FREQUENTLY ASKED QUESTIONS

What is the difference between a Weekday Lab and a Lab On Demand?
Weekday Labs are scheduled labs rotated monthly and are available at a discount if booked in that month. Labs On Demand are available at the date and time of your choice.

How much do labs cost?
Weekday Labs booked in the scheduled month cost $200. Dissection labs start at $250, but can cost more depending on specimens. Labs On Demand range in cost from $250-$500 per 25 students depending on the selection. Labs On Demand can travel to your school for an additional $75 travel fee. Book four or more Labs On Demand at once and receive $25 off each one!

Are labs available at HMNS Sugar Land?
Yes! Weekday Labs are available at HMNS Sugar Land on select Thursdays and Fridays each month, and select Labs On Demand are available at HMNS Sugar Land as well.

How do I register for labs?
Email educationquestions@hmns.org with your preferred lab, date, group size, and age. We will work with you to find a mutually agreed upon date and time. You can find a full list of Labs On Demand at www.hmns.org/lab.

What if I don’t see a lab topic I like?
Email us what you had in mind! We may be able to help you!
LABS ON DEMAND

DISSECTION LABS
Dissection Labs take an inside look at a variety of specimens, from organs to animals. Note: Some dissections are only offered at HMNS Hermann Park.

GRADES 5-12

Introduction to Dissection
Learn how to hold a scalpel, what tools are needed for success, and which way is up in this class for anyone unfamiliar with dissection.

Brain
Put your axons to work as you model nerves and neurotransmitters.

Eyeball
Blind spots, color blindness, or myopia a problem? Come find out why as you take an inside look at the eye and see how it functions.

Fetal Pigs (Advanced Lab – 2 hours)
An extended lab for older students. Explore mammalian anatomy of thoracic and abdominal cavities with dissection of a fetal pig.

Frog
A classic example of vertebrate anatomy, the frog still has a few surprises in store.

Grasshopper
Explore the world of insects as you look at the Lubber grasshopper (Romalea).

Heart
Nothing beats that “Aww” moment! Take a detailed, in-depth look at one powerful muscle and vital body organ, the heart.

Horseshoe Crab
It’s neither part horse nor crab, but it sure is one incredible, ancient arthropod, an actual living fossil! Investigate the horseshoe crab inside and out.

Kidney
From filtration to waste removal, investigate the body’s very own specialized water treatment plant and body fluid balancer, the kidney.

Lizard
Moths, roaches, and beetles, yum! Discover a fascinating predator and local color changer, the anole.

Lung
Take a close look at the mammalian respiratory system as you dissect a sheep pluck, separating the lungs from the trachea and heart.

Owl Pellet
Ever wonder what happens to the indigestible parts when raptors swallow food whole? Find out as you deconstruct an owl pellet.

Shark
Discover there’s more to sharks than their teeth.

Starfish
Dive deep into this class about the starfish and other Echinoderms.

Colossal Calamari
Delve deep into this intriguing cephalopod, the squid. Includes squid dissection.

SEPTMBER WEEKDAY LABS

Optical Illusions
Investigate ambiguous pictures, impossible shapes, strobe effects and other amazing illusions.

Colossal Calamari
Delve deep into this intriguing cephalopod, the squid. Includes squid dissection.

South American Adventure
Take your imagination on a trek through some of the most famous habitats in the world as we study South American wildlife.

Select September labs available at HMNS Sugar Land on September 27-28.

CONOCOPHILLIPS TECHNOSCIENCE LAB

DISSECTION LAB

WILDLIFE LAB

www.hmns.org/lab  (713) 639-4625  educationquestions@hmns.org
BIOLOGY LABS

Biology Labs cover a wide range of topics in molecular biology, ecology, genetics, and more.

GRADES 5-12

Blood
Nobody can do without it, and we mean no body! Learn about some different kinds of blood and use simulated blood to identify human blood types.

Carbohydrates
Discover the facts about the structure and properties of a powerful energy source: carbohydrates. Crack the code and identify an unknown carbohydrate.

Cells
What do you have over 75 trillion of but have never seen with the naked eye? Compare animal and plant cells as you take an up close look at our most basic component.

Enzymes
Crazy for catalyzing! Examine how the body's enzymes aid in digestion and control the release of energy essential to life.

Flowers and Pollination
Get the buzz on how some plants pull out all the stops to attract their perfect, specific pollinator. Investigate how flower form meets function in full color.

Mendelian Genetics
Investigate a variety of phenotypes, genotypes and Punnett squares using Mendel's Principles of Inheritance, the three laws that are the foundation of genetics.

Mitosis
Learn about chromosomes and cellular division as you study mitosis.

Nitrogen Cycle/Water Quality
pH got you down? Are your microbes multiplying? Learn about the nitrogen cycle and how your water quality affects your quality of life.

Osmosis and Diffusion
Explore the mystery of molecular motion as you experiment with diffusion and osmosis.

OCTOBER WEEKDAY LABS

Select October labs available at HMNS Sugar Land on October 25-26.

DISSECTION LAB
Raining Ranids
The frog still has a few surprises in store. Find out what's weird about these lean bug-eating machines. Includes frog dissection.

EARTH SCIENCE LAB
Bright Side of the Moon
Explore the phases of the moon and find out what causes it to wax and wane over the course of a month.

TIME LAB
Garbology
Archeologists love garbage! Come discover the story that can be told by studying the trash that ancient people left behind.

www.hmns.org/lab
(713) 639-4625
educationquestions@hmns.org
Earth Science Labs explore everything Earth—from the depths of the sea to our place in space.

**GRADES 1-8**

**Discover Maps!**
Learn about latitude, longitude, and cartography in this class all about maps!

**Fossil Fuels**
Dig into fossil fuels! Explore the formation of these resources.

**Fossil Sort**
Watch your students become paleontologists! From shark teeth to sea shells, students will catch a glimpse of the past. They will have the opportunity to sort through fossil matrix and identify the fossilized remains of prehistoric ocean creatures.

