

# FOSSIL

Bill Thomson



## Classroom Guide

Kindergarten - 2nd grade+

*Fossil* is a wordless book which visually tells a tale about discovery and fossils. By telling his story through art, Bill Thomson allows students 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 Thomson's vivid drawings will pull students 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 students about reading comprehension, prediction, and creative writing. *Fossil* is an excellent book to use as an introduction to a unit on fossils. It is also an effective tool to teach a variety of language arts lessons. This unique approach in writing can be used in many ways with a wide range of age levels and grades. 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 students for reading *Fossil* and get your students thinking about fossils. After discussing the above questions, talk about visual, written, and oral storytelling. Then read the book to your class. After reading the book, have the students discuss what they thought about the book and share their thoughts.

## Fossil Visual Storytelling Comprehension Lesson:

CCSS.ELA-Literacy.RL.K.3

CCSS.ELA-Literacy.RL.K.7

CCSS.ELA-Literacy.RL.1.3

CCSS.ELA-Literacy.RL.1.7

CCSS.ELA-Literacy.RL.2.3

CCSS.ELA-Literacy.RL.2.7

Students will get into small groups of 3-4 and read the book together. They must write captions to go with each page. For younger age groups, the teacher(s) 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.

Each group will get up and read their story to the class (for younger learners the teacher will read the stories). At the conclusion of the stories, discuss how each group had a different story to tell.

## Cave Paintings Visual Storytelling Lesson:

CCSS.ELA-Literacy.RL.K.7

CCSS.ELA-Literacy.W.K.3

CCSS.ELA-Literacy.RL.1.7

CCSS.ELA-Literacy.RI.1.6

CCSS.ELA-Literacy.W.1.3

CCSS.ELA-Literacy.RL.2.7

CCSS.ELA-Literacy.RI.2.6

CCSS.ELA-Literacy.W.2.3

Talk to the students about prehistory, when there was no written language. Explain how prehistoric humans drew pictures on walls in place of writing. In this activity, students will create their own tale in a format similar to *Fossil*. Each student will create a story of at least 8 pictures. The story must have a definite beginning and an end. It will help to provide the students with prompts such as: One day last summer..., The first day of school..., or My favorite activity... This lesson can be used from Pre-K all the way through 5th grade. For higher grades, the prompt can be specifically geared toward a unit of study.

### Websites for Pictures of Cave Paintings:

Lascaux France -

[http://www.lascaux.culture.fr/site\\_map.php?lng=en](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 Lesson:

CCSS.ELA-Literacy.RF.K.2

CCSS.ELA-Literacy.SL.1.1

CCSS.ELA-Literacy.RF.2.4

CCSS.ELA-Literacy.SL.2.1

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

### List of Nursery Rhyme Lyrics:

[http://www.mothersgooseclub.com/rhyme\\_list.php](http://www.mothersgooseclub.com/rhyme_list.php)

## Group Storytelling Lesson:

CCSS.ELA-Literacy.RF.K.2

CCSS.ELA-Literacy.SL.K.6

CCSS.ELA-Literacy.RF.1.4

CCSS.ELA-Literacy.SL.1.1

CCSS.ELA-Literacy.RF.2.4

CCSS.ELA-Literacy.SL.2.1

CCSS.ELA-Literacy.SL.2.4

Students will collaborate to use creativity and spontaneity to craft stories together. This lesson will foster creative thinking by having students adapt to changes their peers initiate in the story. This lesson can be adapted for pre-readers and readers alike.

### Materials:

30 index cards for each group

3 containers for each group (shoe boxes, paper bags, plastic boxes)

### Preparation:

Students will label 10 index cards with story characters, 10 with plots/problems, and 10 with settings. Label the 3 containers: characters, plots/problems, and settings, and put the cards facedown. Older students 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 lesson.

Settings, characters, and plots can be connected to a recent theme of study in your class.

### Activity:

Assign the groups and give each group the 3 containers. To warm up, students can pull 1 card from each box and link them in a mini story. Let them practice in their groups for a few minutes and then it's story time!!

Students will each take 3 cards, one from each box, and then take turns "telling" the story until the final card has been used. Students should lay the cards down in order after they speak to illustrate a visual representation of the story. This will also reinforce sequence.



## Story Writing Assessment:

CCSS.ELA-Literacy.W.K.3

CCSS.ELA-Literacy.W.1.3

CCSS.ELA-Literacy.SL.1.5

CCSS.ELA-Literacy.W.2.3

As a follow-up assessment to any of the lessons on the previous page, students can write their own story as a homework assignment. For pre-readers, students can create a visual story for homework and have their parents help them. Older students can create a story portfolio where they create one story and present it as a written story, a visual story, and an oral presentation.

## Fossil (Paleontological)/ Archeological Dig Site Lesson:

CCSS.ELA-Literacy.SL.K.1

CCSS.ELA-Literacy.W.K.8

CCSS.Math.Content.K.MD.A.2

CCSS.ELA-Literacy.W.1.8

CCSS.ELA-Literacy.SL.1.1

CCSS.ELA-Literacy.W.2.8

CCSS.ELA-Literacy.SL.2.1

CCSS.Math.Content.3.MD.B.4

In this science lesson, students will explore a paleontological/archeological site.

