

Physical Science Curriculum Map for grade 9

| Unit Name / Topic (specific timeframe, if any) | Strand/ Substrand | Standard (The student will...) | Benchmark (The student will...) | Key Learnings (written as statement) | Activities used | Resources used | Assessment of learning |
|--|---|---|---|--|--|---|------------------------|
| Experimental Design Unit | History and Nature of Science/Scientific World View | Understand the nature of scientific ways of thinking & that scientific knowledge changes and accumulates over time. | 1. Be able to distinguish among hypothesis, theory and law as scientific terms and how they are used to answer a specific question. | Hypotheses, laws and theories are different concepts that are used to answer scientific questions. | Designer Planes | Lab manual, textbook, LCD projector | Lab report, Unit test |
| | | | 2. Be able to explain how scientific and technological innovations as well as new evidence can challenge portions of, or entire accepted theories and models including, but not limited to cell theory, atomic theory, theory of evolution, plate tectonic theory, germ theory of disease, and big bang theory. | Technological innovations change accepted theories and models. | Black Box Lab, Mystery bar lab, Reading and class discussion | Boxes and sticks, lab manual, textbook, LCD projector | Lab report, Unit test |
| | | | 3. Recognize that in order to be valid, scientific knowledge must meet certain criteria including that it, be consistent with experimental, observational and inferential evidence about nature; follow rules of logic and reporting both methods and procedures; and, be falsifiable and open to criticism. | In order to be valid, scientific Knowledge must meet certain criteria. | Experimental design project, practice labs | Lab manual, textbook, LCD panel, Internet, Media Center | Lab report, Unit test |
| | History and Nature of Science/Scientific Inquiry | Design and conduct scientific investigations. | 1. Design and complete a scientific experiment using scientific methods by determining a testable question, making hypothesis, designing a scientific investigation with appropriate controls, analyzing data, making conclusions based on evidence and comparing conclusions to the original hypothesis and prior knowledge. | The design and completion of a scientific experiment uses the scientific method. | Experimental design project | Lab manual, text, LCD panel, Internet, Media Center | Project report |
| | | | 2. Distinguish between qualitative and quantitative data. | There is a difference between qualitative and quantitative data. | Qual. Vs. Quant labs, (many labs throughout the lab manual) | Lab manual, text | lab reports, test/quiz |