**5th Grade Science Scope and Sequence**

**2013-2014**

| **Unit** | **Wk** | **Topic** | **TEKS** | **Vocabulary** |
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| **1**  The student will follow safety procedures while using scientific methods to conduct investigations. | **Wk 1**  8/26-30 | **SIRS**  Safety Rules  Safety Equipment | 5.1A demonstrate safe practices and the use of safety equipment  5.4B use safety equipment, including safety goggles and gloves. | safety, eyewash, goggles, apron, gloves, fire blanket, waft, mitts, first aid kit  **Focus Tools:** notebook |
| **Wk 2**  9/3 - 6  (4 days) | **SIRS**  Scientific Method  Promotional Materials/ Nutritional Labels | 5.2A describe, plan, and implement simple experimental investigations testing one variable;  5.2B ask well-defined questions, formulate testable hypotheses, and select and use appropriate equipment and technology;  5.2C collect information by detailed observations and accurate measuring;  5.2D analyze and interpret information to construct reasonable explanations from direct (observable) and indirect (inferred) evidence;  5.2E demonstrate that repeated investigations may increase the reliability of results;  5.2F communicate valid conclusions in both written and verbal forms; and  5.2G construct appropriate simple graphs, tables, maps, and charts using technology, including computers, to organize, examine, and evaluate information.  5.3B evaluate the accuracy of the information related to promotional materials for products and services such as nutritional labels; | investigation, prediction, hypothesis, data, conclusion, variable, procedure, trial, inference  consumer, product, advertisement, nutrition label  **Focus Tools:** Various |
| **2**  The Student will classify matter based on the physical properties of mass, volume, density, and physical state. | **Wk 3**  9/9-13 | **Matter and Energy**  Properties of Matter  - Mass  - Volume  - Density | 5.5A classify matter based on physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy;  4.5A measure, compare, and contrast physical properties of matter, including size, mass, volume, states (solid, liquid, gas), temperature, magnetism, and the ability to sink or float; | physical properties, matter, mass, volume, dense (density), sink, float, classify  **Focus Tools:** notebook, triple beam balance, graduated cylinder, beaker, goggles |
| **Wk 4**  9/16-20 | **Matter and Energy**  Properties of Matter  - States of Matter  - Changes Between States | 5.5A classify matter based on physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy;  3.5C predict, observe, and record changes in the state of matter caused by heating or cooling; | solid, liquid, gas, thermometer, Celsius, evaporation, condensation  **Focus Tools:** notebook, thermometer, goggles, gloves |
| **3**  The student will classify matter based on the physical properties of mixtures and solutions. | **Wk 5**  9/23-27 | **Matter and Energy**  Properties of Matter  - Mixtures  - Solutions  - Solubility in Water | 5.5A classify matter based on physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy;  5.5C demonstrate that some mixtures maintain physical properties of their ingredients such as iron filings and sand; and  5.5D identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving salt in water or adding lemon juice to water. | mixture, solution, dissolve, solubility, ingredient, iron filings  **Focus Tools:** filter, screen, magnet, hot plate sieve/strainer |
| **4**  The student will review forces and design an experiment that tests the effect of force on an object | **Wk 6**  9/30 - 10/4 | **Force/Motion/Energy**  Forces  - Forces Review  - Magnetism  - Design an Experiment | 5.5A classify matter based on physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy;  5.6D design an experiment that tests the effect of force on an object.  3.6B demonstrate and observe how position and motion can be changed by pushing and pulling objects to show work being done such as swings, balls, pulleys, and wagons; and  5.2A describe, plan, and implement simple experimental investigations testing one variable;  5.2B ask well-defined questions, formulate testable hypotheses, and select and use appropriate equipment and technology;  5.2C collect information by detailed observations and accurate measuring;  5.2D analyze and interpret information to construct reasonable explanations from direct (observable) and indirect (inferred) evidence;  5.2E demonstrate that repeated investigations may increase the reliability of results;  5.2F communicate valid conclusions in both written and verbal forms; and  5.2GG construct appropriate simple graphs, tables, maps, and charts using technology, including computers, to organize, examine, and evaluate information. | force, friction, gravity, magnetism, object, motion, attract, repel  **Focus Tools:** notebook, ruler, meter stick, triple beam balance |
