

Jemez Valley Public Schools
SIXTH GRADE SCIENCE • CONTENT MAP

Quadrant I	Quadrant II	Quadrant III	Quadrant IV
Strand I: Scientific Thinking and Practice			
Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.			
<p>(Apply Throughout Year) Construct appropriate graphs from data and develop qualitative and quantitative statements about the relationships between variables being investigated</p> <p>Examine the reasonableness of data supporting a proposed scientific explanation</p> <p>Justify predictions and conclusions based on data</p> <p>Understand that scientific knowledge is continually reviewed, critiqued, and revised as new data become available</p> <p>Understand that scientific investigations use common processes that include the collection of relevant data and observations, accurate measurements, the identification and control of variables, and logical reasoning to formulate hypotheses and explanations</p> <p>Understand that not all investigations result in defensible scientific explanations</p> <p>Evaluate the usefulness and relevance of data to an investigation</p> <p>Use probabilities, patterns, and relationships to explain data and observations.</p>			<p>Understand that scientific knowledge is continually reviewed, critiqued, and revised as new data become available</p> <p>Understand that scientific investigations use common processes that include the collection of relevant data and observations, accurate measurements, the identification and control of variables, and logical reasoning to formulate hypotheses and explanations</p> <p>Understand that scientific investigations use common processes that include the collection of relevant data and observations, accurate measurements, the identification and control of variables, and logical reasoning to formulate hypotheses and explanations</p>
Quadrant I	Quadrant II	Quadrant III	Quadrant IV
Strand II: Content of Science			
Standard I: (Physical Science) Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.			
<p>Understand that substances have characteristic properties and identify the properties of various substances (e.g., density, boiling point, solubility, chemical reactivity)</p> <p>Use properties to identify substances (e.g., for minerals: the hardness, streak, color, reactivity to acid, cleavage, fracture)</p> <p>Know that there are about 100 known elements that combine to produce compounds in living organisms and</p>	<p>Understand that substances have characteristic properties and identify the properties of various substances (e.g., density, boiling point, solubility, chemical reactivity)</p> <p>Use properties to identify substances (e.g., for minerals: the hardness, streak, color, reactivity to acid, cleavage, fracture)</p> <p>Know the differences between chemical and physical properties and how these properties can influence the interactions</p>	<p>Understand that heat energy can be transferred through conduction, radiation and convection</p> <p>Understand that some energy travels as waves (e.g., seismic, light, sound), including: the sun as source of energy for many processes on Earth, different wavelengths of sunlight (e.g., visible, ultraviolet, infrared), vibrations of matter (e.g., sound, earthquakes), different speeds through different materials</p>	<p>Identify various types of energy (e.g., heat, light, mechanical, electrical, chemical, nuclear)</p> <p>Understand that heat energy can be transferred through conduction, radiation and convection</p> <p>Know that there are many forms of energy transfer but that the total amount of energy is conserved (i.e., that energy is neither created nor destroyed)</p> <p>Understand that some energy travels as</p>

<p>nonliving substances</p> <p>Know the differences between chemical and physical properties and how these properties can influence the interactions of matter</p> <p>Identify various types of energy (e.g., heat, light, mechanical, electrical, chemical, nuclear)</p> <p>Understand that heat energy can be transferred through conduction, radiation and convection</p> <p>Know that there are many forms of energy transfer but that the total amount of energy is conserved (i.e., that energy is neither created nor destroyed)</p> <p>Understand that some energy travels as waves (e.g., seismic, light, sound), including: the sun as source of energy for many processes on Earth, different wavelengths of sunlight (e.g., visible, ultraviolet, infrared), vibrations of matter (e.g., sound, earthquakes), different speeds through different materials</p>	<p>of matter</p> <p>Understand that some energy travels as waves (e.g., seismic, light, sound), including: the sun as source of energy for many processes on Earth different wavelengths of sunlight (e.g., visible, ultraviolet, infrared) vibrations of matter (e.g., sound, earthquakes) different speeds through different materials</p> <p>Know that every object exerts gravitational force on every other object dependent on the masses and distance of separation (e.g., motions of celestial objects, tides)</p> <p>Know that gravitational force is hard to detect unless one of the objects (e.g., Earth) has a lot of mass</p>	<p>Know that gravitational force is hard to detect unless one of the objects (e.g., Earth) has a lot of mass</p>	<p>waves (e.g., seismic, light, sound), including: the sun as source of energy for many processes on Earth, different wavelengths of sunlight (e.g., visible, ultraviolet, infrared), vibrations of matter (e.g., sound, earthquakes), different speeds through different materials</p> <p>Know that every object exerts gravitational force on every other object dependent on the masses and distance of separation (e.g., motions of celestial objects, tides)</p> <p>Know that gravitational force is hard to detect unless one of the objects (e.g., Earth) has a lot of mass</p>
Quadrant I	Quadrant II	Quadrant III	Quadrant IV
Strand II: Content of Science Standard I: (Life Science) Understand the properties, structures, and processes of living things and the interdependence of living things and their environments..			
	<p>Understand how organisms interact with their physical environments to meet their needs (i.e., food, water, air) and how the water cycle is essential to most living systems</p> <p>Describe how weather and geologic events (e.g., volcanoes, earthquakes) affect the function of living systems</p> <p>Describe how organisms have adapted to various environmental conditions</p> <p>Understand that the fossil record provides data for how living organisms have evolved</p> <p>Describe how species have responded to changing environmental conditions over time (e.g., extinction, adaptation)</p> <p>Explain how fossil fuels were formed from animal and plant cells</p> <p>Describe the differences between substances that were produced by living organisms (e.g., fossil fuels) and substances that result from nonliving processes (e.g., igneous rocks)</p>	<p>Describe how weather and geologic events (e.g., volcanoes, earthquakes) affect the function of living systems</p> <p>Describe how organisms have adapted to various environmental conditions</p> <p>Understand that the fossil record provides data for how living organisms have evolved</p> <p>Explain how fossil fuels were formed from animal and plant cells</p> <p>Describe the differences between substances that were produced by living organisms (e.g., fossil fuels) and substances that result from nonliving processes (e.g., igneous rocks)</p>	

