Science Standards by Grade Level

Earth & Space Science	Life Science	Physical Science
5th Grade		
Cycles and Patterns in the Solar System	*Interactions within Ecosystems*	*Light, Sound and Motion*
Characteristics, cycles and patterns in the solar system.	Foundational knowledge of the structures and functions of ecosystems.	Forces that affect motion (change in speed of an object, the amount of force applied and the mass of the object). Light and sound energy.
6th Grade		
Rocks, Minerals and Soil	*Cellular to Multicellular*	*Matter and Motion*
Rocks, minerals and soil. Classification & identification of different types of rocks, minerals and soil.	Modern Cell Theory. Cell processes that sustain life.	Foundational concepts of the particulate nature of matter, linear motion, and kinetic and potential energy.
7th Grade		
Cycles and Patterns of Earth and the Moon	*Cycles of Matter and Flow of Energy*	*Conservation of Mass and Energy*
Earth's hydrologic cycle, patterns that exist in atmospheric and oceanic currents, the relationship between thermal energy and the currents, and the relative position and movement of the Earth, sun and moon.	Impact of matter and energy transfer within the biotic component of ecosystems.	Arrangements of atoms on the Periodic Table of Elements, conservation of mass and energy, transformation and transfer of energy.
8th Grade		
Physical Earth	*Species and Reproduction*	*Forces and Motion*
Physical features of Earth and how they formed. The interior of Earth, the rock record, plate tectonics and landforms.	Processes for the continuation of the species.	Forces and motion within, on and around the Earth and within the universe.

9th Grade Physical Science			
Study of Matter	*Energy & Waves*	*Forces & Motion*	*The Universe*
Classification of Matter	Conservation of Energy	Motion	History of Universe
Atoms	Energy Transfer & Transformation	Forces	Galaxies
Bonding & Compounds	Waves	Dynamics	Stars
Reactions of Matter	Thermal Energy		
	Electricity		

10th Grade Biology			
Heredity	*Evolution*	*Diversity & Independence of Life*	*Cells*
Cellular Genetics	Mechanics	Biodiversity	Cell Structure & Function
DNA Structure & Function	Speciation	Ecosystems	Cellular Process
Genetic Mechanisms & Inheritance		Loss of Diversity	
Mutations			
Modern Genetics			

11th Grade Chemistry		
Structure & Properties of Matter		*Interactions of Matter*
Atomic Structure	Period Table	Chemical Reactions
Chemical Bonding	Representing Compounds	Gas Laws
Quantifying Matter	Intermolecular Forces of Attraction	Stoichiometry

Math (Statistics) Standards by Grade Level

5th Grade – Measurement & Data		
Convert Like Measurement Units	*Represent & Interpret Data*	*Geometric Measurement*
Ex: convert 5cm to 0.05 m	Line Plots (including fractions). Operations including fractions.	Recognize and measure volume of cubes and rectangular prisms with formulas.

6th Grade – Statistics & Probability	
Develop understanding of Statistical Variability	*Summarize and Describe Distributions*
Recognize statistical questioning. Understanding distribution of data (spread & shape). Recognize that median/mean summarizes data sets.	Display data via Number Line, Dot Plots, Histograms, & Box Plots. Reporting number of observations & how measurements were taken. Reporting median, mean, interquartile range, & mean absolute deviation.

7th Grade – Statistics & Probability		
Random Sampling for Inferences	*Informal Comparative Inferences*	*Chance Processes*
Use random samples to draw inferences about a population. Generation of multiple samples of same size to gauge variation	Informally assess the degree of overlap of 2 numerical data distributions with similar variabilities.	Understand probability of any event is between 0 & 1. Develop a probability model to approximate probability. Compare probabilities.

8th Grade – Statistics & Probability
Investigate Patterns of Association in Bivariate Data
Construct and interpret Scatter Plots for bivariate measurements data to investigate patterns of association. Know straight lines are used to model relationships between 2 quantities variables. Understand that patterns of association can be seen in bivariate data by displaying frequencies in a 2 way table.

9th Grade – Algebra 1
Summarize, Represent, & Interpret Data
Create and utilize dot plots, histograms, and box plots along with mean, median, interquartile range and standard deviation. Fit a function to the data set (emphasis of linear and exponential functions). Compute and interpret the correlation coefficient of a linear fit. Distinguish between correlation and causation.