Molly Mann and Elizabeth Goetz

Professor Dyrness

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Final Curriculum Project

Digging for Dinosaurs

**Intro:** Our curriculum project is going to be a lesson about dinosaurs for a second grade classroom.

**Context:** Our thematic unit on dinosaurs will be taught over a course of five consecutive days in a second grade classroom. The classroom is comprised of students from the Hartford area who are mostly minority students from low-income homes. Many of these students are ELL learners. The curriculum on dinosaurs will focus on a variety of subjects, such as science, history, mathematics, and reading. For our lessons we plan to cover a broad overview in dinosaurs, including how we know about them, types of dinosaurs, and how they lived.

**Objectives:**

**Objective 1:** Students will discuss and explain the history and lives of dinosaurs and will gain an understanding about why they no longer exist and how we know about them today. This objective highlights the overall purpose of the curriculum project and factual information the students will learn. This project was chosen because the students should have a substantial understanding about the phenomenon of dinosaurs.

**Objective 2:** Students will apply and demonstrate their mathematical skills such as determining and estimating lengths in inches and centimeters by measuring the bones of dinosaurs.

This objective is supported by two Connecticut Core State Standards for mathematics:
CCSS.Math.Content.2.MD.A.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes,

CCSS.Math.Content.2.MD.A.3 Estimate lengths using units of inches, feet, centimeters, and meters.

These objectives aim to help the students develop their mathematical skills, which they will apply in real-life situations. They will be able to understand the use of a ruler and conceptualize inches and centimeters.

**Objective 3: Students will learn how to conduct interviews and formulate and develop questions.**

This objective follows the Common Core State Standards:

CCSS.ELA-Literacy.SL.2.1 Participate in collaborative conversations with diverse partners,

CCSS.ELA-Literacy.SL.2.1c Ask for clarification and further explanation as needed about the topics and texts under discussion, 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.

Through interviews students will improve their ability to communicate and express themselves and the knowledge they have learned. This objective will allow the students to interact with each, while building upon their listening skills. The students will be more comfortable articulating their ideas and opinions. This objective will incorporate Howard Gardner’s Theory of Multiple Intelligences by applying their linguistic intelligence. This intelligence, “allows individuals to communicate and make sense of the world through language” (Gardner 2).
Objective 4: Students will be able to support an argument and apply their knowledge through writing.

This objective will follow the Common Core State Standards

CCSS.ELA-Literacy.W.2.1 Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a concluding statement or section., CCSS.ELA-Literacy.W.2.8 Recall information from experiences or gather information from provided sources to answer a question.

This objective demonstrates the students’ ability to articulate their understanding of the curriculum. Students will use writing to express themselves and engage deeper into the curriculum.

Activities:

• On day one we will introduce the topic of dinosaurs. Through the smart board, the students will be shown various pictures of dinosaurs and their fossils. The teacher will draw upon knowledge the students already have about dinosaurs since their age group has a special interest in the topic. The teacher will ask and write down on the board what the students already know about dinosaurs. The teacher will then build upon the points already discussed by explaining in further detail what they were, when they lived, and a brief summary of the different types of dinosaurs. The teacher will show the students a simplified timeline of the eras in history, focusing on the period in which dinosaurs lived and eventually extinct. The teacher will also give the students certain vocabulary words they will focus on during this unit. The vocabulary words are: extinct, preserved, fossils, scientists, discovery, prehistoric, imprint, analyze, and paleontologist. In order to further
introduce the topic, the students will sit in a circle and take turns reading different pages out loud to the class from the book, *The Magic School Bus in the Time of the Dinosaurs*. Through the book, this activity will meet the Common Core State Standards for Literacy/English Language Art in Grade 2. It will follow, CCSS.ELA-Literacy.RI.2.3, which the students will be able to, “describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text” (Common Core State Standards Initiative).

