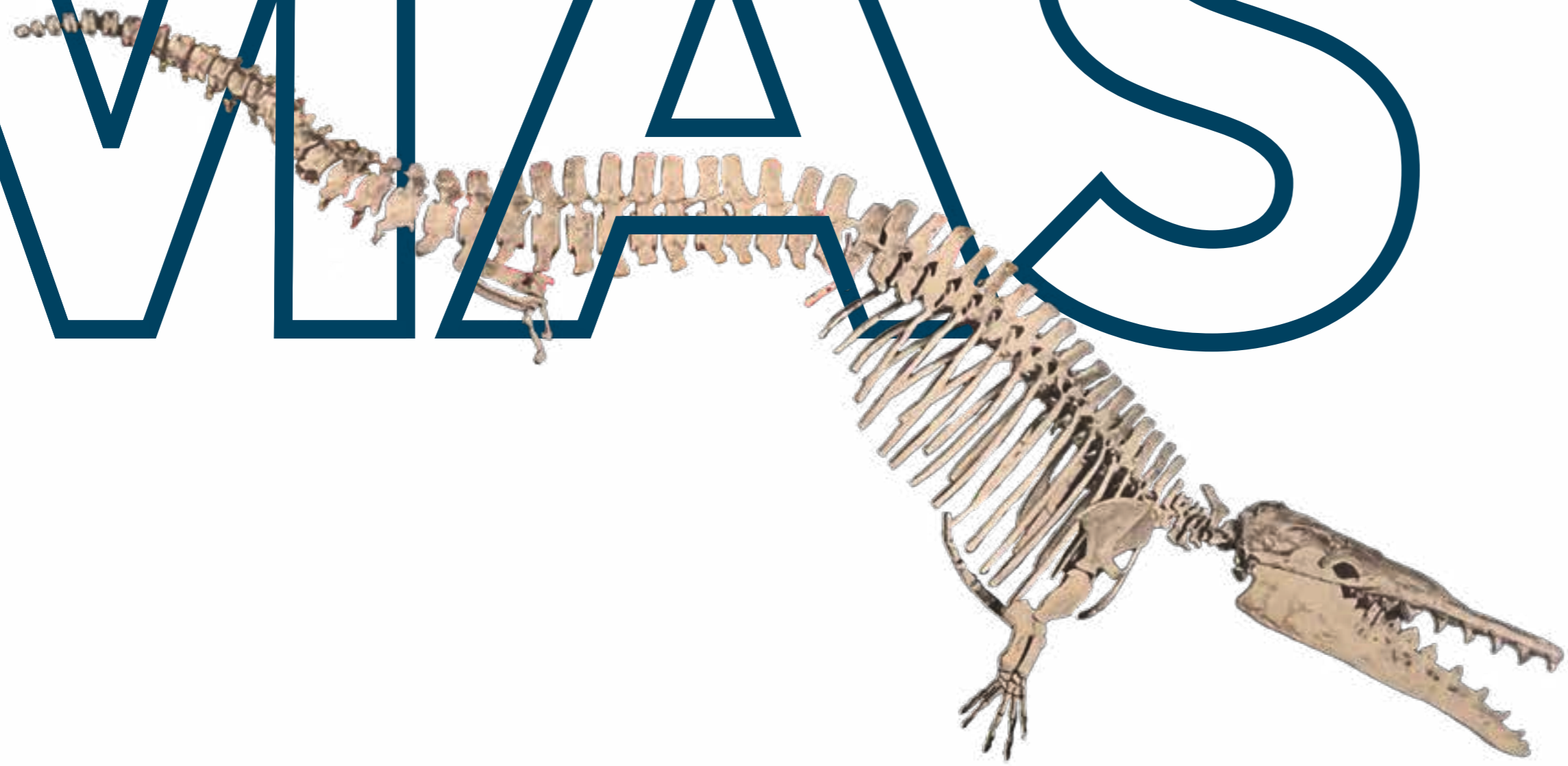


MMAAS



Educator's Guide

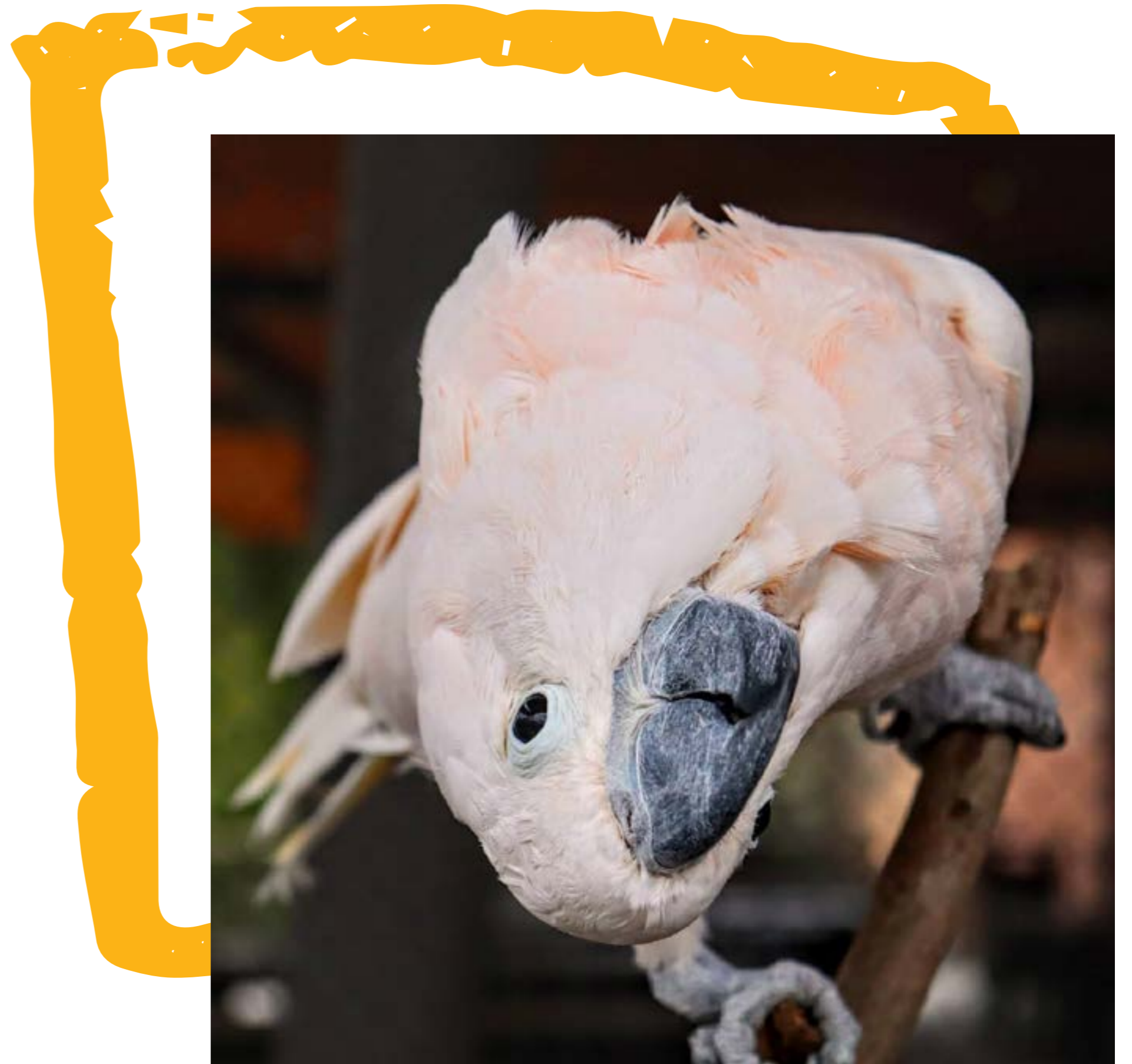


It's not just a field trip, it's a MAS field trip.

We offer a diverse selection of programs that focus on STEAM Learning and support the Georgia Standards of Excellence. Just as steam rises when it's produced and can be used as a lifting gas in a balloon, the addition of the creative thinking engendered by the arts to the STEM curriculum can lift our students to greater academic and career achievement. As it has for 65 years, the Museum of Arts and Sciences designs student activities and selects exhibits that incorporate the arts into combinations of the STEM concepts to make STE+aM.

