6th Grade Yearlong Scope and Sequence							
Quarter 1	Quarter 2		Quarter 3				Quarter 4
Unit 1 **Energy**	Unit 2 Relationships Among Organisms	Unit 3 Earth's Biomes and Ecosystems	Unit 4 Earth's Resources	Unit 5 Human Impact on the Environment	Unit 6 Earth's Water	Unit 7 Earth's Systems	Unit 8 Weather and Climate
8 weeks	4 weeks	5 weeks	3 weeks	2 weeks	1 week	3 weeks	9 weeks

UNIT 1: Energy (8 weeks)

Overarching Question(s)

How is energy transferred and conserved?

Three Dimensional Science Components	TN Academic Standard(s) for Science
DCI(s) PS3: Energy ETS1: Engineering Design **Suggested Science and Engineering Practice(s)** • Developing and Using Models • Planning and Carrying out Controlled Investigations • Analyzing and Interpreting Data **Suggested Crosscutting Concept(s)** • Energy and Matter • Stability and Change • Scale, Proportion, and Quantity • Systems and System Models • Structure and Function	**6.PS3.1** Analyze the properties and compare the sources of kinetic, elastic potential, gravitational potential, electric potential, chemical, and thermal energy. **6.PS3.2** Construct a scientific explanation of the transformation between potential and kinetic energy. **6.PS3.3** Analyze and interpret data to show the relationship between kinetic energy and the mass of an object and its speed. **6.PS3.4** Conduct an investigation to demonstrate the way that heat (thermal energy) moves among objects through radiation, conduction, or convection. **6.ETS1.2** Design and test different solutions that impact energy transfer.

6th Grade Yearlong Scope and Sequence							
Quarter 1	Quarter 2		Quarter 3				Quarter 4
Unit 1 Energy	**Unit 2 Relationships Among Organisms**	Unit 3 Earth's Biomes and Ecosystems	Unit 4 Earth's Resources	Unit 5 Human Impact on the Environment	Unit 6 Earth's Water	Unit 7 Earth's Systems	Unit 8 Weather and Climate
8 weeks	**4 weeks**	5 weeks	3 weeks	2 weeks	1 week	3 weeks	9 weeks

UNIT 2: Relationships Among Organisms (4 weeks)

Overarching Question(s)

How and why do organisms interact with the living and nonliving environments to obtain matter and energy?

Three Dimensional Science Components	TN Academic Standard(s) for Science
DCI(s) LS2: Ecosystems: Interactions, Energy, and Dynamics **Suggested Science and Engineering Practice(s)** • Obtaining, Evaluating, and Communicating Information • Engaging in Argument from Evidence • Developing and Using Models • Constructing Explanations and Designing Solutions • Asking Questions (for Science) and Defining Problems (for Engineering) **Suggested Crosscutting Concept(s)** • Cause and Effect • Patterns • Energy and Matter • Systems and System Models	**6.LS2.1** Evaluate and communicate the impact of environmental variables on population size. **6.LS2.2** Determine the impact of competitive, symbiotic, and predatory interactions in an ecosystem. **6.LS2.3** Draw conclusions about the transfer of energy through a food web and energy pyramid in an ecosystem. **6.LS2.4** Using evidence from climate data, draw conclusions about the patterns of abiotic and biotic factors in different biomes, specifically the tundra, taiga, deciduous forest, desert, grasslands, rainforest, marine, and freshwater ecosystems. **6.LS2.7** Compare and contrast auditory and visual methods of communication among organisms in relation to survival strategies of a population.

6th Grade Yearlong Scope and Sequence							
Quarter 1	Quarter 2		Quarter 3				Quarter 4
Unit 1 Energy	Unit 2 Relationships Among Organisms	**Unit 3 Earth's Biomes and Ecosystems**	Unit 4 Earth's Resources	Unit 5 Human Impact on the Environment	Unit 6 Earth's Water	Unit 7 Earth's Systems	Unit 8 Weather and Climate
8 weeks	4 weeks	**5 weeks**	3 weeks	2 weeks	1 week	3 weeks	9 weeks

UNIT 3: Earth's Biomes and Ecosystems (5 weeks)

Overarching Question(s)

How and why do organisms interact with their environment and what are the effects of these interactions?