**Land Forms**
Explore the basic landforms and waterways found in Texas. Follow our water from spring to shore!

**Layers of the Atmosphere**
Let's take it from the top! In this lab, we'll explore the layers of the earth's atmosphere, and discuss how altitude, pressure, and temperature change in our atmosphere.

**Layers of the Earth**
Journey to the center of the earth? Of course! We're going to explore everything from the core to the crust and all the layers in between.

**Layers of the Ocean**
Take a journey into the depths of the ocean! Learn about the ocean's layers and the pressure it creates for the living and nonliving things in each layer.

**Livable Earth**
Discover the characteristics that make the Earth an ideal place for us to live!

**Mohs Hardness Scale**
Mohs scale helps determine how useful a mineral can be. In this lab you will test minerals and learn their uses.

**Our Place in Space**
Delve into our solar system to find out what makes it unique and see what lies outside of its boundaries.

**Petroleum Production**
Discover everyday items that come from this fossil fuel.

**Renewable Energy**
Discover the many forms of renewable energy at our fingertips.

**Rock Cycle**
Sedimentary, metamorphic and igneous, oh my! Take a spin through the rock cycle and investigate how rocks are changed and formed.

**Rocks and Minerals**
Discover the difference between rocks and minerals and learn how you use them daily.

**Smaller than a Planet**
What else is in our solar system? Discover comets and asteroids, meteors, and meteorites, and other bits found in space!

**Total Eclipse of the Sun**
Explore what happens during an eclipse, and prepare for our next total solar eclipse!

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**NOVEMBER WEEKDAY LABS**

**Balancing Act**
From levers and mobiles to leaning towers, explore the center of mass, and find out why it matters.

**Ancient Greece by the Numbers**
Meet the revolutionary mathematical thinkers of ancient Greece, from Hypatia to Pythagoras and beyond.

**Great Barrier Reef**
This World Heritage Site houses corals, migratory vertebrates, sponges and more. Learn about the relationships between these species in this lab.

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Select November labs available at HMNS Sugar Land on November 15-16.

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[www.hmns.org/lab](http://www.hmns.org/lab)  (713) 639-4625  educationquestions@hmns.org
LABS ON DEMAND

ConocoPhillips Techno Science Labs

ConocoPhillips Techno Science Labs feature interactive experiments in a variety of chemistry and physics topics.

GRADES 1-8

Balancing Act
From levers and mobiles to leaning towers, explore the center of mass and find out why it matters.

Crash Course
Investigate the physics of collisions and safety technology.

Discovering Density
Discover how hot air balloons rise, why rocks sink, and explore cool density tricks.

Falling Fast
Explore parachutes and other ways to cushion a fall, then design and protect an egg ‘passenger’ from a crash.

Kitchen Chemistry
Check out the cool chemistry hiding in household items.

Light
Explore fluorescence, luminescence, and color as we experiment with light.

Magnets
Explore properties of magnets, testing different materials and investigating magnetic fields.

Marvelous Mixtures
Investigate properties of solutions, colloids, alloys, and other mixtures and figure out how to separate them.

Optical Illusions
Investigate ambiguous pictures, impossible shapes, strobe effects, and other amazing illusions.

Optics
Experiment with water drop lenses and mirrors to explore reflection, refraction, and light.

Polymers
From plastic and rubber to gummy bears and slime, polymers are everywhere.

Pressure
Lift, crush, and hover with the amazing power of air pressure.

Shape Science
Discover the science and math of shapes through tessellations, construction, and more.

Shape Science II
There’s so much shape science it wouldn’t all fit in one class! Explore more puzzles, tessellations, and symmetry.

Skyscraper Science
Experiment with tension, compression, and more to solve the problems of building sky-high.

Sound Science
Use tuning forks and tubes to investigate pitch, resonance, and the science of music.

Speed
Explore circular motion and discover what shapes are speediest.

Water Works
Discover surprising things about water and explore surface tension and capillary action.

GRADES 9-12

Density
Discover how hot air balloons rise, why rocks sink, and explore cool density tricks.

Polymers Investigation
Polymers from plastics and rubber to gelatin and glue and are all around us and are incredibly useful! Explore different polymer types and properties (like strength or stickiness) and learn how they are made.

Test for the Best
Decide how to fairly test and compare products to discover which is the best chocolate bar, the most absorbent paper towel, the bubbliest bubble gum, and also how to select the best value as a smart consumer. Allergy note: We will consume food in this lab.

Probability and Problem Solving
Explore the mathematics of chance, from game shows and dice rolls to the weather – what do the numbers really mean, and what is the probability of getting a certain outcome?

DECEMBER WEEKDAY LABS

Circular Motion
Explore rolling and spinning, and discover which shapes are speediest.

Cracking the Egyptian Code
Discover the secret of the Rosetta Stone as you discover how ancient Egyptian hieroglyphics were deciphered.

Sixth Sense
Unveil the world we are missing out on, through animals that have unique methods for sensing heat, pressure, electrical fields and more!

Select December labs available at HMNS Sugar Land on December 13-14.

www.hmns.org/lab (713) 639-4625 educationquestions@hmns.org
LABS ON DEMAND

TIME LABS

Travel through history in each Time Lab, exploring a variety of topics with interactive activities.

GRADES 1-8

Age of Exploration
Let’s circumnavigate the globe together as we discover the intrepid explorers who took to the seas.

Ancient Writing
Try your hand as an ancient scribe! Experiment with different writing styles from different ancient cultures and discover the earliest alphabets.

Archaeology
Dead men really do tell tales! Come explore the science of archeology from shards to skulls and beyond.