The Museum of Arts and Sciences (MAS) offers curated and custom experiences that go beyond a normal field trip tour. With a Planetarium, Georgia's only NOAA Science on a Sphere®, Mini-Zoo, Nature Trails and a multi-million-dollar art collection, the MAS is one of the finest nationally accredited institutions in the South.

Science Technology Engineering Art Math
STEAM Lifts!



Curator Bundles

Select a curator-recommended bundle of programs that supports Georgia Standards of Excellence. Each bundle includes three programs and a time slot for lunch.

Stayin' Alive (PreK-1st) (Fall)

Students will explore living and non-living objects in order to gain a better understanding of how organisms and objects are grouped.

Programs: Live Animal Experience (The Classic), Hands-On (Alike and Different), Discovery House

Standards supported: SKL1, SKL2

It's a New Day (PreK-1st) (Spring)

Students will investigate objects in the sky through observations and a take home art project about day and night.

Programs: Planetarium (Our Sky), Hands-On (Day and Night), Discovery House

Standards supported: SKE1

What Do You Need? (K-2nd) (Fall/Spring)

Students will explore the basic needs of plants and animals and observe different parts of plants (root, stem, leaf, and flower).

Programs: Live Animal Experience (Animals in Our Backyard), Nature Trail, Discovery House

Standards supported: S1L1

Looks Like Rain (K-2nd) (Fall/Spring)

Students will observe weather data and make their very own weather instrument to take home.

Programs: Planetarium (This is Our Sky), Hands-On (Weather Fun), Discovery House

Standards supported: S1E1

Change Happens (2nd-3rd) (Spring)

Students will discover how the environment can be changed by weather, plants, animals, and humans.

Programs: Live Animal Experience (Regional Habitats), Nature Trail, SOS (Weather)

Standards supported: S2E3, S2L1

Patterns in the Sky (2nd-4th) (Fall)

Students will explore the sky and learn more about the relationship between the Earth, moon, and sun. Each student will make their own art of the moon's surface to take home.

Programs: SOS (Earth in Space), Planetarium (Earth, Moon, and Sun), Hands-On (Moonscapes)

Standards supported: S2E1, S2E2

Location! Location! Location! (2nd-4th) (Spring)

Students will discover native plants and animals and take a closer look at the Georgia Piedmont habitat as well as explore local art and objects from the Southeastern region.

Programs: Live Animal Experience (Animals in Our Backyard), Nature Trail, Exhibits

Standards supported: S3L1

Fossils (3rd-5th) (Fall)

Students will investigate different fossils to learn how fossils are formed and what they can tell us about the past. Students will get to take home their own fossil mold and cast.

Programs: SOS (Earth's Surface Over Time), Planetarium (Dinosaur Prophecy), Hands-On (Molds and Casts)

Standards supported: S3E1, S3E2

Energy Flow (4th-6th) (Spring)

Students will discover the parts of an ecosystem and how energy flows within that system.

Programs: Live Animal Experience (Transfer Systems), Nature Trail, SOS (Ecosystems)

Standards supported: S4L1

Patterns and Cycles (4th-6th) (Fall)

Students will observe weather data and patterns and investigate the water cycle's role in our weather systems.

Programs: Planetarium (Dynamic Earth), Hands-On (Incredible Journey), SOS (Weather)

Standards supported: S4E3, S4E4

A Shifting Surface (5th-7th) (Fall)

Students will explore plate tectonics and the effects of these constructive and destructive processes on our surface.

Programs: Planetarium (Dynamic Earth), Hands-On (Volcanoes), SOS (Plate Tectonics)

Standards supported: S5E1, S6E5

Classification (5th-7th) (Fall)

Students will explore classification by observing different types of art, plants, and animals.

Programs: Live Animal Experience (Who Am I?), Nature Trail, Exhibits

Standards supported: S5L1

Climate (6th-8th) (Spring)

Students will observe climate data and patterns and investigate how water on Earth is affected by climate change.

Programs: Planetarium (Dynamic Earth), Hands-On (Rising Seas), SOS (Climate Change)

Standards supported: S6E3, S6E4

What Goes Around Comes Around (6th-8th) (Fall)

Students will explore the relationship between the sun, Earth, and moon and the effects this relationship has on animals.

