

8th Grade Science Guide

First Nine Weeks

Inquiry and Technology & Engineering

- 0807.Inq.1** Design a simple experimental procedure with an identified control and appropriate variables.
- 0807.Inq.2** Select tools and procedures needed to conduct a moderately complex experiment.
- 0807.Inq.3** Interpret and translate data in a table, graph, or diagram.
- 0807.Inq.4** Draw a conclusion that establishes a cause and effect relationship supported by evidence.
- 0807.Inq.5** Identify a faulty interpretation of data that is due to bias or experimental error.
- 0807.T/E.1** Identify the tools and procedures needed to test the design features of a prototype.
- 0807.T/E.2** Evaluate a protocol to determine if the engineering design process was successfully applied.
- 0807.T/E.3** Distinguish between the intended benefits and the unintended consequences of a new technology.
- 0807.T/E.4** Differentiate between adaptive and assistive engineered products (e.g., food, biofuels, medicines, integrated pest management).

Life Science: Biodiversity and Change

- 0807.5.1** Use a simple classification key to identify an unknown organism.
- 0807.5.2** Analyze structural, behavioral, and physiological adaptations to predict which populations are likely to survive in a particular environment
- 0807.5.3** Analyze data on levels of variation within a population to make predictions about survival under particular environmental conditions.
- 0807.5.4** Identify several reasons for the importance of maintaining the earth's biodiversity.
- 0807.5.5** Compare fossils found in sedimentary rock to determine their relative age.

Physical Science: Matter

- 0807.9.1** Recognize that all matter consists of atoms.
- 0807.9.2** Identify the common outcome of all chemical changes.

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Physical Science: Matter

- 0807.9.3** Classify common substances as elements or compounds based on their symbols or formulas.
- 0807.9.4** Differentiate between a mixture and a compound.
- 0807.9.5** Describe the chemical makeup of the atmosphere.
- 0807.9.6** Compare the particle arrangement and type of particle motion associated with different states of matter.
- 0807.9.7** Apply an equation to determine the density of an object based on its mass and volume.
- 0807.9.8** Interpret the results of an investigation to determine whether a physical or chemical change has occurred.
- 0807.9.9** Use the periodic table to determine the properties of an element.

- 0807.9.10** Identify the reactants and products of a chemical reaction.
- 0807.9.11** Recognize that in a chemical reaction the mass of the reactants is equal to the mass of the products (Law of Conservation of Mass).
- 0807.9.12** Identify the basic properties of acids and bases.

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Physical Science: Forces of Nature

- 0807.12.1** Recognize that electricity can be produced using a magnet and wire coil.
- 0807.12.2** Describe the basic principles of an electromagnet.
- 0807.12.3** Distinguish among the Earth's magnetic field, a magnet, and the fields that surround a magnet and an electromagnet.
- 0807.12.4** Distinguish between mass and weight using appropriate measuring instruments and units.
- 0807.12.5** Determine the relationship among the mass of objects, the distance between these objects, and the amount of gravitational attraction.
- 0807.12.6** Illustrate how gravity controls the motion of objects in the solar system.