Aztecs
Come meet the Mesoamerican people who lived in what is now Mexico City and the surrounding territory beginning in the 14th century. They established a broad empire that lasted roughly 200 years and was one of the most advanced for its time.

The Babylonians
A culture that valued mathematics and literature; the Babylonians were an inventive and intelligent people who made large advances in the techniques of agriculture and science.

Black Death
In 1348 Genoese sailors brought the Black Death to Europe from Asia. Explore the effects this plague had on the lives and cultures of Medieval Europe.

Bloodstain Pattern Analysis: Spatter Lab
Bloodstains have a story to tell if you know how to listen. Get hands-on experience and learn to “listen” in our spatter lab. Basics – 1 hour; Extended in-depth – 2 hours

Byzantine Empire
Though the western half of the Roman Empire crumbled in the 5th century, the eastern half survived for 1,000 more years, spanning a rich tradition of art, literature and learning.

Castles
Explore the basics of medieval castle structure and life inside these amazing fortresses. Then use what you’ve learned to design your own.

Charlemagne
Come explore with the King of the Franks and Holy Roman Emperor of the West. Delve into the wonder that was the Carolingian Renaissance.

Civil War Science
Argued by some to be the first “modern” war, come explore what made this conflict different than those before.

Time Labs continue on page 7.

JANUARY WEEKDAY LABS

Discovering Density
Discover how hot air balloons rise, why rocks sink, and what makes submarines go up and down.

Tugging on Your Heartstrings
Take an in-depth look at one powerful muscle, the heart. Includes sheep heart dissection.

Pyroclastic Pompeii
Meet the inhabitants of this ancient city as you journey through the ghostly remains buried deep beneath volcanic ash.

Select January labs available at HMNS Sugar Land on January 24-25.

www.hmns.org/lab (713) 639-4625 educationquestions@hmns.org
LABS ON DEMAND

TIME LABS

Cleopatra
Last pharaoh of Ancient Egypt and shrewd politician meet this mysterious woman of the past.

Egypt 101
What is Egyptology? What does an Egyptologist do? Come explore this exciting field of study in our “mini” Egyptology Lab.

Egypt (Mummification)
Discover the process of mummifying the dead; and delve into the closely held secrets of the ancient embalmers.

Forensic Anthropology: Who Owns These Bones?
Get up close and personal with bones and discover what secrets they can tell you if you know how to listen. Class includes work with skeletal reproductions. Basics – 1 hour; Extended in-depth – 2 hours

Gallant Gladiators
In Rome, gladiators were big business! Encounter the various versions of gladiators and immerse yourself in the ultimate spectator sport.

History of Espionage
Do you have what it takes to crack the case? Discover the history of the covert world of espionage.

History of the Horse and Man
Humans have a 6000 year history with the horse and only 100 years with the automobile. Come discover what makes this historical relationship so important.

Imperial Rome
Experience the magnificence of Rome during its reign as the dominant political, economic and military power of the western civilized world.

Indus River Valley Civilization
The Indus River Valley Civilization is one of the three earliest civilizations. Also known as the Harappan Civilization, they were known for their urban planning and metallurgy. Come discover this vast empire that awaits you!

Inventions of Imperial China
China’s long history saw the emergence of many important inventions such as paper and movable type. Come delve into the many wonders of Imperial China!

Is There a Doctor in the Hut?
Explore the good and the bad as we consider medicine throughout the ancient world from trepanation to tourniquets.

The Kingdom of Kush
Experience the Kingdom of Kush — an ancient civilization in Africa, often referred to as Nubia. It was known for its skillful archers and had close ties to Ancient Egypt.

Medieval Japan
Shogun to samurai; come on a journey to Medieval Japan.

Middle Ages/Castles
Explore the basics of medieval castle structure and life inside these amazing fortresses.

Mongol Empire
Come ride with the Mongols! In less than 80 years, a small band of warriors grew to an empire that stretched from the Pacific Ocean to the Danube River.

Monstrous Megaliths
From Stonehenge to Easter Island come uncover the mysteries of these fascinating stone structures.

The Race for Space!
Delve into the great race and explore the extreme competition between the United States and the Soviets for primacy in space.

Roman Water
Explore the genius of the Roman aqueducts and use what you learn to design and test your own.

Science of the Round Table
Calling all lords and ladies! Join us as we journey to a time of castles, kings, and queens.

Secrets of the Silk Road
Uncover the secrets of the hundreds of well-preserved mummies found buried in China.

Time Labs continue on page 8.

FEBRUARY WEEKDAY LABS

Select February labs available at HMNS Sugar Land on February 21-22.

EARTH SCIENCE LAB

Plate Tectonics
From Pangea to the present, the continents have shifted over time. Discover tectonic plates and how they shift a little bit every year!

TIME LAB

Ancient Persia
Enter through the Gate of Xerxes as we explore the ruins of the ancient Persian city of Persepolis and discover how this ancient culture influenced our own.

WILDLIFE LAB

Moldy Oldies
Many animals live just as long, if not longer than people, and one might even have the gift of immortality! Discover how they do it in this lab.

www.hmns.org/lab   (713) 639-4625   educationquestions@hmns.org
LABS ON DEMAND

TIME LABS

Seven Wonders of the Ancient World
Come travel all over the world as you discover the wonders of the ancient world, from the Lighthouse of Alexandria to the Great Pyramids at Giza.

Siege Machines
Discover the weapons of the “Medieval Arms Race” and design a working model.

Spice
Follow the spice routes as you take a flavorful journey to investigate spices and their impact on economy, health and food.

Timbuktu
Discover this West African city, long synonymous with the uttermost end of the Earth, that was a center of Islamic scholarship under several African empires, was home to a university that helped the spread of Islam throughout Africa.

We Built this City
What does it take to build a successful city? Try your hand at ancient urban engineering.

