2001 Mississippi Science Framework: Physics I, with *Physics in Context*

1. Apply Fundamental Mathematics used in physical concepts	Embedded in Student Text, Teachers Guide, Lab Manuals, Assessment CD & Web site support materials
a. Utilize fundamental SI base and derived units.	Embedded in Student Text, Teachers Guide, Lab Manuals, Assessment CD & Web site support materials
b. Demonstrate proper use of scientific notation and significant figures in calculations and measurements.	Embedded in Student Text, Teachers Guide, Lab Manuals, Assessment CD & Web site support materials
c. Create, extend and record relationships from tables and graphs.	Embedded in Student Text, Teachers Guide, Lab Manuals, Assessment CD & Web site support materials
d. Manipulate equations to solve problems.	Embedded in Student Text, Teachers Guide, Lab Manuals, Assessment CD & Web site support materials

2. Investigate the kinematics of physical bodies	Student Text pp4-23, 82-94,121-137,168-183; Teachers Guide pp. T4-23, T82-94, T121-137, T168-183; Lab Manual pp. 1.1-1.12, 2.1-2.16, 3.1-3.7, 4.1-4.8, Appropiate sections in Assessment CD & Web-site: www.learningincontext.com
a. Identify terminology associated with kinematics and the history of the ideas associated with motion.	Student Text pp4-23, 82-94,121-137,168-183; Teachers Guide pp. T4-23, T82-94, T121-137, T168-183; Lab Manual pp. 1.1-1.12, 2.1-2.16, 3.1-3.7, 4.1-4.8, Appropiate sections in Assessment CD & Web-site: www.learningincontext.com
b. Differentiate between vector and scalar quantities.	Student Text pp4-23, 82-94,121-137,168-183; Teachers Guide pp. T4-23, T82-94, T121-137, T168-183; Lab Manual pp. 1.1-1.12, 2.1-2.16, 3.1-3.7, 4.1-4.8, Appropiate sections in Assessment CD & Web-site: www.learningincontext.com
c. Observe, measure, record and graph experimental results involving bodies in motion.	Student Text pp4-23, 82-94,121-137,168-183; Teachers Guide pp. T4-23, T82-94, T121-137, T168-183; Lab Manual pp. 1.1-1.12, 2.1-2.16, 3.1-3.7, 4.1-4.8, Appropiate sections in Assessment CD & Web-site: www.learningincontext.com
d. Interpret displacement, velocity, and acceleration graphs.	Student Text pp4-23, 82-94,121-137,168-183; Teachers Guide pp. T4-23, T82-94, T121-137, T168-183; Lab Manual pp. 1.1-1.12, 2.1-2.16, 3.1-3.7, 4.1-4.8, Appropiate sections in Assessment CD & Web-site: www.learningincontext.com
e. Solve problems involving kinematic relationships.	Student Text pp4-23, 82-94,121-137,168-183; Teachers Guide pp. T4-23, T82-94, T121-137, T168-183; Lab Manual pp. 1.1-1.12, 2.1-2.16, 3.1-3.7, 4.1-4.8, Appropiate sections in Assessment CD & Web-site: www.learningincontext.com

3. Investigate physical dynamics	Student Text pp.4-23, 47-63, 243-261, 170-183, 326-338; Teachers Guide pp T4-23, T47-63, T243-261, T170-183, T326-338; Lab Manual 1.3-1.24, 4.3-4.9, 7.1-7.12; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com
a. Solve vector problems mathematically and graphically.	Student Text pp.4-23, 47-63, 243-261, 170-183, 326-338; Teachers Guide pp T4-23, T47-63, T243-261, T170-183, T326-338; Lab Manual 1.3-1.24, 4.3-4.9, 7.1-7.12; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com
b. Distinguish between weight and mass.	Student Text pp.4-23, 47-63, 243-261, 170-183, 326-338; Teachers Guide pp T4-23, T47-63, T243-261, T170-183, T326-338; Lab Manual 1.3-1.24, 4.3-4.9, 7.1-7.12; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com
c. Explain physical dynamics in terms of Newton's Three Laws of Motion.	Student Text pp.4-23, 47-63, 243-261, 170-183, 326-338; Teachers Guide pp T4-23, T47-63, T243-261, T170-183, T326-338; Lab Manual 1.3-1.24, 4.3-4.9, 7.1-7.12; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com
d. Solve problems using Newton's Three Laws of Motion.	Student Text pp.4-23, 47-63, 243-261, 170-183, 326-338; Teachers Guide pp T4-23, T47-63, T243-261, T170-183, T326-338; Lab Manual 1.3-1.24, 4.3-4.9, 7.1-7.12; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com
e. Apply the principles of impulse and conservation of momentum to interpret Newton's Third law of Motion.	Student Text pp.4-23, 47-63, 243-261, 170-183, 326-338; Teachers Guide pp T4-23, T47-63, T243-261, T170-183, T326-338; Lab Manual 1.3-1.24, 4.3-4.9, 7.1-7.12; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com
f. Explain the effects of the Law of Universal Gravitational Force and calculate the force between the two masses.	Student Text pp.4-23, 47-63, 243-261, 170-183, 326-338; Teachers Guide pp T4-23, T47-63, T243-261, T170-183, T326-338; Lab Manual 1.3-1.24, 4.3-4.9, 7.1-7.12; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com
g. Explore the principles and applications for solving problems in two-dimensional motion.	Student Text pp.4-23, 47-63, 243-261, 170-183, 326-338; Teachers Guide pp T4-23, T47-63, T243-261, T170-183, T326-338; Lab Manual 1.3-1.24, 4.3-4.9, 7.1-7.12; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com
h. Apply concepts of centripetal force and torque in solving circular motion problems.	Student Text pp.4-23, 47-63, 243-261, 170-183, 326-338; Teachers Guide pp T4-23, T47-63, T243-261, T170-183, T326-338; Lab Manual 1.3-1.24, 4.3-4.9, 7.1-7.12; Appropriate sections in Assessment CD & Web-site: www.learningincontext.com

