

# Exploring Our Heritage

## IDEAL FARMLAND



### Learning Objective

By the end of this lesson students will be able to explain how the Ice Age shaped the topography and geology of Ohio and produced its rich soil. Students will also be able to describe how natural resources created during the Ice Age later benefited the state economy.

### Video Synopsis

In this *Our Ohio* heritage segment, students will hear from a geologist to learn how the Ice Age helped create land ideal for farming. Students will also visit a farm in Northwest Ohio and learn about the soil from a farmer who makes his living from the land.

### Teacher Background

Ohio is one of just five states in the nation where over half of its territory is considered prime farmland. The U.S. Department of Agriculture defines prime farmland as that with the best soil composition for producing agricultural products. How did the state get such rich soil? Ohio's most fertile soil was created as a result of glacial deposits during the Ice Age. The Ice Age, or Pleistocene Era, spanned over two million years. Ending roughly ten thousand years ago, it dramatically changed the Ohio landscape. Hilly moraines, broad valleys and flat plains all bear witness to the massive sheets of ice that moved across the land.

During the Pleistocene Era, glaciers in Ohio ranged in thickness from one thousand feet to one mile. Moving in from the north, the glaciers scraped, flattened, and shaped the land. The glaciers deposited sediments in the north

central third of the state, enriching the soil and leaving behind flat, even landscape perfect for cultivating crops. In contrast, unglaciated Ohio which includes most of southeastern region of the state, was not covered by the ice sheets and thus features hilly terrain and steep ravines.

In addition to providing rich soil, the sediment deposited by the glaciers left behind raw materials such as clay, sand, and gravel—important economic resources for the state. Important waterways such as Lake Erie and the Ohio River were also formed when glacial ice melted away.



Arctic Glacier



## Ohio Academic Content Standards

### GRADE

**3**

#### **Geography**

##### *Location*

2. Use a compass rose and cardinal directions to describe the relative location of places.
3. Read and interpret maps by using the map title, map key, direction indicator and symbols to answer questions about the local community.

### GRADE

**4**

#### **Geography**

##### *Location*

1. Use a linear scale to measure the distance between places on a map.
2. Use cardinal and intermediate directions to describe the relative location of places.
4. Use maps to identify the location of major physical and human features of Ohio including:
  - A. Lake Erie
  - B. Rivers
  - F. The capital city

##### *Places and Regions*

5. Describe and compare the landforms, climate, population, vegetation and economic characteristics of places and regions in Ohio.
6. Identify manufacturing, agricultural, mining and forestry regions in Ohio.
7. Explain how resources, transportation and location influenced the development of cities and industries in Ohio including major industries such as oil, steel, rubber and glass.

##### *Human Environmental Interaction*

8. Identify how environmental processes (i.e., glaciation and weathering) and characteristics (landforms, bodies of water, climate, vegetation) influence human settlement and activity in Ohio.

#### **Social Studies Skills and Methods**

##### *Obtaining Information*

1. Obtain information about state issues from a variety of print and electronic sources, and determine the relevance of information to a research topic:
  - E. Multimedia/Electronic sources.
2. Use a glossary and index to locate information.
3. Use primary and secondary sources to answer questions about Ohio history.

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### GRADE

5

#### Geography

*Location*

2. Use maps to identify the location of:  
E. The Great Lakes.

*Thinking and Organizing*

6. Draw inferences from relevant information.

#### Social Studies Skills and Methods

*Obtaining Information*

3. Differentiate between primary and secondary sources.





## Instructional Procedure (3-4 class periods)

### Ideal Farmland: What I Learned

1. Start by asking students if they know what glaciers are. Next ask if student can imagine that at one time, thousands of years ago, more than half of the state of Ohio was covered in glaciers.
2. Based on the information in the overview briefly describe the Ice Age in Ohio, then, let students know they will be watching a short video about how the Ice Age helped shape the landscape of the state and contributed to its fertile soil for farming.
3. Distribute the worksheet ***Ideal Farmland: What I Learned*** and have students complete the graphic organizer while watching the video.
4. After watching the video, review the worksheets together as a class.

### Ice Age Ohio Map Analysis

1. Now that students have been introduced to the Ice Age in Ohio they will analyze a map of Ohio illustrating the location of the glaciers. Distribute the ***Ice Age Ohio Map Analysis*** worksheet and have students work alone or in pairs to complete. Students will need to use colored pencils or crayons to fill in the map.
2. Once students have completed the worksheet, go over the answers together as a class.
3. Finally, instruct them to look at the map again to find the approximate location of the town they live in and ask them to determine if their town was under ice during the Ice Age.



### Ice Age Natural Resources

1. Begin by explaining to the class what natural resources are. Then, ask the students for examples and write the answers on the board. Explain that there are both living and non-living natural resources. Trees and soil would be an example of each.
2. Now, explain that a number of our natural resources were made possible by the geological processes that occurred as a result of the glaciation during the Ice Age.
3. Finally pass out the worksheet **Ice Age Natural Resources**. In this activity, students will find out about deposits the glaciers left behind, and ways the glaciers have shaped the land, creating natural resources that have benefited the economy of the state. Students should work in groups to complete and will need internet access for this activity.

