Unit 4/Week 2

Title: The Albertosaurus Mystery

Suggested Time: 5-7 days (45 minutes per day)

Common Core ELA Standards: RI.3.1, RI.3.3, RI.3.7; W.3.2 W.3.4, W.3.7, W.3.8; SL.3.1, SL.3.2, SL.3.4, SL.3.5

Teacher Instructions

*Refer to the Introduction for further details.*

**Before Teaching**

1. Read the Big Ideas and Key Understandings and the Synopsis. Please do **not** read this to the students. This is a description for teachers, about the big ideas and key understanding that students should take away **after** completing this task.

Big Ideas and Key Understandings

A paleontologist’s work can be stored and left untouched for many years. Investigations often lead to more unanswered questions.

Synopsis

From the early 1900’s through 1997 scientist investigate meat-eating dinosaurs. This informational text describes how paleontologists continue to investigate unanswered questions. In 1976 Philip Currie a paleontologist discovered Barnum Brown’s field notes and 4 photos that were stored in the American Museum of Natural History along with bones from several dinosaurs. This find brought up the question did some meat-eating dinosaurs spend time living and hunting together? At the time paleontologist thought they lived and hunted alone like the Tyrannosaurus Rex. In 1997 Philip revisited the site and found at least 22 Albertosaurus buried in the rock. Several other scientists found places with the remains of other groups of meat-eating dinosaurs. Scientists can’t answer all questions as a definite yes/no. They make smart guesses based on the evidence they have collected. This investigation lead to other questions that remains unanswered.

1. Read entire main selection text, keeping in mind the Big Ideas and Key Understandings.
2. Re-read the main selection text while noting the stopping points for the Text Dependent Questions and teaching Vocabulary.

**During Teaching**

1. Students read the entire main selection text independently.
2. Teacher reads the main selection text aloud with students following along. (Depending on how complex the text is and the amount of support needed by students, the teacher may choose to reverse the order of steps 1 and 2.)
3. Students and teacher re-read the text while stopping to respond to and discuss the questions and returning to the text. A variety of methods can be used to structure the reading and discussion (i.e.: whole class discussion, think-pair-share, independent written response, group work, etc.)

