



Teacher's Guide

2015
–
2016

EARTH SCIENCE

LIFE SCIENCE

HARVARD
MUSEUM of
NATURAL
HISTORY

All programs correlate with
Massachusetts Curriculum Frameworks

HARVARD MUSEUMS OF SCIENCE & CULTURE



Dear Educator,

Welcome! We are excited to work with you to expand your students' perspectives of the natural world, support field trips where students and adults learn together, and deepen your own professional development.

Two new exhibits have opened recently. ***Islands: Evolving in Isolation*** is a spectacular look at the results of island evolution, featuring animals such as Komodo dragons, Galápagos tortoises, and carnivorous pitcher plants. The renovated ***Central and South America*** exhibition features favorites like Galápagos finches, hummingbirds, and a jaguar, as well as fish and reptiles from the region. The exciting new ***Marine Life*** exhibition in the Putnam Family Gallery opens to the public on November 21.

Check **online** for copies of educational videos from all of our galleries. Stay updated on changes in the museum through the HMNH website. Prepare for your trip by viewing the ***Making the Most of Your Visit*** video, which you can access via the school visits/resources web pages or by scanning the QR code at the bottom of this page with your smartphone.

Four-and-a-half billion years of Earth history are waiting for you to explore at the museum. Contact reservations at 617.495.2341 or reservations@hmn.harvard.edu for help planning your visit.

Sincerely,

Wendy Derjue-Holzer
Education Director
Harvard Museum of Natural History



● See the back page for pricing, scheduling, and reservation information

ALL CLASSES ARE TAUGHT BY HMNH EDUCATION STAFF

Coverage of topics in the Museum's school programs

- strong coverage
- light coverage
- 👤 hands-on lab
- 👣 self-guided visit

		Ecology & Habitats	Anatomy, Physiology & Adaptations	Biodiversity & Classification	Evolution & Fossils	Geological Processes	Rocks	Minerals
K-2	Welcome to the Forest 👤	●		●				
	Dig into Fossils	●	●		●	●	●	
	Animal ABCs	●	●	●				
	Home Sweet Home	●	●	●				
	Bug World! 👤	●	●	●				
3-5	The Changing Earth				●	●	●	
	Rocks and Minerals						●	●
	Jaws and Claws	●	●	●				
	Inside Skeletons 👤		●	●				
	Sketchbook Naturalists: Birds 👤	●	●	●				
	Mineral Lab 👤							●
	Human Origins Lab (Gr 4-6) 👤		●	●	●			
6-12	Forest Ecology 👤	●	●	●				
	Human Evolution 👤		●	●	●			
	Exploring Evolution		●	●	●			
	New England's Prehistoric Past 👤				●	●	●	
	Sketchbook Naturalists: Birds 👤	●	●	●				
ALL	Climate Change	●			●	●		
	Self-Guided Visits 👣	●	●	●	●			●
	Gallery Activities 👣		●		●			●

all ages



Self-guided Visits & Gallery Activities

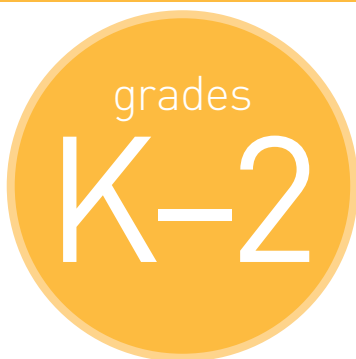
Explore the museum at your own pace, letting students discover things they've never seen among the 14,000 specimens on display.

Gallery activities including Junior Paleontologist, Animal Trackers, and Explore Evolution, help students look closer at specimens and make connections to big ideas. They are available on our website for free download. You may also create your own activities during a free preview visit or by consulting our website for a description of the permanent and temporary exhibitions.

Visit: hmn.harvard.edu/gallery-activities

SCHOOL PROGRAMS

See the back page for pricing and program times



1 1 hour

👤 hands-on lab



Welcome to the Forest 1 👤 (Pre-K & K Groups)

Maximum of 30 students for this hands-on lab

Who lives in a forest? What sights, smells, and noises make a forest special? Young students will explore life in a New England forest through storytelling, movement activities and examination of plant, animals, and fungi specimens.

Dig Into Fossils 1

What are fossils and how do they form? What clues can they give us to life in the past? Students will become paleontologists as they answer these and other questions about fossils and prehistoric life from three different periods in Earth's history.

Professional Development Opportunities

Look for lectures, small group discussions, and multiday professional development opportunities throughout the year. Please see our website or contact us (617.496.9584) for further information.