4. Explore the concepts and relationships among Work, power, and energy.	Student Text pp 82-118, 228-295, 296-323; Teacher Guide pp. T82-118, T228-295, T296-323; Lab Manual pp. 2.1-2.34, 5.1-5.40, 6.1-6.30; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com.
a. Identify terminology associated with work, power and energy.	Student Text pp 82-118, 228-295, 296-323; Teacher Guide pp. T82-118, T228-295, T296-323; Lab Manual pp. 2.1-2.34, 5.1-5.40, 6.1-6.30; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com.
b. Apply the law of Conservation of Energy	Student Text pp 82-118, 228-295, 296-323; Teacher Guide pp. T82-118, T228-295, T296-323; Lab Manual pp. 2.1-2.34, 5.1-5.40, 6.1-6.30; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com.
c. Utilize the Work-Energy Theorem to solve problems.	Student Text pp 82-118, 228-295, 296-323; Teacher Guide pp. T82-118, T228-295, T296-323; Lab Manual pp. 2.1-2.34, 5.1-5.40, 6.1-6.30; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com.

5. Describe the characteristics and properties of mechanical waves.	Student Text pp.353-383, Teachers Guide pp. T353-383, Lab Manual 8.1-8.28; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com.
a. Describe the types, characteristics and behavior of mechanical waves.	Student Text pp.353-383, Teachers Guide pp. T353-383, Lab Manual 8.1-8.28; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com.
b. Explain conceptually and/or mathematically the Doppler Effect.	Student Text pp.353-383, Teachers Guide pp. T353-383, Lab Manual 8.1-8.28; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com.

6. Investigate the principles related to electro-	Student Text pp. 384-421; Teachers Guide pp T384-T421, Lab Manual 9.1-9.30; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com.

magnetic radiation	
a. Determine the relationship between frequency and wavelength using the constancy of the speed of light.	Student Text pp. 384-421; Teachers Guide pp T384-T421, Lab Manual 9.1-9.30; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com.
b. Compare the various components of the electromagnetic spectrum.	Student Text pp. 384-421; Teachers Guide pp T384-T421, Lab Manual 9.1-9.30; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com.
c. Describe the characteristics of lenses and mirrors conception ally, mathematically and/or pictorially.	Student Text pp. 384-421; Teachers Guide pp T384-T421, Lab Manual 9.1-9.30; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com.

7. Measure and calculate the properties of static and current electricity.	Student Text pp. 47-63,106-117, 149-156,200-215; Teachers Guide pp T47-63, T106-117, T149-156, T200-215: Lab Manual pp 1.17-1.24, 2.31-2.34, 3.19-3.28, 4.15-4.32; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com.
a. Identify terminology and units associated with electricity.	Student Text pp. 47-63,106-117, 149-156,200-215; Teachers Guide pp T47-63, T106-117, T149-156, T200-215: Lab Manual pp 1.17-1.24, 2.31-2.34, 3.19-3.28, 4.15-4.32; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com.
b. Describe the characteristics of an electric field.	Student Text pp. 47-63,106-117, 149-156,200-215; Teachers Guide pp T47-63, T106-117, T149-156, T200-215: Lab Manual pp 1.17-1.24, 2.31-2.34, 3.19-3.28, 4.15-4.32; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com.
c. Describe, measure and/or calculate the properties of stationary and moving electric charges (using Coulomb's Law and Ohm's Law).	Student Text pp. 47-63,106-117, 149-156,200-215; Teachers Guide pp T47-63, T106-117, T149-156, T200-215: Lab Manual pp 1.17-1.24, 2.31-2.34, 3.19-3.28, 4.15-4.32; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com.
d. Determine current, voltage, and resistance involved in series and parallel circuits.	Student Text pp. 47-63,106-117, 149-156,200-215; Teachers Guide pp T47-63, T106-117, T149-156, T200-215: Lab Manual pp 1.17-1.24, 2.31-2.34, 3.19-3.28, 4.15-4.32; Appropiate sections in Assessment CD & Web-site: www.learningincontext.com.