Text Dependent Questions

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| **Text-dependent Questions** | **Evidence-based Answers** |
| What kind of fossils were Philip and his team looking for?  (Pg. 44) | They were looking for fossils that belong to dinosaurs called Albertosaurus. |
| Reread page 45. The author uses the phrase “looking for a needle in a haystack”, which means something is very hard to find. Why was the fossil field in western Canada’s badlands hard to find?  How did Philip know he must be close to the fossil field? | Philip had few clues: some notes and four old photos from 90 years ago. Brown did not make a map or write down where he had found the fossils.  Philip saw the remains of Brown’s campsite earlier in the day. |
| What evidence did Philip have to prove he had found Brown’s bone bed? (Pg. 47) | The scene in front of him looked just like the photo. He could tell someone dug into the rock a long time ago because there were holes or cuts in the rocky hills. |
| How did Barnum Brown find his first fossil? (Pg. 48) | Barnum Brown found his first fossil while digging for coal when he was young. |
| Why did Brown leave Columbia University? (Pg. 48) | Brown left the university because he liked digging up bones more than learning about them in a classroom. He became a bone hunter for the American Museum of Natural History in New York City. |
| What did other people say about Brown to indicate that Brown was good at finding fossils? (Pg. 48) | The head of the Museum Henry Fairfield Osborn joked that Brown could “smell fossils” and news writers called him “Mr. Bones”. |
| Where and when were the first Tyrannosaurus Rex skeletons found? (Pg. 49) | Brown found the first Tyrannosaurus Rex skeletons in Wyoming in the early 1990’s. |
| Why did Brown use dynamite to get fossils? (Pg. 49) | Brown used dynamite because many times fossils were stuck in hard rock. |
| On page 50 the author states that this was the first time anyone had found the bones of so many meat-eating dinosaurs in the same spot. Why was this unusual? | At that time, most paleontologists thought meat-eating dinosaurs lived alone. They thought that only plant-eating dinosaurs lived in groups. |
| Why were the dinosaurs Brown discovered named Albertosaurus? (Pg. 50) | They were named Albertosaurus because they were found in Alberta, Canada. |
| Albertosaurus was part of a family of fierce, meat-eating dinosaurs called tyrannosaurids. Tyrannosaurids is the word the book uses to identify a type of dinosaur family. How does the author describe the Albertosaurus? (Pg. 51) | Albertosaurus was smaller than Tyrannosaurus Rex, but it was strong, it could see and smell well, it had many sharp teeth and its huge powerful jaws could crush bone. |
| Use the graphic features on pages 50 and 51 to describe how Albertosaurus and Tyrannosaurus Rex were alike. | They both have large heads, big jaws and sharp teeth. Also scientist believed they were meat-eaters. |
| A paleontologist is a [scientist](http://www.wisegeek.com/what-does-a-scientist-do.htm) who studies the history of organic life on Earth with a focus on organisms that existed in the distant past. Paleontologists thought Albertosaurus lived and hunted alone like the Tyrannosaurus Rex, what happened that might change their thinking? (Pgs. 50-51) | Brown’s discovery of so many meat-eating dinosaurs of the same species in the same spot was evidence that Albertosaurus did not live and hunt alone. |
| Why did Philip think that maybe Albertosaurus could have hunted in packs? (Pg. 52) | Philip thought that since some plant eating dinosaurs had lived in groups meat-eaters that hunted them did too because big groups of animals were hard to hunt alone. |
| Why does Philip decide to return to the badlands? (Pg. 53) | The collection of bones came from at least 9 different animals which meant that the rest of the bones were still buried waiting to be discovered. |
| Which of these can you prove with text evidence; that Albertosaurus lived and died in the badlands region of Canada or that Albertosaurus lived and hunted in groups? (Pgs. 54-55) | Fossils found in the badlands are evidence that the animals lived and died in the badlands region of Canada. There isn’t any supporting evidence that proved what the animals did like lived and hunted in groups. |
| How did Rodolfo Coria and the other scientists provide more evidence that Albertosaurus may have traveled in groups? (Pg. 57) | They found other spots where groups of meat-eating dinosaurs died together. |
| Can we answer the question “Did some meat-eating dinosaurs live and hunt together?” (Pg. 57) | Scientists are still not sure. They can only use clues to try to tell what happened, how it happened and why it happened. |

Vocabulary

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|  | **KEY WORDS ESSENTIAL TO UNDERSTANDING** | **WORDS WORTH KNOWING**  General teaching suggestions are provided in the Introduction |
| **TEACHER PROVIDES DEFINITION**  not enough contextual clues provided in the text |  | Page 46 - discovery  Page 48 - needle in a haystack  Page 51 - fierce |
| **STUDENTS FIGURE OUT THE MEANING**  sufficient context clues are provided in the text | Page 49 - rafted  Page 52 - packs  Page 56 - evidence | Page 46 - remains, location  Page 49 - skeletons, dynamite |

Culminating Task

* Re-Read, Think, Discuss, Write
* *Teachers should provide students with a graphic organizer called The Blackline Master 17b. On the Inferences Map write 3 clues and a sentence for each conclusion. Then, use this information to write a well-organized paragraph about number three.*

*1. How can you tell that Philip is determined to find the Albertosaurus fossil location?*

*2. How can you tell that Barnum Brown was interested in fossils?*

*3. How did Philip and his team draw the conclusion that dinosaurs may have lived and traveled together?*

Answer:

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| Clue 1 | Clue 2 | Clue 3 |
| Philip did not return to camp with the other scientist. He stayed longer. | Philip kept searching even though his head hurt. | Philip kept looking even though sand flies and mosquitoes bit him. |
| Brown found the first Tyrannosaurus Rex skeleton. | People called him “Mr. Bones”. | He traveled many places to find fossils. |
| Philip and his team found at least 22 Albertosaurus were buried together. | Another scientist from Argentina had found a group of dinosaurs buried together. Scientist found more places where dinosaurs were buried together, Arizona and New Mexico | Foot prints of dinosaurs were found along Red Deer River. Dinosaurs needed to find fresh water to drink. |
| Conclusion: | | |
| Philip was determined to find the Albertosaurus fossil site. | | |
| Brown became a great fossil hunter. | | |
| Dinosaurs may have lived and traveled together. | | |

