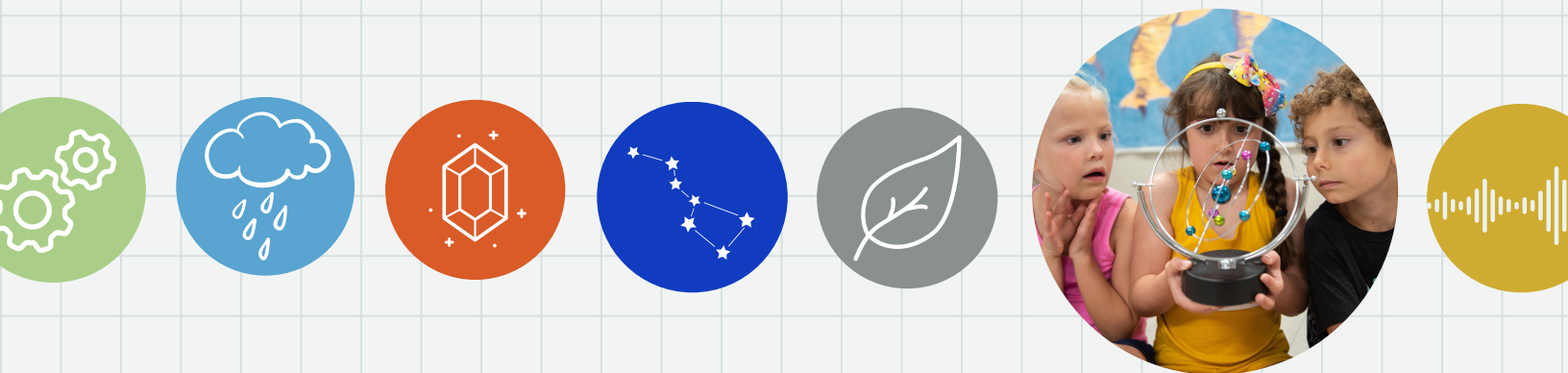




Field Trip & Outreach Guide



AMOS is proud to offer two options: museum field trips AND educational outreach opportunities! Our education team offers a wide variety of curriculum topics for all ages.

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STEM Focused Topics

Pre-K & Kindergarten

1st - 2nd Grade

3rd - 4th Grade

5th - 6th Grade

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9th - 12th Grade

Pricing and Booking Details

Policies

Field Trips and Outreach classes are available in the following topics:



Geology



Engineering



Astronomy



Matter and Energy



Weather and Climate



Quarry*

All QUARRY classes are considered outreach and are subject to availability based on the specific Quarry location

AMOS has partnered with Grove Stone & Sand and Vulcan Materials, to provide hands-on quarry tours of the Grove Stone & Sand Quarry (Black Mountain) or The Vulcan Quarry (Enka)

Curriculum Overview

	Pre K-K	1st Grade	2nd Grade	3rd Grade	4th Grade	5th Grade	6th Grade	7th Grade	8th Grade	9th-12th Grade
Geology										
Astronomy										
Weather & Climate										
Matter & Energy										
Engineering										
Quarry										

Pre-Kindergarten and Kindergarten



Geology

Mini-Rologists

Suitable for Ages 3-7 (K.P.2)

Young Geologists will explore rocks and minerals, listen to a story, then investigate everyday uses of minerals. Get creative with this hands-on activity where students mix colors and invent their own kind of chalk. Each participant will make a piece of chalk they get to take home!



Engineering

Structure Builders

Suitable for Ages 3-7 (K.P.1)

Using low-cost materials, our youngest learners design and build high resolution structures that are easy to assemble and highly adaptable for art or model homes for humans or animals.



1st - 2nd Grade



Geology

Mini-Rologists

Suitable for Ages 3-7 (1.E.2)

Young Geologists will explore rocks and minerals, listen to a story, then investigate everyday uses of minerals. Get creative with this hands-on activity where students mix colors and invent their own kind of chalk. Each participant will make a piece of chalk they get to take home!