Jemez Valley Public Schools • CONTENT MAP			
Quadrant I	Quadrant II	Quadrant III	Quadrant IV
Strand II: Content of Science			
Standard III: (Earth and Space Science) Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.			
	<p>Know that Earth is composed of layers that include a crust, mantle, and core</p> <p>Know that Earth's crust is divided into plates that move very slowly, in response to movements in the mantle</p> <p>Know that sedimentary, igneous, and metamorphic rocks contain evidence of the materials, temperatures, and forces that created them Know that landforms are created and change through a combination of constructive and destructive forces, including: weathering of rock and soil, transportation, deposition of sediment, and tectonic activity, similarities and differences between current and past processes on Earth's surface (e.g., erosion, plate tectonics, changes in atmospheric composition), impact of volcanoes and faults on New Mexico geology</p> <p>Understand the history of Earth and how information about it comes from layers of sedimentary rock, including: sediments and fossils as a record of a very slowly changing world, evidence of asteroid impact, volcanic and glacial activity</p>	<p>Describe the composition (i.e., nitrogen, oxygen, water vapor) and strata of Earth's atmosphere, and differences between the atmosphere of Earth and those of other planets</p> <p>Understand factors that create and influence weather and climate, including: heat, air movement, pressure, humidity, oceans, how clouds form by condensation of water vapor, how weather patterns are related to atmospheric pressure, global patterns of atmospheric movement (e.g., El Niño), factors that can impact Earth's climate (e.g., volcanic eruptions, impacts of asteroids, glaciers)</p> <p>Understand how to use weather maps and data (e.g., barometric pressure, wind speeds, humidity) to predict weather Know that landforms are created and change through a combination of constructive and destructive forces, including: weathering of rock and soil, transportation, deposition of sediment, and tectonic activity, similarities and differences between current and past processes on Earth's surface (e.g., erosion, plate tectonics, changes in atmospheric composition), impact of volcanoes and faults on New Mexico geology</p> <p>Understand the history of Earth and how information about it comes from layers of sedimentary rock, including: sediments and fossils as a record of a very slowly changing world, evidence of asteroid impact, volcanic and glacial activity</p>	<p>Describe the objects in the universe, including: billions of galaxies, each containing billions of stars, different sizes, temperatures, and colors of stars in the Milky Way galaxy</p> <p>Locate the solar system in the Milky Way galaxy</p> <p>Identify the components of the solar system, and describe their defining characteristics and motions in space, including: sun as a medium sized star, sun's composition (i.e., hydrogen, helium) and energy production, nine planets, their moons, asteroids</p> <p>Know that the regular and predictable motions of the Earth-moon-sun system explain phenomena on Earth, including: Earth's motion in relation to a year, a day, the seasons, the phases of the moon, eclipses, tides, and shadows, moon's orbit around Earth once in 28 days in relation to the phases of the moon</p>
Quadrant I	Quadrant II	Quadrant III	Quadrant IV
Strand II: Science and Society			
Standard I: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.			

			<p>Examine the role of scientific knowledge in decisions (e.g., space exploration, what to eat, preventive medicine and medical treatment)</p> <p>Describe the technologies responsible for revolutionizing information processing and communications (e.g., computers, cellular phones, Internet)</p>
--	--	--	--