GRADES 9-12

Archaeology
Dead men really do tell tales! Come explore the science of archeology from shards to skulls and beyond.

Aztec
Come meet the Mesoamerican people who lived in what is now Mexico City and the surrounding territory beginning in the 14th century. They established a broad empire that lasted roughly 200 years and was one of the most advanced for its time.

Black Death
In 1348 Genoese sailors brought the Black Death to Europe from Asia. Explore the effects this plague had on the lives and cultures of Medieval Europe.

Bloodstain Pattern Analysis: Spatter Lab
Bloodstains have a story to tell if you know how to listen. Get hands-on experience and learn to “listen” in our spatter lab. Basics – 1 hour; Extended in-depth – 2 hours

Da Vinci Science
Inventor, artist, architect, genius-Leonardo Da Vinci is the ultimate Renaissance Man. Discover the range of Leonardo’s talents as you try out some challenges of your own.

Egypt (Mummification)
Discover the process of mummifying the dead; and delve into the closely held secrets of the ancient embalmers.

Forensic Anthropology: Who Owns These Bones?
Get up close and personal with bones and discover what secrets they can tell you if you know how to listen. Class includes work with skeletal reproductions. Basics – 1 hour; Extended in-depth – 2 hours

Maya
Discover the Continent’s longest lived indigenous civilization and some of their enduring contributions.

Middle Ages/Castles
Explore the basics of medieval castle structure and life inside these amazing fortresses.

Siege Machines
Discover the weapons of the “Medieval Arms Race” and design a working model.

Vikings
Boat builders, farmers, and fierce warriors are but a few descriptors for the amazing people known as the Vikings. Experience Viking culture and activities in this hands-on class.

MARCH WEEKDAY LABS

Select March labs available at HMNS Sugar Land on March 28-29.

DISSECTION LAB
Leaping Lubbers
Explore insect anatomy as you look at the Lubber grasshopper (Romalea). Includes grasshopper dissection.

TIME LAB
Magnificent Money
Become a numismatist as you travel the timeline of money and its many forms and uses.

WILDLIFE LAB
Bugs in Balance
Peek into this secret world of workers as we learn more about beneficial bugs.

www.hmns.org/lab (713) 639-4625 educationquestions@hmns.org
LABS ON DEMAND

WILDLIFE LABS
Wildlife labs use specimens to discuss the natural world and the unique creatures who inhabit it.

GRADERS 1-8

All in the Family
SCHOOL yourself with this fun class PACKed full of information!

Amphibians
Are frogs and salamanders fortune tellers? Study these environmental indicators to discover what they could tell you about your own future.

Animal Sense of Sight/Smell
He who smelt it... gets the best meal! See the world through the eyes of alligators, rodents, hawks and more; then test your own schnoz to see how it stacks up with the rest of the animal kingdom!

Australian Wildlife
It's got flying foxes, the only two egg-laying mammals in the world, and more!

Bite Your Tongue
Why are giraffe tongues dark? Are frog tongues really on backwards? Answer these questions as we study this important and often overlooked organ.

Crustacean Station
What do lobsters, sea monkeys and pill bugs have in common? Immerse yourself in the world of these leggy arthropods to discover how they are all connected.

Deep Sea Divers
We know more about the surface of the moon than we do the ocean floor. These deep sea creatures are not from space, but with their fangs, transparent heads, built in lights and love of toxic chemicals, they sure are aliens!

Endangered Species
Come quickly because they’re going fast! Why are some animal populations on the decline? What can we do to help them?

Get a Grip
Animals use everything from claws to wrinkles to hang on tight.

Get Batty!
Next time you see a bat, don’t call pest control, bats ARE the pest control! Discover why bats aren’t as spooky as they seem and why they make such great neighbors.

How It’s Made
If you have eaten honey or worn silk, you have benefited from the labor of industrious creatures. Take a behind-the-scenes look at animal-run factories.

Just Keep Swimming
Become an amateur ichthyologist in this lab all about fish fins. After class, test your knowledge in the Alfred C. Glassell, Jr. Hall of the museum.

Magnificent Madagascar
This island sits off the coast of Africa and is a hotspot for biodiversity. Learn more about the strange inhabitants of this land.

Magnificent Mollusca
What has a beak (but it’s not a bird), a mantle (but it’s not a fireplace), a foot (but no legs) and jet propulsion (but isn’t a rocket)?

Myrmecology
Ants! There are over 10,000 ant species. Become a myrmecologist for the day and discover ants that cooperate to form super colonies, set traps to capture prey, and even grow their own food!

Nature’s Revenge
Don’t make them mad; these animals are equipped with toxins to fight back! Delve into the world of venomous and poisonous animals, particularly those found in Texas.

One of These Things is Not Like the Other
Study characteristics of living things and sort them into their taxonomic groups; then, meet the animals you sorted!

Pollution and the Food Web
Small changes in an environment can have a big impact on wildlife. Discover

Wildlife Labs continue on page 10.

APRIL WEEKDAY LABS

Marvelous Mixtures
Investigate properties of solutions, colloids, alloys and other mixtures.

Tornado Alley
Join us in this whirlwind of a class to find out more about tornadoes, how they form, and where we can find them in the United States!

Wacky Weapons
Animals have some weird weaponry, from spiky mustaches to built-in water guns. Learn more about peculiar animal defenses in this lab.

Select April labs available at HMNS Sugar Land on April 25-26.

www.hmns.org/lab (713) 639-4625 educationquestions@hmns.org
Endangered Species
Come quickly because they’re going fast! Why are some animal populations on the decline? What can we do to help them?

Pollution and the Food Web
Small changes in an environment can have a big impact on wildlife. Discover the impact humans have had, both good and bad, as you explore the effects of pollutants in a food web.

Taxonomy
Study features of living things and sort them into their taxonomic groups; then, meet some of the animals you sorted!