Stay updated by subscribing to our Teacher e-news, emailed several times during the year.



Animal ABCs 1

On an imaginary walk through the forest, students will discover different animal groups and compare their differences and similarities. They will look at animals with and without backbones and then examine birds, reptiles, mammals, and amphibians to compare their life cycles and special characteristics that make each group unique.

Home Sweet Home 1

Students will take a tour of habitats around the globe and search for the creatures who call these places home. From lush rainforests to frozen tundra to scorching deserts, they will explore these fascinating environments and the unique adaptations that allow plants and animals to survive in challenging conditions.

Bug World! 1 👤

Maximum of 30 students for this hands-on lab

Through close observations of museum specimens and live animals, students will investigate the diverse world of insects and their relatives and discover the special features that allow them to live in varied habitats all over the world.



In addition, the Museum offers multiple opportunities for adult learning. A detailed list of free lectures, adult classes, and museum-wide events is available on our website.

• Call 617.495.2341 or visit hmn.harvard.edu for more information

grades

3–5

- 1 1 hour
- hands-on lab
- 2 2 hours

The Changing Earth 1

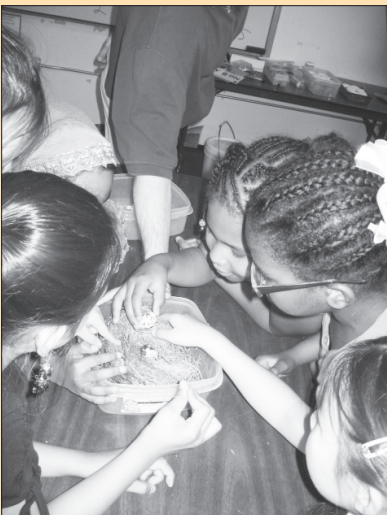
Students will explore rocks, fossils, and other specimens to uncover the geologic history of our region over the past 600 million years. They will discover how plate tectonics, weathering, erosion, and mountain building have all shaped New England's landscape.

Rocks and Minerals 1

Students will become geologists as they explore the fascinating underground world of rocks and minerals. They will learn how scientists use color, heft, hardness, and other properties to identify minerals and discover the surprising uses of minerals around the home.

Jaws and Claws 1

By comparing and contrasting a variety of predators, students will discover the specialized adaptations that allow them to find and capture their prey. They will examine the eyes, ears, teeth, and beaks that enable animals to successfully hunt fish, insects, mice, and clams.



Inside Skeletons 1

Maximum of 30 students for this hands-on lab

Starting with the human skeleton, students will investigate the functions of bones. By examining the skeletal structures of other animals, students will observe how these creatures' bodies have become adapted for jumping, flying, and other lifestyles.

Mineral Lab 1

Maximum of 30 students for this hands-on lab

Students will explore an amazing array of minerals in a lab-like setting. Using scientific tests and careful observation of properties, such as color, hardness, and magnetism, students will practice identifying common minerals the way geologists do.

Forest Ecology 1

Maximum of 30 students for this hands-on lab

From tiny insects to towering trees, from sun to soil, students will explore a forest environment. By examining skeletons, plants, live animals, and fungus, students will investigate connections between living and nonliving components and the flow of energy within an ecosystem.

Human Origins Lab (Gr 4–6) 2

Maximum of 30 students for this hands-on lab

How did we become the brainy, social, bipedal creatures that we are today? Using the evidence shown in the skulls, bones and tools of our ancient human ancestors, students will explore the major physical and technological changes seen from Australopithecus to Homo sapiens.

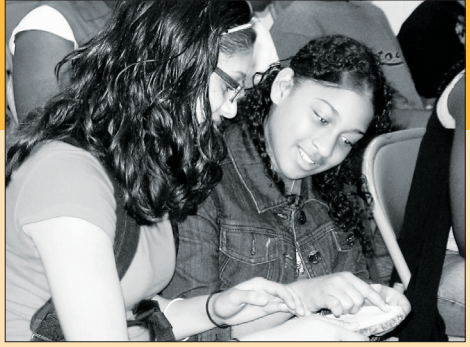
Sketchbook Naturalists: Bird Adaptations 2

Maximum of 30 students for this hands-on lab

Through careful observations and sketches, students will follow in the footsteps of great naturalists, learning science by studying natural objects. They will investigate the special features of a variety of bird groups to discover how these animals are adapted to their habitats.

GRADES

6-12



We accommodate classes ranging from middle school to A.P. Biology by adapting the programs to the age and content knowledge of the students.

