

# Physics

## Assignment List

### Unit 1: Motion

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

### Unit 2: Forces

Lesson	Read Before Coming	# of Problems
02-01 Newton's Laws	4.1-4.4	15
02-02 Weight and Normal Force	4.3-4.5	15
02-03 Friction	5.1	13
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	6.1-6.2	17
03-02 Centripetal Force	6.3	13
03-03 Torque	9.1-9.4	10
03-04 Kinematics of Rotational Motion	10.1-10.2	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
04-02 Conservation of Momentum	8.3	12
04-03 Elastic and Inelastic Collisions	8.4-8.5	12
04-04 Angular Momentum	10.5	11
04-Review		14
04-Test		21

### ***Unit 5: Kepler's Laws and Gravity***

<b>Lesson</b>	<b>Read Before Coming</b>	<b># of Problems</b>
<b>05-01 Kepler's Laws of Planetary Motion</b>	6.6	11
<b>05-02 Weight and Gravity</b>	6.5	11
<b>05-03 Satellites</b>	6.6	9
<b>05-Review</b>		15
<b>05-Test</b>		21

### ***Unit 6: Energy***

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

### ***Unit 7: Static Electricity***

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

### ***Unit 8: Circuits***

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

### ***Unit 9: Magnetism***

<b>Lesson</b>	<b>Read Before Coming</b>	<b># of Problems</b>
<b>09-01 Magnets and B-Fields</b>	22.1-22.3	7
<b>09-02 Magnetic Force on a Moving Charge</b>	22.3-22.5	18
<b>09-03 Magnetic Force on a Current-Carrying Wire</b>	22.7-22.8	12
<b>09-04 Magnetic Fields Produced by Currents</b>	22.9-22.11	14
<b>09-05 Faraday's Law of Induction and Lenz's Law</b>	23.1-23.2	13
<b>09-06 Motional emf and Magnetic Damping</b>	23.3-23.4	8
<b>09-07 Electric Generators and Back Emf</b>	23.5-23.6	10
<b>09-08 Transformers and Electrical Safety</b>	23.7-23.8	8
<b>09-Review</b>		18
<b>09-Test</b>		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
10-03 Sound	17.1-17.2	11
10-04 Intensity	17.3	14
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
11-02 Reflection	25.1-25.2, 25.7	15
11-03 Refraction	25.3-25.5	17
11-04 Lenses	25.6, 26.1-26.3	19
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
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
12-06 The Dual Nature of Light	29.4-29.6	13
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
13-02 Radiometric Dating	31.5	12
13-03 Nuclear Fission	32.6	7
13-04 Nuclear Fusion	32.5	10
13-Review		16
13-Test		21

**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 <sup>nd</sup> Law of Thermodynamics and Heat Engines	15.3-15.5	14
06-10 Entropy and the 2 <sup>nd</sup> Law of Thermodynamics	15.6-15.7	15
06-Review		13
06-Test		21

**Optional Unit 12B: Special Relativity**

Lesson	Read Before Coming	# of Problems
12-01 Einstein's Postulates and Time Dilation	28.1-28.2	11
12-02 Length Contraction	28.3	8
12-03 Relativistic Addition of Velocities	28.4	11
12-04 Relativistic Momentum	28.5	5
12-05 Relativistic Energy	28.6	11
12-Review		13
12-Test		16