Programs: Live Animal Experience (Shadow Survivors), Planetarium (From the Celestial Sphere to the Expanding Universe), SOS (Earth in Space)

Standards supported: S6E1, S6E2

Epic Ecosystems (6th-8th) (Fall/Spring)

Students will observe the interdependence of animals and their environment and how natural selection affects animal populations.

Programs: Live Animal Experience (Survival of the Fittest), Nature Trail, SOS (Ecosystems)

Standards supported: S7L4, S7L5

Build Your Own Field Trip Experience

If a themed curator-recommended bundle doesn't work for you, then you can select 3 general programs for your students!

You can choose a program that matches the your current curriculum. Pick 3 programs from the categories listed to the right.

MAS Curators will adjust program content as needed for each grade level. The following 4 pages offer specific program descriptions.

Customize your experience to best meet the needs of your class and students!

	K	1st	2nd	3rd	4th	5th	6th	7th	8th	High School
Planetarium	✓	✓	✓	✓	✓	✓	✓			✓
Science On A Sphere			✓	✓	✓	✓	✓	✓		✓
Live Animal Experience	✓	✓	✓	✓	✓	✓	✓	✓		✓
Hands-On Activities		✓	✓	✓	✓	✓	✓			✓
Environmental Education	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Discovery House	✓	✓	✓	✓	✓	✓				

Georgia Standards Of Excellence Supported

Planetarium

The Mark Smith Planetarium is an immersive full dome digital Space Theater that offers GSE-related astronomy programming.

Universe Live! (3rd-12th)

Students take a journey in space where they explore the moon, stars, our solar system, and beyond.

Supports: S4E1, S4E2, S6E1, S6E2, SES1

Earth, Moon, Sun (PreK-5th)

Students will examine the moon's orbit, craters, phases, eclipses, and how the Earth, moon, and sun work together as a system.

Supports: SKE1, S2E2, S4E2

This is Our Sky! (PreK-3rd)

Students will take a visual tour of the sky including the relationship of the sun, moon, and stars, as well as explore details of the Earth's tilt, seasons and weather patterns, constellations, and the phases of the moon.

Supports: SKE1, S1E1, S2E1, S2E2

Stars (4th-12th)

Students will examine the life cycles of stars from birth through every phase of their existence and learn how stars release the energy that powers the universe.

Supports: S4E1, S6E1, SES1

Black Holes: The Other Side of Infinity (5th-12th)

Students will see immersive animations of the formation of the universe, star birth, collision of galaxies, and a simulated flight into the supermassive black hole at the center of our own galaxy.

Supports: S6E1, SES1

Dynamic Earth (5th-12th)

Students will explore the inner workings of Earth's climate system using satellite data and supercomputer simulations while examining how the atmosphere, hydrosphere, and biosphere shape our climate.

Supports: S4E3, S4E4, S5E1, S6E4, S6E5, SM1, SM5

Dinosaur Prophecy (1st-5th)

Students will discover early life forms, reasons for extinction, and how different natural events preserve fossils, as well as look at an in-depth discussion of the latest bird and other fossils found in China's Liaoning province.

Supports: S3E1, S3E2

From the Celestial Sphere to the Expanding Universe (6th-12th)

Students will explore how our views of the solar system and universe have changed over time from Earth-centered, to sun-centered, to the modern view of an expanding universe, and take a trip to the edge of our galaxy and back.

Supports: S6E1, S6E2, SAST1



Science on a Sphere

Science On a Sphere® (SOS) is a giant six-foot sphere and unique educational tool developed by the National Oceanic and Atmospheric Administration that displays real-time planetary data and other visualizations. To learn more and access lesson plans visit <http://sos.noaa.gov/>.

Climate Change (6th-12th)

Using NOAA's global climate models generated by supercomputers for surface temperature, sea ice concentration, precipitation, and ocean depth, students will examine the relationship of Earth's atmosphere, land, and oceans.

Supports: S6E4, SES6, SEV2

Weather (2nd-12th)

Using real-time cloud coverage and precipitation data, students will explore weather patterns and the relationship between the water cycle and weather.

