

# P R O J E C T   D E S I G N :   O V E R V I E W

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| <b>Name of Project:</b> Digging for Dinos   | <b>Duration:</b> 9 weeks   |
| <b>Subject/Course:</b> Science  | <b>Teacher(s):</b> Abby Schorr, Tam Dang, Rachel Trowbridge, Amy Filippini |
| <b>Other subject areas to be included, if any:</b> Math, Technology, Language Arts, Art |  |

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| <b>Key Knowledge and Understanding</b><br>(CCSS or other standards) | <p><b>Next Generation Science Standards</b></p> <p>2-ESS1-1 Use information from several sources to provide evidence that Earth events can occur quickly or slowly</p> <p><b>Reading</b></p> <p>RI 2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.</p> <p><b>Writing</b></p> <p>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.</p> <p>W 2.6 With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.</p> <p><b>Math</b></p> <p>2.MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.</p> <p>2.MD.3 Estimate lengths using units of inches, feet, centimeters, and meters.</p> <p>2.MD.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.</p> |          |                               |
| <b>Success Skills</b><br>(to be taught and assessed)                | <p><b>Critical Thinking/Problem Solving</b></p> <p>Students will have a real life problem to solve: "What happened to the dinosaurs?" They will use critical thinking and gathering evidence to support their claim. This will be assessed by the writing rubric.</p> <p><b>RA.W1: Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.</b></p>   | <b>X</b> | <p><b>Self-Management</b></p> |
|   | <p><b>Collaboration:</b></p> <p>Students will be working in teams to create a fossil representation of their dinosaur. Throughout the project, group work will be used to facilitate and develop collaboration skills. This will be assessed with collaboration rubrics and peer evaluations.</p> <p><b>W 2.6 With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.</b></p>   | <b>X</b> | <p><b>Other:</b></p>          |

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| <b>Project Summary</b><br>(include student role, issue, problem or challenge, action taken, and purpose/beneficiary) | Scientists are still not 100% certain about the event that caused the extinction of dinosaurs. Students will research different types of dinosaurs and the habitats they existed in. Students will be doing additional research about dinosaur extinction in order to make a claim as to what happened to the dinosaurs. Students will also be creating a museum to display and share their research with others. |  |
| <b>Driving Question</b>  | What happened to the dinosaurs?   |  |
| <b>Entry Event</b>   | While working out in the garden, students will “discover” fossils that the teachers have planted there. Upon this discovery, students will brainstorm a list of possibilities of who or what these fossils belong to. (To see a video of this entry event, visit <a href="https://youtu.be/dl0F3kYsJP4">https://youtu.be/dl0F3kYsJP4</a> .)   |  |
| <b>Products</b>  | <b>Individual:</b> <ul style="list-style-type: none"> <li>• Written opinion paragraph</li> <li>• ScribblePress book about a dinosaur</li> </ul>   | <b>Specific content and success skills to be assessed:</b> <ul style="list-style-type: none"> <li>• State an opinion, support with evidence</li> <li>• Complete sentences and paragraph structure</li> <li>• Technology competency</li> <li>• Accurate facts about dinosaurs and extinction</li> </ul> |
|  | <b>Team:</b> <ul style="list-style-type: none"> <li>• Dinosaur mock fossils</li> <li>• Mathematical representation of dinosaur height</li> </ul>  | <b>Specific content and success skills to be assessed:</b> <ul style="list-style-type: none"> <li>• Collaboration</li> <li>• Measurement accuracy</li> </ul>   |

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**Making Products Public**  
(include how the products will be made public and who students will engage with during/at end of project)

- Paleontologist/anthropologist - to be used as an expert speaker and as public audience for exhibition
- Kinder and first grade students – to visit the museum, learn about dinosaurs, and give feedback
- Parents – to visit the museum, learn about dinosaurs, and give students feedback

**Resources Needed**

On-site people, facilities: Garden for the entry event, STEM teacher to support inquiry during STEM pullout

Equipment: iPads for ScribblePress books and inquiry

Materials: fossils (created by teachers), clay mixture for student fossils

Community Resources: Paleontologist or biological anthropologist connection

**Reflection Methods**  
(how individual, team, and/or whole class will reflect during/at end of project)

Journal/Learning Log - Students keep a daily reflection journal. Teachers may prompt students each day with a question to answer.

**X**

Focus Group

Whole-Class Discussion - As the project ends, class will reflect on process and Exhibition.

