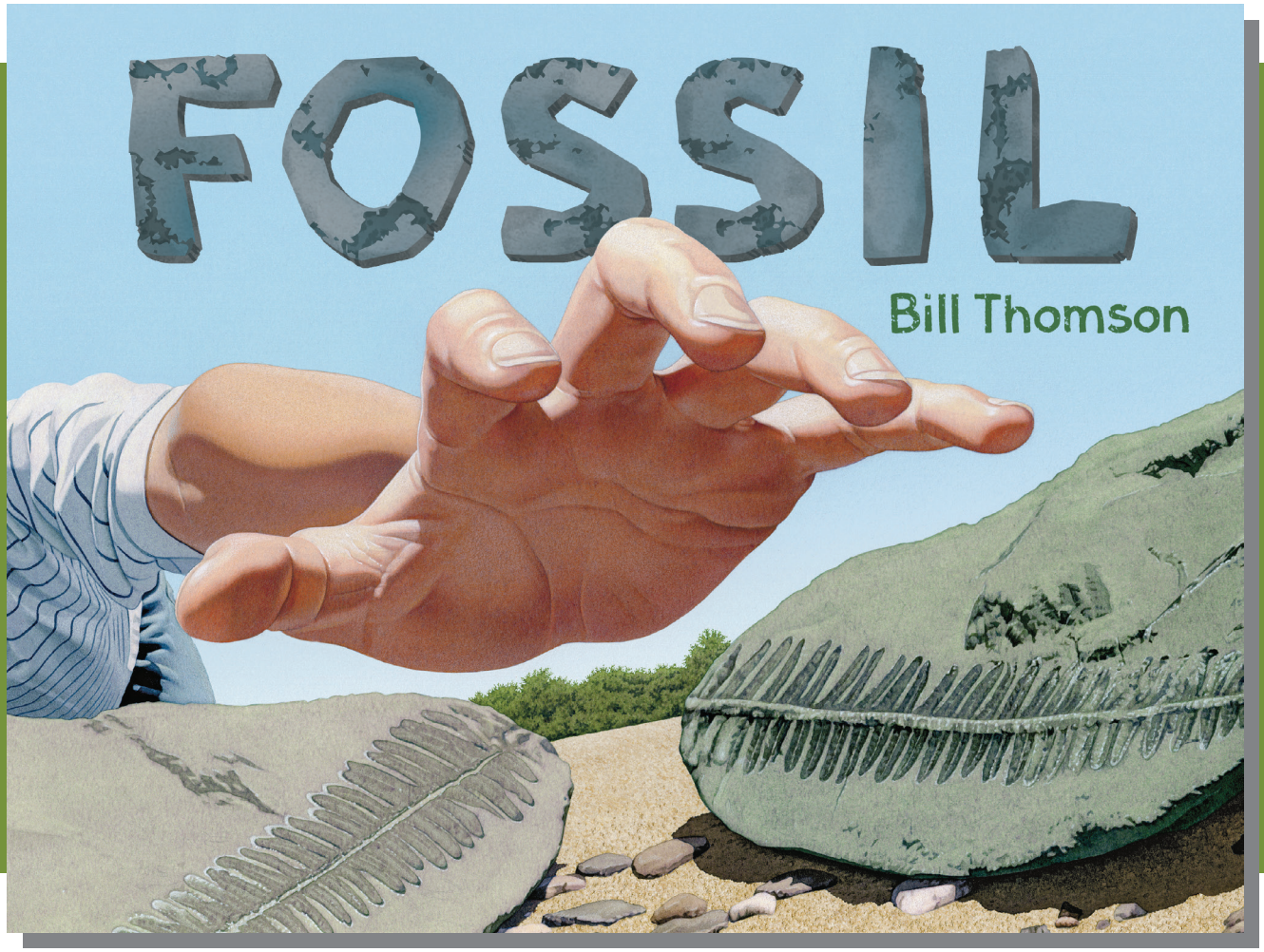


Kids Activity Guide

Fossil is a wordless book which visually tells a tale about discovery and fossils. By telling his story through art, Bill Thomson allows children to read a different tale every time they open the book. *Fossil* is the story of a young boy and his dog who find fossils that come to life. Bill Thomas's vivid drawings will pull children into the boy's emotions and experiences. As the fossils come to life, the boy must figure out how to dispose of the plants and creatures that have come to life. This adventurous story will invite readers to eagerly anticipate what will happen on the next page.

