

## Science Content GLEs for STEP Year 1

GLE #	Content
<b>The student demonstrates an understanding of the structure and properties of matter by:</b>	
[9]SB1.1	Describing atoms and their base components (protons, neutrons, electrons).
[10]SB1.1	Using the periodic table to describe atoms in terms of their base components.
[11]SB1.1	Predicting the properties of an element (i.e. reactivity, metal, non-metal) using the periodic table and verifying predictions through experimentation.
<b>The student demonstrates an understanding of the interactions between matter and energy and the effects of these interactions on systems by:</b>	
[8]SB3.2	Exploring through a variety of models (e.g. gumdrops and toothpicks) how atoms may bond together into well-defined molecules or bond together in large arrays.
[9]SB3.2	Explaining that in chemical and nuclear reactions, energy (e.g. heat, light, mechanical, and electrical) is transferred into and out of a system.
[10]SB3.2	Recognizing that radioactivity is a result of the decay of unstable nuclei.
[11]SB3.2	Researching applications of nuclear reactions in which a small amount of matter is converted directly into a huge amount of energy.
<b>The student demonstrates an understanding of motions, forces, their characteristics, relationships, and effects by:</b>	
[3]SB4.2	Recognizing that objects can be moved without being touched (e.g. using magnets, falling objects, static electricity).
[7]SB4.2	Recognizing that electric currents and magnets exert a force on each other.
[8]SB4.2	Describing the interactions between charges.
[10]SB4.2	Explaining that different kinds of materials respond to electric and magnetic forces (i.e. conductors, insulators, magnetic and non-magnetic materials).
[11]SB4.2	Conducting an experiment to explore the relationship between magnetic forces and electric forces to show that they can be thought of as different aspects of a single electromagnetic force (e.g., generators and motors).
<b>The student demonstrates an understanding of cycles influenced by energy from the sun and by Earth's position and motion in our solar system by:</b>	
[5]SD3.1	Observing a model that shows how the regular and predictable motion of the Earth and moon determine the apparent shape (phases) of the moon over time.
[8]SD3.1	Recognizing the relationship between the seasons and Earth's tilt relative to the sun and describing the day/night cycle as caused by the rotation of the Earth every 24 hours.
<b>The student demonstrates an understanding of the theories regarding the origin and evolution of the universe by:</b>	
[5]SD4.1	Distinguishing between the stars, planets, moons, comets, and meteors.
[6]SD4.1	Contrasting characteristics of planets and stars (i.e. light reflecting, light emitting, orbiting, orbited, composition.)
[7]SD4.1	Comparing and contrasting characteristics of planets and stars (i.e. light reflecting, light emitting, orbiting, orbited, composition.)
[8]SD4.1	Creating models of the solar system illustrating size, location/position, composition, moons/rings, and conditions.