| **5**  The student will explore electric and light energy. | **Wk 7-8**  10/7-11  10/14-18 | **Force/Motion/Energy**  Electric Energy  - Circuits, Electromagnets  - Conductors & Insulators  - Uses of Electricity | 5.6A explore the uses of energy, including mechanical, light, thermal, electrical, and sound energy;  5.6B demonstrate that the flow of electricity in circuits requires a complete path through which an electric current can pass and can produce light, heat, and sound;  5.5A classify matter based on physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy; | energy, electrical energy, electric current, open circuit, closed circuit, conductor, insulator, parallel circuit, series circuit, electromagnet  **Focus Tools:** notebook |
| **Wk 9**  10/21-25 | **Force/Motion/Energy**  Light Energy  - Reflection  - Refraction  - Uses of Light Energy | 5.6C demonstrate that light travels in a straight line until it strikes an object or travels through one medium to another and demonstrate that light can be reflected such as the use of mirrors or other shiny surfaces and refracted such as the appearance of an object when observed through water;  5.6A explore the uses of energy, including mechanical, light, thermal, electrical, and sound energy; | light energy, reflection, refraction, prism, lens, mirror, opaque, transparent, translucent  **Focus Tools:** notebook, hand lenses, prism, mirrors |
| **6**  The student will explore the uses of thermal, light, electric, sound and mechanical energy | **Wk 10**  10/28-11/1 | **Force/Motion/Energy**  Heat Energy  - Conductors & Insulators  - Boiling/ Freezing/ Melting  - Uses of Heat Energy | 5.5A classify matter based on physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy;  5.5B identify the boiling and freezing/melting points of water on the Celsius scale;  5.6A explore the uses of energy, including mechanical, light, thermal, electrical, and sound energy; | thermal/ heat energy, conductor, insulator, reduce (reduction), freezing point, melting point, boiling point, temperature, Celsius  **Focus Tools:** notebook, Celsius thermometer, hot plate, goggles, safety gloves, beaker |
| **Wk 11**  11/4-8 | **Force/Motion/Energy**  Sound Energy  Mechanical Energy  Uses of Energy | 5.6A explore the uses of energy, including mechanical, light, thermal, electrical, and sound energy; | energy, mechanical, kinetic, potential, sound, vibration  **Focus Tools:** notebook |
| **7**  The student will recognize Earth’s surface is constantly changing | **Wk 12**  11/12-15  (4 days) | **Earth and Space**  Changes to Earth’s Surface  - Slow Changes: Weathering, Erosion, Deposition  - Fast Changes | 5.7B recognize how landforms such as deltas, canyons, and sand dunes are the result of changes to Earth's surface by wind, water, and ice;  3.7B investigate rapid changes in Earth's surface such as volcanic eruptions, earthquakes, and landslides | Pangaea, plates, fault, weathering, erosion, deposition, constructive force, destructive force, Plate Tectonics  **Focus Tools:** notebook, goggles, gloves, aprons |
| **Wk 13**  11/18-22 | **Earth and Space**  Changes to Earth’s Surface  - Fast/Slow Changes: Landforms | 5.7B recognize how landforms such as deltas, canyons, and sand dunes are the result of changes to Earth's surface by wind, water, and ice;  3.7B investigate rapid changes in Earth's surface such as volcanic eruptions, earthquakes, and landslides; | volcano, earthquake, landslide, landform, delta, canyon, sand dune, glacier, mountain, valley  **Focus Tools:** notebook |
|  |  |  | **THANKSGIVING** |  |
