5th Grade Science
Curriculum Mapping
2019-2020
Ashley Olsen

Unit: *1*- Physical Science	**Time:** Late *August- late November*

Standards Taught

- 5-PS1-1. Develop a model to describe that matter is made of particles too small to be seen.
- 5-PS1-2. Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.
- 5-PS1-3. Make observations and measurements to identify materials based on their properties.
- 5-PS1-4. Conduct an investigation to determine whether the mixing of two or more substances results in new substances.
- 5-PS2-1. Support an argument that the gravitational force exerted by Earth on objects is directed down.
- 5-PS3-1. Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.

Differentiation/Assessment:	**Classroom Management and Environment:**	**What will the students be doing?**
Students who needed the extra help received guided notes, extra individual practice, and shortened tests. In some cases, leveled reading material is provided, tiered projects, and hands-on experiences are provided.	*The classroom is set up in a semi-flexible seating arrangement. There is frequent movement to encourage stimulation and involvement. Expectations and procedures are clearly stated and easy to understand.*	*To understand and reinforce concepts, students will* • *Create an interactive notebook to include lab results, visual aids, vocabulary enforcement, journaling, questions/responses that reflect the use of Scientific Method* • *Conduct experiments to model that air particles are too small to be seen* • *Conduct lab experiments using household substances to model conservation of matter* • *Conduct lab experiments using household materials to model physical and chemical change* • *Use observation and experimentation to identify baking ingredients based on their given properties*

		• *Conduct experiments to prove that falling object are pulled towards to center of earth.*
Prior Knowledge Needed	**Vocabulary**	**Assessments**
Students will need to know the difference between solids, liquids, and gases. Students will also need to understand the key factors involved in physical and chemical changes.	*Matter* *Physical change* *Chemical change* *properties*	• *Lab reports will be evaluated* • *Oral question/response exams* • *Presentations of lab experiment results* • *Science journaling* • *Google Slides interactive activities and response pages*
Reflection:	**Essential Questions:** • *Is all matter visible?* • *Does the mass of an object change by melting, cooling, heating, or mixing it?* • *How can we classify objects based on their properties?* • *When mixing substances, how can I determine if a new substance has been created?* • *How does gravity affect a falling object?*	

Unit 2: Life Science	**Time:** *End November-Early January*	
Standards Taught		
• 5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water. • 5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment		
Differentiation/Assessment:	**Classroom Management and Environment:**	**What will the students be doing?**
Students who needed the extra help received guided notes, extra individual practice, and shortened tests. In some cases, leveled reading material is provided, tiered projects, and hands-on experiences are provided.	*The classroom is set up in a semi-flexible seating arrangement. There is frequent movement to encourage stimulation and involvement. Expectations and procedures are clearly stated and easy to understand.*	*To understand and reinforce concepts, students will* • *Create an interactive notebook to include lab results, visual aids, vocabulary enforcement, journaling, questions/responses that reflect the use of Scientific Method* • *Conduct research about animal food chains in order to identify primary, secondary, and tertiary consumers* • *Create a multi-media representation of one specific*

		food chain to show transfer of energy. • *Conduct research on food chains and transfer of energy*
Prior Knowledge Needed	**Vocabulary**	**Assessments**
Students will need to know the difference between solids, liquids, and gases. Students will also need to understand the key factors involved in physical and chemical changes.	*energy pyramid* *food web* *herbivore* *carnivore* *omnivore* *consumer* *producer* *decomposer* *primary* *secondary* *tertiary*	• *Lab reports will be evaluated* • *Oral question/response exams* • *Presentations of lab experiment results* • *Written expression* • *Science journaling* • *Aligned worksheets* • *Google Slides interactive activities and response pages*
Reflection:	**Essential Questions:** • *Where does energy originate from?* • *How is energy transferred through the food chain?* • *Can animals belong to multiple food chains? If so, will their role in different food chains change?* • *What are the chief materials needed for a plant to grow?*	

Unit: ***Scientific Method (Science Fair)***		**Time:** *January-Mid February*
Standards Taught		
Differentiation/Assessment:	**Classroom Management and Environment:**	**What will the students be doing?**
Selective grouping will be used for science fair partners. Students needing special accommodations will have research read to them, some research may be highlighted ahead of time, and time-line checklists will be used to help with timely completion.	*The classroom is set up in a semi-flexible seating arrangement. There is frequent movement to encourage stimulation and involvement. Expectations and procedures are clearly stated and easy to understand.*	*To understand and reinforce concepts, students will* • *Develop a hypothesis based on a scientific concept* • *Develop an experiment based on their hypothesis* • *Carry out an experiment, using one or more testable variables* • *Collect and analyze data* • *Create a visual display of their experimental data*

Prior Knowledge Needed	Vocabulary	Assessments
Students will need to have a basic understanding of the Scientific Method	• *Observation* • *Experiment* • *Hypothesis* • *Data* • *Analyze* • *Communicate results*	• *Oral presentations of experimental results* • *Science Fair display boards* • *Science Fair written report detailing the steps of the scientific method, results, and data analysis.*
Reflection:	**Essential Questions:** *essential questions will vary based on scientific experiments chosen*	

Unit: *3*- Earth Science	**Time:** *Mid-February-May*

Standards Taught

- 5-ESS1-1 Support an argument that differences in the apparent brightness of the sun compared to other stars is due to distances from the Earth.
- 5-ESS1-2 Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.
- 5-ESS2-1 Develop a model to describe the interaction of geosphere, biosphere, hydrosphere, and/or atmosphere.
- 5-ESS2-2 Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.
- 5-ESS3-1 Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

Differentiation/Assessment:	Classroom Management and Environment:	What will the students be doing?
Students who needed the extra help received guided notes, extra individual practice, and shortened tests. In some cases, leveled reading material is provided, tiered projects, and hands-on experiences are provided.	*The classroom is set up in a semi-flexible seating arrangement. There is frequent movement to encourage stimulation and involvement. Expectations and procedures are clearly stated and easy to understand.*	*To understand and reinforce concepts, students will* • *Conduct experiments to model that the length of a shadow changes based on the time of day.* • *Create dioramas to model animal habits that show the interactions of Earth's spheres.* •
Prior Knowledge Needed	**Vocabulary**	**Assessments**
Students will need to know how shadows are created. Students will also need to know the difference between water sources and locations.	*Geosphere* *Biosphere* *Hydrosphere* *Atmosphere* *Reservoirs* *Orbits* *Constellations*	• *Lab reports will be evaluated* • *Oral question/response exams* • *Students create labeled sketches (models) in their interactive notebooks to*

		explain interaction of one or more of Earth's spheres • *Presentations of lab experiment results* • *Science journaling* • *Oral presentation and explanation of spheres diorama* • *Google Slides interactive activities and response pages* • *Conservation day- students move through active learning stations developed by the local conservation office that describe soil health, run off, plant growth, and human environmental effects*
Reflection:	**Essential Questions:** • *How does the motion of the Earth cause day and night?* • *Why do stars visible in the sky change throughout the year?* • *What evidence do we have that Earth rotates?* • *If two stars were exactly the same size, but one was much farther from Earth, what might you observe?* • *Why do some stars appear to be brighter than others?* • *What are the 4 Earth spheres?* • *How does recycling impact Earth's spheres?* • *How do humans affect water quality?* • *How does field runoff of pesticides affect water quality?*	