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**Coal City Unit District #1**  
**Fifth Grade**  
**Science Curriculum**

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**SC.5:1**      **Students will demonstrate understanding of geosphere, biosphere, hydrosphere, and atmosphere and how they interact. (NGSS ESS2-1, ESS2-2, ESS3-1, ETS1-1, ETS1-2)**

- SC.5:1-1      Match characteristics of geosphere, biosphere, hydrosphere, atmosphere to the correct sphere.
- SC.5:1-2      Summarize ocean's effect on ecosystems, landforms, climate.
- SC.5:1-3      Label steps of the water cycle.
- SC.5:1-4      Distinguish between characteristics of the steps of the water cycle.
- SC.5:1-5      Deduce interaction of geosphere, biosphere, hydrosphere, atmosphere, and their effect on each other from a given occurrence on Earth. (e.g. forest fire)
- SC.5:1-6      Graph the amounts of fresh and salt water on earth.
- SC.5:1-7      Draw conclusions about the amounts of fresh and salt water on earth.
- SC.5:1-8      Analyze human impact on Earth.

**SC.5:2**      **Students will demonstrate understanding of the processes plants and animal use to obtain nutrients. (NGSS LS1-1, PS3-1)**

- SC.5:2-1      Identify main components of photosynthesis cycle.
- SC.5:2-2      Interpret the main parts of the cycle of photosynthesis.
- SC.5:2-3      Support argument that plants get materials they need for growth from air, water, and sunlight not the soil.
- SC.5:2-4      Analyze how outside factors can contribute to changes in an ecosystem.
- SC.5:2-5      Distinguish between the characteristics of producers, consumers, and decomposers.
- SC.5:2-6      Construct a model showing the movement of matter between producers, consumers, and decomposers.
- SC.5:2-7      Distinguish patterns of interactions between organisms within an ecosystem.

**SC.5:3**      **Students will demonstrate an understanding that all objects and substances in the world are made of matter, can be classified by their physical and chemical properties, and can be changed physically or chemically. (NGSS PS1-1, PS1-3)**

- SC.5:3-1      Identify different properties of matter.
- SC.5:3-2      Recognize ways to test properties of matter.
- SC.5:3-3      Develop a model to describe that matter is made of particles too small to be seen.
- SC.5:3-4      Recognize how particles are arranged in a solid, liquid, and gas.
- SC.5:3-5      Distinguish the difference between mixtures and solutions.
- SC.5:3-6      Conclude whether a reaction forms a new substance.
- SC.5:3-7      Conduct an investigation to determine whether the mixing of two or more substances results in new substances.
- SC.5:3-8      Use given information to measure and graph quantities to provide evidence that regardless the type of change that occurs, matter is conserved.
- SC.5:3-9      Conclude that in any reaction, matter is conserved.
- SC.5:3-10     Evaluate the energy transformations from one form to another.

**SC.5:4**      **Students will design, perform, and analyze the results of scientific experimentation. (NGSS ETS1-3)**

- SC.5:4-1      Design experiments and perform the steps of scientific inquiry.
- SC.5:4-2      Produce a hypothesis from a given question using correct format.
- SC.5:4-3      Define a simple design to a problem.
- SC.5:4-4      Create a variety of graphs and interpret the data.
- SC.5:4-5      Formulate a conclusion based on experimental data.
- SC.5:4-6      Plan and carry out a fair test in which variables are controlled.
- SC.5:4-7      Generate and compare multiple solutions to a problem.
- SC.5:4-8      Consider aspects of a model or prototype that can be improved.
- SC.5:4-9      Identify constraints within given criteria for a problem.
- SC.5:4-10     Analyze the steps engineers take to design and problem solving.

**SC.5:5****Students will show understanding of Earth's gravitational pull, patterns, distances and other components of our solar system. (NGSS ESS1-1)**

- SC.5:5-1 Define a star.
- SC.5:5-2 Support an argument that a star's brightness is determined by its distance from earth.
- SC.5:5-3 Support an argument that gravitational force exerted by Earth on objects is down.
- SC.5:5-4 Map the phases of the moon.
- SC.5:5-5 Distinguish characteristics of Earth's rotation.
- SC.5:5-6 Identify why the Earth has time zones.
- SC.5:5-7 Interpret the sun's position based on the shadow that is cast upon an object.
- SC.5:5-8 Evaluate the key components that lead to important scientific findings.