

Physics Power Standards by Quarter (7/16/08)

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Goal 1 Inquiry	1. Design procedures to test the selected hypotheses.	1. Conduct systematic controlled experiments to test the hypothesis.	1. Report, display and defend the results of investigations.	1. Build and test different models or simulations of the design solution using suitable materials, tools and technology.
Goal 2 Content	<p>Unit: Measurement</p> <p>2. Construct and interpret graphs showing direct and inverse relationships.</p> <p>3. Apply basic problem solving strategies.</p> <p>4. Resolve and compose vectors using the three basic trigonometric functions.</p> <p>Unit: Kinematics</p> <p>5. Solve problems involving constant acceleration.</p> <p>6. Solve projectile motion problems.</p> <p>Unit: Statics-Linear and Rotational</p> <p>7. Summarize Newton's laws.</p> <p>8. Apply free body diagrams to problems involving friction.</p> <p>9. Solve problems with motion involving friction.</p>	<p>Unit: Mechanical Energy</p> <p>2. Summarize the work-energy theorem and identify situations where it applies.</p> <p>3. Illustrate work, power and energy using real world applications.</p> <p>Unit: Dynamics: Linear and Rotational</p> <p>4. Define torque and solve torque problems.</p> <p>5. Define momentum and impulse in terms of Newton's second and third laws.</p> <p>6. Apply conservation of angular momentum to various systems.</p>	<p>Unit: Properties of Matter</p> <p>2. Describe three methods of heat transfer and give examples.</p> <p>3. Solve problems involving the expansion of solids and fluids.</p> <p>4. Apply the first and second laws of thermodynamics to problem solving using specific heat and work.</p> <p>Unit: Waves and Modern Physics</p> <p>4. Describe and calculate wave phenomenon.</p> <p>5. Illustrate the reflection, refraction and diffraction of waves.</p> <p>6. Describe interference and wave resonance and give applications.</p> <p>7. Defend the wave and particle theories of light using light phenomena properties and explain the historical significance of each theory.</p>	<p>Unit: Geometrical Optics</p> <p>2. Use ray tracing techniques for image location involving plane and spherical mirrors, concave and convex lenses.</p> <p>3. Solve problems using Snell's law</p> <p>4. Solve problems using lens and spherical mirror equations.</p> <p>Unit: Electricity and Magnetism</p> <p>5. Solve problems using Coulomb's law, potential difference and electric fields.</p> <p>6. Analyze simple direct current circuits using Ohm's and Kirchoff's laws.</p> <p>7. Describe the relationship between electricity and magnetism.</p>
Goal 3 Connections	10. Demonstrate lab safety procedures and accepted practices of science	7. Evaluate the potential sources of error for an experiment.	8. Recognize and discuss physics applications in everyday life.	8. Describe how occupations use scientific and technological information based on physics concepts.