Laboratory Experiments

WILDLIFE LABS

the impact humans have had, both good and bad, as you explore the effects of pollutants in a food web.

Polyp-palooza!
Often confused for plants or rocks, coral beds are full of fascinating animals working together to support an incredible amount of life forms. Pay these polyps the attention they deserve in this wildlife lab.

Say What?
Which creatures converse through subsonic booms? Can moths really “talk” to bats? Find out the answers to these questions and more as we explore how animals use and experience sound.

Signs of Intelligent Life
Discover the creative methods used to study animal intelligence.

Slow and Steady
Turtles and tortoises seem invincible with their heavy armor, but these living tanks are actually quite vulnerable to human influence. Investigate why in this lab.

Swamp Things
Dig up the truth on the animals in the muck as we encounter wetland wildlife.

The Better to Bite You With
Say cheese! Say plants! Say meat! Smile wide and examine your teeth and the teeth of other animals to see how they match up to their favorite meal.

To Blend or Not to Blend?
Crack the camouflage code in this course.

Young Wonders
Learn about the interesting forms young animals take on their journey to adulthood.

MATH LABS

Math Labs bring numbers, beautiful shapes and equations to life. Check each class for skills requirements.

AGES 8-13

Meet the Number Families
Explore way beyond odd and even—prime, ‘perfect,’ and ‘pizza’ are all number families! Should understand multiples.

AGES 10-16

Patterns in Nature
Explore the Fibonacci sequence and other cool patterns found in animals, plants, minerals, and more! Should understand simple exponents.

Shapes and Solids
What flat shapes can be folded into a cube? Build and investigate three-dimensional solids. Should understand very simple algebraic equations.

AGES 12-18

Fascinating Fractals
Explore endlessly repeating patterns similar to the branches of a tree. Then figure out how to draw your own. Should understand orders of magnitude.

Select May labs available at HMNS Sugar Land on May 23-24.

www.hmns.org/lab
(713) 639-4625 educationquestions@hmns.org

MAY WEEKDAY LABS

Sound Science
Use tuning forks and tubes to investigate pitch, resonance and the science of music.

Making (Seismic) Waves
Explore seismic waves and the destruction left behind by earthquakes. Learn about how scientists predict them and what causes this natural disaster.

Cats!
Join this lab to learn about various adaptations of wild and domestic cats, and handle field specimens from our collection.

CONOCOPHILLIPSTECHNOSCIENCELAB

EARTHSCLIENCELAB

WILDLIFELAB
Scouts@HMNS takes the fun, educational nature of HMNS Education and applies it to Scouting requirements! Scout classes taking place from September through May will be offered on Saturdays and will cover requirements for one badge.

Classes are available at HMNS Hermann Park with a limited selection available at HMNS Sugar Land. Email scouts@hmns.org to inquire about setting up an On Demand private session for your group.

**Boy Scouts**

**Cub Scouts**
Cub Scout classes are designed to complete one Adventure in two hours. Adventure classes are available for Lion Cubs, Tiger Cubs, Wolf Cubs, and Bear Cubs. Each session will introduce and reinforce concepts with hands-on activities to inspire young minds.

**Webelos**
Classes are designed to complete one Adventure in two hours. Each class brings concepts to life with demonstrations and hands-on activities designed to promote learning and retention.

**Scouts BSA**
Classes are designed to meet requirements for one Merit Badge in four hours. Many different Merit Badge classes are offered, including Eagle-required Merit Badges! Each class emphasizes the fun and educational components of requirements.

**Girl Scouts**

**Daisies**
Classes earn each participant an entire Badge. Each class includes a guided tour of an HMNS exhibit hall as well as hands-on crafts.

**Brownies**
Earn an entire Badge in two hours. Exploring everything from bugs to art, these classes bring topics to life with engaging activities.

**Juniors**
Classes will meet requirements for an entire Badge in two hours. Badges are available at HMNS, covering a variety of topics.

**Cadettes**
Classes will meet requirements for each Badge in two-hour sessions.

**Badges On Demand**
Set up a private class for your Scouts! Contact scouts@hmns.org to organize a Badge On Demand session for your entire Troop or Pack. This option works best for groups of 10+.

**Do I have to be a Scout to participate?**
No! All classes are open to children of the appropriate age. Girls are welcome in Boy Scout classes and vice versa.

www.hmns.org/scouts  (713) 639-4631  scouts@hmns.org
Jurassic James’ classes are behind-the-scenes educational Lab On Demand, using the staff’s training classrooms and featuring a special Jurassic James tour.

**GRADES 1-6**

**Life in the Cretaceous**
A look at the animals of the Cretaceous Period, *Tyrannosaurus rex*, *Triceratops*, *Edmontosaurus*, *Gorgosaurus*, *Denversaurus*, *Acrocanthosaurus*, *Deinonychus*, *Mosasaurus*, and *Quetzalcoatlus*. This class is taught in the dinosaur room! We will discuss these animals and their lifestyles and why scientists believe what they do about them by using a large collection models. Then, see the actual skeletons and have a Q-and-A both ways between teacher and students.

**Prehistoric Animal Diets:**
*Carnivores, Herbivores, and Omnivores, oh my!*
The focus of this class is to study the teeth of dinosaurs and other prehistoric animals. Animals include Texas’ own sail-backed *Dimetrodon* to *Tyrannosaurus rex* to the Woolly Mammoth. There is a focus on how and what these and other prehistoric animals ate, which is easily learned by a simple shape of the tooth. In the Morian Hall of Paleontology, we will compare the teeth of each skeletal mount to determine diet using the handout received in class.

**Prehistoric Defense: Teeth, claws, run, or hide!**
We will start in Jurassic James’ lab and look at how various lifeforms defend themselves. With a particular focus on the composition of each defense such as bony horns and spikes or keratin claws and quills and how and why some species choose flight or fight. In the Morian Hall of Paleontology where James will “quiz the kids” on the preferred defense method of certain species.