Three Dimensional Science Components	TN Academic Standard(s) for Science
DCI(s) LS2: Ecosystems: Interactions, Energy, and Dynamics LS4: Biological Change: Unity and Diversity ESS2: Earth's Systems ETS1: Engineering Design **Suggested Science and Engineering Practice(s)** • Engaging in Argument from Evidence • Obtaining, Evaluating, and Communicating Information • Asking Questions (for Science) and Defining Problems (for Engineering) • Constructing Explanations and Designing Solutions **Suggested Crosscutting Concept(s)** • Patterns • Cause and Effect • Stability and Change	**6.LS2.4** Using evidence from climate data, draw conclusions about the patterns of abiotic and biotic factors in different biomes, specifically the tundra, taiga, deciduous forest, desert, grasslands, rainforest, marine, and freshwater ecosystems. **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. **6.LS2.6** Research the ways in which an ecosystem has changed over time in response to changes in physical conditions, population balances, human interactions, and natural catastrophes. **6.LS4.1** Explain how changes in biodiversity would impact ecosystem stability and natural resources. **6.LS4.2** Design a possible solution for maintaining biodiversity of ecosystems while still providing necessary human resources without disrupting environmental equilibrium. *__6.ESS3.3__ Assess the impacts of human activities on the biosphere including conservation, habitat management, species endangerment, and extinction.* **6.ETS1.1** Evaluate design constraints on solutions for maintaining ecosystems and biodiversity.

6th Grade Yearlong Scope and Sequence							
Quarter 1	Quarter 2		Quarter 3				Quarter 4
Unit 1 Energy	Unit 2 Relationships Among Organisms	Unit 3 Earth's Biomes and Ecosystems	**Unit 4 Earth's Resources**	Unit 5 Human Impact on the Environment	Unit 6 Earth's Water	Unit 7 Earth's Systems	Unit 8 Weather and Climate
8 weeks	4 weeks	5 weeks	**3 weeks**	2 weeks	1 week	3 weeks	9 weeks

UNIT 4: Earth's Resources and Human Impact on the Environment (3 weeks)

Overarching Question(s)

How is energy transferred and conserved?
How do the Earth's surface processes and human activities affect each other?

Three Dimensional Science Components	TN Academic Standard(s) for Science
DCI(s) PS3: Energy ESS3: Earth and Human Activity **Suggested Science and Engineering Practice(s)** • Planning and Carrying out Controlled Investigations • Constructing Explanations and Designing Solutions • Obtaining, Evaluating, and Communicating Information **Suggested Crosscutting Concept(s)** • System and System Models • Cause and Effect • Energy ad Matter	**6.PS3.4** Conduct an investigation to demonstrate the way that heat (thermal energy) moves among objects through radiation, conduction, or convection. **6.ESS3.1** Differentiate between renewable and nonrenewable resources by asking questions about their availability and sustainability. **6.ESS3.2** Investigate and compare existing and developing technologies that will utilize renewable and alternate energy sources. **6.ESS3.3** Assess the impacts of human activities on the biosphere including conservation, habitat management, species endangerment, and extinction.

6th Grade Yearlong Scope and Sequence							
Quarter 1	Quarter 2		Quarter 3				Quarter 4
Unit 1 Energy	Unit 2 Relationships Among Organisms	Unit 3 Earth's Biomes and Ecosystems	Unit 4 Earth's Resources	**Unit 5 Human Impact on the Environment**	Unit 6 Earth's Water	Unit 7 Earth's Systems	Unit 8 Weather and Climate
8 weeks	4 weeks	5 weeks	3 weeks	**2 weeks**	1 week	3 weeks	9 weeks

UNIT 5: Human Impact on the Environment (2 weeks)

Overarching Question(s)

How and why is Earth constantly changing?

Three Dimensional Science Components	TN Academic Standard(s) for Science
DCI(s) ESS2: Earth Systems ESS3: Earth and Human Activity **Suggested Science and Engineering Practice(s)** • Using Mathematical and Computational Thinking • Constructing Explanations and Designing Solutions **Suggested Crosscutting Concept(s)** • Scale, Proportion, and Quantity • Cause and Effect	**6.ESS2.4** Apply scientific principles to design a method to analyze and interpret the impact of humans and other organisms on the hydrologic cycle. **6.ESS3.3** Assess the impacts of human activities on the biosphere including conservation, habitat management, species endangerment, and extinction.