### Materials:

- Several plastic kiddie pools, or large plastic bins.
- Alternative—pre-prepared loose soil or sandbox areas
- 10–14 wooden dowels per site
- A spool of yarn or string for each site
- Gardening equipment: trowels, garden forks, scoops, etc.
- 1 brush per site (hand brushes work the best)
- 1 notebook for each student
- 1 ruler for each student
- Post-its or sticky tags
- A bucket for each site
- Paleontological or archeological artifacts (students can use their fossils from the Create a Fossil lessons below)
- Sand, gravel, or foam peanuts

**Preparing a dig site for your students:** “Plant” a variety of artifacts in the dig site; If you want the students 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.

Students should be separated into groups of 3–5 students. Each group of students will be assigned a dig site. Students will set up a grid using the dowels and string/yarn. They 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. Students will divide up the individual grids and begin their excavation. In their notebook, each student will log what artifacts are discovered in each box. After logging the find they will carefully place their find in the group’s bucket. Each artifact should be measured with the ruler and include a brief description. Younger nonwriting students will collect their artifacts and discuss their finds with the teacher and their peers. The teacher can help these students both with the grid and diagramming the grid.

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

The group will continue excavating and recording data until the entire site has been excavated. The group will 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>



### 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!!

## Create an Impression Fossil Lesson:

CCSS.ELA-Literacy.SL.K.1

CCSS.ELA-Literacy.SL.1.1

CCSS.ELA-Literacy.SL.2.1

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

### Materials (per student):

- Paper plate
- Plaster of Paris (enough to fill plate) or play dough (enough to flatten out on  $\frac{1}{2}$  of the plate)
- 1 or 2 natural objects (rocks, shells, leaves, sticks, etc.)

### Preparation:

Explain to students the difference between impression fossils and mineral replacement fossils. Have the students bring in 1 or 2 natural objects from home a few days before the lesson. For play dough make sure you recommend hard objects such as shells, rocks, and sticks; for plaster they can use any object.

### Activity:

Give each student a paper plate filled with wet plaster of Paris, or a plate with a flattened piece of play dough. The students 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

CCSS.ELA-Literacy.SL.K.1

CCSS.ELA-Literacy.SL.1.1

CCSS.ELA-Literacy.SL.2.1

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

### Materials:

- 1 sponge for every 2 or 3 students
- Scissors
- Sand
- Salt
- Water
- Large pitcher
- Large plastic containers (6-8 inches deep)
- Measuring cups
- Long-handled spoon

### Preparation:

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

### Activity:

Have each student cut a fossil shape out of the sponge and then place it in the container, covering it with sand completely. Make sure there is sand above and below the sponge shapes. Have a student pour the salt water into the container until it completely soaks the sand. Leave the containers of sand in a warm, dry place until they dry (3-4 days). 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 have the students compare them. Discuss how some objects made better impressions and why the students think that is so. What is the difference between the two types of fossils?





## Common Core State Standards connections for *Fossil* and Classroom Guide:

### Kindergarten Standards:

**CCSS.ELA-Literacy.RL.K.3** With prompting and support, identify characters, settings, and major events in a story.

**CCSS.ELA-Literacy.RL.K.7** With prompting and support, describe the relationship between illustrations and the story in which they appear (e.g., what moment in a story an illustration depicts).

**CCSS.ELA-Literacy.W.K.3** Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events; tell about the events in the order in which they occurred; and provide a reaction to what happened.

**CCSS.ELA-Literacy.SL.K.1** Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and in larger groups.

**CCSS.ELA-Literacy.SL.K.6** Speak audibly and express thoughts, feelings, and ideas clearly.

**CCSS.ELA-Literacy.RF.K.2** Demonstrate understanding of spoken words, syllables, and sounds.

**CCSS.ELA-Literacy.W.K.8** With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

**CCSS.Math.Content.K.MD.A.2** Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. For example, directly compare the heights of 2 children and describe 1 child as taller/shorter.

### 1<sup>st</sup> Grade Standards:

**CCSS.ELA-Literacy.RL.1.3** Describe characters, settings, and major events in a story, using key details.

**CCSS.ELA-Literacy.RL.1.7** Use illustrations and details in a story to describe its characters, setting, or events.

**CCSS.ELA-Literacy.RI.1.6** Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.

**CCSS.ELA-Literacy.RF.1.4** Read with sufficient accuracy and fluency to support comprehension.

**CCSS.ELA-Literacy.W.1.3** Write narratives in which students recount 2 or more appropriately sequenced events; include some details regarding what happened; use temporal words to signal event order; and provide some sense of closure.

**CCSS.ELA-Literacy.W.1.8** With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

**CCSS.ELA-Literacy.SL.1.1** Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.

**CCSS.ELA-Literacy.SL.1.5** Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.

### 2<sup>nd</sup> Grade Standards

**CCSS.ELA-Literacy.RL.2.3** Describe how characters in a story respond to major events and challenges.

**CCSS.ELA-Literacy.RL.2.7** Use information gained from the illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot.

**CCSS.ELA-Literacy.RI.2.6** Identify the main purpose of a text, including what the author intends, to answer, explain, or describe.

**CCSS.ELA-Literacy.RF.2.4** Read with sufficient accuracy and fluency to support comprehension.

**CCSS.ELA-Literacy.W.2.3** Write narratives in which students recount a well-elaborated event or short sequence of events; include details to describe actions, thoughts, and feelings; use temporal words to signal event order; and provide a sense of closure.

**CCSS.ELA-Literacy.W.2.8** Recall information from experiences or gather information from provided sources to answer a question.

**CCSS.ELA-Literacy.SL.2.1** Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups

**CCSS.ELA-Literacy.SL.2.4** Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.

**CCSS.Math.Content.3.MD.B.4** Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.

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

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