lines		
07-05 Potential and E-Field	19.4	11
07-Review		17
07-Test		21

Unit 8: Circuits

Lesson	Read Before Coming	# of Problems
Lab 08-01 Ohm's Law		
08-01 Ohm's Law	20.1-20.2	17
08-02 Series Circuits	21.1	11
08-03 Parallel Circuits	21.1	10
08-04 Circuits in Parallel and Series	21.1	9
Lab 08-04 Resistors		
08-05 Voltmeters and Ammeters	21.4	9
08-06 Electric Power and AC/DC Currents	20.4-20.5	15
08-07 Electricity and the Human Body	20.6	14
08-Review		13
08-Test		21

Unit 9: Magnetism

Lesson	Read Before Coming	# of Problems
09-01 Magnets and B-Fields	22.1-22.3	7
Lab 09-01 Draw Magnetic Field		
09-02 Magnetic Force on a Moving Charge	22.3-22.5	18
09-03 Magnetic Force on a Current-Carrying Wire	22.7-22.8	12
Lab 09-03 Electric Motor		
09-04 Magnetic Fields Produced by Currents	22.9-22.11	14
09-05 Faraday's Law of Induction and Lenz's Law	23.1-23.2	13
09-06 Motional emf and Magnetic Damping	23.3-23.4	8
09-07 Electric Generators and Back Emf	23.5-23.6	10
09-08 Transformers and Electrical Safety	23.7-23.8	8
09-Review		18
09-Test		21

Unit 10: Waves and Sound

Lesson	Read Before Coming	# of Problems
10-01 Waves	16.9, 16.2	15
10-02 Superposition and Interference	16.10	13
Lab 10-03 Properties of Sound and 10-03 Sound	17.1-17.2	11
Lab 10-04 Intensity vs Distance		
10-04 Intensity	17.3	14
Lab 10-05 Doppler Effect and 10-05 Doppler Effect	17.4	14
10-06 Resonance	17.5	12
10-Review		23
10-Test		21

Unit 11: Electromagnetic Rays

Lesson	Read Before Coming	# of Problems
11-01 Electromagnetic Spectrum and Behavior	24.2-24.3, 30.3, 30.6	16
Lab 11-02 Reflection and Refraction		
11-02 Reflection	25.1-25.2, 25.7	15
Lab 11-03 Internal Reflection and 11-03 Refraction	25.3-25.5	17
11-04 Lenses	25.6, 26.1-26.3	19
Lab 11-04 Meter Stick Optics		
11-Review		17
11-Test		21

Unit 12: Dual Nature of Light

Lesson	Read Before Coming	# of Problems
12-01 The Double Slit Experiment	27.1-27.3	11
12-02 Multiple Slit Diffraction	27.4	10
Lab 12-02 CD Line Spacing		
12-03 Single Slit Diffraction	27.5-27.6	11
12-04 Quantum Nature of Light	29.1	13
12-05 Photoelectric Effect	29.2-29.3	12
Lab 12-05 Find Planck's Constant		
12-06 The Dual Nature of Light	29.4-29.6	13
Lab 12-06 Dual Nature of Light and 12-Review		16
12-Test		21

Unit 13: Fission, Fusion, and Radioactivity

Lesson	Read Before Coming	# of Problems
13-01 Radioactivity	30.1-30.2, 31.1-31.4	20
Lab 13-02 Radioactive Decay Simulation		
13-02 Radiometric Dating	31.5	12
13-03 Nuclear Fission	32.6	7
13-04 Nuclear Fusion	32.5	10
Lab 13-04 Mass-Energy		
13-Review		16
13-Test		21

Unit 14: Special Relativity

Lesson	Read Before Coming	# of Problems
14-01 Einstein's Postulates and Time Dilation	28.1-28.2	11
14-02 Length Contraction	28.3	8
14-03 Relativistic Addition of Velocities	28.4	11
14-04 Relativistic Momentum	28.5	5
14-05 Relativistic Energy	28.6	11
Lab 14-05 Relativity Lab		
14-Review		13
14-Test		16

Optional Unit 5B: Fluids

Lesson	Read Before Coming	# of Problems
05-01 Fluids and Density	11.1-11.2	13
05-02 Pressure and Depth	11.3-11.4	13
05-03 Pascal's Principle and Measuring Pressure	11.5-11.6	14
05-04 Archimedes' Principle	11.7	12
05-05 Flow Rate and Bernoulli's Equation	12.1-12.2	17
05-06 The Most General Applications of Bernoulli's Equation	12.3	9
05-07 Viscosity, Poiseuille's Law, and Turbulence	12.4-12.5	13
05-Review		13
05-Test		21

Optional Unit 6B: Temperature, Heat, and Thermodynamics

Lesson	Read Before Coming	# of Problems
06-01 Temperature and Thermal Expansion	13.1-13.2	15
06-02 Ideal Gas Law and Kinetic Theory	13.3-13.4	15
06-03 Phase Changes and Humidity	13.5-13.6	13
06-04 Heat and Temperature Change	14.1-14.2	13
06-05 Phase Change and Latent Heat	14.3	14
06-06 Conduction	14.4-14.5	11
06-07 Convection and Radiation	14.6-14.7	15
06-08 The 1st Law of Thermodynamics and Simple Processes	15.1-15.2	14
06-09 The 2 nd Law of Thermodynamics and Heat Engines	15.3-15.5	14
06-10 Entropy and the 2 nd Law of Thermodynamics	15.6-15.7	15
06-Review		13
06-Test		21