

SAM NOBLE MUSEUM
**EDUCATOR'S
GUIDE**

2012 - 2013

WELCOM





Welcome to the Sam Noble Museum!

Dear Educators,



Welcome to the Sam Noble Museum at the University of Oklahoma! This 2012-13 Educator's Guide provides information regarding the museum's innovative educational programs, exhibits and experiences that inspire learners of all ages to understand the natural and cultural world.

The educators at the Sam Noble Museum are excited to work with you and your students this year. We look forward to serving you and hope that you share your ideas and feedback with us regarding your visit to the museum.

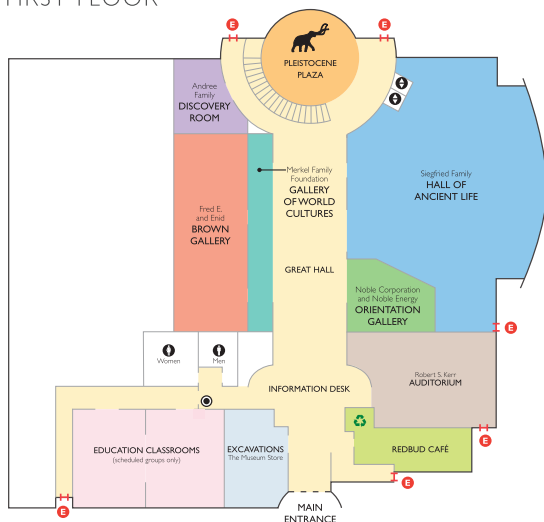
Sincerely,
Education Department Staff

TABLE OF CONTENTS

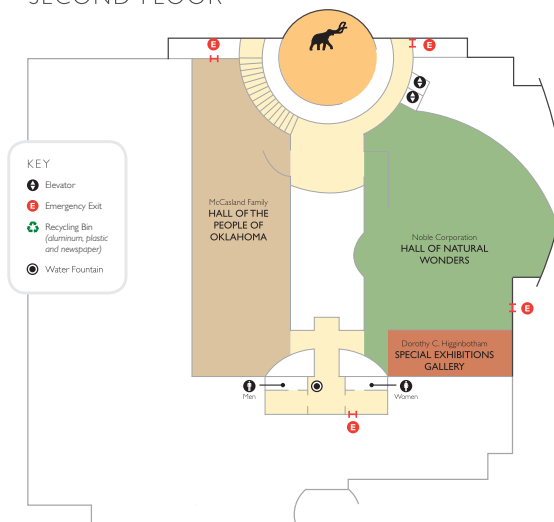
A Class Adventure	2
Field Trip Details	4
Discovery Room	6
Programs: PreK–Kindergarten	7
Programs: Grades 1–3	8
Programs: Grades 4–5	10
Programs: Grades 6–8	12
Programs: Grades 9–12	14
Programs: Whitten-Newman ExplorOlogy® Program	16

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FIRST FLOOR



SECOND FLOOR



TEACHER APPRECIATION MONTH October

During the month of October, all Pre-K through 12th grade teachers and their families are invited to visit the museum free of charge! Simply fill out a brief informational survey and experience the wonders of the Sam Noble Museum!

Programs Your Students Will Love

Our education department staff has developed a range of inquiry-based programs for each grade level. All programs address PASS standards and are taught by professional museum educators.

Educational Program Guides

Let us help you prepare your students for their museum visit! Educational Program Guides include background information, vocabulary lists and PASS objectives. Visit our website, <http://education.snomnh.ou.edu/schoolprograms>, to download these resources.

Exhibit Interpreters

Trained volunteers in each gallery share stories, touchable specimens, artifacts and activities with your students as they explore the museum.

Gallery Activities

Our gallery Discovery Guides include thoughtful activities that encourage students to explore the details in each gallery. Guides are available for grades K–2, 3–5, 6–8 and 9–12 in PDF form on the museum website. It takes about 30 minutes to complete the activities in one gallery.