Supports: S2E3, S4E3, S4E4, S6E3, S6E4, SM1, SES5

Plate Tectonics (5th-12th)

Students will explore how Earth's active plates change the landscape through constructive and destructive forces causing volcanic eruptions, earthquakes, and tsunami events.

Supports: S5E1, S6E5, SES1, SES2, SG4

Earth In Space (2nd-12th)

Using real imagery of the Earth, Sun, and Moon, students will explore the relationships between these three celestial bodies through topics such as day and night, seasons, moon phases, and eclipses.

Supports: S2E1, S2E2, S4E1, S4E2, S6E2, SAST2

Ecosystems (4th-12th)

Students will explore the relationships between organisms and their environments by examining different biomes around the globe.

Supports: S4L1, S7L4, SEC1, SEC5, SEV1

Earth's Surface Over Time (3rd-12th)

Students will examine Earth's changing landscape and explore how fossils provide clues to understanding Earth's past.

Supports: S3E1, S3E2, SES3, SES4



Live Animal Experience

Live Animal Experiences provide unique opportunities for students to combine both creatures and Georgia's Standards of Excellence in their field trip experience.

The Classic (K-12th)

This animal experience highlights a bird, mammal, and reptile with basic information about their species, habitat, adaptation, classification, and personal information.

Supports: SKL2, S1L1, S3L1, S3L2, S4L1

Animals in Our Backyard (K-12th)

Native Georgia animals are featured in this animal experience with information about habitat, adaptation, classification, and more.

Supports: S1L1, S3L1, S3L2, S4L1, S5L1

Who Am I? (3rd-12th)

Students will learn about classification and characteristics of major animal groups while investigating ways that animals adapt to suit their environment during this animal experience.

Supports: S4L1, S5L1, S7L1

Regional Habitats (K-12th)

During this animal experience, students will see and learn about animals and their habitats and how those animals adapt to change within that habitat.

Supports: S2E3, S2L1, SB5

Transfer Systems (3rd-12th)

Students will examine the main parts of an ecosystem (producers, consumers, and decomposers) and learn about the animals that are part of the energy transfer system in this animal experience.

Supports: S4L1, SEV1

Shadow Survivors (4th-12th)

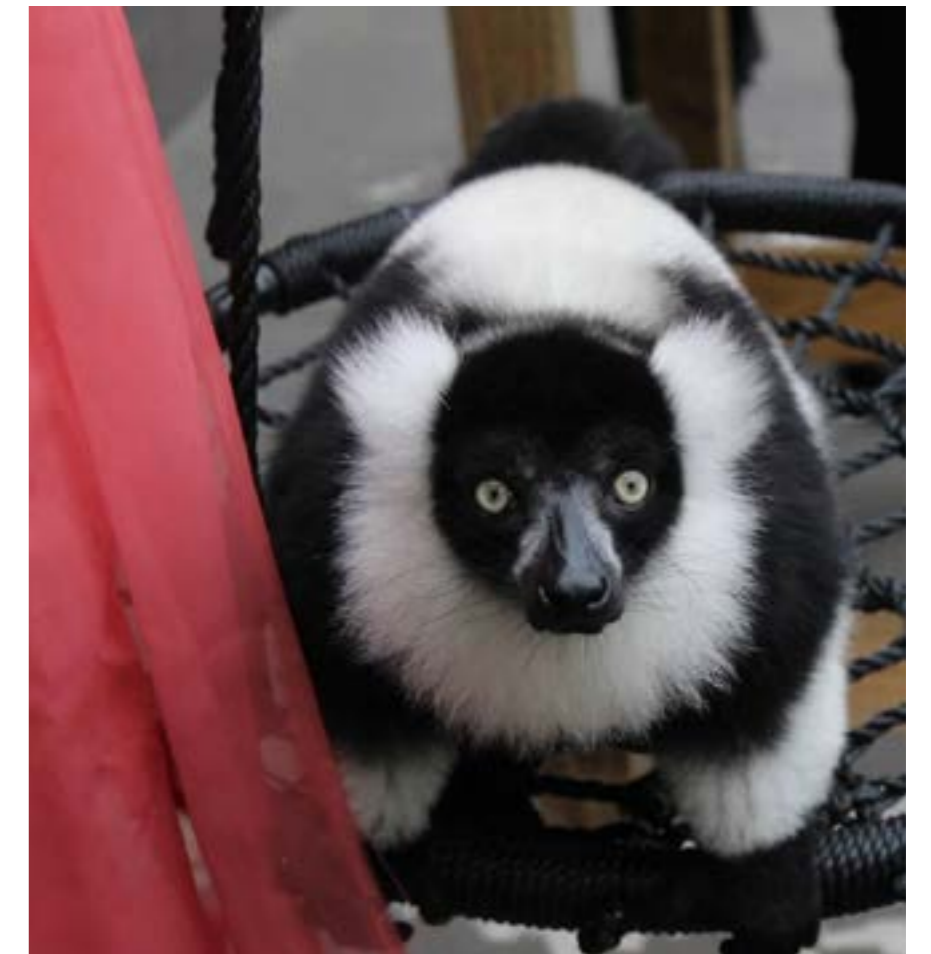
During this animal experience, students will learn about diurnal and nocturnal survival skills and adaptations.