- The second day the students will learn about the causes of dinosaur extinction and how fossils have been used to discover their existence. The teacher will ask the students why they think the dinosaurs died out. After the students state their reasons, the teacher will explain at least five of the many theories that exist today. He or she will then describe ways in which fossil have been used to discover the reptiles. The students will understand the role of paleontologists in finding and learning about the lives of dinosaurs. Next, they will complete an activity that focuses on mathematical concepts and skills. The students will be given a sheet with different dinosaur body parts, which they will have to piece together to create their own dinosaur. The parts of the dinosaur will be pasted on a piece of blue construction paper, which students will include features of the dinosaur’s environment, such as grass and the sun. While doing so, each student will have to measure and record the length in inches of the different elements of the dinosaur and use addition to measure the dinosaur’s length. The students will then compare each other’s dinosaurs to see which ones are taller and bigger. In addition, at the bottom of the student’s artwork, they will have to write three statements about their dinosaur. For example, the students will include the dinosaur’s measurements, physical characteristics,
and any facts they have learned.

In order to keep the students motivated to present their best work, they will graded based on the one to three scaled rubric. The students will receive a one (needs work) if their assignment lacked accurate measurements, complete sentences, correct facts and creativity. The students will receive a two (satisfactory) if their work had some inaccurate measurements, not fully complete sentences, some correct facts and some creativity. Finally, the students will receive a three (proficiency) if their assignment had all accurate measurements, complete sentence, correct facts, and excellent creativity.

According to Howard Gardner’s Theory of Multiple Intelligences, the students will be able to apply their logical-mathematical intelligence, which focuses on “core operations such as categorization, numbers, relations” (Gardner 2). This also meets the Connecticut State Department of Education Curriculum Standards And Assessment Expectations in science for second grade. The activity follows the Grade-Level Expectations in which, “students should be able to measure and compare the sizes of different solids” (Connecticut State Department of Education 25).

• On day three, the students will have an exciting, interactive field trip to Dinosaur State Park.

“Dinosaur State Park (is) where your students can explore a museum and enjoy the outdoors in one field trip, while meeting Connecticut Core Science Standards. The Park features over 500 Early Jurassic dinosaur footprints preserved in place inside the museum, alongside interactive exhibits about dinosaurs, evolution, and Connecticut geology. The Park has guided programs throughout the school year for grades 1 and up. Your visit will begin with a slide presentation, followed by a guided tour of the
trackway and a participatory activity with the following themes: **Grades 1-5 Fun with Fossils** - Travel back in time to learn what Connecticut was like at the time of the dinosaurs, and what we can learn about dinosaurs from their footprints and other fossils. Students will examine a variety of fossils and dinosaur models to learn about what made dinosaurs unique.”

This fieldtrip will provide the students with a more extensive and engaging understanding of dinosaurs and the role of paleontologists. Dinosaur State Park will allow the students to explore and understand an ancient existence through tangible activities such as seeing footprints and fossils. In order to keep the students engaged during the fieldtrip, they will have to answer five questions on a worksheet. The questions will be “How many fossils did you look at? What type of body part of the dinosaur did you find? What are scientists called who study fossils? What do you think make dinosaurs unique? Describe Connecticut during the time of the dinosaurs.” These questions are not only factual, but also opinion based and allows the students to make connections about the material. The students will appreciate dinosaurs not only as a distant and historic concept, but also as a present-day experience. The children in second grade are at Piaget’s second developmental stage, preoperational, which they are, “still not able to conceptualize matters in the abstract, that is, to operate on the mind. The child had to have the concrete physical situation in front of it” (Piaget 43). The fieldtrip to Dinosaur Park obeys Piaget’s stages of learning by allowing the students to have hands on learning experience about Dinosaurs.