### Ohio's Ice Age Animals

1. Write the word "paleontologist" on the board. Ask students if anyone knows what this is. Explain that paleontologists are scientists who specialize in looking at the remains of animals from other geological periods.
2. Now, ask students if they know of any animals that lived during the Ice Age but are now extinct. The mastodon should be a familiar example. Now advise students that they will be conducting research to find out more about some of the extinct animals that lived during the Ice Age.
3. Distribute the worksheet **Ohio's Ice Age Animals**. Students will use the internet and books in the library to conduct research about the Ice Age and complete the graphic organizer. Students will need to have library access to complete this activity.



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### Answer Key

#### Ideal Farmland: What I Learned

1. The land in the north and west regions of the state were made flat by the glaciers.
2. The peak of the last Ice Age was 18-20 thousand years ago.
3. One half to one whole mile thick.
4. The Great Black Swamp is the area that used to be covered by a lake.
5. 5-7 different types of soil.

#### Ice Age Ohio: Map Analysis

1. More than half, or two thirds of the state was covered by glaciers.
2. In the middle of the state.
3. Yes
4. The Ohio River and Lake Erie.
5. The river is south of Columbus and the lake is north.
6. About 175 miles.



#### Ice Age Natural Resources

1. Clay is composed of fine grained minerals and was deposited during the Ice Age. It is a big Ohio industry and brings in millions of dollars.
2. Shale is compressed layers of clay. It is also an important natural resource that brings millions of dollars to the economy.
3. Eskers are deposits of sand and gravel. Ohio has a large sand and gravel industry.
4. Outwash refers to deposits left by the glaciers. This makes Ohio soil rich and good for farming.

#### Ohio's Ice Age Animals

For this activity students should include a description of what each animal looked like, size, what it ate, and when it lived. Each description should include a sketch. Each worksheet should include a one paragraph description of the student's favorite animal and give reasons why.





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# IDEAL FARMLAND



## Ideal Farmland: What I Learned

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**Instructions:** Read all of the boxes in the **Find Out** column below. Fill in the correct answers in the **What I Learned** column while watching the video *Ideal Farmland*.

FIND OUT	WHAT I LEARNED
How did the land in Ohio get so flat?	
When was the peak of the last Ice Age?	
How thick could the ice from the glacier be in places?	
What is the name of the place that used to be covered by a lake?	
How many different types of soil did the glaciers leave behind on Scott's farm?	