**Rocks and Minerals of Ancient Americas**
How you ever wondered why some cultures leave pyramids and others do not? In this class we will take a brief look at Granite, Scoria, Obsidian, Limestone, Sandstone, Gneiss, and more, with the express emphasis on how the ancient peoples of the Americas used the materials to build their worlds. In the John P. McGovern Hall of the Americas, James will “quiz the kids” on which rocks they see on display in the museum!

**Rocks and Minerals of Ancient Egypt**
A look at Granite, Scoria, Obsidian, Limestone, Sandstone, and Gneiss and how the ancient peoples of Egypt used the materials to build their worlds. In the Hall of Ancient Egypt, James will “quiz the kids” on which rocks they see on display in the museum!

**What is a Dinosaur? Think Like a Scientist**
Using models, maps and a 17-foot-long hand-drawn diagram (by the instructor), your students will learn the fundamental features that classify dinosaurs from all other prehistoric life. The second half of class will be a brief journey through the Morian Hall of Paleontology to observe the same features on mounted skeletons. In the Morian Hall of Paleontology, we will use the handout received in class to identify which specimen are dinosaurs and which are not.

*James’ classes continue on Page 13.*
Introduction to Minerals
Using hundreds of specimen representing 160 minerals species, this course focuses on the way different minerals form and how they are classified. With an emphasis on industrial and commercial uses, this course is a must for identifying and appreciating minerals in your day-to-day life. The second half of the class will be focused on the mineral collection of the Houston Museum of Natural Science. A quick tour of the Cullen Hall of Gems and Minerals that will give you the chance to appreciate some of the world’s finest mineral specimens and their uses in industry and art.

The Rock Cycle
Using a vast collection of rock and specimen equal to many colleges, this touch-intensive introductory lecture will look at many of Earth’s environments and structures while explaining the rocks they produce. The accompanying tour of the Houston Museum of Natural Science features multiple exhibit halls.

Sedimentary Rocks and the Environments that Make Them
A class with a particular focus on the effects of weather, erosion, and transportation of sediments. This course offers a more detailed look at the various sedimentary environments that make up the world. Highlights include, but are not limited to, the formation of the gulf coast, swamps, marshes, bogs, lakes, river features, estuaries, barrier islands, and lagoons. The tours will consist of portions of the Wiess Energy Hall, Morian Hall of Paleontology, Frensley/Graham Hall of African Wildlife, and Farish Hall of Texas Wildlife. These tours will provide visuals to clarify the concepts described in the classroom.

Igneous Rocks, Volcanoes, Metamorphic Rocks, and Metamorphism
Emphasizing the relationship that volcanoes have with earthquakes and their effects on civilization past and future, this course continues developing the concepts of the rock cycle, with a focus on the different types of volcanoes all over the world, what conditions create them and the rocks they produce. The second portion of the lecture will focus on the various types of metamorphism caused by magma deep within the earth and lava at the surface.

The 10 Evidences of Plate Tectonics
For over a century, scientists have been piecing together the clues of geology’s great unifying theory: the Theory of Plate Tectonics. First proposed in the 1960’s, the concepts of Continental Drift that the theory is derived from are only a little over 100 years old. Like a crime scene detective, this course investigates the evidence of plate tectonics piece by piece, building a complete understanding of one of the most pivotal of geology’s theories. And like all of James’ courses, we will end with a tour of the museum showing evidence for this theory you may have overlooked all along!

Paleontology 101: An Introduction to Paleontology & Fossils
Covering specimens from the earliest invertebrates to vertebrates alike, this lecture will focus on the origin of the fossil record as well as the various methods of fossilization. To complete your understanding of the topics covered, you will be encouraged to touch and examine a variety of specimens of actual fossils, models and specimen. An in-depth tour of the Morian Hall of Paleontology, using the Museum’s internationally acclaimed collection of specimens is also included.

DINOSAURS! Life in the Mesozoic
With a particular focus on individual species not seen in many museums, this class will focus solely on the dinosaurs and the reptiles that preceded them and how the formation and break up of Pangaea affected dinosaur diversity. The lecture will be a product of a college honor’s project the instructor Jurassic James submitted! We will also officially look at what is wrong with Jurassic Park by discussing the behind-the-scenes-stories of the terrifying Tyrannosaurus rex, the supersized Spinosaurus, and of course the fan favorite Velociraptors! This is Jurassic James’ favorite course to teach— you don’t want to miss it! The tour will be in the middle of the Morian Hall of Paleontology.

James’ classes continue on Page 14.
JURASSIC JAMES

Life after Dinosaurs! Cenozoic—the Age of Mammals
After the bullying dinosaurs were “expelled” by Principal Meteorite, mammals finally had their time! I know what you are thinking. Mice, cats and horses; these animals are not that interesting I can see them anywhere. But did you know that there were once rodents almost as big as cows? More than just saber-toothed cats had sabers, and some prehistoric horses had multiple fingers and toes! We think of venom as being a reptiles-only club, but a few mammals were allowed in. And that the largest land-mammal was not the Woolly Mammoth (Not even the largest mammoth) but instead was a rhinoceros as big as Diplodocus (without the tail)! With a 40-foot hand-drawn phylogenetic (family) tree created by the teacher and over 100 models; you will review each of the major mammal groups in the fossil record and their relationship to species living today. The tour will be conducted in the final portion of the Hall of Paleontology.

Prehistoric Texas Wildlife: Appreciate the Animal History of your Own Backyard!
This exciting class will focus on amphibians, reptiles, mammals and birds of Texas. Jurassic James has been all over our great state and has seen and interacted with many of these species. Due to Texas’ large size and geographical position, many species inhabit our state either year round or seasonally. Have you ever wondered why they say “Where the deer and the antelope play” when Texas has no antelope only pronghorns? This class will explain that and many more ideas about your state’s wildlife that you never thought of. We will also journey to the Farish Hall of Texas Wildlife.