Hands-on Exploration

Our Discovery Room is a hands-on exhibit space designed for students to explore museum objects in a stimulating and fun environment. Students may explore collection drawers, complete a series of tabletop activities, excavate dinosaur bones or simply examine the many wonders displayed in the room.

Exhibits That Bring Science to Life!

Oklahoma's present Native American heritage and its archaeological past, its ecology and wildlife, and its ancient life forms are all beautifully showcased in museum galleries.

Discovery Kits for Teachers

Discovery Kits are available at no charge to teachers and can be picked up at the museum. The loan period is two weeks. Kits include *Diaries in the Dirt* (Archaeology), *Excavation to Exhibit* (Paleontology), *Dino Dig* (Paleontology), *Herpetology 101* (Biology), *Just Add Water* (Biology & Earth Sciences) and *Minerals Rock!* (Earth Sciences). Visit our website for Discovery Kit descriptions. To arrange a loan, e-mail education@snomnh.ou.edu.

ENTURE!

Professional Development Opportunities

We offer a variety of workshops for teachers throughout the year. Please check our website for current offerings.

Immerse Yourself in the Past

In The Hall of Ancient Life, your students can sit on replicas of 3-billion-year-old bacterial domes called stromatolites, wander the giant forests that became Oklahoma's coal deposits, and then be awed by the dinosaurs and mammoth.

Explore the Natural Wonders of Oklahoma

Breathtaking dioramas in the Hall of Natural Wonders allow students to explore some of Oklahoma's unique habitats. Walk through a limestone cave that is home to bats and salamanders, observe bison in their natural habitat and marvel at the beauty of Black Mesa.

Investigate Native Cultures of Oklahoma

The Hall of the People of Oklahoma explores how people lived in the state from 30,000 years ago to present day. The gallery includes mammoth-hunting tools, exotic trade goods from the Spiro mounds and a dugout canoe students can sit in. Also, learn about the cultures of Oklahoma's many Native American tribes.



SPECIAL EXHIBITIONS

Dancers and Deities: Kachinas from the James T. Bialac Native American Art Collection

Sept. 21, 2012 through Jan. 6, 2013

Dancers and Deities features an amazing selection of Native American Kachinas created by master artists from Hopi and Zuni Pueblos.

Southwest Visions: Paintings from the James T. Bialac Native American Art Collection

Oct. 5, 2012 through Jan. 6, 2013

This exhibit presents a comprehensive suite of Southwest Native American paintings that spans the development of this important genre of Native American painting.

Bugs: Outside the Box

Feb. 1 through May 12, 2013



Bugs: Outside the Box presents a selection of greatly enlarged insect sculptures, each showcasing the beauty hidden within the (mini) beasts of the natural world.

Beautiful Beasts

Feb. 1 through Sept. 8, 2013

Using homemade equipment and inexpensive lenses, Oklahoma photographer Thomas Shahan captures a remarkable world of unspeakable beauty and hidden presence of mid-western spiders and insects.

Hours for School Groups

Monday–Friday	9:30 a.m. to 5 p.m.
Saturday	10 a.m. to 5 p.m.
Sunday	1 to 5 p.m.

School Group Admission

School groups receive a discounted admission rate when reservations are made in advance with the museum education department.

Students

PreK–Kindergarten	Free
Grades 1–12	\$2

Adult Chaperones

PreK–Grade 5: (1 adult per 5 students)	Free
Grades 6–12: (1 adult per 10 students)	Free

Additional Adults

Adults	\$4
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School Group Program Fees

Enhance your museum experience with one of our inquiry-based programs! Advanced registration is required and programs are limited to a maximum of 25 students. Please note that one teacher must be present at all times during your scheduled program.

Classroom Program	\$35
Laboratory Program	\$70
Discovery Room Session	\$25
Discovery Room Program	\$35

Reservations

Begin the reservation process online at <http://education.snomnh.ou.edu/schoolprograms>. You also may contact the education department at (405) 325-1008, or e-mail us at education@snomnh.ou.edu. We recommend that reservations are made at least two weeks in advance of your planned visit.

