

8th Grade Science

Proficient Performance Level Descriptors

A student who is **Proficient consistently exhibits competency** in the scientific thinking practice, planetary structure, organisms and their environment, properties of matter, structure of matter, changes in matter, energy and motion. Proficient students are able to

- identify the parts and functions of a compound microscope
- identify the main phases of the water cycle
 - evaporation
 - condensation
 - precipitation
- analyze the importance of the Periodic Table of the Elements
 - number of atoms in a chemical formula
 - the particles that make up the nucleus
 - the particles of the atom
 - compounds
 - elements
 - isotopes
- identify the major role of the red blood cells in the circulatory system
- recognize the difference between quantitative and qualitative observations
- determine the number of chromosomes that each human parent contributes to the offspring
- recognize the importance of photosynthesis to plant growth
- recognize the importance of ATP and cellular respiration
- identify the elements needed for organisms to survive
- describe and explain the significance of the different forms of energy
 - electric
 - nuclear
 - thermal
 - chemical
- explain the Kinetic Molecular Theory
- identify the methods of separating mixtures
- recognize the importance of transformation of energy
 - kinetic
 - potential
- enumerate the different types of variables
 - x-axis and the y-axis
- identify the steps and importance of scientific methods
- differentiate a plant cell from an animal cell

- determine the factors that affect the reaction rate
- describe and explain cell division
- determine the ratio of offspring using the Punnett Square
 - homozygous genes
 - heterozygous genes
 - dominant and recessive traits
- describe the effects of greenhouse gases in the atmosphere
- recognize the importance of radiation in cancer treatment
- identify and recognize the difference between a chemical and physical change
- identify and describe the earth's layers
- calculate density
- recognize the importance of the pH scale
- identify the correct order of the hierarchical classification system
- identify the spheres of the earth's atmosphere
- describe and determine the effects of homeostasis of the human body
- distinguish among magma, igneous, metamorphic and sedimentary rocks
- describe and explain the law of universal gravitation

A student who is **Borderline Proficient occasionally exhibits competency** in the scientific thinking practice, planetary structure, organisms and their environment, properties of matter, structure of matter, changes in matter, energy and motion. Students are able to

- identify the parts and functions of a compound microscope
- identify the main phases of the water cycle to include evaporation, condensation, and precipitation
- analyze the importance of the Periodic Table of the Elements
- identify the major role of the red blood cells in the circulatory system
- recognize the difference between quantitative and qualitative observations
- determine the number of chromosomes that each human parent contributes to the offspring
- recognize the importance of photosynthesis to plant growth
- recognize the importance of ATP and cellular respiration
- identify the elements needed for organisms to survive
- describe and explain the significance of the different forms of energy
- identify the methods of separating mixtures
- recognize the importance of transformation of energy
- enumerate the different types of the variable
 - x-axis and the y-axis
- identify the steps and importance of scientific methods
- differentiate a plant cell from an animal cell
- determine the factors that affect the reaction rate
- describe and explain cell division
- determine the ratio of offspring using the Punnett Square
- describe the effects of greenhouse gases in the atmosphere
- recognize the importance of radiation in cancer treatment
- identify and recognize the difference between a chemical change and physical change
- identify and describe the earth's layers
- recognize the importance the pH scale
- describe and determine the effects of homeostasis of the human body
- distinguish among magma, igneous, metamorphic and sedimentary rocks