Supports: 26E2, S7L4

Survival of the Fittest (5th-12th)

Students will examine the classification of vertebrates in this animal experience along with predator/prey relationships and how wild exotics can disrupt an ecosystem.

Supports: S7L4, S7L5, SB5, SEC3, SZ4



Hands-On Activities

STEAM-based activities that include aspects of art throughout the exploration of scientific concepts and processes. Our classroom holds 28 students at a time for a total of 112 students per field trip.

Incredible Journey (3rd - 8th)

Students explore the water cycle by becoming a water droplet and journeying through the cycle.

Supports: S4E3, S6E3

Kinetic Sculpture (3rd - 5th)

Engineering, science, and art—the key elements in the design of sculpture in motion—are examined and practiced as students look at examples of kinetic sculpture in the MAS collection and then create their own.

Supports: S4P3, S5CS4, VA.CR

Day and Night (PreK-1st)

Students explore characteristics of day and night through a take-home art project.

Supports: SKE1

Rising Seas (6th-8th)

Students conduct experiments to explore the human impact on the natural cycling of water including the flow of water to the ocean, the melting of glaciers, and the rising of the seas.

Supports: S6E3, SEV2, SES6, SM5

Volcanoes as Constructive Forces (5th-8th)

Students create mini-volcanoes, graph the development of land they create, and make a topographic map.

Supports: S5E1, S6E5

Creatures: Alike and Different (K)

Students will learn how to describe and classify attributes of objects, materials, and animals.

Supports: SKL1

Art & 3 States of Matter (K - 2nd)

Using experiments and different art mediums, students will learn the three states of matter and the characteristics of them while creating art to take home.

Supports: SKP1, S2P1, VA.CR

Weather Fun (1st - 2nd)

Experiments and an art project to take home focus on wind as a factor in weather.

Supports: S1E1, VA.CR

Molds and Casts (1st - 5th)

Students make a clay mold and plaster cast.

Supports: S3E2

Moonscapes (1st-2nd)

Conduct experiments and create an art project to take home that focus on the surface of the moon and how craters are made.

Supports: S2E2, VA.CR



Additional Programming

Sweetgum Trail

Guided Nature Trail Walk (K-12th)

The trail program includes a Georgia native plant garden and explores life science topics based on appropriate GSE.

Supports: S1E1, S1P1, S1P2, S3E2, S4E4, S4P2, S5P3

Exhibitions

Expedition Observation (3rd-12th)

This program is a tour and activity designed to encourage students to look at art and exhibits more critically, practicing observation skills through a STEAM learning lens. Students will be able to see both permanent and travelling exhibits.

Supports: S3E2, S5L1, VA.CN.1, VA.RE.1, MSEK1.2

Discovery House

Guided Tour (PreK-8th)

Docented group experiences in three fully interactive floors of Discovery House including the Mini-Zoo.

Supports: S1E1, S1P1, S1P2, S3E2, S4E4, S4P2, S5P3



Field Trip Preview

Check-In & Payment

- Check in is from 9:30-9:45AM. Please have a school/group representative visit the front desk to check in and give final head counts.
- Please call the MAS if you are experiencing delays. Late arrival may shorten or forfeit programming as your field trip begins promptly at 10AM.
- Early arrival allows students to unload from the bus and have a bathroom break before programming begins.
- The Group Tour Coordinator will ask you to form groups based on programming schedules and will hand you a daily schedule. (please note: some groups have multiple classes in them.)

