



Teacher's Guide



Lakeshore Museum Center

430 W. Clay Avenue at Fourth Street, Muskegon
231-722-0278
www.lakeshoremuseum.org

The Lakeshore Museum Center has many science and history programs that support the Michigan State Curriculum. Programs are FREE of charge. To schedule a museum program, please contact the Programming Department at 231-722-0278.

Science Programs



STEAM Fossils

Grades: 3-5

Capacity: 30 students

Program Time: 45 minutes

This interactive STEAM-based program sends students on a 400 million year journey into Michigan's past to see how plants, animals, and habitats have changed. See real fossils up close and learn why they became extinct. The conclusion will be a STEAM-based activity to create the ultimate creature of survival! Teachers booking this as an outreach will get a modified program. Supports NGSS for 3rd and 4th grades. 3-LS4-1, 3-LS4-3, 3-LS4-4, 3-LS3-2, 4-ESS1-1 MI, 3-5-ETS1-2, 3-5-ETS1-3

Dinosaurs

Grade: Pre-K

Capacity: 30 students

Program Time: 20 minutes

Discover what fossils are and how they tell the story of dinosaurs. Examine replica fossils and meet the Museum's own dinosaur, Deinonychus (dine-ON-ik-us).

Light and Sound Waves

Grades: 1-4

Capacity: 30 students

Program Time: 45 minutes

How do light and sound travel across vast distances? In this program, students will learn about light and sound waves by getting hands-on with string telephones, flashlights, and a resonance bowl. Supports NGSS for 1st grade. 1-PS4-1, 1-PS4-2, 1-PS4-3, 1-PS4-4

STEM Magnets

Grades: Pre-K-3

Capacity: 30 students

Program Time: 30 minutes

What are magnets? Experiment with the properties of magnetism to understand magnets and their uses. Students in 3rd grade and up will conclude with a STEM-based magnet activity to test their understanding. Supports NGSS for K and 3rd grade. K-PS2-1, K-PS2-2, 3-PS2-3, 3-PS2-4, 3-5-ETS1-1, 3-5-ETS1-2

Forces In Motion

Grades: K-3

Capacity: 30 students

Program Time: 30 minutes

Discover how things move. Learn about gravity, inertia, and friction through hands-on experiments and demonstrations. **Supports NGSS for K and 3rd grade.** K-PS2-1, K-PS2-2, 3-PS2-1, 3-PS2-2

Whoo's In The Forest?

Grades: K-2

Capacity: 30 students

Program Time: 20 minutes

This program, focusing on the owl, introduces students to local predators, adaptations, food chains/webs, habitats, and predator/prey concepts. A great precursor to the Museum's Nature's Food Web program for grades 3–5. **Supports NGSS.** K-LS1-1, K-ESS3-1, 1-LS1-1, 1-LS3-1, 2-LS4-1

Nature's Food Webs

Grades: 2-4

Capacity: 30 students

Program Time: 45 minutes

By studying the food web of an owl, students explore firsthand the complex interdependence between food and energy in living systems. Students will dissect an owl pellet. **Supports NGSS for 2nd and 4th grades.** 2-LS4-1, 3-LS3-2, 4-4-LS1-1, 4-LS1-2

Michigan's Geologic Past

Grades: 2-5

Capacity: 30 students

Program Time: 45 minutes

Learn about the changes our state has gone through in the last 500 million years, and how these changes shaped Michigan into what it is today. This program will include where different resources such as salt, water, and iron came from, as well as how the glaciers carved out the Great Lakes. **Supports NGSS for 2nd and 4th grades.** 2-ESS1-1, 2-ESS2-2, 2-ESS2-3, 4-ESS1-1, 4-ESS2-1, 4-ESS2-2

A Beak For Every Job

Grades: 3-5

Capacity: 30 students

Program Time: 30 minutes

A STEAM-based program for the birds! A Beak For Every Job looks at how our feathered friends have adapted to suit their environment and food source. Learn about how traits are passed down to create the perfect beak for the job. This program will include a STEAM-based activity where the students will discover what beak type is perfect for a food type. Supports NGSS for 3rd and 4th grades. 3-LS3-1, 3-LS3-2, 3-LS4-2, 4-LS1-1, 3-5-ETS1-1, 3-5-ETS1-2

Shocking!

