

Course Description:

Science 2 (1 of 2) covers many topics in science, including science processes, plants, animals, matter, energy, motion, and forces. Students will learn how scientists ask questions about objects, organisms, and events. They will identify and experiment with simple equipment and tools to make observations and gather data. Science 2 (1 of 2) allows students to identify and then compare and contrast the basic needs of living things for survival. Students will also get to identify and describe major stages in the life cycles of plants and animals. Students will get the chance to act as scientists by designing a solution to a human problem by mimicking the structure and function of plants and/or animals.

Students will learn about the different types of matter, including their properties and changes that can be done to them. Science 2 (1 of 2) ends with students identifying the relationship between energy and motion and energy and forces. Students will also look at the concepts of electricity, gravity, and magnetism.

Course Objectives:

- Plan and do a study to see if plants need water to grow.
- Tell what is the same and different as plants and animals grow and change.
- Identify parts of a scientific investigation.
- Study and share about the needs of living things and how their bodies meet those needs.
- Build and test ways to fix a problem you find.
- Tell what is different about chemical and physical changes to matter.
- Test to find properties of matter and sort things by their properties.
- Tell how energy is in many forms, can do work, and can make change happen.
- Test what happens when you add forces to different objects.
- Tell what happens between energy, force, and the motion of objects.

Course Overview:

This course is made up of 6 units. Each unit has five lessons. Lessons are made of up activities that include the following types of learning:

- **Warm-Ups** allow for practice of skills or concepts taught in previous lessons. These are graded activities.
- **Direct Instructions** provide modeling of new skills and concepts. These are not graded activities.
- **Guided Practices** allow for practice of a skill with support. These are graded activities only on a completion basis.
- **Unit Reviews** allow for practice of skills prior to taking unit exams. These are not graded activities.
- **Unit Exams** test mastery of skills from the unit. These are graded activities.
- **Projects** provide an opportunity for practice of more complex skills across several activities or lessons within a unit. These activities require a final graded submission.

Required Materials:

Required:

- aluminum foil (1 small sheet)
- antacid tablet
- baking soda (1 teaspoon)
- balloon

- balls of different sizes (2)
- book
- bowl (large; microwave-safe)
- box (small, empty)
- building blocks (10-12 of various shapes and sizes)
- butter (2 sticks)
- candy sprinkles (1 tablespoon)
- chalk (1 piece)
- coffee filter
- computer paper (blank, white; 1-2 sheets)
- construction paper (colored; 3-4 pieces)
- containers of different shapes and sizes (6 containers)
- cotton dish towel (or piece of a cotton shirt)
- crayons/markers/colored pencils
- cups of different sizes (2)
- desk drawer
- digital kitchen scale (if available) or a scale of any type
- egg
- fidget spinner or video of a fidget spinner
- flashlight
- funnel that fits over a cup
- heat source (heat lamp or a window in the sun)
- key
- magnet (horseshoe)
- magnet (small or medium)
- markers, crayons, or colored pencils
- matches or lighter
- materials for building a prototype (various materials that can be found around your home)
- merry-go-round or video of someone on a merry-go-round
- metal screw
- microwave
- modeling clay or salt dough
- music player with speaker
- one of the following: oil, dish soap, or milk
- oven mitts (2)
- pan
- paper clips (metal; 4-5 clips)
- paper clips (plastic; 4-5 clips)
- paper towels (2-3 sheets)
- paper
- pencils
- penny
- permanent marker
- piece of string (about 1 foot long)
- plastic (one piece about 1-2 inches in size)
- plastic wrap (2 sheets of 4x4 inches)

- plate (small)
- potted plants (small; 4 of the same plant)
- powdered drink mix (1 packet)
- printables (see Course Syllabus for link)
- printer and printer paper (for printables)
- rock (about 1-2 inches in size)
- rubber bands (1 short and 1 long)
- rubber eraser
- ruler
- salt (1 teaspoon)
- safety gloves (1 pair)
- sand paper (1 piece)
- scissors
- slide or video of someone going down a slide
- soil that has small rocks in it (1 tablespoon)
- soup can
- string (1 piece about 12 inches long)
- toilet paper roll
- tools for measuring volume (measuring cups or spoons or a combination)
- toy block
- toy car
- toy windmill or video of a windmill
- vinegar (1 tablespoon)
- wax paper (one 4x4 inch sheet)
- wood (1 small piece about 1-2 inches in size)

Optional:

- hand lens or binoculars
- measuring cup
- stopwatch or timer
- thermometer