Payment

Payment for admission and programs is due upon arrival. Payments may be made by purchase order, school check, credit card or cash. Schools that need to cancel a scheduled program should do so at least two business days in advance.

Fund My Field Trip!

Have your students missed out on visiting the Sam Noble Museum due to lack of funding? We offer a variety of funding opportunities. Visit our website for more information.

Field trip funding is made possible by the generous support of: President David Boren, H.A. and Mary K. Chapman Trust, Puterbaugh Foundation, Eric Sherburn, Walton Family Foundation, Whitten-Newman Foundation, Grand River Dam Authority, and the Oklahoma Energy Resources Board.

Chaperones

The required adult chaperones receive free admission to the museum in exchange for their active supervision of all students. A ratio of 1:5 is required for elementary school children; a ratio of 1:10 is required for 6th through 12th grades.

AILS



Lunch

- Outdoor tables are available on the museum grounds where school groups may eat sack lunches. Please bring group lunches in plastic totes: corrugated cardboard is a pest hazard and cannot be brought into the museum.
- The Red Bud Café, located inside the museum, can provide box lunches for groups under 25 that order at least five business days in advance. To make arrangements for box lunches, call the café at (405) 325-8454.
- Reaves Park, about one-half mile east of the museum, is a great space for lunch. The park has play equipment and picnic tables.
- Jacobson House Foundation offers indoor seating for groups of fewer than 30 who have sack lunches. Contact Jacobson House at (405) 366-1667.
- Couch Restaurants on the OU campus is available for groups willing to purchase lunch. For more information call (405) 325-5185 or visit www.housing.ou.edu.

Excavations: The Museum Store

The museum store offers a wide selection of T-shirts, books, toys and jewelry, with many items priced under \$5. Please provide supervision in the store in the ratio of 1:5 (PreK through 5) or 1:10 (6 through 12).

SAMPLE FIELD TRIP ITINERARY

9:00 a.m.

Depart school for the Sam Noble Museum!

10:15 a.m. Arrive at the Museum!

- Museum staff greets group on school bus
- Head Teacher checks group in at Front Desk
- Group uses restrooms, divides into chaperone groups

10:30 a.m.

Group A – 50 minute Educational Program

Group B – 50 minute Educational Program

Group C – Visit Hall of Ancient Life

Group D – Visit Hall of Ancient Life

11:30 a.m.

Group A – Visit Hall of People of Oklahoma & Hall of Natural Wonders

Group B – Visit Hall of People of Oklahoma & Hall of Natural Wonders

Group C – 50 minute Educational Program

Group D – 50 minute Educational Program

12:30 p.m. Group Lunch at Reaves Park

1:30 p.m.

Group A – Visit Hall of Ancient Life

Group B – Visit Hall of Ancient Life

Group C – Visit Hall of People of Oklahoma & Hall of Natural Wonders

Group D – Visit Hall of People of Oklahoma & Hall of Natural Wonders

2:30 p.m. Depart the Sam Noble Museum

DISCOVERY ROOM



DISCOVERY ROOM SESSION

Discovery Room Sessions allow students to participate in guided play activities that enhance their understanding of natural and cultural history. These 25 minute sessions are most appropriate for PreK through grade 5 and are limited to a maximum of 25 students per session.

FEE \$25 per session + museum admission

Discovery Room Visit

School groups may visit the Discovery Room on either a first-come basis, or they may schedule a Discovery Room Session. Please remember, if you choose not to schedule a session, there is no guarantee that the room will be available while you are at the museum.

DISCOVERY ROOM PROGRAMS

Discovery Room programs involve hands-on activities, live animals and scientific specimens. Programs are 25 minutes and are limited to a maximum of 25 students per class.

FEE \$35 per session + museum admission

All About Amphibians

What makes amphibians unique? Students will learn all about amphibians by observing live salamanders and tadpoles and participating in an exciting activity that takes us through the life cycle of a frog.

