



**CAVE OF THE MOUNDS**<sup>®</sup>

National Natural Landmark

*2017 Governor's Tourism Stewardship Award Winner*

## **GeoJourney Activity Packet**

Thank you for bringing your group to Cave of the Mounds National Natural Landmark – Wisconsin’s oldest classroom! We are proud to assist educators in reaching their goals with fun, hands-on activities.

Within this PDF, we have provided a few options for you to incorporate into your classroom, or as a take-home activity for your students! These additional activities can help to enhance lesson plans. Also included is a quiz that you can issue to your students before and/or after your visit to Cave of the Mounds. Along with this, we have included a crossword puzzle. This can also be used as a before or after tool, or alternative activity. If you would like to extend the learning experience after your visit, you can find other lessons and ideas, or more information about our programs, by visiting our website at [www.caveofthemounds.com](http://www.caveofthemounds.com).

Our objective for your visit is to present the unique geology of our area in an effort to strengthen their learning about the world around them. Our hope is to inspire your students to become good stewards of all natural environments in the future.

Please contact us personally if you have questions or concerns about your visit. We can be reached at (608)437-3038 ext. 103 or you may contact us by e-mail at [groups@caveofthemounds.com](mailto:groups@caveofthemounds.com).

Sincerely,

Education Team

# Charcoal Briquette Crystal Growing Project

You will need: 1 charcoal briquette, 1 pie tin, **Charcoal crystal solution** (10ml Ammonia, 50ml laundry bluing, 50ml salt, 100ml water)

1. Mix a batch of crystal solution, stirring well.

\*For colorful crystals, add food coloring to solution!

2. Place a piece of charcoal into the pie tin. Pour crystal solution over the top of the charcoal.

3. Over time, crystals will form on top of the charcoal.

\*Add more solution to the pie tin for continued crystal growth.

## HOW?!?



Charcoal is a very porous and absorbs the solution. Water evaporates from the solution leaving salt crystals behind.

Cave of the Mounds is a solution cave. Water brings calcium carbonate into the cave. Crystals of calcite are deposited, creating cave formations called **speleothems**.

# Create-A-Fossil Investigation

YOU WILL NEED: **fine sand, 2 containers (one for the molds/casts, one to mix plaster), quick-set Plaster of Paris and various items to create molds/casts.**

1. Fill 2/3 of your container with moistened sand.

2. Press objects into the moist sand—Leaves, plastic dinosaurs or bugs, shells and twigs; other items with interesting textures also work well.

3. With the help of an adult, mix Plaster of Paris and carefully pour into the impressions in the sand.

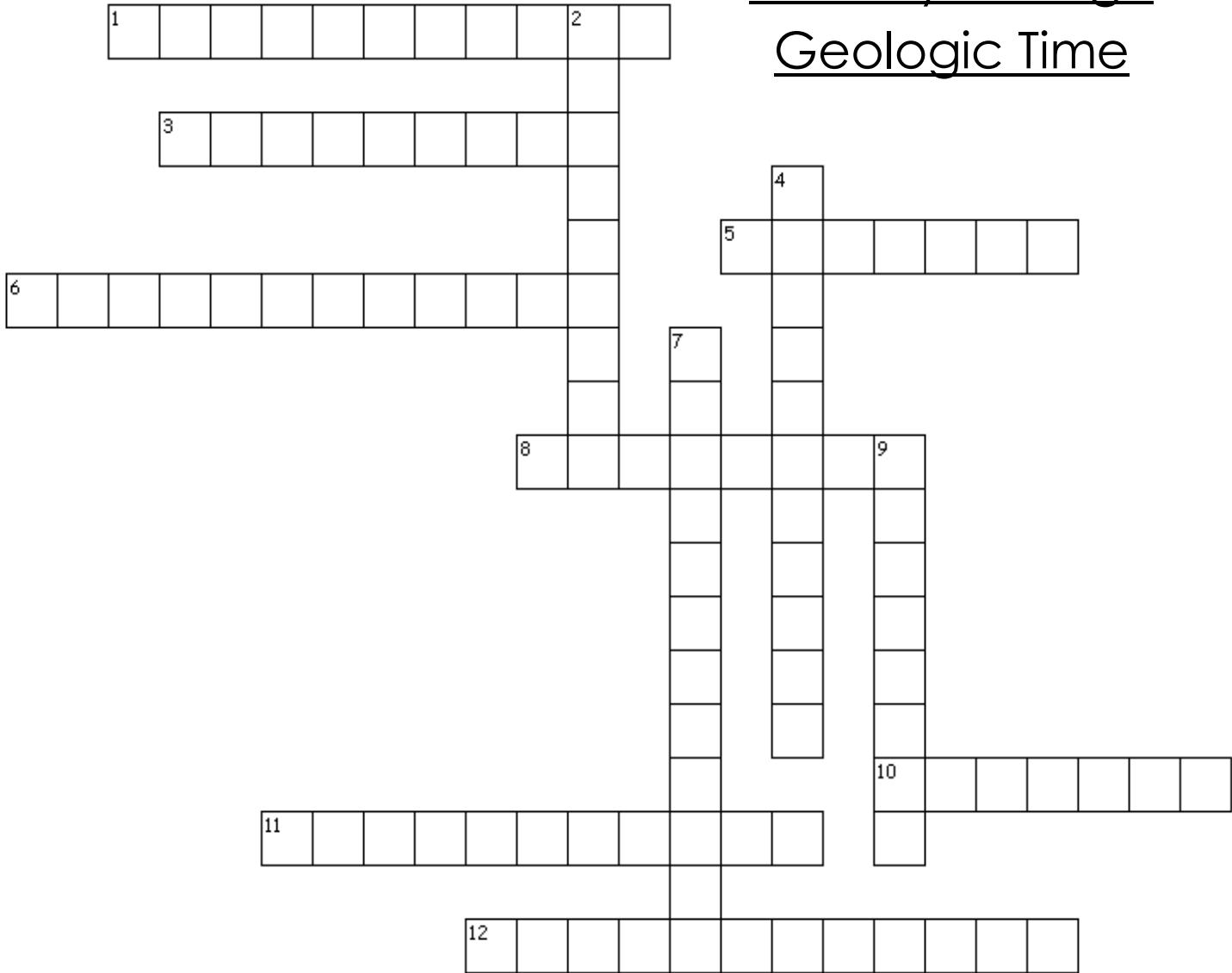
4. Wait patiently for the plaster to dry to the touch, about 30-40 minutes. Then turn container out onto a flat work surface, remove the excess sand, and let the remaining plaster dry. Finally, whisk away dried sand using a small brush and uncover your creation!