Grades: K-5

Capacity: 30 students

Program Time: 20 min for K-1; 45 Min for 2-5

Experiment and learn about the properties of electric current and static electricity through demonstrations and hands-on activities. Supports NGSS for 3rd and 4th grades. 3-PS2-1, 3-PS2-3, 4-PS3-2



History Programs

Muskegon “The Lumber Queen”

Grades: 2-5

Capacity: 30 students

Program Time: 1 hour

Discover the importance of lumbering in the development of Muskegon County. Students will see tools of the trade and the Museum’s sawmill. The video “Logging in Michigan” will be shown. Supports Michigan Social Studies Standards for 2nd, 3rd, and 4th grades. 2-H2.0.4, 2-H2.0.6, 2-G4.0.1, 3-H3.0.3, 3-G4.0.2, 3-E1.0.3, 4-H3.0.4

Michigan’s First Economic Endeavor: *The Fur Trade*

Grades: 3-5

Capacity: 30 students

Program Time: 45 minutes

Discover Michigan’s first business, the fur trade. Students will learn what items were traded, who traded them, and why. Explore what life as a fur trader was like by entering a replica fur trader’s cabin. Supports Michigan Social Studies Standards for 3rd and 5th grades. 3-H3.0.3, 3-H3.0.5, 3-H3.0.6, 3-G4.0.2, 3-E1.0.3, 3-E2.0.1, 5-U1.1.3, 5-U1.4.3

Michigan’s First People

Grades: 2-5

Capacity: 30 students

Program Time: 45 minutes

This program covers pre-contact Indian culture in Michigan. Examine artifacts, furs, and a Woodland Indian wigwam. Supports Michigan Social Studies Standards for 3rd and 5th grades. 3-H3.0.5, 5-U1.1.2, 5-U1.1.3



Colorful Quilts

Grades: Pre K-5

Capacity: 30 students

Program Time: 30 minutes

What makes a quilt a quilt? Learn how quilt designs tell stories of pioneer days. Students will examine quilts and create their own quilt block patterns. **Supports Michigan Social Studies and Math Standards for Kindergarten. K-H2.0.3, K.G.1 and K.G.6**

Michigan's Pioneer Community

Grades: K-3

Capacity: 30 students

Program Time: 45 minutes

What was it like to live in early Michigan? How did the pioneers arrive and survive in our state? Students will learn about everyday living and the chores of pioneer children as well as make and taste their own butter. **Supports Michigan Social Studies Standards for K, 1st, and 3rd grades. K-H2.0.1, K-H2.0.3, K-G5.0.1, 1-H2.0.3, 1-H2.0.4, 1-G5.0.1, 3-H3.0.3, 3-H3.0.7**

Tin Punching

Grades: 3-5

Capacity: 30 students

Program Time: 45 minutes

Discover the importance of tin during the early pioneer and colonial days. See how it was used to create different objects and view examples of punched tin. Students will tin punch and take their projects home.



The Philanthropy of Charles Hackley

Grades: 2-5

Capacity: 30 students

Program Time: 30 minutes

Learn about the gifts Charles Hackley gave to Muskegon. Students grasp the concepts of economics and philanthropy by becoming mill workers or lumber barons dealing with the cost of living in the late 1800s. Your students will experience first-hand the importance of giving back to their community. Supports Michigan Social Studies Standards for 2nd grade. 2-H2.0.3, 2-H2.0.4, 2-H2.0.5, 2-H2.0.6

Our Community Yesterday and Today

Grades: 2-5

Capacity: 30 students

Program Time: 45 minutes

Take a historic downtown walking tour during which students will learn about the past and current uses and occupants of many of Muskegon's historic businesses and residences. Learn about the McCracken Building, the story of Charles Hackley's father, what life was like for the Spaniola family running a market on Western Avenue, and many more interesting facts about historic downtown Muskegon. Supports Michigan Social Studies Standards for 2nd and 3rd grade. 2-H2.0.4, 2-H2.0.6, 3-H3.0.7

Guided Exhibit Tour

Grades: All Ages

Capacity: 30 students

Program Time: Varies

Dive into Muskegon County natural or cultural history with a guided tour of Michigan: From the Depths of Time, Coming to the Lakes, Body Works: It's All Up to You, our hands-on Science Center, or take a tour of the entire museum.

