5th Grade Science Curriculum

Unit	Standards Covered	Unit Objectives	Quarter
Unit 1- STEM overview and Scientific Method basics	Overview of all PA and Next Generation Standards	Students will understand what STEM stands for and why it is important in today's world. Students will understand and analyze how the Scientific Method works and why it is necessary for conducting experiments.	Q1
Individual Teacher Content			
Unit 2- Biological Sciences: Organisms and Cells	3.1.A: Organisms and Cells Standard - 3.1.5.A2 Describe how life on earth depends on energy from the sun. Standard - 3.1.5.A3 Compare and contrast the similarities and differences in life cycles of different organisms. Standard - 3.1.5.A5 Explain the concept of a cell as the basic unit of life. Compare and contrast plant and animal cells.	Students will understand and apply what an organism is and be able to differentiate between the two main types of cells	Q1
Individual Teacher Content (Units 2 & 4 content can be combined)	**Mystery Science Unit-Web of Life** • Lesson 1 Food Chains, Predators, Herbivores, & Carnivores • Lesson 2 Plants Need Air and Water • Lesson 3 Decomposers & Matter Cycle • Lesson 4 Decomposers, Nutrients, & Matter Cycle • Lesson 5 Ecosystems & Matter Cycle • Lesson 6 Food Webs & Flow of Energy		
Unit 3- Biological Sciences: Genetics & Evolution	3.1.B: Genetics Standard - 3.1.5.B1Differentiate between inherited and acquired characteristics of plants and animals 3.1.C: Evolution Standard - 3.1.5.C1 Describe how organisms meet some of their needs in an environment by using behaviors (patterns of activities) in	Students will understand and apply skills to understand genetics, learned vs. inherited characteristics, and adaptations of both plants and animals.	Q2

	response to information (stimuli) received from the environment. Standard - 3.1.5.C2 Give examples of how inherited characteristics (e.g., shape of beak, length of neck, location of eyes, shape of teeth) may change over time as adaptations to changes in the environment that enable organisms to survive.		
Unit 4: Biological Sciences: Ecosystems, Biomes & Food Webs	7S5.B.3.1 Describe the relationships between organisms in different ecosystems. Eligible Content - S5.B.3.1.1 Describe the roles of producers, consumers, and decomposers within a local ecosystem. Eligible Content - S5.B.3.1.2 Describe the relationships between organisms in different food webs.	Students will understand the different ecosystems that organisms live in. Apply previous skills of understanding adaptations. Understand food webs and why they are important.	**Q2**
Individual Teacher Content	**Mystery Science Unit-Web of Life** ● Lesson 1 Food Chains, Predators, Herbivores, & Carnivores ● Lesson 2 Plants Need Air and Water ● Lesson 3 Decomposers & Matter Cycle ● Lesson 4 Decomposers, Nutrients, & Matter Cycle ● Lesson 5 Ecosystems & Matter Cycle ● Lesson 6 Food Webs & Flow of Energy		
Unit 5: Physical Sciences: Chemistry	Standard - 3.2.5.A1Describe how water can be changed from one state to another by adding or taking away heat. Assessment Anchor - S5.C.1 Structure, Properties, and Interaction of Matter and Energy ● Eligible Content - S5.C.1.1.1 Identify characteristic properties of matter that are independent of mass and volume. ● Eligible Content - S5.C.1.1.2 Differentiate between volume and mass. ● Eligible Content - S5.C.1.2.1 Describe how water changes from one state to	Students will understand how water can be changed from one state to another by adding or taking away heat, review the states of matter, review the properties of matter, and identify differences between chemical and physical changes in matter.	**Q3**

	another. ● Eligible Content - S5.C.1.2.2 Identify differences between chemical and physical changes of matter.		
Individual Teacher Content	**Mystery Science Unit; Chemical Reactions & Properties of Matter** ● Lesson 1 Chemistry and Conservation of Matter ● Lesson 2 Dissolving & Particulate Nature of Matter ● Lesson 3 Acids & Reactions, Properties of Matter ● Lesson 4 Chemical Reactions ● Lesson 5 Gasses & Particle Models		
Unit 5: Physical Sciences: Physics	Standard - 3.2.5.B1 Explain how mass of an object resists change to motion. Standard - 3.2.5.B2 Examine how energy can be transferred from one form to another. Standard - 3.2.5.B3 Demonstrate how heat energy is usually a byproduct of an energy transformation. Standard - 3.2.5.B4 Demonstrate how electrical circuits provide a means of transferring electrical energy when heat, light, sound, and chemical changes are produced. Demonstrate how electromagnets can be made and used. Standard - 3.2.5.B5 Compare the characteristics of sound as it is transmitted through different materials. Relate the rate of vibration to the pitch of the sound.	Students will understand and apply physics concepts throughout interactive lessons.	**Q3**
Unit 7: Earth and Space Sciences: Earth Structure, Processes and Cycles	3.3.5.A1-Describe how landforms are the result of a combination of destructive forces such as erosion and constructive erosion, deposition of sediment, etc. 3.3.5.A3- Explain how geological processes observed today such as erosion, movement of lithospheric plates, and changes in the composition of the atmosphere are similar to those in the past. 3.3.5.A4-Explain the basic components of the water cycle.	For students to learn about Earth Structure, Processes and Cycles through interactive videos, slides, and other activities.	**Q4**

Individual Teacher Content	**Mystery Science Unit: Water Cycle & Earth's Systems** ● Lesson 1 Hydrospheres & the Roles of Water ● Lesson 2 Mixtures and Solutions ● Lesson 3 Groundwater as Natural Resource ● Lesson 4 Water Cycle ● Lesson 5 Natural Disasters & Engineering		
Unit Earth and Space Sciences: Our Solar System	S5.D.3.1.1 Describe the patterns of Earth's rotation and revolution in relation to the Sun and Moon (i.e., solar eclipse, phases of the Moon, and time). S5.D.3.1.2 Compare the general characteristics of the inner planets of our solar system (i.e., size, orbital path, surface characteristics, and moons).	Students will explain the relationships between objects in our solar system.	**Q4**
Individual Teacher Content	**Mystery Science Unit: Stars and Solar Systems** ● Lesson1 Day, Night, and Earth's Rotation ● Lesson 2 Earth's Rotation and Daily Shadow Patterns ● Lesson 3 Seasonal Changes & Shadow Length ● Lesson 4 Seasonal Patterns & Earth's Orbit ● Lesson 5 Moon Phases, Lunar Cycle ● Lesson 6 Planets & Solar System ● Lesson 7 Gravity ● Lesson 8 Star Brightness & Habitable Planets		