Thomson allows the readers' own imaginations to drive the story. This provides a unique opportunity to teach kids about reading comprehension, prediction, and creative writing. *Fossil* is an excellent book to use as an introduction to fossils and paleontology. This unique approach in writing can be used in many ways with a wide range of ages. Both nonreaders and readers alike can benefit from *Fossil*.

Pre-reading Questions

1. **What is a fossil?**
2. **What is a story? What are some different ways to tell a story?**
3. **Why do people tell stories? Can stories help you understand something?**
4. **What type of person finds fossils?**
5. **What can fossils tell us?**
6. **Have you ever seen a fossil?**
7. **What is a dinosaur?**
8. **What is extinction?**

These questions will prepare your child for reading *Fossil* and get them thinking about fossils! After discussing the above questions, talk about visual, written, and oral storytelling. Then read the book! After reading the book, have your child discuss what they thought about the book and ask them to share their thoughts.

Links to background information on Storytelling:

http://hivenyc.org/CrashCourses/r_briefhistoryofstorytelling.html

http://www.storytellingday.net/history-of-storytelling-how-did-storytelling.html

http://www.mikelockett.com/downloads/History%20of%20Storytelling.pdf

Fossil Visual Storytelling Comprehension Activity:

Read the story with your child and write captions to go with each page. For younger children you will need to write down their story. Stress the importance of creativity. Discuss that everyone who reads the book will interpret the story in a different way.

Have your child read their story out loud to a sibling, a friend, or another family member. Make up and write your own version and then discuss how you each had a different story to tell.

Cave Paintings Visual Storytelling Activity:

Talk to your child about prehistory, when there was no written language. Explain how prehistoric humans drew pictures on walls in place of writing. In this activity, your child will create their own tale in a format similar to *Fossil*. They will create a story of at least 8 pictures. The story must have a definite beginning and an end. It will help to provide prompts such as: One day last summer…, The first day of school…, or My favorite activity…

Websites for pictures of cave paintings:

Lascaux France - http://www.lascaux.culture.fr/site_map.php?lng=en

Chauvet France - http://www.culture.gouv.fr/culture/arcnat/chauvet/en/index.html

Oral Storytelling Activity:

You and your child will examine oral storytelling and discuss how tales change over time when they are not written down. Your child will transform their cave painting into an oral tale. Many early stories were created in chants and songs. Your child will create words to tell their story and set it to the beat of a nursery rhyme.

List of Nursery rhyme lyrics:

http://www.mothergooseclub.com/rhyme_list.phpv

Group Storytelling Activity:

You and your child will collaborate to use creativity and spontaneity to craft stories together. This lesson will foster creative thinking by having you and your child adapt to changes in the story. This activity can be adapted for pre-readers and readers alike.

Materials:

30 index cards

3 containers (shoe boxes, paper bags, plastic boxes)

Preparation:

1. Help your child label 10 index cards with story characters, 10 with plots/problems, and 10 with settings.
2. Put the cards facedown in each container (1 container for each type of card).

   Note: Older children should focus on specific character traits in their characters while pre-readers can draw pictures on their index cards. As an alternative, you can create the cards yourself in preparation for this activity.

Activity:

Have your child pull 1 card from each box and link them in a mini story. Let them practice for a few minutes and, then it's story time!!

Each member of the family participating will take 3 cards, 1 from each box, and then take turns "telling" the story until the final card has been used. You should lay the cards down in order after each speaker so there is also a visual representation of the story. This will reinforce sequence.