Rock Stars

Suitable for Ages 7-13 (1.E.2))

Students will delve into the world of Geology by interacting with rocks and minerals as a Geologist does and learn details of their properties. They will identify rocks and their place in the rock cycle based on their characteristics while playing a game. We will also mimic the rock cycle using crayons.



Astronomy

Kidstronauts

Suitable for Ages 6-10 (1.E.1)

Want to be an astronaut? Students learn more about these scientists' daily lives and even get to test their skills with STEAM challenges that will prepare them for their voyage to space. Students will also model the Sun, Moon, & Earth system and explore moon phases. Add an inflatable planetarium show to this program for an additional fee (program time will increase by 30 mins)



1st - 2nd Grade



Weather and Climate

Weather Makers

Suitable for Ages 7-10 (2.E.1)

This is an inquiry and invention-based approach to measuring and discovering the weather. Create tools to make your own weather devices. Students will gain a deeper understanding of the design and use of technologies to measure scientific phenomena. At the end of this program, students will recognize the tools that scientists use to study the weather and learn why studying weather patterns is important.



Matter and Energy

Good Vibrations

Suitable for Ages 6-9 (2.P.1)

Students will explore sound, how it is created, and what sound waves look like by doing a series of tests with boom whackers and tuning forks. Students will then learn about the mathematical aspect of sound and tone/pitch and use what they have learned to make their own instrument.

Collision Course

Suitable for Ages 7-10 (3.P.1)

Students will explore material and physical science through the design of a system for launching a small car into a target. During this open-ended creativity and problem-solving lesson, students will apply Newton's Laws of Motion and explain how speeds change when objects collide.

Circuit Workshop

Suitable for Ages 7-13 (4.P.1, 4.P.3)

Students will dive into the world of electricity with hands-on construction of electrical components. They will discover the difference between insulators and conductors, and explore open and closed circuits while building their own circuits using a variety of tools.



1st - 2nd Grade



Engineering

Collision Course

Suitable for Ages 7-10 (NGSS-Eng. Des.)

(Structural Engineering: See Matter & Energy)

Circuit Workshop

Suitable for Ages 7-13 (NGSS-Eng. Des.)

(Electrical Engineering: See Matter & Energy)

Weather Makers

Suitable for Ages 7-10 (NGSS-Eng. Des.)

(Mechanical Engineering: See Weather & Climate)



Quarry

Macro Invertebrate Study

Suitable for Ages 7-13 (1.L.2,
2.L.1)

Students will get the chance to do a streamside investigation where they will collect and identify macroinvertebrates to determine the health of a local stream at the Grove Stone & Sand Quarry.

Forest Finders

Suitable for Ages 6-9 (1.L.2.1)

Students will conduct a tree survey of the Grove Stone & Sand Quarry environmental trail by identifying Western North Carolina native trees and determining species' richness for each survey plot.



3rd - 4th Grade



Geology

Rock Stars

Suitable for Ages 7-13 (4.P.2)

Students will delve into the world of Geology by interacting with rocks and minerals as a Geologist does and learn details of their properties. They will identify rocks and their place in the rock cycle based on their characteristics while playing a game. We will also mimic the rock cycle using crayons.



Mineral Detectives

Suitable for Ages 9-13 (4.P.2)

Students will 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.



Astronomy

Kidstronauts

Suitable for Ages 6-10 (3.E.1)

Want to be an astronaut? Students learn more about these scientists' daily lives and even get to test their skills with STEAM challenges that will prepare them for their voyage to space. Students will also model the Sun, Moon, & Earth system and explore moon phases. Add an inflatable planetarium show to this program for an additional fee (program time will increase by 30 mins)

3rd - 4th Grade

Lunar Landers

Suitable for Ages 7-13 (3.E.1,4.E.1)

Students will interact with the phases of the moon and explore the day and night skies with our NASA Eyes software. They will discuss the challenges of leaving Earth in a spacecraft and exploring the moon then build their own lunar lander and test them against gravity!

