7th Grade Yearlong Scope and Sequence					
Quarter 1	Quarter 2		Quarter 3	Quarter 4	
Unit 1 **Matter**	Unit 2 Cell Structure and Function	Unit 3 Human Body Systems	Unit 4 Reproduction, Survival, and Heredity	Unit 5 Cycling of Matter and Energy	Unit 6 Earth's Atmosphere
8 weeks	6 weeks	3 weeks	9 weeks	3 weeks	6 weeks

UNIT 1: Matter (8 weeks)

Overarching Question(s)

How can one explain the structure, properties, and interactions of matter?

Three Dimensional Science Components	TN Academic Standard(s) for Science
DCI(s) PS1: Matter and Its Interactions **Suggested Science and Engineering Practice(s)** • Developing and Using Models • Analyzing and Interpreting Data • Engaging in Argument from Evidence **Suggested Crosscutting Concept(s)** • Cause and Effect • Patterns • Energy and Matter • Scale, Proportion, and Quantity • Structure and Function • Stability and Change	**7.PS1.1** Develop and use models to illustrate the structure of atoms, including the subatomic particles with their relative positions and charge. **7.PS1.2** Compare and contrast elemental molecules and compound molecules. **7.PS1.3** Classify matter as pure substances or mixtures based on composition. **7.PS1.4** Analyze and interpret chemical reactions to determine if the total number of atoms in the reactants and products support the Law of Conservation of Mass. **7.PS1.5** Use the periodic table as a model to analyze and interpret evidence relating to physical and chemical properties to identify a sample of matter. **7.PS1.6** Create and interpret models of substances whose atoms represent the states of matter with respect to temperature and pressure.

7th Grade Yearlong Scope and Sequence					
Quarter 1	Quarter 2		Quarter 3	Quarter 4	
Unit 1 Matter	Unit 2 Cell Structure and Function	Unit 3 Human Body Systems	Unit 4 Reproduction, Survival, and Heredity	Unit 5 Cycling of Matter and Energy	Unit 6 Earth's Atmosphere
8 weeks	6 weeks	3 weeks	9 weeks	3 weeks	6 weeks

UNIT 2: Cell Structure and Function (6 weeks)

Overarching Question(s)

How do organisms live, grow, respond to their environment, and reproduce?

Three Dimensional Science Components	TN Academic Standard(s) for Science
DCI(s) LS1: From Molecules to Organisms: Structures and Processes **Suggested Science and Engineering Practice(s)** • Developing and Using Models • Constructing Explanations and Designing Solutions • Planning and Carrying out Controlled Investigations **Suggested Crosscutting Concept(s)** • Structure and Function • Systems and System Models	**7.LS1.1** Develop and construct models that identify and explain the structure and function of major cell organelles as they contribute to the life activities of the cell and organism. **7.LS1.2** Conduct an investigation to demonstrate how the cell membrane maintains homeostasis through the process of passive transport. **7. LS1.3** Evaluate evidence that cells have structural similarities and differences across kingdoms. **7.LS1.4** Diagram the hierarchical organization of multicellular organisms from cells to organism.

7th Grade Yearlong Scope and Sequence					
Quarter 1	Quarter 2		Quarter 3	Quarter 4	
Unit 1 Matter	Unit 2 Cell Structure and Function	**Unit 3 Human Body Systems**	Unit 4 Reproduction, Survival, and Heredity	Unit 5 Cycling of Matter and Energy	Unit 6 Earth's Atmosphere
8 weeks	6 weeks	**3 weeks**	9 weeks	3 weeks	6 weeks

UNIT 3: Human Body Systems (3 weeks)

Overarching Question(s)

How do organisms live, grow, respond to their environment, and reproduce?
How are engineering, technology, science, and society interconnected?

Three Dimensional Science Components	TN Academic Standard(s) for Science
DCI(s) LS1: From Molecules to Organisms: Structures and Processes ETS2: Links Among Engineering, Technology, Science, and Society **Suggested Science and Engineering Practice(s)** • Asking Questions (for Science) and Defining Problems (for Engineering) • Constructing Explanations and Designing Solutions **Suggested Crosscutting Concept(s)** • Stability and Change • Structure and Function	**7.LS1.5** Explain that the body is a system comprised of subsystems that maintain equilibrium and support life through digestion, respiration, excretion, circulation, sensation (nervous and integumentary) and locomotion (musculoskeletal). **7.ETS2.1** Examine a problem from the medical field pertaining to biomaterials and design a solution taking into consideration the criteria, constraints, and relevant scientific principles of the problem that may limit possible solutions.