| **8**  The student will explore the formation of sedimentary rocks and evidence from fossils. | **Wk 14**  12/2-6 | **Earth and Space**  Sedimentary Rocks  Fossils | 5.7A explore the processes that led to the formation of sedimentary rocks and fossil fuels;  5.7D identify fossils as evidence of past living organisms and the nature of the environments at the time using models. | sedimentary rock, sediment, fossils, extinct  **Focus Tools:** notebook |
| **9**  The student will learn that the Earth consists of useful resources | **Wk 15**  12/9-13 | **Earth and Space**  Renewable & Nonrenewable Resources Fossil Fuels | 5.7A explore the processes that led to the formation of sedimentary rocks and fossil fuels;  4.7C identify and classify Earth's renewable resources, including air, plants, water, and animals; and nonrenewable resources, including coal, oil, and natural gas; and the importance of conservation. | renewable, nonrenewable, natural resources, fossil fuels, coal, oil, natural gas  **Focus Tools:** notebook, hand lens, safety goggles |
| **Wk 16**  12/16-20 | **Earth and Space**  Alternative Energy  Conservation | 5.7C identify alternative energy resources such as wind, solar, hydroelectric, geothermal, and biofuels;  4.7C identify and classify Earth's renewable resources, including air, plants, water, and animals; and nonrenewable resources, including coal, oil, and natural gas; and the importance of conservation. | alternative energy, wind energy, solar energy, hydroelectric energy, geothermal energy, biofuels, solar panel, wind mill  **Focus Tools**: notebook, meter stick, stopwatch, hot plate, safety goggles |
|  |  |  | **WINTER BREAK** |  |
| **10**  The student recognizes patterns in the natural world and among the Sun, Earth and Moon System | **Wk 17**  1/7-10  (4 days) | **Earth and Space**  Solar System  Characteristics of Sun, Moon & Earth | 5.8D identify and compare the physical characteristics of the Sun, Earth, and Moon.  3.8D identify the planets in Earth's solar system and their position in relation to the Sun. | Sun, sunspot, solar flare, corona, craters, atmosphere, solar system, planet, prominence  **Focus Tools:** notebook |
| **Wk 18**  1/13-17 | **Earth and Space**  Revolution  Seasons | 4.8C collect and analyze data to identify sequences and predict patterns of change in shadows, tides, seasons, and the observable appearance of the Moon over time. | seasons, revolve/revolution, orbit, pattern, cycle, tilt |
| **11**  The student recognizes patterns in the natural world and among the Sun, Earth, and Moon system | **Wk 19**  1/21-24  (4 days) | **Earth and Space**  Rotation  Night and Day  Shadows | 5.8C demonstrate that Earth rotates on its axis once approximately every 24 hours causing the day/night cycle and the apparent movement of the Sun across the sky;  4.8C collect and analyze data to identify sequences and predict patterns of change in shadows, tides, seasons, and the observable appearance of the Moon over time. | Rotate (rotation), axis, spin, apparent movement, cycle, shadow  **Focus Tools:** notebook |
|  | **Wk 20**  1/27-31 | **Earth and Space**  Lunar Cycle  Tides | 4.8C collect and analyze data to identify sequences and predict patterns of change in shadows, tides, seasons, and the observable appearance of the Moon over time. | Lunar Cycle, moon, moon phase, full moon, quarter moon, new moon, tides, gravity |
| **12**  The student will learn that there are recognizable patterns in the water cycle, weather and climate | **Wk 21**  2/3-7 | **Earth and Space**  Water Cycle  Weather  Climate | 5.8A differentiate between weather and climate;  5.8B explain how the Sun and the ocean interact in the water cycle;  4.8A measure and record changes in weather and make predictions using weather maps, weather symbols, and a map key;  4.8B describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process; | evaporation, condensation, precipitation, accumulation, weather, climate, temperature, wind, cold front, warm front  **Focus Tools:** notebook, safety goggles, Celsius thermometer |
| **13**  The student will learn that organisms undergo similar life processes | **Wk 22**  2/10-14 | **Organisms and Environments**  Complete & Incomplete Metamorphosis  Comparing Life Cycles | 5.10C describe the differences between complete and incomplete metamorphosis of insects. | egg, larva, pupa, adult, nymph, molt, life cycle, incomplete metamorphosis, complete metamorphosis  **Focus Tools:** notebook, safety goggles, safety gloves |