Programming

- At the time of booking, you will choose 3 programs for your school. All of our programs support the Georgia Standards of Excellence, and our new curated bundles all connect and have a recommendation of fall or spring based on the GSE pacing guide.
- Programs typically run 40-45 minutes long. A staff member will assist you in moving from program to program, as well as seating.
- The MAS is ADA accessible and can assist groups with children or adults on the spectrum and/or with disabilities (see accessibility and accommodations section)
- Lunch will be held at 11:30AM and/or 12:15PM
- Eating/Drinking is not allowed inside the building.
- Lunch will be located at the picnic area next to the caboose. In the event of rain you will be guided to use our covered pavilion.
- Your group is welcome to order food to be delivered to the front desk, however a group representative must be at the desk to receive it.
- You may choose to shop at the Museum Store during lunch. The store offers a wide range of items for kids and adults. There are budget friendly items available for as low as \$3. We also offer a penny squishing machine next to the store. Please limit the store to 10 students at a time.
- Field Trips run from 10AM-1PM. There is no field trip programming after 1PM.



Booking Your Experience at MAS

Scan the code to be taken to the field trip inquiry form



Booking

- Book early! Our busiest time of year is March, April, and May. Please book at least one month in advance of your anticipated field trip date.
- To begin the field trip booking process, fill out the field trip inquiry form at www.masmacon.org/educators/on-site-field-trips. The MAS Group Tour Coordinator, Lauren Dean, will contact you within 5-7 business days with more information and send you the rest of the booking process. Please ensure all information on the inquiry form is correct to ensure a smooth booking process.

Field Trip Requirements

- Minimum group size is 10 students
- Maximum group size is 280 students
- One chaperone/teacher per every 10 students is required. Those chaperones are admitted for free. Additional chaperones and parents will be charged admission. Teachers and these chaperones must be with their group at all times.

Fees*

- Students: \$9/student
- Teachers, Bus Drivers & Designated Chaperones: FREE
- Parents & Additional Chaperones: \$10/person

The Museum accepts payment before, after, or on the day of your visit. We accept checks, cash, and cards. A quote/invoice will be provided upon being approved for your field trip. You may request to update this one time before your visit. If needed, an invoice can be sent after your visit with the numbers you brought that day. Payment is due within 30 days of the booked field trip date. Please note that no refunds under the amount of \$25 will be issued.

Please make arrangements to pay for students all together to expedite the check-in process. For groups with more than 10 parents, please have parents pool money into one payment.

*Please note: MAS Memberships do not apply to school field trips for any attendees.

The MAS is for everyone! If students or adults in your group require special accommodations, then let us know. The MAS building is ADA accessible with spaces available in programming areas for wheelchairs and an elevator to access all three floors of the Discovery House.

Visually Impaired Focused Field Trips

The MAS has been working to create programming for students with visual impairments. If your group is interested in this experience, please contact the Group Tour Coordinator for more information.

Visually impaired-friendly exhibits:

- The MAS has begun to include braille exhibit labels for certain installations.
- The Artists' Garrett (Top Floor of the Discovery House) includes toys and exhibits that students can touch and use.
- The Scientist's Workshop (Basement of the Discovery House) includes rocks and exhibits that students can touch.
- The Science Hall includes meteorites that students may touch.

Sensory-Heavy Areas & What to Expect

- Live Animal Experiences: Programs may include several other guests and some animals may produce loud, sudden noises.
 - Mini-Zoo: Some animals may produce sudden, loud noises (i.e. Lemurs and Parrots) that make students uncomfortable.
 - Light Box (3rd Floor of the Discovery House): The Light Box produces several bright colors using your silhouette. This may be triggering for students with epilepsy and/or overwhelming for students with sensory sensitivity.
 - Planetarium: During these shows it can become very dark, very loud, and may include flashing lights that can be difficult for students with epilepsy or sensory sensitivity. If a student needs to leave during the program, they will not be allowed back in for safety reasons.

Accessibility and Accommodations