## What is a fossil?

**Fossils** are remains of life from the past preserved in rock. The most common types of fossils are molds and casts. A **mold** forms when something is pressed into soft mud and removed by decomposition or pulled out, leaving an impression of the object. A **cast** is a three-dimensional (3-D) example of an object of the past created when a mold fills up with sediment like mud, sand or volcanic ash.



# Journey Through Geologic Time



## **Across**

1. The rock type that is layers of compacted and cemented sediments
3. The era that showed the first vertebrate animals.
5. The study of the earth, rocks, and minerals.
6. The study of ancient life and fossils.
8. The era the dinosaurs lived during.
10. The rock type that forms because of cooling lava or magma.
11. The remains of animals that have been replaced by rock and mineral over time.
12. Things that animals have left behind that have been replaced by rock and mineral over time.

## **Down**

2. When one rock type can change into another, it is an example of the \_\_\_\_\_.
4. The rock that has been changed due to heat and pressure.
7. The span of time that the earth has been in existence is represented by \_\_\_\_\_.
9. Wooly Mammoths and other mammals are most prolific in this era.

## Geologic Time Quiz

Fill in the blanks using the given word bank:

1. \_\_\_\_\_ rocks form because of heat and pressure.
2. \_\_\_\_\_ rocks form from cooling lava or magma.
3. \_\_\_\_\_ rocks form from compacting and cementing sediments.
4. The era with widespread oceans and sea creatures is the \_\_\_\_\_ era.
5. The two main types of fossils we have are \_\_\_\_\_ and \_\_\_\_\_ fossils.
6. The dinosaurs lived during the \_\_\_\_\_ era.
7. \_\_\_\_\_ are what make up rocks.
8. The era we are currently living in is the \_\_\_\_\_ era.

### Word Bank

Mesozoic    Paleozoic    Quartz    Body    Igneous    Trace  
Shell    Minerals    Metamorphic    Cenozoic    Sedimentary

## Geologic Time Quiz Answers

- |                |                 |
|----------------|-----------------|
| 1. Metamorphic | 5. Body & Trace |
| 2. Igneous     | 6. Mesozoic     |
| 3. Sedimentary | 7. Minerals     |
| 4. Paleozoic   | 8. Cenozoic     |

## Crossword Puzzle Answers

### Across

- 1. Sedimentary
- 3. Paleozoic
- 5. Geology
- 6. Paleontology
- 8. Mesozoic
- 10. Igneous
- 11. Body Fossils
- 12. Trace Fossils

### Down

- 2. Rock Cycle
- 4. Metamorphic
- 7. Geologic Time
- 9. Cenozoic