STEM Center Programs

Build a Beak

Grade: 3

Cost: \$2 per student

Program Time: 45 minutes

Partners with A Beak for Every Job

Students will be challenged to create a custom bird beak to eat a specific food. Students will then test their beaks against other food sources. Through this process, students will learn about adaptations. Supports NGSS for 3rd grade. 3-LS4-4, 3-LS4-2, 3-5-ETS1-1, 3-5-ETS1-2

Electricity Experimentation

Grades: 3-4

Cost: \$2 per student

Program Time: 30 minutes

Partners with Shocking!

Learn about the many uses of electricity in our homes and businesses and its history. Students will explore how to connect circuits together, fly foil around the room using static electricity, race pop cans, and learn what makes a good conductor and insulator. Supports NGSS for 3rd and 4th grades. 3-PS2-3, 3-PS2-1, 3-5-ETS1-1, 3-5-ETS1-2, 3-5-ETS1-2

Food Webs: Prey's Point of View

Grade: 3

Cost \$2 per student

Program Time: 30 minutes

Partners with Food Webs

Closely examine the remains of an owl's prey to learn its anatomy and how they adapt to survive. Supports NGSS for 3rd grade. 3-LS4-3, 3-LS3-2, 3-LS4-2

Fossil Casting

Grades: 3-4

Cost: \$2 per student

Program Time: 30 minutes

Partners with STEAM Fossils

Casts and Molds are very important for museums and researchers to study and display fossils. Students will see a cast of a mastodon discovered in Ravenna then select their own fossil to make a cast and mold. Students will get to take home their cast and mold. **Supports NGSS for 3rd and 4th grades. 3-LS4-1, 3-LS3-1, 3-LS4-3, 3-LS4-4**

Muskegon Foundries

Grade: 2

Cost: \$2 per student

Program Time: 60 minutes

Following the end of the lumber industry, foundries became vital for Muskegon's economy. Learn the history of these companies then try your hand at foundry work by creating a mold, casting it, and smoothing out the finished product. Students will get to take home their tin cast. **Supports Michigan Social Studies Standards and NGSS for 2nd grade. 2-H2.0.4, 2-H2.0.5, 2-H2.0.6, 2-PS1-1, 2-PS1-4**

Fur Trade Canoes

Grade: 3

Cost \$2 per student

Program Time: 45 minutes

Partners with Fur Trade program or Michigan's First People

Learn about the large wooden canoes used by fur traders as they explore buoyancy. Then construct aluminum canoes in a challenge to find the best design to hold weight and be maneuverable. **Supports Michigan Social Studies Standards for 3rd grade. 3-H3.0.1, 3-H3.0.2, 3-H3.0.6, 3-G4.0.2, 3-E1.0.3**



Lumbering Math

Grades: 2-4

Cost: \$2 per student

Program Time: 30 minutes

Partners with Muskegon “The Lumber Queen”

This program puts the math into lumbering. Just how much wood was cut during the lumbering period? How did they figure that number out? What’s the best way to cut a log to maximize profit and minimize waste? Students will use math and log ends to answer these questions and more. Supports Michigan Social Studies Standards for 2nd, 3rd and 4th grades. 2-G4.0.1, 3-E1.0.3, 4-H3.0.1, 4-H3.0.2, 4-H3.0.3, 4-H3.0.4

Native American Wigwam Building

Grades: 3-5

Cost: \$2 per student

Program Time: 45 minutes

Partners with Michigan’s First People

How did Native Americans harness natural resources to create a shelter to survive Michigan’s winter? Why was a wigwam designed the way that it was? Students will find out the answers as they build their own wigwams and test it against simulated Michigan weather. Supports Michigan Social Studies Standards for 3rd and 5th grades. 3-H3.0.4, 3-H3.0.5, 3-G5.0.1, 3-G5.0.2, 5-U1.1.2, 5-U1.1.3

