FOSS and SEEd Standards Alignment
Third Grade

Strand 3.1: WEATHER AND CLIMATE PATTERNS

Weather is a minute-by-minute, day-by-day variation of the atmosphere's condition on a local scale. Scientists record patterns of weather across different times and areas so that they can make weather forecasts. Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over a long period of time. A variety of weather-related hazards result from natural processes. While humans cannot eliminate natural hazards, they can take steps to reduce their impact.

STANDARDS	FOSS	MINIMUM
3.1.1 Analyze and interpret data to reveal patterns that indicate typical weather conditions expected during a particular season. Emphasize students gathering data in a variety of ways and representing data in tables and graphs. Examples of data could include temperature, precipitation, or wind speed. (ESS2.D)	***Water and Climate*** Investigations 3: Weather and Water Investigations 4: Seasons and Climate	***Water and Climate*** Investigations 3: Weather and Water Part 1- 3 classes
3.1.2 Obtain and communicate information to describe climate patterns in different regions of the world. Emphasize how climate patterns can be used to predict typical weather conditions. Examples of climate patterns could be average seasonal temperature and average seasonal precipitation. (ESS2.D)	***Water and Climate*** Investigations 2: Hot Water, Cold Water Investigations 4: Seasons and Climate	***Water and Climate*** Investigations 4: Seasons and Climate Part 1 – 1-2 classes Part 2 – 2 classes
3.1.3 Design a solution that reduces the effects of a weather-related hazard. *Define the problem, identify criteria and constraints, develop possible solutions, analyze data from testing solutions, and propose modifications for optimizing a solution.* Examples could include barriers to prevent flooding or wind-resistant roofs. (ESS3.B, ETS1.A, ETS1.B, ETS1.C)	***Water and Climate*** Investigations 1: Water Observations Investigations 4: Seasons and Climate Investigations 5: Water Works	***Water and Climate*** Investigations 4: Seasons and Climate Part 3 (prep) 4-5 classes

Strand 3.2: EFFECTS OF TRAITS ON SURVIVAL

Organisms (plants and animals, including humans) have unique and diverse life cycles, but they all follow a pattern of birth, growth, reproduction, and death. Different organisms vary in how they look and function because they have different inherited traits. An organism's traits are inherited from its parents and can be influenced by the environment. Variations in traits between individuals in a population may provide advantages in surviving and reproducing in particular environments. When the environment changes, some organisms have traits that allow them to survive, some move to new locations, and some do not survive. Humans can design solutions to reduce the impact of environmental changes on organisms.

STANDARDS	FOSS	MINIMUM
3.2.1 Develop and use models to describe changes that organisms go through during their life cycles. Emphasize that organisms have unique and diverse life cycles but follow a pattern of birth, growth, reproduction, and death. Examples of changes in life cycles could include how some plants and animals look different at different stages of life or how other plants and animals only appear to change size in their life. (LS1.B)	***Structures of Life*** Investigations 1: Origin of Seeds Investigations 2: Growing Further	***Structures of Life*** Investigations 1: Origin of Seeds Part 1 – 4 classes Part 2 – 3 classes (and 6 days of monitoring)
3.2.2 Analyze and interpret data to identify patterns of traits that plants and animals have inherited from parents. Emphasize the similarities and differences in traits between parent organisms and offspring and variation of traits in groups of similar organisms. (LS3.A, LS3.B)	***Structures of Life*** Investigations 1: Origin of Seeds Investigations 2: Growing Further Investigations 3: Meet the Crayfish Investigations 4: Human Body	***Structures of Life*** Investigations 2: Growing Further Part 2 – 3 classes and 6 days of monitoring
3.2.3 Construct an explanation that the environment can affect the traits of an organism. Examples could include that the growth of normally tall plants is stunted with insufficient water or that pets given too much food and little exercise may become overweight. (LS3.B)	***Structures of Life*** Investigations 2: Growing Further Investigations 3: Meet the Crayfish	***Structures of Life*** Investigations 2: Growing Further Part 1- 3 classes