Philip and his team concluded that dinosaurs may have lived and traveled in groups. First, Philip and his team found at least 22 Albertosaurus fossil buried together. Finding fossils together might have meant they lived or traveled in groups since they were found together. Also, other scientists found places where dinosaurs were buried together. For example, a scientist in Argentina called Philip to let him know he had found a group of dinosaur bones buried together. Finally, footprints were found in the Red Deer River Valley of Canada. This find suggests that the dinosaurs may have traveled together looking for water sources. These clues suggest to scientists that dinosaurs may have lived or traveled together in groups.

Additional Tasks

* Suppose you were a reporter who was with Barnum Brown when he discovered the remains of a Tyrannosaurus Rex in 1902. Review the story then write an article that includes:
  + facts about the discovery,
  + what Barnum Brown might have said,
  + and why this discovery can help us learn about the past.
* In small groups, students should work together and use the Internet to find out more about the Albertosaurus. Together, the group should research the following questions:

Who discovered the Albertosaurus?

Where were the fossils located?

What did an Albertosaurus look like and what did it eat?

When did it live?

What can the fossils tell us about creatures from the past?

During the research process, students should be guided to take notes on their findings and to write down the names of their sources. Once the information has been gathered, students should create a presentation that includes answers to all of the research questions, as well as a visual of their choosing, that they feel enhances their presentation.

Supports for English Language Learners (ELLs) to use with Basal Alignment Project Lessons

When teaching any lesson, it is important to make sure you are including supports to help all students. We have prepared some examples of different types of supports that you can use in conjunction with our Basal Alignment Project Lessons to help support your ELLs. They are grouped by when they would best fit in a lesson. While these supports reflect research in how to support ELLs, these activities can help ALL students engage more deeply with these lessons. Note that some strategies should be used at multiple points within a lesson; we’ll point these out. It is also important to understand that these scaffolds represent options for teachers to select based on students’ needs; it is not the intention that teachers should do *all* of these things at every lesson.

**Before the reading:**

* Read passages, sing songs, watch videos, view photographs, discuss topics (e.g., using the [four corners strategy](http://www.theteachertoolkit.com/index.php/tool/four-corners)), or research topics that help provide context for what your students will be reading. This is especially true if the setting (e.g., 18th Century England) or topic (e.g., boats) is one that is unfamiliar to the students.
* Provide instruction, using multiple modalities, on selected vocabulary words that are *central to understanding the text*. When looking at the lesson plan, you should note the Tier 2 words, particularly those words with high conceptual complexity (i.e., they are difficult to visualize, learn from context clues, or are abstract), and consider introducing them ahead of reading. For more information on selecting such words, go [here](https://achievethecore.org/page/3167/selecting-and-using-academic-vocabulary-in-instruction). **You should plan to continue to reinforce these words, and additional vocabulary, in the context of reading and working with the text. (See additional activities in the During Reading and After Reading sections.)**

**Examples of Activities:**

* Provide students with the definition of the words and then have students work together to create [Frayer models](http://www.theteachertoolkit.com/index.php/tool/frayer-model) or other kinds of word maps for the words.
* When a word contains a prefix or suffix that has been introduced before, highlight how the word part can be used to help determine word meaning.
* Keep a word wall or word bank where these new words can be added and that students can access later.
* Have students create visual glossaries for whenever they encounter new words. Then have your students add these words to their visual glossaries.
* Create pictures using the word. These can even be added to your word wall!
* Create lists of synonyms and antonyms for the word.
* Have students practice using the words in conversation. For newcomers, consider providing them with [sentence frames](https://achievethecore.org/page/3159/ell-supports-for-writing-and-discussion) to ensure they can participate in the conversation.
  + Practice spelling the words using different spelling practice strategies and decoding strategies. Students could take turns spelling with a partner.
* Use graphic organizers to help introduce content.

**Examples of Activities:**

* Have students fill in a [KWL chart](http://www.nea.org/tools/k-w-l-know-want-to-know-learned.html) about what they will be reading about.
* Have students research setting or topic using a pre-approved website and fill in a chart about it. You could even have students work in groups where each group is assigned part of the topic.
* Have students fill in a bubble map where they write down anything that they find interesting about the topic while watching a video or reading a short passage about the topic. Then students can discuss why they picked the information.