Fleece to Shirt: Pioneers and Clothing Making

Grades: 2-3

Cost \$2 per student

Program Time: 45 minutes

Partners with Michigan’s Pioneer Community

Wool was an important material for clothing production for Michigan’s earliest European settlers. Students will examine wool to learn why it was so valued and process their own wool like the pioneers. Supports Michigan Social Studies Standards for 2nd and 3rd grades. 2-H2.0.5, 2-H2.0.6, 2-E1.0.3, 2-E1.0.4, 3-H3.0.7, 3-E1.0.4

Planning Your Visit

Museum Scheduling Guidelines

Free Admission for Muskegon County Schools!

Out-of-county schools call the Programming Department at 231-722-0278 or visit www.lakeshoremuseum.org for admission rates.

Planning your visit:

1. Select a program and several possible dates and times.
2. Please call at least two weeks in advance to schedule a guided program. Reservations are also required for self-guided tours.
3. You will receive a program confirmation by e-mail.
4. At least one adult for every 10 children is required, unless otherwise noted. Supervision is the responsibility of the teachers and chaperones.
5. Students are required to wear name tags.
6. Please let us know if you have any special needs. ADA accessible entrance and parking is on Fourth Street (press the buzzer to notify us of your arrival.)
7. Sensory bags and a museum social story are available on request.

Please take note:

1. Running late? Please call 231-722-0278. We only wait 15 minutes unless notified.
2. Cancellations must be made at least 24 hours prior to your scheduled visit.
3. Our programs are free for groups within Muskegon County.

Outreach Programs

Outreach Programs

Outreach Programs can be brought into the classroom for free for teachers in Muskegon County. Teachers provide a table and the Museum provides the rest! Choose one of the 10 programs listed below. To schedule an Outreach Program call the Programming Department at 231-722-0278.

Out-of-Country Outreach Programs

Outreaches are now available to schools within a 50-mile radius of the museum. Contact the Programming Department at 231-724-5533 if you are unsure if your school is within this radius.

Cost: \$100 for the first presentation for up to 30 students, and \$50 for each additional presentation of up to 30 students, plus federal mileage rate for round trip from our museum. \$100 deposit is required two weeks prior to program with remainder due the day of program.



Lakeshore Museum Center COMES TO YOU

- » STEAM Fossils
- » Dinosaurs
- » Food Webs
- » STEM Magnets
- » Michigan's First People
- » Quilts
- » Shocking!
- » Tin Punching
- » Michigan Geological Past
- » The Philanthropy of Charles Hackley

BIG Lesson

Grades 2-5

Requirements: Teachers must complete a special training program and be able to spend one full week at the museum. Please call 231-724-5526 for the next training date and/or more information.

Have you ever wanted more from a museum visit? Do you wish that you could have a study trip that incorporates special activities, behind-the-scenes tours, experiments, and guest speakers? Imagine the impact that a week-long study trip held at the Lakeshore Museum Center could have on your students for the remainder of the year!

The BIG Lesson model focuses on partnerships between community resources and schools that encourage hands-on and minds-on learning for students. This teacher-led, student-centered model uses an object-based, interdisciplinary approach to teaching and learning. By utilizing behind-the-scenes tours of the museum and guest speakers, students work cooperatively on a research topic.



Special Programs

From Furs to Fire: Third Grade Michigan History Week

Grade: 3

Capacity: 9 classes/day

Program Dates: November

During this interactive educational experience, students will learn how Michigan Indians survived prior to western contact, and once contact was made, how they used furs to obtain goods and technology from the fur traders. Supports grade level content expectations for third grade. H3.0.1, H3.0.4, H3.0.5, H3.0.6, E1.0.3, E1.0.4, G4.0.2, G5.0.2 Registration is required. Call 231-724-5533 to register for the scheduling lottery.

