

General Supplies for the New 2020 3rd Grade SEEd Science Core

(The bolded word(s) in the standard is the **Science and Engineering Practice**)

(The brown, underlined word is the Crosscutting Concept)

(The bullets are supplies that could be used for that standard)

(The capital letters at the end of the standard is the NGSS standard(s) it is connected to.)

(Any sentences in italics are for engineering.)

Stand 3.1 Weather and Climate Patterns

Standard 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)

- Go to www.KSL.com click on “Weather”, select your region, and then click on “Details” and it will tell you all weather information to make the graphs.
- Or you can purchase the weather instruments below to get the information yourself.
 - Thermometers—temperature
 - Anemometer—wind speed
 - Rain gauge—precipitation
 - Wind vane—wind speed
 - Barometer—air pressure

Standard 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)

- Acquire regional climate charts around the world to look for patterns to predict typical seasonal weather conditions of average temperatures and precipitation.

Standard 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)

- Gather materials together for engineering projects that reduce the effects of weather-related hazards.

Strand 3.2 Effects of Traits on Survival

Standard 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)

- Life cycle chart of plants.
- Life cycle chart of animals.

Standard 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)

- Pictures of adult animals and their young offspring.
- Pictures of grown plants and young plants.

Standard 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) (Need to do experiments in different environments while growing plants.)

- Different types of soil (clay, gravelly, topsoil, subsoil, sand, etc.)
- Variety of seeds
- Light and lack of light
- Heat and lack of heat (heat lamps)
- Water and lack of water
- Fertilizer and lack of fertilizer

Standard 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 thorns protecting a plant from being eaten or strong smelling flowers to attracting certain pollinators. Examples of behaviors could include animals living in groups for protection or migrating to find more food. (LS2.D, LS4.B)

- Pictures of plants and their traits showing their abilities for survival.
- Pictures of animals and their traits showing their abilities for survival.

Standard 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)

- Pictures of different environments and pictures of animals for students to decide which environments are best and least suitable for the animals and to explain why.

Standard 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)

- Gather materials together for this engineering project to solve a problem of a changed environment that impact plants and animals in that environment.

Strand 3.3 Force Affects Motion

Standard 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)

- Different objects for pushing (balls, boxes, toy cars, etc.)

Standard 3.3.2

Analyze and interpret 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)

- Pendulums
- Ramps
- Objects to go down ramps (toy cars, balls, etc.)

Standard 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)

- Anything to drop downward (balls, pencils, desk objects, etc.)

Standard 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)

- Magnets
- Balloons
- Silk cloth for rubbing the balloon (hair can also be used)

Standard 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)

- Gather supplies together for this engineering project to design a device using magnets to solve a problem.