**During reading:**

* Read the text aloud first so that ELLs can hear the passage read by a fluent reader before working with the text themselves.
* Allow ELLs to collaborate in their home languages to process content before participating in whole class discussions in English. Consider giving them the discussion questions to look over in advance (perhaps during the first read) and having them work with a partner to prepare.
* Encourage students to create sketch-notes or to storyboard the passage when they are reading it individually or with a partner. This will help show if they understand what they are reading as they are reading it.
* Ask questions related to the who, what, when, why, and how of the passage. For students that may need a little more help, provide them with [sentence stems](https://achievethecore.org/page/3159/ell-supports-for-writing-and-discussion).
* Continue to draw attention to and discuss the words that you introduced before the reading.

**Examples of Activities:**

* Have students include the example from the text in their glossary that they created.
* Create or find pictures that represent how the word was used in the passage.
* Practice creating sentences using the word in the way it was using in the passage.
* Have students discuss the author’s word choice.
* Use graphic organizers to help organize content and thinking.

**Examples of Activities:**

* Have students fill in a chart to keep track of their 5ws while they read to help them summarize later and figure out the central idea of a passage.
* It may again be beneficial to have somewhere for students to store new words that they encounter while reading the text. Students could use a chart to keep track of these new words and their meanings as they read.
* If you had students fill in a KWL, have them fill in the “L” section as they read the passage.
* Utilize any illustrations or text features that come with the story or passage to better understand the reading.
* Compare/contrast the passage with what the illustrations convey about the passage. Have students consider if the illustrations look the way they visualized the passage in their own minds or if the passage matches their predictions based on the illustrations.
* Identify any text features such as captions and discuss how they contribute to meaning.

**After reading:**

* Present directions for any post-reading assignments orally and visually; repeat often; and ask English Language Learners to rephrase.
* Allow ELLs to use English language that is still under development. Students should not be scored lower because of incorrect spelling or grammar (unless the goal of the assignment is to assess spelling or grammar skills specifically). When grading, be sure to focus on scoring your students only for the objective(s) that were shared with students.
* Scaffold questions for discussions so that questioning sequences include a mix of factual and inferential questions and a mix of shorter and more extended responses. Questions should build on each other and toward inferential and higher-order-thinking questions. There are not many factual questions already listed in the lesson instructions, so you will need to build some in as you see fit. More information on this strategy can be found [here](https://achievethecore.org/aligned/creating-sequencing-text-dependent-questions-support-english-language-learners/).
* Reinforce new vocabulary using multiple modalities

**Examples of activities:**

* Using the words that you had students work with before reading, have students write sentences in reference to the passage that you just finished reading.
* Require students to include the words introduced before reading in the culminating writing task.
* For newcomers, print out pictures that represent the words that you focused on and have students match the words to the pictures.
* Based on different features of the words, have the students sort them into different categories and explain their choices. For example, the students could sort the words by prefixes, suffixes, connotation, etc.
* After reading the passage, continue to examine important sentences (1–2) in the text that contribute to the overall meaning of the text. Guide students to break apart these sentences, analyze different elements, and determine meaning. More information on how to do this, including models of sentence deconstruction, can be found [here](https://achievethecore.org/page/3160/juicy-sentence-protocol).
* Provide differentiated scaffolds for writing assignments based on students’ English language proficiency levels.

**Examples of Activities:**

* For all students, go over the prompt in detail, making sure to break down what the prompt means before having the students get to work. Then have the students explain the directions back to you.
* Have students create an evidence tracking chart during reading, then direct them to look back over their evidence chart and work with a group to see if their evidence matches what the rest of the class wrote down. If some of the chart does not match, students should have a discussion about why.
* For students who need more support, model the proper writing format for your students and provide them with a properly formatted example for reference.
* For newcomers, you may consider creating sentence or paragraph frames to help them to write out their ideas.
* To further discussion about the passage, have students create their own who, what, when, where, why, and how questions related to the passage to ask each other and have students pair up and practice asking each other the questions. If available, pair students of the same home language to support the use of language still under development.