Eyes on the Solar System

Ages 8-15 (3.E.1)

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



Weather and Climate

Weather Makers

Suitable for Ages 7-10 (2.E.1)

This is an inquiry and invention-based approach to measuring and discovering the weather. Students will create tools to make your own weather devices. Students will gain a deeper understanding of the design and use of technologies to measure scientific phenomena. At the end of this program, students will recognize the tools that scientists use to study the weather and learn why studying weather patterns is important.



3rd - 4th Grade



Matter and Energy

Good Vibrations

Suitable for Ages 6-9 (2.P.1)

Students will explore sound, how it is created, and what sound waves look like by doing a series of tests with boom whackers and tuning forks.

Students will then learn about the mathematical aspect of sound and tone/pitch and use what they have learned to make their own instrument.

Collision Course

Suitable for Ages 7-10 (3.P.1)

Students will explore material and physical science through the design of a system for launching a small car into a target. During this open-ended creativity and problem-solving lesson, students will apply Newton's Laws of Motion and explain how speeds change when objects collide.

Circuit Workshop

Suitable for Ages 7-13 (4.P.1, 4.P.3.)

Students will dive into the world of electricity with hands-on construction of electrical components. They will discover the difference between insulators and conductors and explore open and closed circuits while building their own circuits using a variety of tools.



Medieval Motion

Suitable for Ages 8-14 (5.P.1)

Using creativity and material science, students will build mini projectiles. Students will test launch their designs of different weights, shapes and patterns, measuring their results. This is a skills-based design and engineering lesson that reinforces safe testing and careful measurement.

3rd - 4th Grade



Engineering

Lunar Landers

Suitable for Ages 7-10 (NGSS-Eng. Des.)

(Structural Engineering: See Matter & Energy)

Collision Course

Suitable for Ages 7-10 (NGSS-Eng. Des.)

(Structural Engineering: See Matter & Energy)

Circuit Workshop

Suitable for Ages 7-13 (NGSS-Eng. Des.)

(Electrical Engineering: See Matter & Energy)

Weather Makers

Suitable for Ages 7-10 (NGSS-Eng. Des.)

(Mechanical Engineering: See Weather & Climate)



Quarry

Suitable for Ages 7-13 (4.L.1)

Macro Invertebrate Study

Students will get the chance to do a streamside investigation where they will collect and identify macroinvertebrates to determine the health of a local stream at the Grove Stone & Sand Quarry.

Forest Finders

Suitable for Ages 3-9 (3.L.2)

Students will conduct a tree survey of the Grove Stone & Sand Quarry environmental trail by identifying Western North Carolina native trees and determining species' richness for each survey plot.

5th - 6th Grade



Geology

Rock Stars

Suitable for Ages 7-13 (4.P.2)

Students will delve into the world of Geology by interacting with rocks and minerals as a Geologist does and learn details of their properties. They will identify rocks and their place in the rock cycle based on their characteristics while playing a game. We will also mimic the rock cycle using crayons.

Mineral Detectives

Suitable for Ages 9-13 (4.P.2)

Students will 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.



Astronomy

Lunar Landers

Suitable for Ages 7-13 (6.E.1)

Students will interact with the phases of the moon and explore the day and night skies with our NASA Eyes software. They will discuss the challenges of leaving Earth in a spacecraft and exploring the moon then build their own lunar lander and test them against gravity!

Eyes on the Solar System

Ages 8-15 (6.E.1)

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

5th - 6th Grade



Weather and Climate

Greenhouse in a Jar

Suitable for Ages 12-15 (5.P.3, 5.E.1)

Students will investigate the Greenhouse Effect and understand how carbon dioxide affects temperature in our atmosphere. Design a controlled experiment to test and measure how a CO₂ source can impact temperature change over time compared to controls. Discuss results and the implications of global warming in our lives.