| **14**  The student will examine properties of soils, compare structures and functions of different plants species and identify the significance of photosynthesis. | **Wk 23-24**  2/18-21  2/24-28 | **Organisms and Environments**  Soil  Plants  - Life cycle  - Structures & Functions  - Plant Adaptations  Photosynthesis | 4.7A examine properties of soils, including color and texture, capacity to retain water, and ability to support the growth of plants;  5.10A compare the structures and functions of different species that help them live and survive such as hooves on prairie animals or webbed feet in aquatic animals;  5.9A observe the way organisms live and survive in their ecosystem by interacting with the living and non-living elements;  3.10C investigate and compare how animals and plants undergo a series of orderly changes in their diverse life cycles such as tomato plants, frogs, and lady bugs.  5.9D identify the significance of the carbon dioxide-oxygen cycle to the survival of plants and animals. | soil, clay, sand, loam, humus, texture, retain seed, seedling/sprout, germinate, photosynthesis, life cycle, carbon dioxide/oxygen cycle, adaptation, stomata, offspring  **Focus Tools:** notebook, hand lens, computers, terrariums, aquariums, aprons, gloves, goggles, |
|  |  |  | **SPRING BREAK** |  |
| **15**  The student will learn that there are relationships, systems and cycles within environments | **Wk 25**  3/3-7 | **Organisms and Environments**  Ecosystems  - Characteristics  - Interactions  - Effects of Changes | 5.9A observe the way organisms live and survive in their ecosystem by interacting with the living and non-living elements;  5.9C predict the effects of changes in ecosystems caused by living organisms, including humans, such as the overpopulation of grazers or the building of highways  3.9A observe and describe the physical characteristics of environments and how they support populations and communities within an ecosystem; | ecosystem, habitat, environment, biome, thrive, perish, population, community  **Focus Tools:** notebook, hand Lens, computers, notebook, terrariums, and aquariums, aprons, safety gloves, safety goggles |
| **Wk 26**  3/17-21 | **Organisms and Environments**  Food Chains  Food Webs | 5.9B describe how the flow of energy derived from the Sun, used by producers to create their own food, is transferred through a food chain and food web to consumers and decomposers; | producer, consumer, decomposer, carnivore, herbivore, omnivore, predator, prey, food chain, food web, energy pyramid |
| **16**  The student will compare adaptations of organisms and differentiate between inherited traits and learned behaviors | **Wk 27-28**  3/24-28  3/31 - 4/4  **STAAR**  **4/1 - 5th Math**  **4/2 - 5th Rdg** | **Organisms and Environments**  Animal Adaptations  Inherited Traits  Learned Behavior | 5.10A compare the structures and functions of different species that help them live and survive such as hooves on prairie animals or webbed feet in aquatic animals;  5.9A observe the way organisms live and survive in their ecosystem by interacting with the living and non-living elements;  5.10B differentiate between inherited traits of plants and animals such as spines on a cactus or shape of a beak and learned behaviors such as an animal learning tricks or a child riding a bicycle; | Organism, adaptation, camouflage, hibernation, migration, mimicry, inherited trait, learned behavior, trait, heredity, instinct, offspring  **Focus Tools:** notebook |
|  | **Wk 29**  4/7-11 | **STAAR Symposium** |  |  |
|  | **Wk 30**  4/14-17  (4 days) | **STAAR Symposium** |  |  |
|  | **Wk 31**  4/21-25 | **STAAR**  **4/23 - 5th Science** |  |  |
|  | **Wk 32**  4/28-5/2 | Cross Content Connection |  |  |
|  | **Wk 33**  5/5-9 | Cross Content Connection |  |  |
|  | **Wk 34**  5/12-16  **STAAR Retake**  **5/13 - 5th Math**  **4/14 - 5th Rdg** | Cross Content Connection |  |  |
|  | **Wk 35**  5/19-23 | Middle School Preview |  |  |
|  | **Wk 36**  5/27-30  (4 days) | Middle School Preview |  |  |
|  | **Wk 37**  6/2-6 | Middle School Preview |  |  |
|  | **Wk 38**  6/9-10  (2 days) | Middle School Preview |  |  |