7th Grade Yearlong Scope and Sequence					
Quarter 1	Quarter 2		**Quarter 3**	Quarter 4	
Unit 1 Matter	Unit 2 Cell Structure and Function	Unit 3 Human Body Systems	**Unit 4 Reproduction, Survival, and Heredity**	Unit 5 Cycling of Matter and Energy	Unit 6 Earth's Atmosphere
8 weeks	6 weeks	3 weeks	**9 weeks**	3 weeks	6 weeks

UNIT 4: Reproduction, Survival, and Heredity (9 weeks)

Overarching Question(s)

How can one explain the structure, properties, and interactions of matter?

Three Dimensional Science Components	TN Academic Standard(s) for Science
DCI(s) LS1: From Molecules to Organisms: Structures and Processes LS3: Heredity **Suggested Science and Engineering Practice(s)** • Constructing Explanations and Designing Solutions • Developing and Using Models • Obtaining, Evaluating, and Communicating Information • Engaging in Argument from Evidence • Using Mathematics and Computational Thinking **Suggested Crosscutting Concept(s)** • Energy and Matter • Cause and Effect • Patterns • Scale, Proportion, and Quantity • Structure and Function	**7.LS1.6** Develop an argument based on empirical evidence and scientific reasoning to explain how behavioral and structural adaptations in animals and plants affect the probability of survival and reproductive success. **7.LS1.7** Evaluate and communicate evidence that compares and contrasts the advantages and disadvantages of sexual and asexual reproduction. **7.LS1.8** Construct an explanation demonstrating that the function of mitosis for multicellular organisms is for growth and repair through the production of genetically identical daughter cells. **7.LS3.1** Hypothesize that the impact of structural changes to genes (i.e., mutations) located on chromosomes may result in harmful, beneficial, or neutral effects to the structure and function of the organism. **7.LS3.2** Distinguish between mitosis and meiosis and compare the resulting daughter cells. **7.LS3.3** Predict the probability of individual dominant and recessive alleles to be transmitted from each parent to offspring during sexual reproduction and represent the genotypic and phenotypic patterns using ratios.

7th Grade Yearlong Scope and Sequence					
Quarter 1	Quarter 2		Quarter 3	**Quarter 4**	
Unit 1 Matter	Unit 2 Cell Structure and Function	Unit 3 Human Body Systems	Unit 4 Reproduction, Survival, and Heredity	**Unit 5 Cycling of Matter and Energy**	Unit 6 Earth's Atmosphere
8 weeks	6 weeks	3 weeks	9 weeks	**3 weeks**	6 weeks

UNIT 5: Cycling of Matter and Energy (3 weeks)

Overarching Question(s)

How do organisms live, grow, respond to their environment, and reproduce?
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) LS1: From Molecules to Organisms: Structures and Processes LS2: Ecosystems: Interactions, Energy, and Dynamics **Suggested Science and Engineering Practice(s)** • Constructing Explanations and Designing Solutions • Developing and Using Models **Suggested Crosscutting Concept(s)** • Energy and Matter	**7.LS1.9** Construct a scientific explanation based on compiled evidence for the processes of photosynthesis, cellular respiration, and anaerobic respiration in the cycling of matter and flow of energy into and out of organisms. **7.LS2.1** Develop a model to depict the cycling of matter, including carbon and oxygen, including the flow of energy among biotic and abiotic parts of an ecosystem.

7th Grade Yearlong Scope and Sequence					
Quarter 1	Quarter 2		Quarter 3	**Quarter 4**	
Unit 1 Matter	Unit 2 Cell Structure and Function	Unit 3 Human Body Systems	Unit 4 Reproduction, Survival, and Heredity	Unit 5 Cycling of Matter and Energy	**Unit 6 Earth's Atmosphere**
8 weeks	6 weeks	3 weeks	9 weeks	3 weeks	**6 weeks**

UNIT 6: Earth's Atmosphere (6 weeks)

Overarching Question(s)

How do Earth's surface processes and human activities affect each other?

Three Dimensional Science Components	TN Academic Standard(s) for Science
DCI(s) ESS3: Earth and Human Activity **Suggested Science and Engineering Practice(s)** • Using Mathematics and Computational Thinking • Asking Questions (for Science) and Defining Problems (for Engineering) **Suggested Crosscutting Concept(s)** • Stability and Change	**7.ESS3.1** Graphically represent the composition of the atmosphere as a mixture of gases and discuss the potential for atmospheric change. **7.ESS3.2** Engage in a scientific argument through graphing and translating data regarding human activity and climate.