Climate Action Workshop

Suitable for Ages 12-18 (7.P.2, 8.P.2.)

The Climate Action Workshop is an interactive group learning experience that utilizes the En-ROADS Climate simulator to: 1-Promote greater understanding of the causes of climate change and the solutions essential to its mitigation. 2-Engage participants, test various solutions, and immediately view the effect on global temperature rise. This experience is hopeful, scientifically-grounded, action-oriented, and eye-opening.



Matter and Energy

Circuit Workshop

Suitable for Ages 7-13 (6.P.3)

Students will dive into the world of electricity with hands-on construction of electrical components. They will discover the difference between insulators and conductors and explore open and closed circuits while building their own circuits using a variety of tools.



Medieval Motion

Suitable for Ages 8-14 (5.P.1)

Using creativity and material science, students will build mini projectiles. Students will test launch their designs of different weights, shapes and patterns, measuring their results. This is a skills-based design and engineering lesson that reinforces safe testing and careful measurement.

5th - 6th Grade



Engineering

Suitable for Ages 8+ (NGSS Eng. Des.)

Exhibit Design Challenge

Modeling AMOS' exhibit design protocols, students will analyze existing exhibits and take on the exhibit design challenge back at school! Teachers may choose to book the AMOS STEM Lab for an exhibit showcase after the completion of student exhibits!

Note: Other engineering falls under these standards-based courses:

Greenhouse in a Jar Suitable for Ages 12-15 (NGSS-Eng. Des.)

Circuit Workshop Suitable for Ages 7-13 (NGSS-Eng. Des.)

(Electrical Engineering: See Matter & Energy)



Quarry

Suitable for Ages 7-13 (6.L.2)

Macro Invertebrate Study

Students will get the chance to do a streamside investigation where they will collect and identify macroinvertebrates to determine the health of a local stream at the Grove Stone & Sand Quarry.

Forest Stewards Suitable for Ages 10-13 (6.E.2, 6.L.2)

Students will conduct a tree survey of the Grove Stone & Sand Quarry environmental trail by identifying Western North Carolina native trees and determining species' richness for each survey plot.

7th - 8th Grade



Geology

Rock Stars

Suitable for Ages 7-13 (8.E.2)

Students will delve into the world of Geology by interacting with rocks and minerals as a Geologist does and learn details of their properties. They will identify rocks and their place in the rock cycle based on their characteristics while playing a game. We will also mimic the rock cycle using crayons.

Mineral Detectives

Suitable for Ages 9-13 (8.E.2)

Students will 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.



Astronomy

Lunar Landers

Suitable for Ages 7-13 (6.E.1)

Students will interact with the phases of the moon and explore the day and night skies with our NASA Eyes software. They will discuss the challenges of leaving Earth in a spacecraft and exploring the moon then build their own lunar lander and test them against gravity!

Eyes on the Solar System

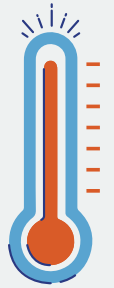
Students will live a day in the life of our solar system through interactive play and inquiry-based exploration with our inflatable planetarium. They will take ownership over research and practice science communication through group sharing.



7th - 8th Grade



Weather and Climate



Greenhouse in a Jar

Suitable for Ages 12-15 (7.E.1)

Students will investigate the Greenhouse Effect and understand how carbon dioxide affects temperature in our atmosphere. Design a controlled experiment to test and measure how a CO₂ source can impact temperature change over time compared to controls. Discuss results and the implications of global warming in our lives.

Climate Action Workshop

Suitable for Ages 12-18 (7.P.2, 8.P.2)

The Climate Action Workshop is an interactive group learning experience that utilizes the En-ROADS Climate simulator to: 1-Promote greater understanding of the causes of climate change and the solutions essential to its mitigation. 2-Engage participants, test various solutions, and immediately view the effect on global temperature rise. This experience is hopeful, scientifically-grounded, action-oriented, and eye-opening.