**X**

Fishbowl Discussion

Survey

Other:

**Notes:**

# PROJECT DESIGN: STUDENT LEARNING GUIDE

**Project:** Digging for Dinos

**Driving Question:** What happened to the dinosaurs?

| <b>Final Product(s)</b><br>Presentations,<br>Performances, Products<br>and/or Services | <b>Learning Outcomes/Targets</b><br>knowledge, understanding & success skills needed<br>by students to successfully complete products  | <b>Checkpoints/Formative Assessments</b><br>to check for learning and ensure<br>students are on track  | <b>Instructional Strategies for All Learners</b><br>provided by teacher, other staff, experts; includes<br>scaffolds, materials, lessons aligned to learning<br>outcomes and formative assessments  |
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| <b>Claim Paragraph<br/>(Individual)</b>  | I can write a paragraph with a topic sentence, three supporting facts, and a conclusion.<br><i>(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.)</i> | <ul style="list-style-type: none"> <li>• Informal writing assessments</li> <li>• Writing prompts “on-demand”</li> <li>• Capitalization and punctuation quiz</li> <li>• Subject/predicate quiz</li> </ul>   | <ul style="list-style-type: none"> <li>• Step Up to Writing Lessons on paragraph organization and parts of a paragraph</li> <li>• Shared Writing modeled by teacher</li> <li>• Sentence Frames</li> <li>• Cloze paragraph</li> <li>• Peer critique on paragraph structure</li> </ul>  |
|  | I can identify a claim and support it with evidence.<br><i>(CCRA.W.1 Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.)</i>  | <ul style="list-style-type: none"> <li>• Extinction theory quizzes</li> <li>• Exit tickets after lessons</li> <li>• Student field guide</li> <li>• Students read a paragraph and identify the claim and supporting evidence by underlining in different colors.</li> </ul> | <ul style="list-style-type: none"> <li>• Teacher introduces the four theories of dinosaur extinction (asteroid, volcano, mammal competition, continental drift).</li> <li>• Student “field guide” (note-taking)</li> <li>• Focused writing lessons about making a claim and supporting it with evidence.</li> <li>• Whole class claim paragraph about one theory to model structure</li> <li>• “Claim Activity” – see Project Calendar</li> <li>• Anchor chart with evidence based claims: <i>For example, according to..., Based on ...</i></li> <li>• Students orally make their claim and support with evidence while peers give them feedback. Is your claim valid? Does your evidence support your claim?</li> </ul> |
|  | I can use an iPad to create a book about a dinosaur.<br><i>(W 2.6 With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.)</i>  | <ul style="list-style-type: none"> <li>• Skill Quiz (Demonstrate saving a picture from Google and inserting it into your book)</li> </ul>  | <ul style="list-style-type: none"> <li>• Modeled lessons about using the app, ScribblePress</li> <li>• Mini-Lessons: How to search for a picture on the Internet, How to add a picture to your book</li> </ul>  |

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| Scribble Press Book<br>(Individual) | I can answer questions about my dinosaur in complete sentences. <i>(W.2.8 Recall information from experiences or gather information from provided sources to answer a question.)</i>   | <ul style="list-style-type: none"> <li>• Exit tickets after lessons on dinosaurs</li> <li>• Student field guide</li> <li>• Sentence structure quizzes</li> </ul> | <ul style="list-style-type: none"> <li>• Teacher introduces five different types of dinosaurs using a Process Grid (GLAD Strategy).</li> <li>• Student “field guide” (note-taking)</li> <li>• Focused lessons around complete sentences, punctuation, capitalization.</li> <li>• Fiction/nonfiction stories to build context</li> </ul>  |
| Mathematical<br>Dinosaur (Group)    | I can estimate and measure the height of my dinosaur accurately. <i>(2.MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes. 2.MD.3 Estimate lengths using units of inches, feet, centimeters, and meters.)</i>   | <ul style="list-style-type: none"> <li>• Measurement quizzes</li> <li>• Exit tickets</li> </ul>  | <ul style="list-style-type: none"> <li>• Use Math Investigations <i>Unit 9, Measuring Length and Time</i>, to align math curriculum with project</li> <li>• Measurement lessons and activities using standard and non standard units of measure</li> <li>• Collaborative tasks around measurement</li> </ul>   |
|                                     | I can write a word problem comparing the heights of two dinosaurs. <i>(2.MD.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. 2.MD.5 Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.)</i> | <ul style="list-style-type: none"> <li>• Exit tickets</li> <li>• Measurement quizzes</li> </ul>  | <ul style="list-style-type: none"> <li>• Use Math Investigations <i>Unit 9, Measuring Length and Time</i>, to align math curriculum with project</li> <li>• Model strategies to solve word problems</li> <li>• Students trade and solve each other’s word problems. Critique and give feedback.</li> <li>• Model how to write a word problem</li> <li>• Solve word problems collaboratively</li> </ul> |
| Dinosaur Fossil<br>(Group)          | I can collaborate with my peers to create a replica fossil of our dinosaur. <i>(Success Skills)</i>  | <ul style="list-style-type: none"> <li>• Peer evaluation</li> <li>• Self evaluation</li> <li>• Teacher observations</li> </ul>                                   | <ul style="list-style-type: none"> <li>• Determine and model expectations for group work</li> <li>• Use and model rubrics for group work</li> <li>• Use critical friends to give feedback to groups</li> </ul>   |