- Day four the students will be conducting interviews with each other. They will be paired in twos in which the students will be incorporating the knowledge they learned about
dinosaurs from the previous days. They are building upon information from the class discussions, the dinosaur they created, and the fieldtrip. The students will not be paired according to their ability. Rather, they will be paired counting by off the students out loud and matching them with the student with the same number. The students will take turns playing the role of a paleontologist and interviewer. As the interviewer, the student will create their own questions to ask a paleontologist about the dinosaurs they found.

To make sure the students are effectively working on the assignment, he or she will then have to write down three facts he/she learned. In return, as the paleontologist, the student will have to answer the question, sharing the type the dinosaur they found, the characteristics and the reasons why it could have been extinct. According Dewey, this activity would be an important for the students because, “purposeful activity in social settings (is) the key to genuine learning” (Dewey 57). The skills the students will be practicing during the interviews can be applied to real-life situations in the future.

For the last day, the students will be evaluated by working with their partner from the previous day to write a newspaper article. Each article from the students will be collected and made into a classroom newspaper called the *Dino-Times*. They will have to respond to the following prompt, “From your experience as a paleontologist at Dinosaur State Park, argue why studying dinosaurs is important. Use your knowledge about dinosaurs to help you.” They will use their answers from the interviews and knowledge they have learned the past few days to write article. The articles must include a brief summary of their experience as a paleontologist at the state park.

This will be a fun and challenging way to evaluate the students about the accumulation of the knowledge they have gained. The students will be graded on their
creativity, effort, and the quality of information. This evaluation does follow the banking system of education in which, “students are the depositories and the teacher is the depositor….in which the students patiently receive, memorize, and repeat” (Freire 58).

**Evaluation**

- For the evaluation piece, the students will be paired with their same partner from the interviews. They will have to create an article for the *Dino-Times*, a pretend newspaper that features the students’ work from this unit. The prompt for the article assignment is as follows: “From your experience as a paleontologist at Dinosaur State Park, argue why studying dinosaurs is important. Use your knowledge about dinosaurs to help you.” The students will have to work together using their knowledge from class discussion, the Dinosaur State Park, and previous activities from earlier in the week. The evaluation is an article because it is similar to an essay, but for younger students. This evaluation will not follow the banking system of education in which, “students are the depositories and the teacher is the depositor….in which the students patiently receive, memorize, and repeat” (Freire 58). However, it is a fun, but a challenging activity for the second graders, while not boring such as the standard test or quiz. The students will be graded on their creativity, effort, the quality of information, and use of unit vocabulary. The students will be evaluated on a one to five scale, in which they will receive a (1) if they show minimal understanding of information, little creativity, minimal effort, lack complete sentences and no use of unit vocabulary. The students will earn a (2-3) if they demonstrated substantial understanding of information, some creativity and effort, not fully complete sentences and minimal use of unit vocabulary. The students will receive a (4-5) for
showing clear understanding of information, excellent creatively, outstanding effort, complete sentences and great incorporation of the unit’s vocabulary.
Appendix

The Magic School Bus in the Time of the Dinosaurs

Creation of own dinosaur
Images of the dinosaurs and website for facts
http://www.sciencekids.co.nz/dinosaurus.html
Instructions: Answer the following questions about dinosaurs while on the field trip. Use complete sentences.

1. How many fossils did you look at?

2. What type of body part of the dinosaur did you find?

3. What are scientists called who study fossils?

4. What do you think made dinosaurs unique?

5. Describe Connecticut during the time of the dinosaurs.
Second Grade Dinosaur Unit Vocabulary Words

1.  *Extinct*: not alive today; all members of the group or species have died out
2.  *Preserved*: has not rotted
3.  *Fossils*: hardened remains of an animal or plant that lived long ago
4.  *Scientists*: people who study things in nature
5.  *Difficult*: not easy
6.  *Discovery*: something that is seen or found out for the first time
7.  *Prehistoric*: belonging to a time before people started writing history
8.  *Imprint*: to mark by applying pressure
9.  *Analyze*: to look at very carefully
10. *Paleontologist*: a scientist who studies fossils and the past
Works Cited
