

# STAAR 8<sup>th</sup> GRADE SCIENCE

## Quick Reference Guide

RS	Readiness Standard
SS	Supporting Standard
	Process Skills

### Reporting Category 1: Matter and Energy (14 questions)

8.5A	RS	describe the structure of atoms, including the masses, electrical charges, and locations, of protons and neutrons in the nucleus and electrons in the electron cloud
8.5B	RS	identify that protons determine an element's identity and valence electrons determine its chemical properties, including reactivity
8.5C	RS	interpret the arrangement of the Periodic Table, including groups and periods, to explain how properties are used to classify elements
8.5D	RS	recognize that chemical formulas are used to identify substances and determine the number of atoms of each element in chemical formulas containing subscripts
8.5E	RS	investigate how evidence of chemical reactions indicate that new substances with different properties are formed
8.5F	SS	recognize whether a chemical equation containing coefficients is balanced or not and how that relates to the law of conservation of mass.
7.5C	SS	diagram the flow of energy through living systems, including food chains, food webs, and energy pyramids
7.6A	SS	identify that organic compounds contain carbon and other elements such as hydrogen, oxygen, phosphorus, nitrogen, or sulfur
7.6B	SS	distinguish between physical and chemical changes in matter in the digestive system
6.5C	SS	differentiate between elements and compounds on the most basic level
6.6A	SS	compare metals, nonmetals, and metalloids using physical properties such as luster, conductivity, or malleability
6.6B	SS	calculate density to identify an unknown substance

### Reporting Category 2 Force, Motion, and Energy (12 questions)

8.6A	RS	demonstrate and calculate how unbalanced forces change the speed or direction of an object's motion
8.6B	SS	differentiate between speed, velocity, and acceleration
8.6C	RS	investigate and describe applications of Newton's law of inertia, law of force and acceleration, and law of action-reaction such as in vehicle restraints, sports activities, amusement park rides, Earth's tectonic activities, and rocket launches
7.7A	SS	contrast situations where work is done with different amounts of force to situations where no work is done such as moving a box with a ramp and without a ramp, or standing still

### Reporting Category 2 (continued)

6.8A	SS	compare and contrast potential and kinetic energy
6.8C	SS	calculate average speed using distance and time measurements
6.8D	SS	measure and graph changes in motion
6.9C	SS	demonstrate energy transformations such as energy in a flashlight battery changes from chemical energy to electrical energy to light energy

### Reporting Category 3 Earth and Space (14 questions)

8.7A	RS	model and illustrate how the tilted Earth rotates on its axis, causing day and night, and revolves around the Sun causing changes in seasons
8.7B	RS	demonstrate and predict the sequence of events in the lunar cycle
8.7C	SS	relate the position of the Moon and Sun to their effect on ocean tides.
8.8A	RS	describe components of the universe, including stars, nebulae, and galaxies, and use models such as the Hertzsprung-Russell diagram for classification
8.8B	SS	recognize that the Sun is a medium-sized star near the edge of a disc-shaped galaxy of stars and that the Sun is many thousands of times closer to Earth than any other star
8.8C	SS	explore how different wavelengths of the electromagnetic spectrum such as light and radio waves are used to gain information about distances and properties of components in the universe
8.8D	SS	model and describe how light years are used to measure distances and sizes in the universe
8.9A	SS	describe the historical development of evidence that supports plate tectonic theory
8.9B	RS	relate plate tectonics to the formation of crustal features
8.9C	RS	interpret topographic maps and satellite views to identify land and erosional features and predict how these features may be reshaped by weathering.
8.10A	SS	recognize that the Sun provides the energy that drives convection within the atmosphere and oceans, producing winds and ocean currents
8.10B	SS	identify how global patterns of atmospheric movement influence local weather using weather maps that show high and low pressures and fronts
8.10C	SS	identify the role of the oceans in the formation of weather systems such as hurricanes
7.8C	SS	model the effects of human activity on groundwater and surface water in a watershed
6.11B	SS	understand that gravity is the force that governs the motion of our solar system

# Staar 8th Grade Science Quick Reference Guide

**Innovative Academic Solutions**



## **Staar 8th Grade Science Quick Reference Guide:**

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