Story Writing Activity:

As a follow-up writing activity to any of the above lessons, your child can write their own story. Pre-readers can create a visual story using your help while older children can create a story portfolio where they create 1 story and present it as a written story, a visual story, and an oral presentation.

Fossil (Paleontological)/ Archaeological Dig Site Lesson:

In this science lesson, kids will explore a paleontological/archaeological site.

Materials:

1 plastic kiddie pool, or large plastic bin. Alternative–pre-prepared loose soil or sandbox area

10-14 wooden dowels

A spool of yarn or string

Gardening equipment: trowels, garden forks, scoops, etc.

1 brush (hand brushes work the best)

1 notebook

1 ruler

Post-its or sticky tags

A bucket

Paleontological or archaeological artifacts (you can use the fossils from the Create a Fossil Lesson below)

Sand, gravel, or foam peanuts

Preparing a dig site: "Plant" a variety of artifacts in the dig site; If you want your child to analyze the find later, include complementary artifacts that tell a tale about the history of the site. If you are just focusing on learning about dig sites, you can use simple, everyday items.

You and your child will set up a grid using the dowels and string/yarn. They will need to diagram the site in their notebook and assign each axis of the grid a letter or a number so each box within the grid is easily identifiable. In their notebook, your child will log what artifacts are discovered in each box. After logging each find, they will carefully place it in the bucket. Each artifact should be measured with the ruler and have a brief description written about it. Younger nonwriters will collect their artifacts and discuss their finds with you. You can also help them both with the grid and with diagramming the grid.

Digging procedure: Slowly and carefully excavate the site by placing the excavated material into the pails. BEFORE removing objects, your child will note their size, shape, and orientation in the box, then they will tag/label the object with the post-its/sticky tags.

Continue excavating and recording data until the entire site has been excavated. Then write a summary of their findings during the dig, including conclusions about the site.

Fossil Background information sites:

http://www.sciencekids.co.nz/sciencefacts/earth/fossils.html

http://www.discoveringfossils.co.uk/whatisafossil.htm

http://www.wacona.com/promote/fossils/facts.htm

Create an Impression Fossil Lesson:

In this science lesson your child will create their own impression fossil using plaster of Paris or play dough.

Materials:

Paper plate

Plaster of Paris (enough to fill plate) or play dough (enough to flatten out on ½ of the plate)

1 or 2 natural objects (rocks, shells, leaves, sticks, etc.)

Preparation:

Have your child find 1 or 2 natural objects. For play dough make sure you collect hard objects such as shells, rocks, and sticks. For plaster they can use any object.

Activity:

Prepare a paper plate filled with wet plaster of Paris, or a plate with a flattened piece of play dough. Your child will press their natural object into the plaster or play dough. After making the impression, they can remove the objects from the plaster. Place the plates of plaster in a safe area to dry. The play dough fossils will need 2 days to harden completely.

Create a Mineral Replacement Fossil

In this science lesson your child will create their own mineral replacement fossil using a sponge.

Materials:

1 sponge
Scissors
Sand
Salt
Water
Large pitcher
Large plastic containers (6-8 inches deep)
Measuring cups
Long-handled spoon

Preparation:

Fill a large plastic container halfway with sand (3-4 inches deep). In the pitcher mix 2 parts salt to 5 parts water and stir until dissolved.

Activity:

1. Have your child cut a few fossil shapes out of the sponge.
2. Place them in the container, covering them with sand completely. Make sure there is sand above and below the sponge shapes.
3. Pour the salt water into the container until it completely soaks the sand.
4. Leave the containers of sand in a warm, dry place until they dry (3-4 days).
5. When they are dry remove them from the sand carefully. The sponges will be hard and bonelike.