PASS **PreK** Science Processes and Inquiry 1.1, 1.4 | Physical Science 2.2, 2.3 | Life Science 3.1, 3.2, 3.3

KINDERGARTEN Science Process 1.1, 1.3 | Physical Science 1.1, 1.3 | Life Science 2.1, 2.2, 2.3

HADLEY FERNAN



GRADES PreK AND KINDERGARTEN

EDUCATIONAL PROGRAMS

These programs last 25 minutes and involve hands-on activities with scientific specimens. Programs are limited to a maximum of 25 students per class.

FEE \$35 per class + museum admission

Dinosaur Eggs and Babies

What challenges does a baby dinosaur face while it is developing inside the egg? What adventures might it have once it hatches? Students will learn about two young dinosaurs in Cretaceous Oklahoma and participate in engaging activities and experiments.

PASS **PreK** Science Process 1.1, 1.3 |
Physical Science 2.1 | Life Science 3.1, 3.2
KINDERGARTEN Science Process 1.1–1.3 |
Physical Science 1.1 | Life Science 2.1, 2.2

Creature Features

Fur, feathers, scales and slime! Students will find out first hand what characteristics make birds, amphibians, reptiles and mammals both different and similar.

PASS **PreK** Science Process 1.1, 1.4 |
Physical Science 1.1 | Life Science 1.3
KINDERGARTEN Science Process 1.1, 1.3 |
Physical Science 1.1 | Life Science 2.3



CHARLES BAKER

Natural or Not

How can you tell the difference between things you find in nature and things that people have made? Students will classify a variety of objects to decide if they are natural or produced by humans and learn how people use natural resources, such as oil, in everyday life. **OERB**

PASS **PreK** Science Process 1.1, 1.2, 1.4 |
Physical Science 2.2 | Earth/Space Science 4.1
KINDERGARTEN Science Process 1.1, 1.3, 1.4 |
Physical Science 1.2 | Earth/Space Science 3.1

**“The instructor was very flexible
with the kids’ answers and
adapted to their knowledge.”**

PREK TEACHER
KATHERINE I. DAILY ELEMENTARY, NOBLE

GRADES 1, 2, 3

EDUCATIONAL PROGRAMS

These programs last 50 minutes and include activities using artifacts or scientific specimens. Some programs also include investigations, demonstrations or data collection and analysis. Programs are limited to a maximum of 25 students per class.

FEE \$35 per class + museum admission

Meet the Dinosaurs

What kinds of dinosaurs roamed Oklahoma? Were they meat eaters or plant eaters? Did they have sharp teeth, large claws or other interesting adaptations? Are they really all extinct?

Students will discover the answer to these and other questions as they examine fossils and participate in Cretaceous role-playing.

PASS GRADE 1 Science Process 1.2, 3.1 | Life Science 2.1, 2.2, 2.3

GRADE 2 Science Process 1.2, 3.1, 4.1 | Life Science 2.2

GRADE 3 Science Process 1.2, 3.1, 4.1 | Life Science 2.2



Prairie Connections

What sort of special adaptations do prairie animals need for living in their wide-open environment? Let your students meet the prairie dogs, bobwhite quail and other natives of the Oklahoma grasslands and find out the surprising ways they meet the challenges of prairie living. Bet you can't guess what a horned lizard eats!

PASS GRADE 2

Science Process 1.2, 3.1, 4.2, 4.3 | Life Science 2.1, 2.2

GRADE 3 Science Process 1.2, 3.1, 4.2, 4.3 | Life Science 2.1–2.3

CHARLES BAKER



Raw to Refined

How do people modify natural resources to create tools, household items and other basic goods? Students will examine and classify common objects based on their raw materials to discover how humans interact with the natural world.

