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?  | They were looking for fossils that belong to dinosaurs called Albertosaurus.  |
| 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?  | 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?  | Barnum Brown found his first fossil while digging for coal when he was young. |
| Why did Brown leave Columbia University?  | 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?  | 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?  | Brown found the first Tyrannosaurus Rex skeletons in Wyoming in the early 1990’s.  |
| Why did Brown use dynamite to get fossils?  | Brown used dynamite because many times fossils were stuck in hard rock. |
| 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?  | 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?  | 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.  |
| 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?  | 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?  | 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?  | 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?  | 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? | 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?”  | 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 |  | discoveryneedle in a haystackfierce |
| **STUDENTS FIGURE OUT THE MEANING**sufficient context clues are provided in the text | raftedpacksevidence | remains, locationskeletons, 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.