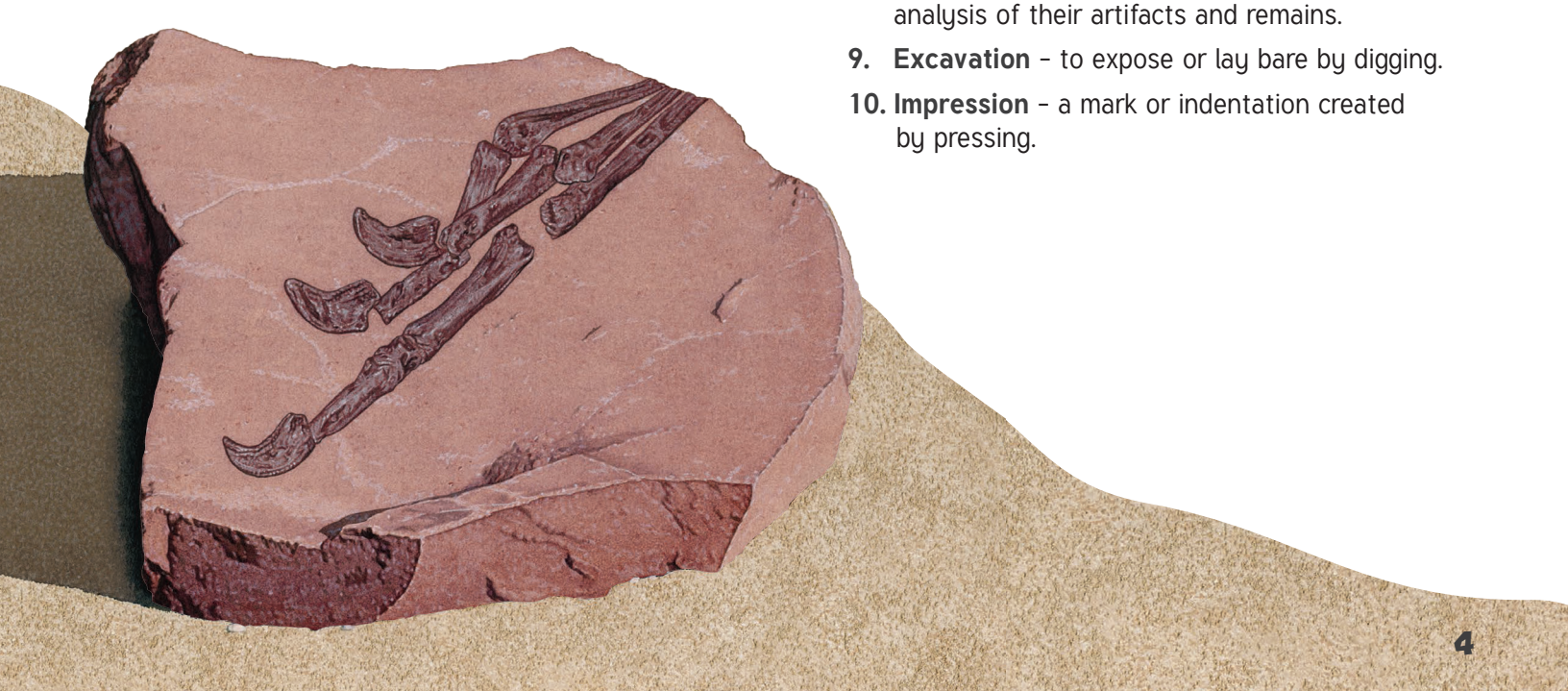
Wrap up discussion:

Once the fossils are finished drying compare them. Discuss how some objects made better impressions and why your child thinks that is so. What is the difference between the two types of fossils?