PASS GRADE 1 Science Process 1.1, 1.2, 2.1, 2.2 |

Physical Science 1.1, 1.2

GRADE 2 Science Process 1.1, 1.2, 2.1, 2.2 |

Physical Science 1.1. | Earth/Space Science 3.1

GRADE 3 Science Process 1.1, 1.2, 2.1, 2.2 | Physical Science 1.1

OERB



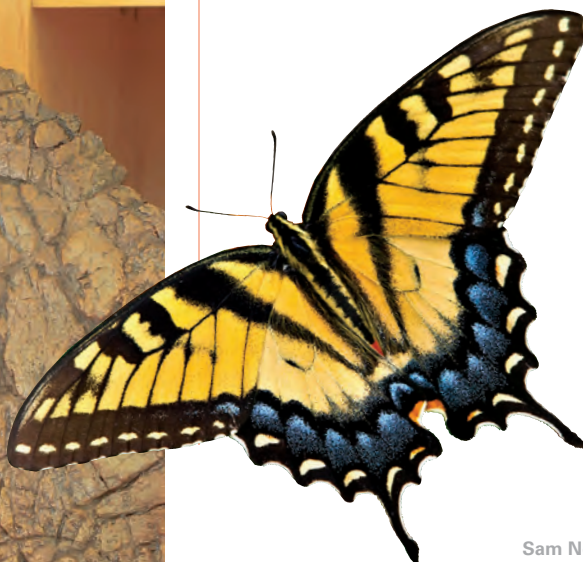
CHARLES BAKER

"I really enjoyed the museum class because the students were able to touch, hold and feel specimens."

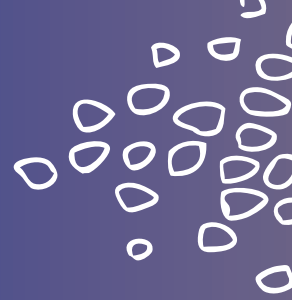
FIRST-GRADE TEACHER
HERONVILLE ELEMENTARY, OKLAHOMA CITY



CHARLES BAKER



GRADES 4,5



EDUCATIONAL PROGRAMS

These programs last 50 minutes and include activities using artifacts or scientific specimens. Some programs also include investigations, demonstrations, or data collection and analysis. Programs are limited to a maximum of 25 students per class.

FEE \$35 per class + museum admission

Dinosaur Feasts

What do scientists know about how dinosaurs ate? Students will compare dinosaur fossils and modern animal specimens to discover how both carnivorous and herbivorous dinosaurs crunched and munched their food.

PASS **GRADE 4** Science Process 1.2, 2.1, 4.4, 5.3 | Life Science 3.1, 3.2

GRADE 5 Science Process 1.2, 2.1, 4.4, 5.3 | Life Science 2.1

"We researched various earth biomes and this class really reinforced the interaction between biotic and abiotic factors."

FOURTH-GRADE TEACHER
CENTRAL ELEMENTARY, WARR ACRES

Web of Life

How is a tree connected to a coyote? From plants to animals to fungus, students will use museum specimens to create a community, learn about how an ecosystem works, collect and graph class data, and discover how all organisms in an ecosystem are connected.

PASS **GRADE 4** Science Process 1.2, 3.1, 4.2, 4.3, 5.1, 5.3, 5.4 | Life Science 3.1, 3.2

GRADE 5 Science Process 1.2, 2.1, 3.1, 4.2, 4.3, 5.3, 5.4 | Life Science 2.1, 2.2

Wild and Rare

Everyone hears about endangered species, but of the many plants and animals around us, which ones are endangered? Which ones are threatened? Which ones are surviving? Students will learn what makes a species vulnerable to extinction, then use museum specimens and hands-on materials to gather information and predict the futures of several species.

PASS **GRADE 4** Science Process 1.2, 3.1, 4.3, 5.1, 5.3, 5.4 | Life Science 3.1, 3.2 | **GRADE 5** Science Process 1.2, 2.1, 3.1, 4.3, 5.3, 5.4 | Life Science 2.1, 2.2





The Bison Hunters: Native Americans of the Plains

How did the Native Americans use the natural resources on the Great Plains to meet their needs? Student teams will analyze and measure tools, clothing and other artifacts from Plains Indian culture to discover the relationship between these peoples and their natural environment.

PASS **GRADE 4** Social Studies 4.1, 4.2, 5.2 5.3, 5.5
GRADE 5 Social Studies 6.3, 7.2, 7.5

CHARLES BAKER



Rockin' Rocks

Did you know that not every rock is the same?

