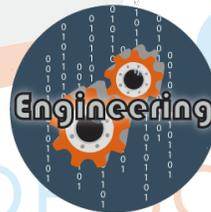


2018 Spring Curriculum Guide

*All classes are available for in-house & outreach unless designated otherwise



	PreK and K (P)	1	2	3	4	5	6	7	8
Geology (GEO)					A/B				
Astronomy (AST)									
Weather/Climate (WEA)									
Matter & Energy (ME)									
Quarry (QUA)									
Engineering (ENG)									

**For course code, combine subject and grade (ex. ME-2, GEO-4A)

How to Use This Guide

Class Code & Title

Grade Level Class is Designed For

GEO 4A: Mineral Detectives Grade 4

Suitable for ages 7-13 NC Standards: 4.P.2.1, 4.P.2.2

Explore the world of minerals and identify specimens using authentic scientific tests and tools, including Moh's hardness scale with custom made hardness kits, acid testing, streak tests, and more.



GEOLOGY

*All GEO classes available for in-house & outreach

GEO P: Mini-Geologists Pre K/K

Suitable for Ages 3-5

Preschool learners will practice measurement, pouring while they mix colors and invent their own kind of chalk. Each participant will make a piece of chalk they get to keep.

GEO 1: Rocky Roads Grade 1

Suitable for Ages 6-10 NC Standards 1.E.2.1, 1.E.1.

Explore the world of geology with a hands-on investigation of the properties and uses of rocks, minerals, and soil. Classify and categorize rocks based on characteristics and physical properties. Explore porosity and permeability of soil structures through experimentation with particle size.

GEO 4A: Rocks Stars Grade 4

Suitable for Ages 7-13 NC Standards 4.P.2.1, 4.P.2.2

Explore the world of minerals and identify specimens using authentic scientific tests and tools, including Moh's hardness scale with custom made hardness kits, acid testing, streak tests, and more.

GEO 4B: Mineral Detectives Grade 4

Suitable for Ages 7-13 NC Standards 4.P.2.3

Delve into the world of geology by interacting with rocks and minerals as a geologist does and learn details of their properties. Identify rocks and their place in the rock cycle based on their characteristics.



ASTRONOMY

*All AST classes available for in-house & outreach

AST P: Tycho to the Moon Pre K/K

Suitable for Ages 3-5

"Blast off on an amazing ride with Tycho and his young American friends, Ruby and Michael. Learn about night and day, space travel, phases of the Moon, and features of the lunar surface. Take a close-up look at the Sun, see Tycho play in zero gravity, witness Earth from space, and watch meteors shoot across the night sky."

AST 1: Seeing Stars Grade 1

Suitable for Ages 6-10 NC Standards 1E.1.1, 1.E.1.2

Interact with the phases of the moon through kinesthetic exploration and explore the night sky with our inflatable planetarium. Construct a scientific model which demonstrates the sun/moon/earth relationships.

AST 3: Stars, the Sun and Shadows, Oh My! Grade 3

Suitable for Ages 7-10 NC Standards 3.E.1.1, 3.E.1.2

Live a day in the life of our solar system through interactive play and inquiry-based exploration with our inflatable planetarium. Take ownership over research and practice science communication through group sharing.

AST 4: Lunar-tics Grade 4

Suitable for Ages 7-11 NC Standards 4.E.1.1, 4.E.1.2

Interact with the phases of the moon and explore the day and night skies with our inflatable planetarium. Explore the moon phases and earth's rotation with hand-held models and flashlights.



MATTER & ENERGY

*All ME classes available for in-house & outreach

ME 3: Ramp Racers Grade 3

Suitable for Ages 7-10 NC Standards 3.p.1.1, 3.P.1.2

Explore material and physical science through the design of a system for launching a small car onto a target. During this open-ended creativity and problem solving lesson students will observe, predict and iterate while learning about motion and forces.

ME 4: Circuit Workshop Grade 4

Suitable for Ages 7-11 NC Standards 4.P.1, 4.P.3

Dive into the world of electricity with hands-on construction of electrical components. Build real parts, mounted on sturdy wood blocks, learning the basics of soldering and circuitry! The class will work collectively to build multiple sets of take-home circuits that can be used for future classroom study.

ME 5: Medieval Motion Grade 5

Suitable for Ages 8-13 NC Standards 5.P.1.1, 5.P.1.2

Using creativity and material science, students will build mini projectiles. Students will test launch their designs of different weights, shapes and patterns, then measure their design using, Newtons of force, distance and time. This is a skills based design and engineering lesson that reinforces safe testing and careful measurement.

ME M: Modeling Motion Middle School

Suitable for Ages 12-15

Using creativity and material science, students will build mini projectiles. Students will test launch their designs of different weights, shapes and patterns, then measure their design using, Newtons of force, distance and time, then graph the motion of their object. This is a skills based design and engineering lesson that reinforces safe testing and careful measurement.



WEATHER & CLIMATE

*All WEA classes available for in-house & outreach

WEA 2: Weather Makers! Grade 2

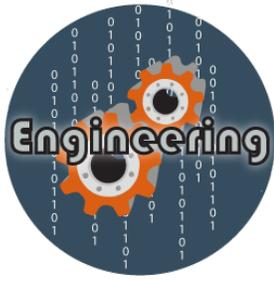
Suitable for Ages 7-10 NC Standards 2.E.1.1

This is an inquiry and invention based approach to measuring and discussing the weather. Through the construction of weather tools and models. Students will gain a deeper understanding of the design and use of technologies to measure scientific phenomena. At the end of this project, you will recognize the tools that scientists use to study the weather and why these tools are constructed the way they are.

WEA M: Climate Simulation Middle School

Suitable for Ages 12-15 NC Standards 8.P.2

The World Climate Simulation is an educational role playing exercise of the global climate change negotiations. During the activity students play negotiators from different countries that are making decisions about greenhouse gas emissions. The results of these decisions are then tested with an interactive climate model. Students gain an understanding of climate science and what can be done to stop human-caused climate change, as well as practice with public speaking, problem solving, and critical thinking.



ENGINEERING

*All ENG classes available for in-house & outreach

ENG P: Structure Builders Pre K/K

Suitable for Ages 3-5

Using low cost materials preschool students design and build high resolution structures that are easy to assemble and highly adaptable for art or model homes for humans or animals.

Note: Other engineering falls under these standards based courses:

- Ramp Racers
(Structural Engineering)
- Circuit Workshop
(Electrical Engineering)
- Weather Makers
(Mechanical Engineering)



QUARRY TOUR

*All QUA classes outreach only, call us for more detail

QUA 1: Quarry Tour Grade 1-8

AMOS has partnered with Grove Stone & Sand, to provide hands-on quarry tours of the Grovestone Quarry, in Black Mountain. Students will search for macroinvertebrates in the mountain stream, and explore granite, its properties, and how this rock is used.