Prehistoric Texas Wildlife: Appreciate the Animal History of your Own Backyard!
Have you ever wonder how the cast of the Lion King became what it is? They have Lions? Why are there no bears and tigers? OH MY! This class will focus on the broad range of wildlife that inhabit many of Africa’s variety of ecosystems. This class will look at the feeding methods of many African species both carnivorous and herbivorous. This will be the first of Jurassic James’ classes that will offer a look at the Frensley/Graham Hall of African Wildlife. We will see short-necked giraffes, understand why humans domesticated horses and not zebras, and examine how in India elephants are like organic bulldozers, while African elephants are having none of it!

Decoding Minerals and Rocks of the Ancient Egypt
The Egyptians are one of the most revered and researched of ancient cultures. So what more can we add to this grand story? Well the simple question of how they did it? We will focus on the specific geologic conditions that gave them the building materials to create their mega structures and mythologies. From a geologic standpoint, most of human history is a drive for resources. And the Egyptians were just down-right lucky! The class will also have a tour of the Hall of Ancient Egypt!

Decoding Minerals, Rocks & Resources of the Americas
Taking a look at the Mayan, Aztec, tribes of the Amazon, Plains tribes, and Southwest and Northeast Native Americans with a focus on the specific geologic conditions that gave America’s human inhabitants the building materials to create the mega structures, mythologies and wealth of the Americas before the arrival of the old world inhabitants. Many people cannot tell the difference between Egyptian, Aztec, and Mayan pyramids! This course will show how to tell and much more! And by comparison, why the tribes of the Amazon or Great Plains have no pyramids. This course has already been taught to the Museum’s Adult Education audience with only positive reviews!
FIELD TRIP PACKAGES

The Basic
- Admission to the Permanent Exhibit Halls
- The Wortham Giant Screen Theatre film, *Tiny Giants 3D*
Cost: Approximately $8.50 per person

The George Experience
- Missions in the Expedition Center
- Astronomy classes
- Walking trails in Brazos Bend State Park
Cost: Varies based on grade level and group size

A Day with Dinos
- Admission to the Permanent Exhibit Halls
- Guided tour of the Morian Hall of Paleontology
- Exclusive access to touch carts with your tour guide
- Show: *Dinosaur Prophecy* in the Burke Baker Planetarium
Cost: Approximately $8.00 per person

Add a Lab On Demand or On-site Outreach to your Field Trip!

AFTER HOURS PROGRAMS

Spend the night at the Museum with Overnight Programs at HMNS! Try a Lab or Outreach program, see a show in the Burke Baker Planetarium, and answer the age-old question: does everything come to life at night?

For ages 6-12, begin your customized booking by sending an email to overnights@hmns.org or learn more online at www.hmns.org/overnights!

VIP Overnights
Get the Museum to yourself after hours! Go on a scavenger hunt in the Morian Hall of Paleontology, see a show in the Burke Baker Planetarium, and close out the night by sleeping in an exhibit hall! Customize your itinerary with a variety of options, including Labs On Demand, Outreach, and more. It's your night, your way; an experience you'll never forget!

Late Nights
Have an after hours experience without packing your pillow! Late Night packages include the options available for VIP Overnights, including scavenger hunts, activities, and Labs On Demand and Outreach upgrades!

Sleuths and Secrets
Uncover secrets of Ferrante Imperato, the mastermind behind the Cabinet of Curiosities, in this interactive mystery adventure. Ask about our newest Sleuths and Secrets program featuring Death By Natural Causes! Perfect for groups of 10-14 people, ages 12 & up.

Overnights for Scouts
Individual registration Overnights for Cub Scouts and Girl Scouts are available on Sept. 20, 2019 and Feb. 15, 2019, respectively. VIP Overnights for Scouts are also available, where Scouts can include optional add-ons that complete requirements for Adventures and Badges!

www.hmns.org/fieldtrips (713) 639-4659 fieldtrips@hmns.org
EARLY CHILDHOOD

Early Investigations
Led by Museum docents, these interactive field trip add-ons feature a 45-minute interactive class as well as a 45-minute tour of an exhibit hall, perfect for your young learner. Topics include: Paleontology, Insect Zoo, Texas Wildlife, Under the Sea, Native North Americans, Native Latin Americans, Ancient Egypt, and African Culture and Wildlife.

Cost: Approximately $8.00 per person

Early Childhood Development Labs
Interactive activities, hands-on learning, active instruction; at HMNS, we know how to engage your young learners! Ask about special Early Childhood Development Labs!

Science Start
TEKS-aligned presentations that come straight to you, Science Start gives the head start K-2 students need for scientific topics like density, scale, and the human body! To learn more, email outreach@hmns.org.

TEACHER WORKSHOPS

The Educator Event @HMNS
FREE to educators, this conference-style event every January features a variety of workshops and booths from local organizations. Participants will earn up to three hours of CPE credit!

Educator Late Nights
Earn six hours of CPE credit in this exclusive after hours HMNS experience offered during the school-year! Each fun-filled evening features hands-on activities, an exhibit tour, and dinner.

Gifted & Talented Workshops
Earn up to six hours of TAGT-verified credit in these fun workshops utilizing HMNS’ vast resources. Laugh and learn with our Youth Education Sales team!

Shell Educators’ Preview
Get a free peek of the latest HMNS exhibitions, enjoy light refreshments, and meet our youth education staff! You’ll even earn one hour of CPE credit in the process!

www.hmns.org/education (713) 639-4625 educationquestions@hmns.org
Bring the Museum straight to you! Our exciting, hands-on Outreach Programs cover a wide variety of topics for all ages, from early childhood to senior citizens! Witness everything from chemical reactions to a katydid the size of your hand, and take a trip to the moon or even back in time. There’s something for everyone with HMNS Outreach!