Matter and Energy

Circuit Workshop

Suitable for Ages 7-13 (6.P.3)

Students will dive into the world of electricity with hands-on construction of electrical components. They will discover the difference between insulators and conductors and explore open and closed circuits while building their own circuits using a variety of tools.



Medieval Motion

Suitable for Ages 8-14 (5.P.1)

Using creativity and material science, students will build mini projectiles. Students will test launch their designs of different weights, shapes and patterns, measuring their results. This is a skills-based design and engineering lesson that reinforces safe testing and careful measurement.

7th - 8th Grade



Engineering

Exhibit Design Challenge Suitable for Ages 8+ (NGSS-Eng. Des.)

Modeling AMOS' exhibit design protocols, students will analyze existing exhibits and take on the exhibit design challenge back at school! Teachers may choose to book the AMOS STEM Lab for an exhibit showcase after the completion of student exhibits!

Note: Other engineering falls under these standards-based courses:

Circuit Workshop Suitable for Ages 7-13 (NGSS-Eng. Des.)

(Electrical Engineering: See Matter & Energy)



Quarry

Macro Invertebrate Study Suitable for Ages 7-13 (7.L.1)

Students will get the chance to do a streamside investigation where they will collect and identify macroinvertebrates to determine the health of a local stream at the Grove Stone & Sand Quarry.

Forest Stewards Suitable for Ages 10-13 (7.E.1, 8.E.1, 8.L.3)

Students will conduct a tree survey of the Grove Stone & Sand Quarry environmental trail by identifying Western North Carolina native trees and determining species' richness for each survey plot.

9th - 12th Grade



Astronomy

Eyes on the Solar System

EES

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



Weather and Climate

Climate Action Workshop

EES, BIO, APES

The Climate Action Workshop is an interactive group learning experience that utilizes the En-ROADS Climate simulator to: 1-Promote greater understanding of the causes of climate change and the solutions essential to its mitigation. 2-Engage participants, test various solutions, and immediately view the effect on global temperature rise. This experience is hopeful, scientifically-grounded, action-oriented, and eye-opening.



Matter and Energy

Medieval Motion

PS

Using creativity and material science, students will build mini projectiles. Students will test launch their designs of different weights, shapes and patterns, measuring their results. This is a skills-based design and engineering lesson that reinforces safe testing and careful measurement.



Engineering

Exhibit Design Challenge

ENG

Modeling AMOS' exhibit design protocols, students will analyze existing exhibits and take on the exhibit design challenge back at school! Teachers may choose to book the AMOS STEM Lab for an exhibit showcase after the completion of student exhibits!

Pricing

	Group Size	Price per Student	Price per Staff/Teacher	Price per Chaperone	Flat Rate
General Admission with One Program	15-75	\$9	\$0	\$5	NA
General Admission with Two Programs	15-60	\$16	\$0	\$5	NA
Outreach Programs (travel fee may apply)	5+	NA	NA	NA	\$200*
Outreach Two Programs (travel fee may apply)	5+	NA	NA	NA	\$400*

Need Based & Title 1 Discounts

- Title I discounts available due to the generosity of donors and other sponsors:
 - 15% Buncombe County Schools
 - 10% Asheville City Schools & other
- *additional discounting available based on economic need and additional application requirements upon request

Policies

- During field trips, teachers/staff and parents are considered chaperones.
- K-5th grade field trips must have a minimum of a 1:6 adult to student ratio, and a maximum of a 1:3 adult to student ratio.
- 6th-12th grade field trips must have a minimum of 1:10 adult to student ratio.
- Adults in excess of the ratio will be subject to full admission cost upon arrival.
- Chaperones must be a minimum of 16 years of age, such in the case of camp groups, but we do require at least 1 adult (18 years or older) per 25 students.
- Adults with younger children accompanying them (children not a part of the general group of students), cannot be counted towards chaperone numbers and must pay group-discounted, full admission price. Children over the age of 2 will also be charged.