Vocabulary for *Fossil* Activity

As a post-reading activity ask your child to define the following vocabulary in their own words:

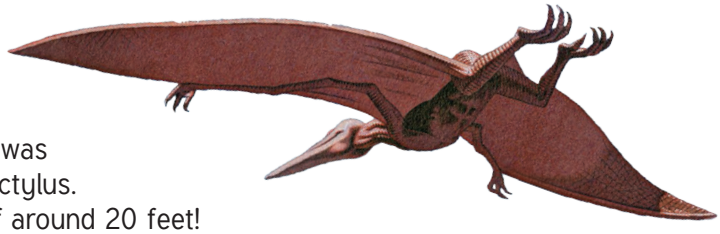
1. **Fossil** - any remains, impression, or trace of a living thing from past geologic ages that has been preserved in the Earth's crust.
2. **Artifact** - an object created by human beings which represents a culture or a stage of development in a culture.
3. **Dinosaurs** - a diverse group of animals that lived 252 to 66 million years ago during the Mesozoic Era. They have been discovered in fossils since their extinction.
4. **Extinct** - no longer in existence; that has ended or died out.
5. **Interpret** - to understand in a particular way due to one's own judgement or belief.
6. **Prehistory** - the period of time in the past before writing and recorded events.
7. **Paleontology** - the study of the life of past geological eras primarily by using fossil remains.
8. **Archaeology** - the study of past human life by analysis of their artifacts and remains.
9. **Excavation** - to expose or lay bare by digging.
10. **Impression** - a mark or indentation created by pressing.



Fossil Word Search

Y	D	L	M	M	A	F	Z	E	Y	Y	E	Q	D	Q
U	G	I	I	H	E	T	V	X	L	G	X	Z	P	E
A	M	O	N	S	G	W	V	T	F	O	C	N	T	J
K	T	A	L	O	S	B	V	I	N	L	A	R	E	U
T	U	E	P	O	S	O	X	N	O	O	V	A	R	X
X	E	V	R	T	T	A	F	C	G	E	A	C	A	Y
H	N	B	C	P	E	N	U	T	A	A	T	P	N	B
K	X	L	X	I	R	R	O	R	R	H	I	Y	O	F
F	K	W	E	H	G	E	O	E	D	C	O	C	D	W
N	O	S	M	O	H	T	T	E	L	R	N	L	O	Z
W	K	V	H	R	G	O	J	N	P	A	X	L	N	L
P	R	E	H	I	S	T	O	R	I	C	P	I	X	W
N	O	I	S	S	E	R	P	M	I	A	M	B	W	K
K	P	V	H	P	Y	L	Y	L	C	E	J	Y	K	S
W	S	I	A	R	T	I	F	A	C	T	K	Q	O	G