In this class, students will understand the difference between minerals and rocks, test the porousness of rocks and learn how sedimentary rocks are formed.

CERB

PASS **GRADE 4** Science Process 1.1, 1.2, 2.1, 2.2, 3.1-3.4, 4.1-4.4 | Earth/Space Science 4.1-4.4

GRADE 5 Science Process 1.1, 1.2, 2.1, 2.2, 3.1-3.4, 4.1-4.4



"The program exposed my students to science and social studies experiences that I cannot provide in my classroom."

FOURTH-GRADE TEACHER
CELIA CLINTON ELEMENTARY, TULSA



EDUCATIONAL PROGRAMS

These programs last 50 minutes and include activities using artifacts or scientific specimens. Some programs also include investigations, demonstrations, or data collection and analysis. Programs are limited to a maximum of 25 students per class.

FEE \$35 per class + museum admission

Clues to the Past

Did you know that southeastern Oklahoma was once a swamp at the edge of the sea? Students in this class will identify marine, wetland and terrestrial fossils and map their locations to re-create Oklahoma's ecosystem as it existed 300 million years ago.

PASS **GRADE 6** Science Process 2.1, 2.2 | Life Science 3.2, 4.1, 4.2

GRADE 7 Science Process 2.1, 2.2 | Life Science 4.2

GRADE 8 Science Process 2.1, 2.2 | Life Science 3.1, 3.2

Ecosystem Interactions

How do ecosystems work? Student groups will build food chains using museum specimens, collect and graph



CHARLES BAKER

data, and discover how the living and non-living components of an ecosystem are connected to each other.

PASS **GRADE 6** Science Process, 2.1, 2.2, 4.1–4.3, 5.1, 5.3, 5.4 | Life Science 3.2, 4.1, 4.2

GRADE 7 Science Process 1.3, 2.2, 3.1, 4.1–4.3, 5.3, 5.4, | Life Science 2.1, 3.1, 4.2

GRADE 8 Science Process 1.3, 2.1, 2.2, 4.1–4.3, 5.1, 5.3, 5.4 | Life Science 3.2

Science I.D.

How does a scientist identify organisms and study differences among species? Students will observe, measure, identify and describe several different groups of museum specimens, from turtles to trilobites.

PASS **GRADE 6, 7, 8** Science Process 1.1, 1.3, 2.1, 4.3

GRADE 7 Life Science 2.2, 3.1

GRADE 8 Life Science 3.1, 3.2

LABORATORY PROGRAM

Laboratory programs last 90 minutes and include experiments or simulations and active investigation by students.

Laboratories are limited to a maximum of 25 students per class.

FEE \$70 per class + museum admission

Geology Laboratory

Did you know that you could experience the rock cycle in minutes, rather than eons? In this laboratory, students will investigate the rock cycle by “making” sedimentary, igneous and metamorphic rocks, and then experience the processes of erosion, sedimentation and soil formation. Students also will identify a variety of rocks and minerals through observations and tests. **OERB**

PASS GRADES 6–8 Process Skills 1.1, 1.2, 2.2, 3.1, 4.1, 4.3, 5.1

GRADE 6 Earth-Space Science 5.1

GRADE 8 Earth-Space Science 4.1, 4.2

Archaeology Laboratory

Students will experience the process of scientific archaeology from excavation through data collection, artifact

“The program gave the kids examples of rocks and minerals in real life, not just from a book.”

SIXTH-GRADE TEACHER
MIDWAY ELEMENTARY, HITCHITA

identification, interpretation and reporting. The “sites” excavated represent five cultures from Oklahoma’s past, ranging from the dramatic mammoth-hunting cultures of 11,000 years ago to the historic Wichita.

PASS GRADE 6 Social Studies 1.1, 3.1, 3.2

GRADE 7 Social Studies 1.1, 5.1, 5.2

GRADE 8 Social Studies 1.1



GRADES 9,10,11

EDUCATIONAL PROGRAMS

These programs last 50 minutes and include activities using artifacts or scientific specimens. Some programs also include investigations, demonstrations, or data collection and analysis. Programs are limited to a maximum of 25 students per class.

