

General Supplies for the New 2020 2nd 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 2.1 Changes in the Earth Surface

Standard 2.1.1

Develop and use models illustrating the patterns of landforms and water on Earth. Examples of models could include valleys, canyons, or floodplains and could depict water in the solid or liquid state. (ESS2.B)

- Pictures, books, videos of valleys, canyons, and/or floodplains for observation and developing models
- 3 Trays, soil, water, pouring pitcher of sorts, a tin can with one end open, and other end closed with nail holes in it for putting water in it for rain falling on soil
 - Experiments with soil and showing water running downhill forming valleys, canyons, and floodplains

Standard 2.1.2

Construct an explanation about changes in Earth's surface that happen quickly or slowly. Emphasize the contrast between fast and slow changes. Examples of fast changes could include volcanic eruptions, earthquakes, or landslides. Examples of slow changes could include the erosion of mountains or the shaping of canyons. (ESS1.C)

- Pictures, books, videos of erosion and the slow process of water causing canyons.
- Tray, soil, water, pouring pitcher of sorts, a tin can with one end open, and other end closed with nail holes in it for putting water in it for rain falling on soil
 - Experiment with soil and showing water running downhill forming the slow process of canyons forming
- Pictures, books, videos of volcanoes, earthquakes, and landslides for discussion and constructing explanations.
- Tray, soil, water, pouring pitcher of sorts to have water pour rapidly
 - Experiment with soil showing water poured quickly on soil with water running downhill quickly forms landslides showing a rapid change on the hillside.
- Tray, soil, three-inch long 2-inch diameter PVC pipe, spoon, pill bottle, vinegar, and baking soda to make a volcano
 - Build a mountain out of soil around the three-inch long 2-inch diameter PVC pipe
 - Put baking soda with a spoon at the bottom of the PVC pipe. Pour vinegar into the pill bottle. Pour the vinegar onto the baking soda in the PVC pipe.
 - At that moment, it will flow up like lava of a volcano and run down the mountainside causing an instant change in the appearance of the volcanic mountain

- Two blocks of 2” x 4” wood, two inches long; soil, tray, small toy houses
 - In a tray, put the two pieces of wood next to each other. Spread soil over the top of the blocks so they are covered completely. Put the toy houses all over the soil on the block, especially over the cracks. Push one block one way and the other block another way and watch the houses and the cracks and to see the rapid change in the Earth’s surface.
 - Do the same as above, except, pull the blocks away from each other to make the soil split apart and the house fall into the cracks and to see the rapid change in the Earth’s surface.

Standard 2.1.3

Design solutions to slow or prevent wind or water from **changing** the shape of land. *Define the problem by asking questions and gathering information, convey designs through sketches, drawings, or physical models, and compare and test designs.* Examples of solutions could include retaining walls, dikes, windbreaks, shrubs, trees, and grass to hold back wind, water, and land. (ESS2.A, ESS2.C, ETS1.A, ETS1.B, ETS1.C)

- Have the students design solutions on paper or by physical models to prevent wind or water from changing the shape of the land by using retaining walls, dikes, windbreaks, shrubs, trees, and grass to hold back wind, water, and land.

Strand 2.2 Living Things and Their Habitats

Standard 2.2.1

Obtain, evaluate, and communicate information about **patterns** of living things (plants and animals, including humans) in different habitats. Emphasize the diversity of living things in land and water habitats. Examples of patterns in habitats could include descriptions of temperature or precipitation and the types of plants and animals found in land habitats. (LS2.C, LS4.C, LS4.D)

- Pictures, videos, and books of plants living in their different habitats of cold, hot, desert, rain forests, water, etc.
- Pictures, videos, and books of animals living in their different habitats of cold, hot, desert, rain forests, water, etc.
- Pictures, video, and books of people living in their different habitats of cold, hot, desert, rain forests, water, etc.

Standard 2.2.2

Plan and carry out an investigation of the **structure and function** of plant and animal parts in different habitats. Emphasize how different plants and animals have different structures to survive in their habitat. Examples could include the shallow roots of a cactus in the desert or the seasonal changes in the fur coat of a wolf. (LS1.A, LS4.A, LS4.D)

- Pictures, video, and books of different plants in their different habitats to investigate their different structures through experimentation to survive in that habitat.
- Pictures, video, and books of different animals in their different habitats to investigate their different structures through experimentation to survive in that habitat.

Standard 2.2.3

Develop and use a model that mimics the function of an animal dispersing seeds or pollinating plants. Examples could include plants that have seeds with hooks or barbs that attach themselves to animal fur, feathers, or human clothing, or dispersal through the wind, or consumption of fruit and the disposal of the pits or seeds. (LS2.A)

- Pictures, books, and videos of the different ways animals help pollinate plants and model how this happens.
- Pictures, books, and videos of the different ways animals can disperse seeds and model how this happens.
- Pictures, books, and videos of the ways wind, gravity, and water can disperse seeds and model how this happens.

Standard 2.2.4

Design a solution to a human problem by mimicking the structure and function of plants and/or animals and how they use their external parts to help them survive, grow, and meet their needs. *Define the problem by asking questions and gathering information, convey designs through sketches, drawings, or physical models, and compare and test designs.* Examples could include a human wearing a jacket to mimic the fur of an animal or a webbed foot to design a better swimming fin. (LS1.A, LS1.D, ETS1.A, ETS1.B, ETS1.C)

- Have the students design solutions to a human problem by physically mimicking the structure and function of plants and animals of how they use their external parts to help them survive, grow, and meet their needs.

Strand 2.3 Properties of Matter

Standard 2.3.1

Plan and carry out an investigation to classify different kinds of materials based on patterns in their observable properties. Examples could include sorting materials based on similar properties such as strength, color, flexibility, hardness, texture, or whether the materials are solids or liquids. (PS1.A)

- Gather a pile of books from the classroom and classify them.
- Gather different pencils from the classroom and classify them.
- Gather different shoes from the classroom and classify them.
- Gather different lunch boxes from the classroom and classify them.
- Gather different toys that students bring from home to classify them.

Standard 2.3.2

Construct an explanation showing how the properties of materials influence their intended use and function. Examples could include using wood as a building material because it is lightweight and strong or the use of concrete, steel, or cotton due to their unique properties. (PS1.A)

- Gather different objects from the classroom and outside the classroom made of different materials. Have the students explain why the object was made of that materials for its intended use.

Standard 2.3.3

Develop and use a model to describe how an object, made of a small set of pieces, can be disassembled and reshaped into a new object with a different **function**. Emphasize that a great variety of objects can be built from a small set of pieces. Examples of pieces could include wooden blocks or building bricks. (PS1.A)

- Building blocks, Legos, or other small toy building pieces.

Standard 2.3.4

Obtain, evaluate, and communicate information about changes in matter **caused** by heating or cooling. Emphasize that some changes can be reversed and some cannot. Examples of reversible changes could include freezing water or melting crayons. Examples of irreversible changes could include cooking an egg or burning wood. (PS1.B)

- Water and containers: put water in the freezer and let it thaw (reversible)
- Video of burning wood or paper (irreversible)
- 2 eggs, one cooked, one not cooked: crack them both open (irreversible)
- Heating unit, crayons, old pan: heat crayons in a pan and the draw with the melted crayon (reversible)
- Video of cooking meat on a grill: no more red meat but cooked meat (irreversible)
- Strawberries (or any fruit): put in the freezer and let it thaw (reversible)