Muskegon Heritage Museum

Grades: 2-12

Capacity: 30 students

Program Time: 1-1.5 hours

Students are invited to join us to learn how industry shaped Muskegon's history. They may also experience STEM themed programs by seeing machinery in operation and learning about the invention of unique products made in Muskegon. Volunteer docents lead student in both small and large groups with hands-on activities featuring the museum's favorite exhibits.

For more information or to schedule a free tour for your class, email info@muskegonheritage.org or call 231-722-1363.



Historic Sites of the Lakeshore Museum Center

Tours of the Historic Sites can be scheduled to coordinate with Museum Programs. Tours at the houses may be arranged September, October, May and limited dates in April. Call for reservations: 231-724-5534

Hackley and Hume Guided Tour

Grades: K-12

Capacity: 45 people

Program Time: 1 hour

Tour the homes of Muskegon's most prominent lumber barons. Students will learn how life was different in the 1890s and 1920s compared to today through hands-on experiences. Second graders will focus on how Charles Hackley shaped our community, while fourth grade classes will learn more about Hackley's role in the lumber industry of Muskegon. Supports grade level content expectations for 2nd and 4th grades. 2-H2.0.3, 2-H2.0.4, 2-H2.0.6, 3-H3.0.3, 3-E1.0.3, 4-H3.0.1, 4-H3.0.4

Visit our website at www.lakeshoremuseum.org for class admission rates.

Fire Barn Museum Tour

Grades: K-12

Capacity: 30 students

Program Time: 30 minutes

Through viewing two floors of firefighting equipment and photographs from the 19th and 20th centuries, students will discover how firefighters have been protecting and serving the Muskegon community for over 135 years.

Supports grade level content expectations for 2nd grade. H2.0.4, H2.0.5, H2.0.6

Scolnik House of the Depression Era Tour

Grades: K-12

Capacity: 30 students

Program Time: 30 minutes

This is a hands-on house museum representing fictional working class families in Muskegon from 1929 through 1939. The house museum focuses on how immensely our community changed during the Great Depression.

Supports grade level content expectations for 2nd and 4th grades. 2-H2.0.4, 2-H2.0.5, 2-H2.0.6



Loan Kits

The Lakeshore Museum Center has a wide variety of Educational Loan Kits available at no cost. These kits contain many useful and fun tools to enhance almost any lesson. These tools include:

- » Books
- » Posters
- » Videos
- » Artifacts
- » Specimens
- » CDs
- » Experiments
- » Activities

Resource binders include lesson plans, helpful teaching tips, artifact/specimen explanations, and websites for additional information.

Loan Kits are available at no cost and can be checked out for a maximum of two weeks. To reserve a Loan Kit, or if you have any questions, please call 231-724-5533. It is recommended that you reserve Loan Kits several weeks in advance. A late fee of \$5.00 per day will be charged for kits that are not returned on time.

Pictures and inventories of each of the Loan Kits are available by request. E-mail: pat@lakeshoremuseum.org for more information.



Michigan Fossils

Look at real Michigan fossils and explore topics on habitat change, extinction, and what fossils can tell us about Michigan's past. This kit ties in with the Museum's newest gallery: Michigan: From the Depths of Time. Discover the strange creatures that called Michigan home.

Skulls

Learn about predators and prey and study animals' teeth and diet by looking at 15 different skulls. Most of the skulls are of Michigan animals.

Rocks and Minerals

How are rocks and minerals connected? Students will compare and contrast rock and mineral samples with several guides to assist in identification and explanation.

Great Lakes Fish

Discover the fish that can be found in the Great Lakes surrounding Michigan, as well as inland waters through hands-on specimens. Items like mounted fish, a fish skeleton, models, and posters will help make this topic come alive for your students.

How Your Body Works

Explore the amazing human body by using models and posters of various systems and even use a stethoscope to hear your own heartbeat.

Dinosaurs

Students will utilize assorted dinosaur fossils such as tracks, teeth, and skulls to learn about variation in size, diet, and adaptations of dinosaurs.

Energy and Electricity

Learn different ways energy and electricity can be made and used in everyday life. Perform experiments and build circuits and devices using a littleBits™ student set.