	Investigations 4: Human Body	Part 2 (loosely)– 3 classes and 6 days of monitoring Investigations 3: Meet the Crayfish Part 1 (prep for part 2 and 3) - 2-3 classes Part 2 – 6 classes
3.2.4 Construct an explanation showing how variations in traits and behaviors can affect the ability of an individual to survive and reproduce. Examples of traits could include large thorns protecting a plant from being eaten or strong smelling flowers to attract certain pollinators. Examples of behaviors could include animals living in groups for protection or migrating to find more food. (LS2.D, LS4.B)	***Structures of Life*** Investigations 3: Meet the Crayfish	***Structures of Life*** Investigations 3: Meet the Crayfish Part 1 (prep for part 2 and 3) - 2-3 classes Part 2 – 6 classes Part 3 – 4 classes
3.2.5 Engage in argument from evidence that in a particular habitat (system) some organisms can survive well, some survive less well, and some cannot survive at all. Emphasize that organisms and habitats form systems in which the parts depend upon each other. Examples of evidence could include needs and characteristics of the organisms and habitats involved such as cacti growing in dry, sandy soil but not surviving in wet, saturated soil. (LS4.C)	***Structures of Life*** Investigations 3: Meet the Crayfish	***Structures of Life*** Investigations 3: Meet the Crayfish Part 2- 6 classes
3.2.6 Design a solution to a problem caused by a change in the environment that impacts the types of plants and animals living in that environment. *Define the problem, identify criteria and constraints, and develop possible solutions*. Examples of environmental changes could include changes in land use, water availability, temperature, food, or changes caused by other organisms. (LS2.C, LS4.D, ETS1.A, ETS1.B, ETS1.C)	***Structures of Life*** Investigations 3: Meet the Crayfish	***Structures of Life*** Investigations 3: Meet the Crayfish Part 3 (prep for standard) - 4-5 days

Strand 3.3: FORCE AFFECTS MOTION

Forces act on objects and have both a strength and a direction. An object at rest typically has multiple forces acting on it, but they are balanced, resulting in a zero net force on the object. Forces that are unbalanced, can cause changes in an object's speed or direction of motion. The patterns of an object's motion in various situations can be observed, measured, and used to predict future motion. Forces are exerted when objects come in contact with each other, however some forces can act on objects that are not in contact. The gravitational force of Earth, acting on an object near Earth's surface pulls that object toward the planet's center. Electric and magnetic forces between a pair of objects can act at a distance. The strength of these non-contact forces depends on the properties of the objects and the distance between the objects.

STANDARDS	FOSS	MINIMUM
3.3.1 Plan and carry out investigations that provide evidence of the effects of balanced and unbalanced forces on the motion of an object. Emphasize investigations where only one variable is tested at a time. Examples could include an unbalanced force on one side of a ball causing it to move and balanced forces pushing on a box from both sides producing no movement. (PS2.A, PS2.B)	***Motion and Matter*** Investigations 1: Forces Investigations 2: Patterns of Motion Investigations 3: Engineering	***Motion and Matter*** Investigations 1: Forces Part 3 – 2-3 classes
3.3.2 Analyze data from observations and measurements of an object's motion to identify patterns in its motion that can be used to predict future motion. Examples of motion with a predictable pattern could include a child swinging on a swing or a ball rolling down a ramp. (PS2.A, PS2.C)	***Motion and Matter*** Investigations 1: Forces Investigations 2: Patterns of Motion Investigations 3: Engineering	***Motion and Matter*** Investigations 2: Patterns of Motion Part 1- 1 class Part 2 – 2 classes
3.3.3 Construct an explanation that the gravitational force exerted by Earth causes objects to be directed downward, toward the center of the spherical Earth. Emphasize that "downward" is a local description depending on one's position on Earth. (PS2.B)	***Motion and Matter*** Investigations 1: Forces	***Motion and Matter*** Investigations 2: Patterns of Motion Part 3- 1-2 classes

3.3.4 Ask questions to **plan and carry out an investigation** to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other. Emphasize how static electricity and magnets can cause objects to move without touching. Examples could include the force an electrically charged balloon has on hair, how magnet orientation affects the direction of a force, or how distance between objects affects the strength of a force. Electrical charges and magnetic fields will be taught in Grades 6 through 8. (PS2.B)	***Motion and Matter*** Investigations 1: Forces	***Motion and Matter*** Investigations 1: Forces Part 1 – 2-3 classes Part 2 – 2-3 classes Part 3 – 2-3 classes
3.3.5 Design a solution to a problem in which a device functions by using scientific ideas about magnets. *Define the problem, identify criteria and constraints, develop possible solutions using models, analyze data from testing solutions, and propose modifications for optimizing a solution*. Examples could include a latch or lock used to keep a door shut or a device to keep two moving objects from touching each other. (PS2.B, ETS1.A, ETS1.B, ETS1.C)	***Motion and Matter*** Investigations 3: Engineering	***Motion and Matter*** Investigations 3: Engineering Part 1- 2 classes Part 2- 3 classes Part 3- 2 classes Part 4 –5 classes