FEE \$35 per class + museum admission

It's Classified!

Scientists classify species into taxonomic groups based on characteristics such as tooth structure, skull shape, nostril placement and body type. Students will identify and group a variety of museum specimens based on quantitative and qualitative characteristics.

PASS GRADES 9–12 Science Process 1.1, 2.1, 2.2, 4.7 | Biological Diversity 3.1, 3.2

Extinction

Extinction events can be observed in the fossil record as dramatic changes in life forms and communities. Scientists use these changes in the fossil record to define time periods. Students will



CHARLES BAKER

identify and organize fossil specimens from different time periods to determine the factors that influence extinction, including two famous mass extinction events.

PASS GRADES 9–12 Science Process 2.1, 2.2, 4.1, 4.7, 6.4
GRADE 8 Life Science 3.1, 3.2

"To see the wonder, the awe, the interest in my students as they viewed the exhibits, to watch them interact and answer the educator and to experience their growth in social/community skills was so satisfying for me."

NINTH-GRADE TEACHER
ADA JUNIOR HIGH, ADA





LABORATORY PROGRAM

Laboratory programs last 90 minutes and include experiments or simulations and active investigation by students.

Laboratories are limited to a maximum of 25 students per class.

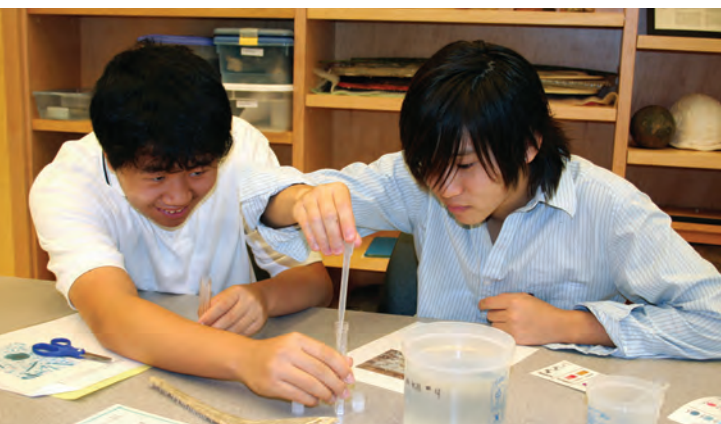
FEE \$70 per class + museum admission

CSI Red River

Students canoeing on the Red River find fish swimming erratically; a fisherman on the Mountain Fork of the Little River is stunned to find piles of dead and dying fish. What is happening? It is up to wildlife biologists to collect data and find the answers! Students in this class will use a variety of chemical tests, interviews and other data collection skills to solve the mysteries.

PASS GRADES 9–12 Science Process 1.1, 1.2, 1.3, 4.1–4.8, 6.1– 6.4

All SNOMNH programs have companion pre-visit materials. Check them out on the museum's website at www.snomnh.ou.edu.



LAURA VACCHI

WHITTEN-NEWMAN

EXPLOROLOGY[®] PROGRAM

WHITTEN-NEWMAN EXPLOROLOGY[®] PROGRAM

The Whitten-Newman ExplorOlogy[®] Program is a series of innovative educational opportunities designed to engage Oklahomans in “doing science” by immersing them in exciting science experiences. All programs provide participants with an adventure in science discovery!

About

During these discovery-based programs students and teachers explore the natural world we all share. This is a chance for Oklahomans to work alongside scientists and experts from the museum. Participants will have a unique opportunity to combine nature experiences with hands-on participation in field-based science, where the laboratory is the great outdoors.

Elementary, middle and high school students and teachers are encouraged to find out more about these exciting programs at explorology.snomnh.ou.edu or call (405) 325-3183.



JES COLE

The Whitten-Newman
ExplorOlogy[®] Program
is generously funded by the
Whitten-Newman Foundation.







Sam Noble Museum

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