Magnet Magic

Learn about magnetic fields, poles, and everyday uses for magnets. Students will be amazed at the fun they will have experimenting with magnets.

Furs

What does mammal hair feel like?
How do animals use camouflage to hide?
Touchable furs help students learn about animal coverings.

Michigan Animals

Students will learn about local animal adaptations by examining various animal pelts, replica scat, a beaver-chewed log, skulls, and assorted animal specimens.

Insects and Spiders

See the variation in local insects and spiders through a close-up view of actual specimens while using detailed visual guides to assist.

Birds

What makes birds unique? Students will compare and contrast a variety of bird talons, eggs, wings, feet, skulls, nests, bird calls, and actual bird specimens from different species.

Amphibians and Reptiles

Learn the difference between species by examining turtles, frogs, snakes, and salamanders. Study skin, skulls, life cycles, and visual guides.

Life Cycles

Students will learn about the stages of life that all plants and animals go through and see real examples of the life cycles of dragonflies, pine trees, and corn. They will also learn how plants spread using different types of seeds and play several fun life cycle games.

Plants

Students will examine leaves, seeds, and plant samples to learn about the structure, development, adaptation, uses and importance of flowers, trees, and other plants.

It's All Up to You

Teach your students about nutrition, exercise and physical protection, as well as the consequences of not living a healthy lifestyle using hands-on items such as: replica food, a children's workout video, and a student blood pressure kit.

Master Simple Machine Station

This kit allows you to create and use each of the four simple machines (pulleys, levers, wheels, and inclined planes) to teach about forces and motion, scientific inquiry, critical thinking, and using tools to measure, plot, and interpret data.

The Solar System

Use this kit to help demonstrate and explain how the planets move around the universe and how the moon orbits around the earth. Learn about far away galaxies and stars and the history of humans' exploration of space. (Visit the Museum to see the Orrery).

Victorian Life

Explore turn-of-the-century Michigan through a stereoscope, classroom reader and a chamber pot. Students will explore the changing lifestyle by viewing photographs and books from and about this period.

Michigan Indians

What was Indian life in Michigan like hundreds of years ago? Students will learn about Michigan Indian culture by touching stone tools and crafts. Study animal pelts and metal items to understand the cultural impact of the fur trade.

Michigan in the Civil War

Students will have the opportunity to try on a Civil War uniform, go through a haversack and a housewife, learn about slavery and the Underground Railroad, and meet Michigan Civil War soldiers with this hands-on loan kit.

Lumbering

Discover the importance of the lumbering era in the development of Muskegon County by utilizing lumbering tools, viewing pictures from the lumbering era, and touching a 100-year-old log end.

Michigan Settlers

Find out what life was like for the brave people who settled Michigan. Examine wool cards, a quilt square, candle molds, and play pioneer games. Students can use artifacts, videos, posters, and music to experience life as Michigan settlers.

The Depression Era

This kit explores the Great Depression and how it affected not only the people of Michigan, but people throughout the United States. Browse through the Current School Topics weekly publications for the 1930-31 school year, play typical 1930s games, or read a story of hard times.

Other available Loan Kits:

- » Jewish Heritage
- » Seashells
- » The 1960s in Michigan
- » Herstory
- » 1920s, 30s, & 50s Newspapers

**SCIENCE
PROGRAMS**

**HISTORY
PROGRAMS**

**STEM CENTER
PROGRAMS**

OUTREACH

**THE BIG
LESSON**

**SPECIAL
PROGRAMS**

**HISTORIC
SITES**

LOAN KITS

- 1. Lakeshore Museum Center**
430 W. Clay Ave., Downtown Muskegon
231.722.0278 – Open Year Round
- 2. Fire Barn Museum**
510 W. Clay Ave., Downtown Muskegon
Open May to October
- 3. Hackley & Hume Historic Site**
484 W. Webster Ave., Downtown Muskegon
Open May to October
- 4. Muskegon Heritage Museum**
561 W. Webster Ave., Downtown Muskegon
Open May to October
- 5. Scolnik House of the Depression Era**
504 W. Clay Ave., Downtown Muskegon
Open May to October

