

## INQUIRY

**Scientific Inquiry**

- \_\_\_\_\_ Design procedures to test the selected hypotheses. *Physics 01*
- \_\_\_\_\_ Conduct systematic controlled experiments to test the hypothesis. *Physics 02*
- \_\_\_\_\_ Report, display and defend the results of investigations. *Physics 03*

**Technological Design**

- \_\_\_\_\_ Build and test different models or simulations of the design solution using suitable materials, tools and technology. *Physics 04*

## CONTENT

**Physical Science****Measurement**

- \_\_\_\_\_ Construct and interpret graphs showing direct and inverse relationships. *Physics 05*
- \_\_\_\_\_ Apply basic problem solving strategies. *Physics 06*
- \_\_\_\_\_ Resolve and compose vectors using the three basic trigonometric functions. *Physics 07*

**Kinematics**

- \_\_\_\_\_ Solve problems involving constant acceleration. *Physics 08*
- \_\_\_\_\_ Solve projectile motion problems. *Physics 09*

**Statics-Linear and Rotational**

- \_\_\_\_\_ Summarize Newton's laws. *Physics 10*
- \_\_\_\_\_ Solve problems with motion involving friction. *Physics 11*
- \_\_\_\_\_ Apply free body diagrams to problems involving friction *Physics 12*

**Mechanical Energy**

- \_\_\_\_\_ Illustrate work, power and energy using real world applications. *Physics 13*
- \_\_\_\_\_ Summarize the work-energy theorem and identify situations where it applies. *Physics 14*

**Dynamics-Linear and Rotational**

- \_\_\_\_\_ Define torque and solve torque problems. *Physics 15*
- \_\_\_\_\_ Define momentum and impulse in terms of Newton's second and third laws. *Physics 16*
- \_\_\_\_\_ Apply conservation of angular momentum to various systems. *Physics 17*

**Properties of Matter**

- \_\_\_\_\_ Apply the first and second laws of thermodynamics to problem solving using specific heat and work. *Physics 18*
- \_\_\_\_\_ Solve problems involving the expansion of solids and fluids. *Physics 19*
- \_\_\_\_\_ Describe three methods of heat transfer and give examples. *Physics 20*

**Waves and Modern Physics**

- \_\_\_\_\_ Describe and calculate wave phenomenon. *Physics 21*
- \_\_\_\_\_ Illustrate the reflection, refraction, diffraction and interference of waves. *Physics 22*
- \_\_\_\_\_ Describe interference and wave resonance and give applications. *Physics 23*
- \_\_\_\_\_ Defend the wave and particle theories of light using light phenomena properties and explain the historical significance of each theory. *Physics 24*

**Geometrical Optics**

- \_\_\_\_\_ Use ray tracing techniques for image location involving plane and spherical mirrors, concave and convex lenses. *Physics 25*
- \_\_\_\_\_ Solve problems Snell's Law. *Physics 26*
- \_\_\_\_\_ Solve problems using lens and spherical mirror equations. *Physics 27*

**Electricity and Magnetism**

- \_\_\_\_\_ Solve problems using Coulomb's law, potential difference and electric fields. *Physics 28*
- \_\_\_\_\_ Analyze simple direct current circuits using Ohm's and Kirchoff's laws. *Physics 29*
- \_\_\_\_\_ Describe the relationship between electricity and magnetism. *Physics 30*

## CONNECTIONS

**Science Practices**

- \_\_\_\_\_ Demonstrate safe lab procedures and accepted practices of science. *Physics 31*
- \_\_\_\_\_ Evaluate potential sources of error for an experiment. *Physics 32*

**S/T/S (Science, Technology and Society)**

- \_\_\_\_\_ Recognize and discuss physics applications in everyday life. *Physics 33*
- \_\_\_\_\_ Describe how occupations use scientific and technological information based on physics concepts. *Physics 34*