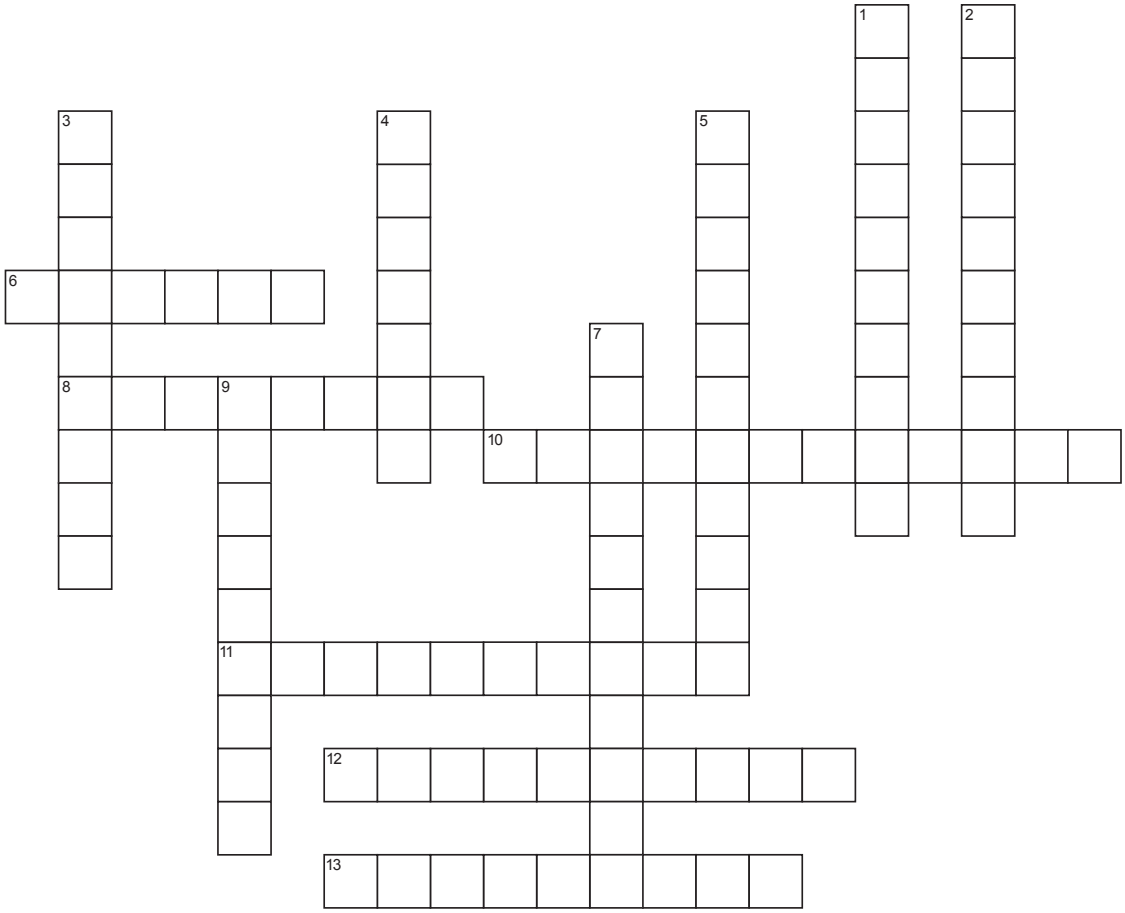
ARCHAEOLOGY
ARTIFACT
BILL
DINOSAUR
DRAGONFLY
EXCAVATION
EXTINCT
FOSSIL
IMPRESSION
INTERPRET
PALEONTOLOGY
PREHISTORIC
PTERANODON
THOMSON



Fun Facts about the flying "Dino" in *Fossil*:

The type of reptile in *Fossil* that flew away with the dog was a Pteranodon! They are easily confused with the Pterodactylus. Pteranodons were large flying reptiles with a wingspan of around 20 feet! They had a backward slanting bony crest on their skull. The Pterodactylus was a much smaller flying reptile with a wingspan of only 5 feet and it was the first flying reptile fossil to be discovered. Both Pteranodons and Pterodactylus are not technically dinosaurs because, by definition, all dinosaurs belong to the groups Saurischia and Ornithischia, which exclude Pterosaurs. They both lived over 85 million years ago and Pteranodons are believed to have lived for over 100 million years before going extinct which makes them one of the longest living species ever to exist!!

Fossil Crossword Puzzle



ACROSS

6. Any remains, impression, or trace of a living thing from past geologic ages that has been preserved in the Earth's crust. The boy breaks these in the book.

8. An object created by human beings which represents a culture or a stage of development in a culture.

10. The study of the life of past geological eras primarily by using fossil remains.

11. The period of time in the past before writing and recorded events.

12. A mark or indentation created by pressing.

13. An insect with large eyes, two pairs of strong transparent wings, and an elongated body.

DOWN

1. The type of dinosaur that flies away with the dog in *Fossil.*

2. To expose or lay bare by digging.

3. A diverse group of animals that lived 252 to 66 million years ago during the Mesozoic Era. They have been discovered in fossils since their extinction.