**Bugs On Wheels**
Hands-on presentations introduce students to the natural world, from tall trees to small insects. Featuring specimens from the Cockrell Butterfly Center’s live collection, topics include: *All About Butterflies, Amazing Arthropods, Awesome Arachnids, The Buzz About Bees, Cleanup Crew, Monarchs – Metamorphosis, Migration, & Mimicry, and Plants & Pollinators*

**Chevron Earth Science On Wheels**
From crystals to claws and teeth to *Triceratops* skin, students will be amazed by the wonders of earth science! Topics include: *Dinosaur Discovery, Dynamic Earth, Focus on Fossils, Know Your Rocks, Renewable is Doable, Science Sort, and The Water Cycle*

**ConocoPhillips Science On Stage**
Through exciting demonstrations, these large-group presentations explore chemistry and physics for up to 250 people! From examining the effects of liquid nitrogen to seeing Newton’s laws in action, this program makes physical science fun for everyone! Topics include: *Cool Chemistry, Exploring Energy, and Motion Commotion*

**Discovery Dome**
A giant, inflatable, portable dome theater brings the best of the Burke Baker Planetarium right to your group! Featuring over 40 different presentations for all ages, covering a range of topics, the Discovery Dome takes audiences on a journey not possible anywhere else.

**Docents To Go**
A trained Museum docent presents real Museum artifacts and specimens! Each 45-minute session is a hands-on, interactive experience. Topics include: *Astronomy, Authentic Africa, Birds, Egypt, Energy, Insects, Native Americans, Oceans, Paleontology, Rocks & Minerals, and Texas Wildlife*

**Science Start**
Think Science On Stage for young learners. These 25-minute presentations bring basic science concepts to life through fun demonstrations, perfect for your K-2nd grade scientists! Topics include: *Body Works, Build It Big, Discovering Density, and Space: Going the Distance*

**Wildlife On Wheels**
Live animals and Museum specimens come to you, giving students opportunities to explore the basics of wildlife in an up-close and personal way. Topics include: *Invertebrates, Rainforests, Reptiles & Amphibians, Texas Wildlife, Venomous vs. Poisonous, and Vertebrates*

**Activity Stations**
Add crafting or investigation stations to your next event! See a full list of topics online.

**On-site Outreach—receive a discount on your program!**
Add an Outreach Program to your HMNS field trip and receive the special discounted On-site Outreach rate, starting at just $275!
## HMNS MEMBERSHIP

### MEMBER EVENTS

An HMNS Membership will get you free or discounted admission to fun and educational events! Ask about special educator discounts!

**2nd Saturday — Members Only!**
Fun for the whole family, this monthly event full of crafts, tours and activities is the perfect way to kick off a weekend, when HMNS opens one hour early, exclusively for Members on the 2nd Saturday of each month!

**Girls Exploring Math and Science (GEMS) — February 16, 2019**
A day of hands-on activities for all to enjoy! Local professionals will be at the Museum to answer questions about their careers in STEM fields.

**World Trekkers — Members Only!**
Take a trip with World Trekkers. Each event highlights a different country, with special animals, crafts and cuisine.

### MEMBER BENEFITS

- Permanent Exhibit Hall Admission is free all year!
- **Members First!** Get exclusive early access to special exhibitions
- Free admission to the Permanent Exhibitions at HMNS Sugar Land
- Discounted admission to ticketed special exhibitions, the Cockrell Butterfly Center, the Burke Baker Planetarium, and the Wortham Giant Screen Theatre
- Early registration and discounts for Xplorations Summer Camp
- Discounts of 10% or more at the Museum Store
- Invitations to special Members’ Only events
- Reduced rates for lectures, classes, programs, and special events
- Special Member rate for parking
- Members’ Only ticket line
- And much, much more!

### MEMBER LEVELS

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**Catalysts—HMNS’ Young Professional Membership Group**

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### HMNS ACCESSIBILITY

Our goal is to make the Houston Museum of Natural Science accessible to all visitors. We are excited to offer resources for those with sensory sensitivities or those affected by autism spectrum disorders.

Before coming to the Museum, visit [www.hmns.org/accessibility](http://www.hmns.org/accessibility). There, you’ll be able to download and review our guides, planners, and other resources to make your visit to HMNS more enjoyable for you and the whole family! If you have any questions, email accessprogramming@hmns.org, and we’ll be happy to help.

**Visual Vocabulary Cards**
Use our Visual Vocabulary Cards to make visiting new spaces and transitioning between Museum halls easier. You can also use these cards to create a visual schedule of your day at HMNS!

**Exploration Planner**
Use our Exploration Planner to let your family know what to expect during your day at the Museum, from waiting in line at the box office to exploring our many exhibit halls. Let

**Sensory Guide**
Our Sensory Guide provides you with information on which exhibits meet your or your child’s sensory needs, including noise levels, visual stimulation, and tactile components. Use it to plan your visit and decide which exhibit halls are appropriate for you and your family. You can also use this map to ensure your transitions between Museum halls are appropriate for your family’s sensory needs.

**Sensory Backpacks**
Check out a backpack with ear defenders, fidgets, and more for your visit from Museum Services!

**HMNS Accessibility App**
We are proud to announce an iPhone and Android app, “Access HMNS,” to help you make the most of your HMNS experience!

April 27, 2019 and September 28, 2019, 8-10 a.m.
December 2, 2019, 9 a.m.-5 p.m.
HMNS is committed to making the Museum as accessible as possible to those with sensory sensitivities. Visit the Museum with modifications, including bright lights dimmed, dark spaces lit, loud noises lowered and venues adjusted for a sensory friendly experience!