6th Grade Yearlong Scope and Sequence							
Quarter 1	Quarter 2		Quarter 3				Quarter 4
Unit 1 Energy	Unit 2 Relationships Among Organisms	Unit 3 Earth's Biomes and Ecosystems	Unit 4 Earth's Resources	Unit 5 Human Impact on the Environment	**Unit 6 Earth's Water**	Unit 7 Earth's Systems	Unit 8 Weather and Climate
8 weeks	4 weeks	5 weeks	3 weeks	2 weeks	**1 week**	3 weeks	9 weeks

UNIT 6: Earth's Water (1 week)

Overarching Question(s)

How and why is Earth constantly changing?

Three Dimensional Science Components	TN Academic Standard(s) for Science
DCI(s) ESS2: Earth's Systems ESS3: Earth and Human Activity **Suggested Science and Engineering Practice(s)** • Using Mathematical and Computational Thinking • Constructing Explanations and Designing Solutions **Suggested Crosscutting Concept(s)** • Scale, Proportion, and Quantity • Cause and Effect	**6.ESS2.4** Apply scientific principles to design a method to analyze and interpret the impact of humans and other organisms on the hydrologic cycle **6.ESS3.3** Assess the impacts of human activities on the biosphere including conservation, habitat management, species endangerment, and extinction.

6th Grade Yearlong Scope and Sequence							
Quarter 1	Quarter 2		Quarter 3				Quarter 4
Unit 1 Energy	Unit 2 Relationships Among Organisms	Unit 3 Earth's Biomes and Ecosystems	Unit 4 Earth's Resources	Unit 5 Human Impact on the Environment	Unit 6 Earth's Water	**Unit 7 Earth's Systems**	Unit 8 Weather and Climate
8 weeks	4 weeks	5 weeks	3 weeks	2 weeks	1 week	**3 weeks**	9 weeks

UNIT 7: Earth's Systems (1 week)

Overarching Question(s)

How and why is Earth constantly changing?

Three Dimensional Science Components	TN Academic Standard(s) for Science
DCI(s) ESS2: Earth Systems **Suggested Science and Engineering Practice(s)** • Engaging in Argument from Evidence • Developing and Using Models • Constructing Explanations and Designing Solutions **Suggested Crosscutting Concept(s)** • Cause and Effect • Systems and System Models	**6.ESS2.1** Gather evidence to justify that oceanic convection currents are caused by the sun's transfer of heat energy and differences in salt concentration leading to global water movement. **6.ESS2.2** Diagram convection patterns that flow due to uneven heating of the earth. **6.ESS2.3** Construct explanation for how atmospheric flow, geographic features, and ocean currents affect the climate of a region through heat transfer.

6th Grade Yearlong Scope and Sequence							
Quarter 1	Quarter 2		Quarter 3				**Quarter 4**
Unit 1 Energy	Unit 2 Relationships Among Organisms	Unit 3 Earth's Biomes and Ecosystems	Unit 4 Earth's Resources	Unit 5 Human Impact on the Environment	Unit 6 Earth's Water	Unit 7 Earth's Systems	**Unit 8 Weather and Climate**
8 weeks	4 weeks	5 weeks	3 weeks	2 weeks	1 week	3 weeks	**9 weeks**

UNIT 8: Weather and Climate (9 weeks)

Overarching Question(s)

How and why is Earth constantly changing?

Three Dimensional Science Components	TN Academic Standard(s) for Science
DCI(s) ESS2: Earth's Systems **Suggested Science and Engineering Practice(s)** • Developing and Using Models • Constructing Explanations and Designing Solutions • Analyzing and Interpreting Data **Suggested Crosscutting Concept(s)** • Systems and Systems Models • Energy and Matter	**6.ESS2.2** Diagram convection patterns that flow due to uneven heating of the earth. **6.ESS2.3** Construct explanation for how atmospheric flow, geographic features, and ocean currents affect the climate of a region through heat transfer. **6.ESS2.5** Analyze and interpret data from weather conditions, weather maps, satellites, and radar to predict probable local weather patterns and conditions. **6.ESS2.6** Explain how relationships between the movement and interactions of air masses, high and low pressure systems, and frontal boundaries result in weather conditions and severe storms.