

**State of Texas Assessments of Academic Readiness (STAAR®)
Performance Level Descriptors
Grade 8 Science**

Performance Level Descriptors

Scientific investigation and reasoning skills are not assessed in isolation but are incorporated into questions that assess science content. These skills focus on safe, environmentally appropriate, and ethical laboratory and field investigations; using scientific methods and equipment in investigations; and using critical thinking, scientific reasoning, and problem solving to make informed decisions.

Students achieving Masters Grade Level Performance can

- Interpret the role of valence electrons in the chemical reactivity of elements
- Explain how the law of conservation of mass relates to evidence of a chemical reaction
- Analyze relationships among force, motion, and energy
- Explain the electromagnetic spectrum and how it relates to components of the universe
- Analyze interdependence among organisms and their environments

Students achieving Meets Grade Level Performance can

- Describe subatomic particles and their role in determining an element's identity and chemical properties
- Use physical and chemical properties to identify and classify elements on the periodic table
- Determine the number of atoms in a complex chemical formula
- Apply Newton's laws of motion
- Relate tides, seasons, and lunar phases to the motion and position of the sun, Earth, and moon
- Describe components of the universe using observable data and models
- Analyze convection within the Earth, in oceans, and in weather systems
- Examine and evaluate the formation, weathering, and erosion of Earth's crustal features
- Describe interactions that occur within ecosystems, among organisms, and within organisms
- Recognize how environmental changes affect organisms
- Describe the role of genetic material in governing the inherited traits of organisms

Students achieving Approaches Grade Level Performance can

- Determine the number of atoms of an element in a simple chemical formula
- Identify balanced and unbalanced forces
- Identify characteristics of groups of stars on a Hertzsprung-Russell diagram
- Recognize that sustainability of an ecosystem is related to species diversity
- Identify the flow of energy within a living system

Students achieving Did Not Meet Grade Level Performance can

- Recognize components of atoms and the organization of elements on the periodic table
- Identify Newton's laws of motion
- Recognize that the sun is the primary energy source for Earth's ocean currents and weather systems
- Identify components of cells, organisms, and ecosystems