PA- Science 5 (2 of 2)

Course Description:

Science 5 (2 of 2) investigates structures and functions of organisms, ecology and evolution, Earth's spheres, the geosphere, engineering and natural resources, and the Sun, Moon, and Earth Systems. Activities include identifying plant and animal anatomy; explaining the flow of matter; describing climate change, evolution, weathering and erosion, seasons and the moon cycle; and predicting, modeling, and observing across these topics to draw conclusions.

Course Objectives:

- Use a model to show change of matter and energy between plants, animals, decomposers, and the environment.
- Compare organs and other physical parts of plants and animals, including the human body.
- Observe how organisms interact with living and nonliving parts of their ecosystem to live and survive.
- Use proof to explain how something acts and where something lives can make inherited characteristics work differently.
- Tell about parts that are the same and things that are different between weather and climate.
- Make a model telling ways the geosphere, biosphere, hydrosphere, and atmosphere work together.
- Study data to explain patterns of Earth's features.
- Explain what changes weathering and erosion can have on the geosphere.
- Explain how well solutions to help protect Earth's environment and resources work.
- Explain how Earth's raw materials are useful for the human-made world.
- Use proof and models to explain how the Earth and Moon move within our solar system.
- Put data in a graph to show patterns of how things change.

Required Materials:

Required:

- paper
- pencil
- a few different types of plants
- carrots
- celery
- spinach
- flowering plant
- colored pencils, crayons, or markers
- 2 pieces of yellow construction paper
- 1 piece of blue construction paper
- timer or stopwatch
- scissors
- large glass jar with lid
- potting soil
- charcoal
- small plants
- rocks
- water

- spray bottle
- empty shoe box
- construction paper
- glue or tape
- colored clay or dough
- cotton balls
- string
- cups (both experiments)
- freezer
- permanent marker
- vinegar
- chalk
- colored chalk
- salt
- small container with a lid
- measuring cups
- baking pan
- water bottle
- book
- plastic/wooden chute
- waterproof bin
- sand
- dirt
- potting rocks
- duct tape
- Erosion Chart (student drawn)
- baking dish with high sides
- straw
- spoon
- Deposition Chart (student drawn)
- poster board
- prototype
- coin
- red marker
- ball of clay
- flashlight
- printables (see Course Syllabus for link)
- printer and printer paper (for printables)

Course Overview:

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

- **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.

- **Independent Practices** allow for practice of a skill without support. These are graded activities.
- **Checkpoints** test mastery of skills from lessons. These are graded activities.
- **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.