4. No longer in existence; that has ended or died out.

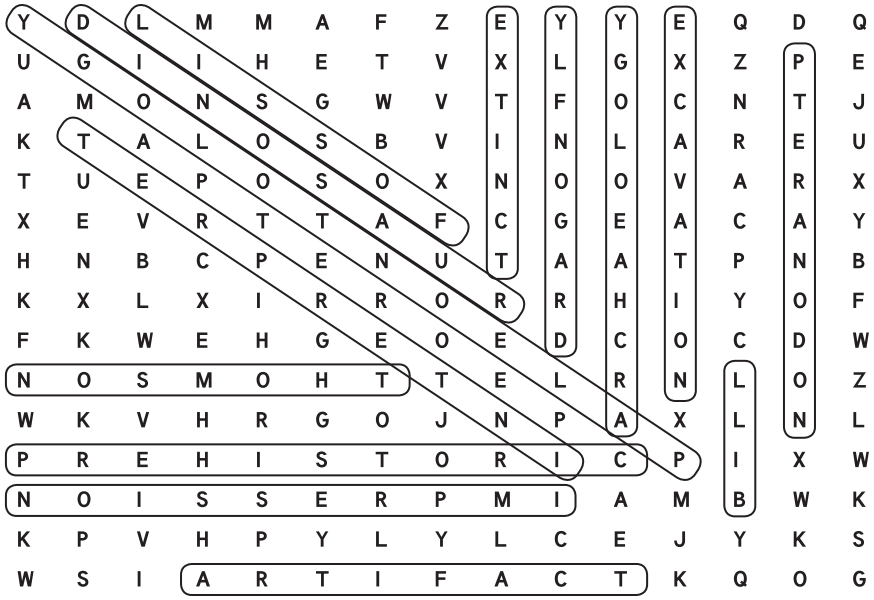
5. The study of past human life by analysis of their artifacts and remains.

7. Author of *Fossil* and *Chalk.*

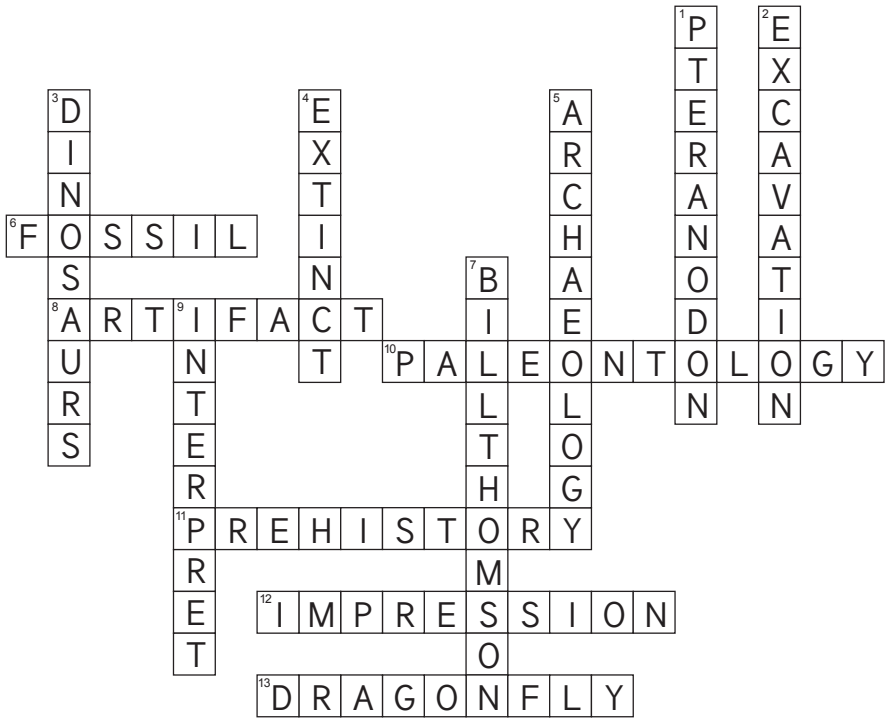
9. To understand in a particular way due to one's own judgment or belief.

Fossil Activity Answer Key

Word Search Key



Crossword Puzzle Key



This guide was created by Chris Valcarcel, Educational Consultant and Jennifer Messinger, Graphic Designer

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