### Word Bank

**Ice Age:** A period of time when ice sheets covered much of the world.

**Arctic:** The land surrounding the Arctic Ocean.

**Geology:** A science that studies the history of the earth looking closely at rocks.

## Exploring Our Heritage

# IDEAL FARMLAND



### Ice Age Ohio Map Analysis

NAME: \_\_\_\_\_

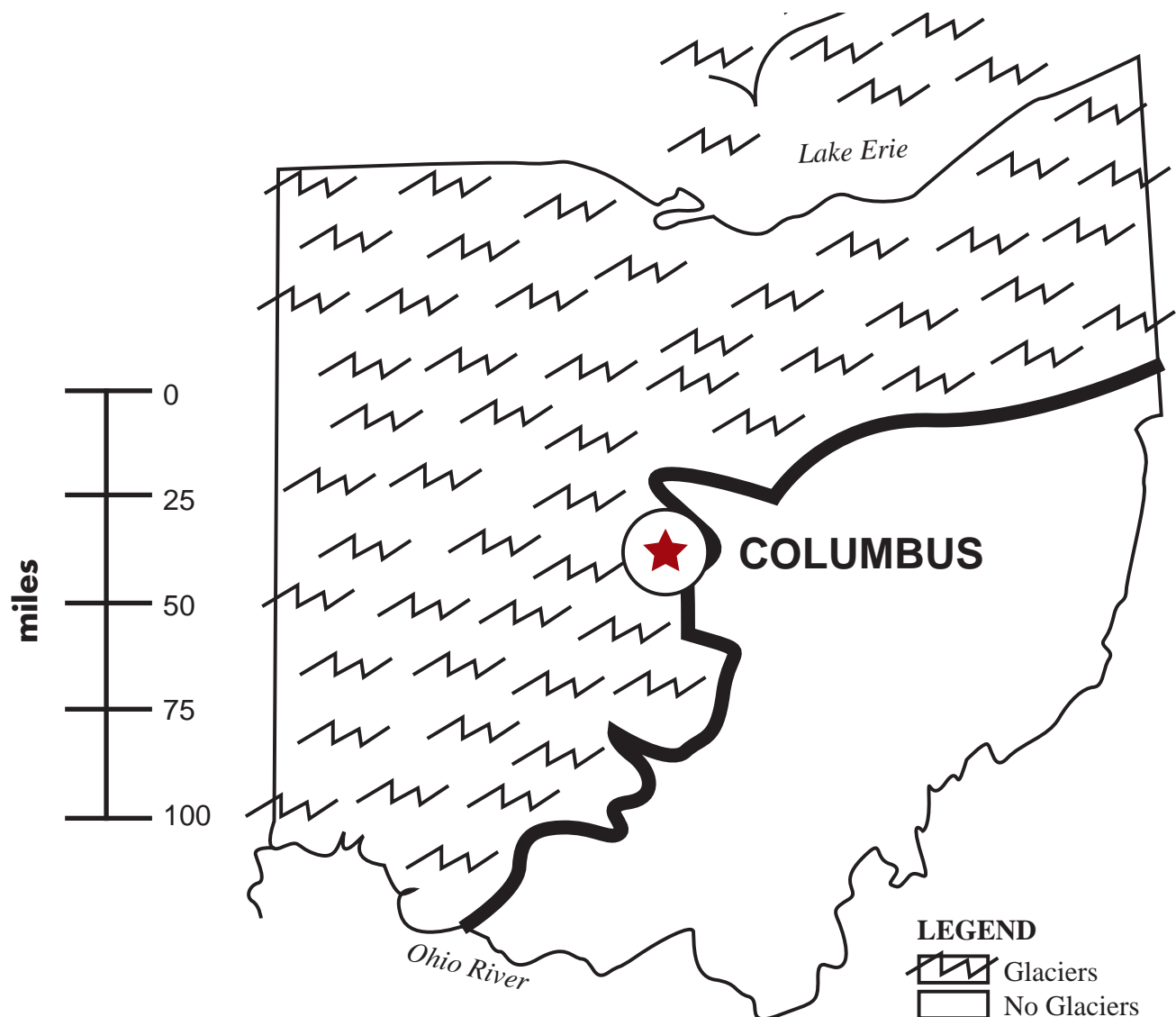
DATE: \_\_\_\_\_

**Instructions:** Look closely at the map to answer each of the questions on **Page 9** using complete sentences.

#### Word Bank

**Compass Rose:** A circle divided into four points that show the four cardinal directions.

**glacier:** A large body of ice.







## Ice Age Ohio Map Analysis

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**Instructions:** Look at the map key on **page 8**. Use a blue crayon or colored pencil to fill in the region of Ohio covered in glaciers. Use green to color in the areas not covered by glaciers. Draw in hills to show the hilly landscape where there were no glaciers. Then, draw a compass rose on the map and complete the questions below.

1. How much of Ohio was covered by glaciers?

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2. Where in the state is the capital of Ohio located?

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3. Was the capital city of Columbus covered by a glacier during the Ice Age?

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4. What river and what lake appear on the map?

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5. Where is the river located in relation to Columbus? The lake?

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6. About how many miles did the glaciers cover on the west side of the state?

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## Exploring Our Heritage

# IDEAL FARMLAND



## Ice Age Natural Resources

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**Instructions:** Ohio's soil is very rich in the northern and western portions of the state because glaciers passed over the land. Lakes and rivers were also created by the glaciers during the Ice Age. In this activity, you will find out more about how the glaciers changed and benefited the land in Ohio. Start by conducting library research to find out more about each of the terms listed below. Then define each term and explain how it developed during the Ice Age. Finally, describe how it has benefited Ohio's economy as a natural resource. Use the Ohio Historical Society's online encyclopedia to find this out.

<http://www.ohiohistorycentral.org/>

### Word Bank

**natural resource:** Naturally occurring substances that are considered valuable.

**Pleistocene:** Scientific term for the Ice Age.

### Clay

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**Benefit to the Economy:** \_\_\_\_\_

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### Shale

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**Benefit to the Economy:** \_\_\_\_\_

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## Exploring Our Heritage

# IDEAL FARMLAND



## Ice Age Natural Resources

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

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### Word Bank

**natural resource:** Naturally occurring substances that are considered valuable.

**Pleistocene:** Scientific term for the Ice Age.

### Esker

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**Benefit to the Economy:** \_\_\_\_\_

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### Outwash

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**Benefit to the Economy:** \_\_\_\_\_

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## Ohio's Ice Age Animals

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

Ohio was much different before the Ice Age than it is today. For example, the Ohio River and Lake Erie didn't even exist and there were many animals that are now extinct.

**Instructions:** You will find out more about some of the extinct animals that used to live in Ohio. Use the internet and books in the library to find out about the Ice Age animals listed in the **Find It** column from **page 13**. In the **Draw It** column, draw or trace a picture of the animal and then write a brief description about the animal in the **What I Learned** column. Include information about what the animal looked like, its size, what it ate, and when it lived. When you are done filling out the columns, choose your favorite animal and write a paragraph describing it and what made it your favorite.

### Word Bank

**fossil:** A trace or imprint of the remains of an animal or plant in the earth or rock.

**extinct:** No longer existing.

### My Favorite:

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Ohio's Ice Age Animals

FIND IT	DRAW IT	WHAT I LEARNED
Mastodon		
Mammoth		
Giant Ground Sloth		
Short Faced Bear		
Giant Beaver		

