

**White County Schools
6th Grade Science**

State-Approved Curriculum:

Tennessee Academic Standards found [here](#).
White County Board Policy [4.400](#) - Instructional Materials

First Nine Weeks			
<u>Objectives/Topics Covered</u>	<u>Standards</u>	<u>Materials and Resources</u>	<u>Major Assignments</u>
Topic one Energy - Students model the relationship between kinetic and potential energy. - Students use scientific evidence to identify and relate different forms of energy. - Students investigate the relationship between temperature, thermal energy, and heat. - Students model proportional relationships to explain that energy is neither created nor destroyed.	6-PS3-1 Analyze the sources of energy in a system to gather evidence supporting that energy is conserved during transfers of kinetic, potential (elastic, gravitational, and chemical), and/or thermal energy. 6-PS3-2 Use a model to gather evidence to support changes to a system that can be caused by transfers of sound or thermal energy (i.e., conduction, convection, or radiation).	- Elevate Science Grade 6 SAVVAS - SAVVAS lab kits (all needed lab materials are provided by text lab kits)	TOPIC 1 - Quiz- Kinetic energy and potential energy - Quiz- Other forms of Energy - Quiz- Thermal energy - Quiz- Energy Change and Conservation - Test- Energy TOPIC 2 - Quiz- Living things and the environment - Quiz-interactions in Ecosystems - Energy flow in ecosystems - Test- Topic Ecosystems, Populations, and Energy - Mastery Connect Benchmark
Topic two Ecosystems, Populations, and Energy	6-LS2-1 Use data to evaluate and		

• Students will investigate ecosystems and the effects of limiting factors on populations. • Students model different types of relationships between organisms and how changes to one population may impact another. • Using models, students construct explanations about energy flow in ecosystems.	communicate the impact of environmental variables, both living and nonliving (e.g., food, water, oxygen, and other resources), on population size within a system. • 6-LS2-2 Construct an explanation that predicts patterns of competitive, symbiotic, and predatory interactions among organisms across ecosystems. • 6-LS2-3 Use a model to construct an explanation about the transfer of energy through a food web and energy pyramid in an ecosystem. • 6.ETS1: Engineering Design 2) Design, construct, and test a device that either minimizes or maximizes thermal energy transfer by combining solutions		
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	or parts of solutions to solve a problem that can be communicated and explained to others.		
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Second Nine Weeks			
<u>Objectives/Topics Covered</u>	<u>Standards</u>	<u>Materials and Resources</u>	<u>Major Assignments</u>
Topic three Ecosystem Health and Biodiversity - Students investigate terrestrial ecosystems and the effect of invasive species on native populations. - Students investigate aquatic ecosystems and the effect of invasive species on native populations. - Students investigate the importance of biodiversity and design solutions for maintaining biodiversity. Topic four Earth's Hydrosphere and Atmosphere - Students investigate how differences in air pressure caused by the unequal heating of the	6-LS2-4 Construct an explanation that uses abiotic (e.g., precipitation, temperature, soil) and biotic (e.g., biodiversity, number of organisms) patterns in earth's terrestrial and aquatic ecosystems (e.g., tundra, taiga, deciduous forest, desert, grasslands, rainforest, marine, and freshwater) as measures of ecosystem health. 6-LS2.5) Analyze existing evidence about the effect of a specific invasive species on native populations in Tennessee and design a solution to mitigate its impact.	- Elevate Science Grade 6 SAVVAS - SAVVAS lab kits (all needed lab materials are provided by text lab kits)	TOPIC 3 - Quiz- Terrestrial Ecosystems - Quiz- Aquatic Ecosystems - Quiz- Benefits of Biodiversity - Test- Ecosystem Health and Biodiversity TOPIC 4 - Quiz- Patterns in Earth's atmosphere - Quiz- Patterns in Earth's Ocean - Quiz- The Water Cycle - Test- Earth's Hydrosphere and Atmosphere - Mastery Connect Benchmark 3