Exploring Evolution ¹

Recommended for grades 6-8 or as an introduction to evolution for grades 9-12

Through examination of museum specimens, classroom discussion, and scientific reasoning, students will explore the evolutionary concepts of variation, inheritance, natural selection, and artificial selection that explain the biodiversity of life on Earth today.

Climate Change ¹

Is our climate changing? How do we know? Using fossils, rocks, and scientific data, students will investigate climate in two dramatically different periods of Earth's history and compare it to today's changing climate.


Human Evolution ²


By comparing the skeletons and technology of human and non-human primates from Australopithecus to Homo sapiens students will see the evolutionary trends which led to the emergence of modern humans. Students will learn how skulls, teeth, hips, and other key features have evolved through time. Seeking a program that is more anthropology based? Try the Human Origins Lab for grades 4-6.



¹ 1 hour

² 2 hours

 hands-on lab

 self-guided visits

New England's Prehistoric Past ²

How has New England changed over the past 500 million years? By studying rocks, fossils, and living animals that provide the clues to ancient oceans, volcanoes, and ice ages, students will leave this lab with a better understanding of what New England looked like, who lived here, and how scientists know about these ancient environments.

Sketchbook Naturalists: ² Bird Adaptations

Recommended for students up to grade 8.

Through careful observations and sketches students will follow in the footsteps of great naturalists, learning science by studying natural objects. They will investigate the special features of a variety of bird groups to discover how these animals are adapted to their habitats.

HIGH SCHOOL VISITS ANYTIME


Having trouble finding time for your class to visit as a whole group? The museum now offers a program for teachers to pre-purchase passes at the reduced group rate of \$5 for each high school student. These students can use passes on their own time to complete activities assigned by you. Contact us for more details.

• Call 617.495.2341 or visit hmn.harvard.edu for more information

HOW TO SCHEDULE A PROGRAM

- 1 Select your desired program from this guide.
- 2 Identify your preferred program date, time, as well as several alternate days.
- 3 Determine the number of students and chaperones. One chaperone per five students is required for K–8 groups. Contact us about requirements for older students.
- 4 Reservations can be made with an **online form** or by calling **617.495.2341**. The reservations desk is staffed weekdays.
- 5 A confirmation email will be sent to you. Carefully review it and contact us if any information is incorrect. Watch the online video **“Making the Most of Your Visit”** as an overview of what to expect. Please note that your visit is not confirmed until you receive this email.

PROGRAM FEES AND SCHEDULES

Program type	Capacity	Times	Student rate	Free chaperones	Additional chaperones
1 1 hour	50 students maximum	9:30, 10:30, 11:30, 12:30	\$8 each (\$200 min. per program)	One free per five students	\$10 each
2 2 hour	30 students maximum	9:30, 12:30	\$11 each (\$275 min. per program)	One free per five students	\$10 each
 Self-guided visits			\$5 each (special K–12 schools rate)	One free per five students	\$10 each

All prices include museum admission

Contact us about fee reductions for qualifying groups

RESERVATION INFORMATION

- Reserve programs at least two weeks in advance. Spring programs often fill months in advance.
- Advance reservations are required to receive the school rate.
- Groups cancelling less than two weeks prior to a scheduled program will be charged the full program fee.

PAYMENT METHODS

Bring payment with you the day of your visit.

Checks: Single check made out to Harvard University

Credit Cards: MC, VISA, or AMEX

Purchase Orders: Arrange at least one week before your visit with the Education Office.

PARKING

Bus drop-off and pick-up is permitted in designated areas, but there is no bus parking available at the museum. Refer to the confirmation email for bus and car parking options.

OTHER MUSEUM PROGRAMS

Check the Peabody Museum of Archaeology & Ethnology and the Harvard Semitic Museum websites for more great K–12 programs.

CHAPERONES

Chaperones must stay with their students at all times and are responsible for the safety and proper conduct of the group. One adult chaperone is required for every five students (grades K-8).

LUNCH OPTIONS

Your group may eat on the lawn in front of the museum. During inclement weather, groups may eat in our lobby area. Lobby space is limited and available on a first-come, first-served basis. Sorry, we do not have a snack bar or dining facilities.

MUSEUM SHOP

The Museum Shop offers many interesting and educational items. Please have chaperones stay with students when visiting the shop.

FOR MORE INFORMATION

Call our Education Office at 617.495.2341, email reservations@hmn.harvard.edu or check our website, www.hmn.harvard.edu, throughout the year for updates.

Photos: Nate Dean; Tony Rinaldo, Patrick Rogers, Heather Queyrouze; Kayla Willis



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Explorers welcome!