Testing Blueprints

Ideal % of Test	Ideal # of Items	8th Grade Science Process/Inquiry Standards and Objectives
18 - 24%	**8 - 11**	**P1.0 Observe and Measure**
		Observe and Measure – Observing is the first action taken by the learner to acquire new information about an objects, organism, or event. Opportunities for observation are developed through the use of a variety of scientific tools. Measurement allows observations to be quantified. The student will accomplish these objectives to meet this process standard.
	4 - 6	**1.1 Qualitative/Quantitative Observations/Changes** Identify qualitative and/or quantitative changes given conditions (e.g., temperature, mass, volume, time, position, length) before, during, and after an event.
	4-5	**1.2 Appropriate Tools** Use appropriate tools (e.g., metric ruler, graduated cylinder, thermometer, balances, spring scales, stopwatches, computers, handheld data collection devices) to measure objects, organisms, and/or events.
		1.3 SI (metric) Units Use appropriate International System of Units (SI) (i.e., grams, meters, liters, degrees Celsius, and seconds) and SI prefixes (i.e. milli-, centi-, and kilo-) when measuring objects, organisms and/or events.
16 - 20%	**7 - 9**	**P2.0 Classify**
		Classify – Classifying establishes order. Objects, organisms, and events are classified based on similarities, differences, and interrelationships. The student will accomplish these objectives to meet this process standard.
	4-6	**2.1 Classification System** Using observable properties, place an object, organism, and/or event into a classification system (e.g., dichotomous keys, periodic table, biological hierarchy).
	3-5	**2.2 Properties Variables** Identify properties by which a set of objects, organisms, or events could be ordered.
33 - 38%	**15 - 17**	**P3.0 Experiment**
		Experiment – Experimenting is a method of discovering information. It requires making observations and measurements to test ideas. The student will accomplish these objectives to meet this process standard.
	6-7	**3.2 Experimental Design** Experimental design - Understanding experimental design requires that students recognize the components of a valid experiment. The student will accomplish these objectives to meet this process standard. Evaluate the design of a scientific investigation (e.g., order of investigation procedures, number of tested variables).

	6-7	**3.3 Identify Variables** Identify variables and/or controls in an experimental setup: independent variable and dependent variable.
	3-4	**3.6 Hazards/Practice Safety** Recognize potential hazards and practice safety procedures in all science investigations.
27 - 31%	**12 - 14**	**P4.0 Interpret and Communicate**
		Interpret and Communicate – Interpreting is the process of recognizing patterns in collected data by making inferences, predictions, or conclusions. Communicating is the process of describing, recording, and reporting experimental procedures and results to others. Communication may be oral, written, or mathematical and includes organizing ideas, using appropriate vocabulary, graphs, other visual representations, and mathematical equations. The student will accomplish these objectives to meet this process standard.
	6-7	**4.2 Data Tables/Line/Bar/Trend and Circle Graphs** Interpret data tables, line bar, trend, and/or simple circle graphs.
	6-7	**4.3 Explanations/Prediction** Evaluate to develop reasonable explanation and/or predictions.
100%	**45**	**Total Test**
Ideal % of Test	**Ideal # of Items**	**8th Grade Science Content Standards and Objectives**
19%	**8**	**C1.0 Properties of Matter and Energy**
		Properties and Chemical Changes in Matter - Physical characteristics of objects can be described using shape, size, and mass. The materials from which objects are made can be described using color, texture, and hardness. These properties can be used to distinguish and separate one substance from another. The student will engage in investigations that integrate the process standards and lead to the discovery of the following objectives:
	4	**1.1 Chemical Reactions** Substances react chemically with other substances to form new substances with different characteristics (e.g., oxidation, combustion, acid/base reactions).
	4	**1.2 Conservation of Matter** Matter has physical properties that can be measured (i.e., mass, volume, temperature, color, texture, density, and hardness) and chemical properties. In chemical reactions and physical changes, matter is conserved (e.g., compare and contrast physical and chemical changes).

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19%	8	C2.0 Motion and Forces
		Motions and Forces - The motion of an object can be described by its position, direction of motion, and speed as prescribed by Newton's Laws of Motion. The student will engage in investigations that integrate the process standards and lead to the discovery of the following objectives:
	4	**2.1 Motion of an Object** The motion of an object can be measured. The position of an object, its speed, and direction can be represented on a graph.
	4	**2.2 Object Subjected to a Force** An object that is not being subjected to a net force will continue to move at a constant velocity (i.e., inertia, balanced and unbalanced forces).
17%	**7**	**C3.0 Diversity and Adaptations of Organisms**
		Diversity and Adaptations of Organisms - Millions of species of animals, plants, and microorganisms are alive today. Although different species might look dissimilar, the unity among organisms becomes apparent from an analysis of internal and external structures. Adaptation involves the selection of naturally occurring variations in populations. The student will engage in investigations that integrate the process standards and lead to the discovery of the following objectives:
	3	**3.1 Classification** Soil consists of weathered rocks and decomposed organic material from dead plants, animals, and bacteria. Soils are often found in layers.
	4	**3.2 Internal and External Structures** Weather exhibits daily and seasonal patterns (i.e., air temperature, basic cloud types – cumulus, cirrus, stratus, and nimbus, wind direction, wind speed, humidity, precipitation). a. Weather measurement tools include thermometer, barometer, anemometer, and rain gauge. b. Weather maps are used to display current weather and weather predictions.
27%	**11**	**C4.0 Structures/Forces of the Earth/Solar System**
		Structures and Forces of the Earth and Solar System - The earth is mostly rock, three-fourths of its surface is covered by a relatively thin layer of water, and the entire planet is surrounded by a relatively thin blanket of air, and is able to support life. The student will engage in investigations that integrate the process standards and lead to the discovery of the following objectives:
	4	**4.1 Landforms Result from Constructive and Destructive Forces** Landforms result from constructive forces such as crustal deformation, volcanic eruption, and deposition of sediment and destructive forces such as weathering and erosion.
	3-4	**4.2 Rock Cycle** The formation, weathering, sedimentation, and reformation of rock

		constitute a continuing "rock cycle" in which the total amount of material stays the same as its form changes.
	3-4	**4.3 Global Weather Patterns** Atmospheric and ocean circulation patterns affect weather on a global scale (e.g., El Ninõ, La Ninã, Gulf Stream).
18%	**7-8**	**C5.0 Earth's History**
		Earth's History - The Earth's history involves periodic changes in the structures of the earth over time. The student will engage in investigations that integrate the process standards and lead to the discovery of the following objectives:
	3-4	**5.1 Catastrophic Events** Earth's history has been punctuated by occasional catastrophic events (e.g., the impact of asteroids or comets, enormous volcanic eruptions, periods of continental glaciations, and the rise and fall of sea level).
	3-4	**5.2 Fossil Evidence** Fossils provide important evidence of how life and environmental conditions have changed (e.g., Law of Superposition, index fossil, geologic time period, extinction).
100%	**41[1] -42[1]**	**Total Test**

[1] Each test item aligns to both a Process Standard/Objective and a Content Standard/Objective, except for Safety Items which only align to P3.4.