atmosphere create global and local winds and how the rotation of Earth produces patterns of calm areas and global wind belts. • Students investigate how unequal heating and Earth's rotation produce patterns of ocean circulation that distribute energy. • Students investigate how water is always moving between the surface of Earth and the atmosphere, the processes that drive the water cycle, and how the water cycle affects the weather.	• 6.LS4: Biological Change: Unity and Diversity 1) Explain how changes to biodiversity in a system would impact human resources (e.g., food, medicine, and clean water) and "ecosystem services" (e.g., climate stabilization, decomposition of waste, and pollination) • 6.ETS1: Engineering Design 1) Design, evaluate, and improve a possible solution for maintaining biodiversity of ecosystems. • 6.ESS2: Earth's Systems 1) Diagram oceanic and atmospheric convection patterns in a system that flow due to uneven heating of the earth. • 6.ESS2: Earth's Systems 2)Gather evidence to justify that oceanic convection		
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	currents in a system are caused by the sun's transfer of thermal energy and differences in salinity leading to global water movement. 6.ESS2: Earth's Systems 4) Develop and use a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.		
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Third Nine Weeks			
<u>Objectives/Topics Covered</u>	<u>Standards</u>	<u>Materials and Resources</u>	<u>Major Assignments</u>
Topic 5 Earth's Climates - Students investigate the impact greenhouse gases and rising temperatures have on Earth - Students investigate the movement of air masses to identify the type of fronts and weather that can develop. - Students investigate how factors such as latitude,	6.ESS2: Earth's Systems-3 Construct an explanation for how atmospheric flow, geographic features, and ocean currents affect the climate of a region through heat transfer. 6.ESS2: Earth's Systems-6 Develop a model to explain the role of greenhouse gases in	- Elevate Science Grade 6 SAVVAS - SAVVAS lab kits (all needed lab materials are provided by text lab kits)	TOPIC 5 - Quiz- Heating Earth's surface - Quiz- Weather - Quiz- Climate - Test- Earths Climate TOPIC 6 - Quiz- Water cycle - Quiz- Atmospheric Systems - Quiz- Managing Earth's Resources

altitude, land distribution, and ocean currents influence climate patterns Topic 6 Earth and Human Activity - Students investigate how increases in human population and need for natural resources impacts the water cycle and landforms. - Students model how energy is transferred from the sun to Earth's surface and air by radiation, conduction, and convection. - Students explore the diversity of nonrenewable energy sources and the impact of their scarcity on human energy use. - Students investigate how increases in human population and need for natural resources impacts Earth's systems.	regulating the Earth's average surface temperature and keeping it habitable. 6.ESS2: Earth's Systems-7 Collect data to provide evidence for how the interactions of air masses result in changes in local weather conditions and how that data can be used to predict probable local weather patterns. 6.ESS2: Earth's Systems-5 Analyze and interpret data to determine the impact of humans and other organisms on the water cycle, landforms (e.g., rain shadow effect) and atmospheric systems. 6.ESS3: Earth and Human Activity 1) Use data to explain the consumption and sustainability of natural resources (non-renewable and renewable) and the resulting impact on Earth's system. 6.ESS3: Earth and		- Test- Earth and Human activity - Mastery connect Benchmark 3
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	Human Activity-2 Investigate and compare existing and developing technologies that utilize renewable and alternative energy resources. 6.ESS3: Earth and Human Activity-3 Obtain, evaluate, and communicate information about the impacts of human activities on the biosphere including conservation, habitat management, species endangerment, and extinction.		
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Fourth Nine Weeks			
<u>Objectives/Topics Covered</u>	<u>Standards</u>	<u>Materials and Resources</u>	<u>Major Assignments</u>
Review All Topics for TCAP Testing	Review All Standards for TCAP Testing	- Elevate Science Grade 6 SAVVAS - SAVVAS lab kits (all needed lab materials are provided by text lab kits)	TCAP Test