

Dino Discovery

Educator Guide

Welcome to our Hybrid Learning Series.

The Rock by Rock Hybrid Learning Series is a great addition to science and literacy instruction either as a whole class or small group interdisciplinary unit or as a self-directed learning opportunity. Each project includes character growth, reading, writing, science, social studies and the arts.

At Rock by Rock, we believe that children learn best when they are having fun and are deeply engaged in rigorous, hands-on learning that has real-world application. That is why our projects:

- **Focus on building literacies for life:** We design our modules to prioritize both the consumption and production of modern day applications of 21st century literacies such as text messaging chats, shorter texts and articles, short-form multimedia, podcasts, op-eds etc....
- **Are Hybrid (blend of offline and online learning):** We leverage technology to present engaging content and couple that with real world hands-on projects and activities to provide a multimodal learning experience to meet every learner's needs.
- **Develop life habits and character:** We believe that habits and character education are a core part of instruction. By infusing habits with academics, we can better prepare children to thrive in our ever-changing world and to help make the world a better place.

Each project in the Endangered Species Series can be done together as a class, in small groups or individually as a self-directed project. Each mission is focused on one endangered species and how we can take small actions each day to help. Each project positions students to:

1. **Life Habit:** Reflect on the focus life habit (Learner, Creativity, Curiosity, Empathy, Courage, Kinship, Impact Awareness).
2. **Explore:** Understand the mission or challenge students will address through reading, social studies and science and connect personally to the issue or problem through writing and art.
3. **Take Action:** Engage in a take action project that involves writing and art (crafts, performance, etc.).
4. **Share:** Enlist others to work towards or rally around a cause.
5. **Reflect:** Reflect on how the project taught about the life habit. Set habit goals for future growth.



Sample Classroom Applications: There are two ways that you can use this project-based learning bundle.



Modular/Centers Time: You can integrate the project across your day. This looks like implementing a thematic unit that ties together different learning blocks around one topic/theme. Below is a table that illustrates one way you could integrate the project across your days including in self-directed centers.

Time period	Component and Description
Morning Meeting or Community Time	Introduce the topic and theme of the project. <ul style="list-style-type: none"> ● Introduce the life habit. ● Discuss the habit and engage in life habit activities. ● Complete the weekly reflections of the life habit each week.
Humanities/ Literacy	Supplement literacy (i.e. once a week for read aloud/shared reading in science or social studies time). <ul style="list-style-type: none"> ● Engage in the literacy lessons and post reading activities.
Centers Time	Set up a rotation of centers to include: <ul style="list-style-type: none"> ● Self-Directed Computer Center - Have students engage in the online modules. ● Hands-On Activities: Set out different activities for students to engage in each week.
Science or Project Time	Take Action project: <ul style="list-style-type: none"> ● Engage in the project as a full class. ● Provide an opportunity for students to present and share what they have learned with their community. ● Reflect on their life-habit and what they have learned.

The unit sequence below and student mission log is formatted to be in this modular spiraled centers model knowing that you could re-group the lessons and activities to be more linear if that is your preference.



Project-based Learning Time: If you have a dedicated project-based learning time each week or science/social studies time you can do this set of lessons as a whole group/class learning journey. This is recommended for the homeschool setting.

- Download all the materials.
- Start with the "Introduction of the Life Habit" and work through to the "Take Action Project."

Below is a sample timeline of how you could organize the lessons and activities by week.

Week	Description										
Week 1: Introduction to the Life Habit	<ol style="list-style-type: none"> 1. Set the stage for the topic and excite students about the project. 2. Watch the introductory video together. 3. Introduce the life habit and engage in the activities as a whole group. 4. Determine how you will set up a weekly reflection of the life habit. 										
Week 2: Literacy Lessons	<ol style="list-style-type: none"> 1. Engage in the four literacy lessons. You can either do this as a read aloud or shared reading text. 										
Week 3: Science/Social Studies	<ol style="list-style-type: none"> 1. Engage in the online module together to reinforce and extend key ideas shared in literacy lessons. You can even project the module lessons on a screen. 2. Go through the lessons together as a whole group and explore specific concepts together. 3. Pair different hands-on activities to the online modules. <table border="1" data-bbox="583 954 1604 1284"> <thead> <tr> <th data-bbox="583 954 1161 1019">Online Module</th> <th data-bbox="1161 954 1604 1019">Hands-On Activities</th> </tr> </thead> <tbody> <tr> <td data-bbox="583 1019 1161 1084">Lesson 1-3</td> <td data-bbox="1161 1019 1604 1084">Dino Plate Art & Dino Sort</td> </tr> <tr> <td data-bbox="583 1084 1161 1149">Lesson 4-6</td> <td data-bbox="1161 1084 1604 1149">Human Impact on Animals</td> </tr> <tr> <td data-bbox="583 1149 1161 1214">Lesson 6-9</td> <td data-bbox="1161 1149 1604 1214">Fossil Art Drawing</td> </tr> <tr> <td data-bbox="583 1214 1161 1284">Lesson 10</td> <td data-bbox="1161 1214 1604 1284">Stop and Start Matching</td> </tr> </tbody> </table> 	Online Module	Hands-On Activities	Lesson 1-3	Dino Plate Art & Dino Sort	Lesson 4-6	Human Impact on Animals	Lesson 6-9	Fossil Art Drawing	Lesson 10	Stop and Start Matching
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Week 4: Take Action, Share and Reflect	<ol style="list-style-type: none"> 1. Engage in the Take Action project. 2. After completing the project, make time for students to share what they have learned and present their project to others in your community. 										

3. Close out the project through an independent and group reflection on the life habit. .

Another way to implement the lessons whole group is to just follow the lesson sequence below.

Unit Overview:

<p>Driving Question:</p> <p>How can I help to prevent extinction?</p>	<p>Real world Mission:</p> <p>Discover what dinosaurs can teach us about extinction and how we can help to prevent more animals from becoming extinct.</p>	<p>Take Action Project:</p> <p>Create a fossil exhibit and share ways we can help to prevent extinction.</p>
<p>Learning Goals</p> <p>Character Focus: Impact Awareness</p> <p>Literacy:</p> <ol style="list-style-type: none"> 1. Find the main idea and key details of informational text 2. Explore informational text features 3. Research and write key facts about an animal. 4. Present and share how we can help to prevent animal extinction. 5. Answering and asking questions, engaging in a discussion and sharing and presenting information. <p>Science:</p> <ol style="list-style-type: none"> 1. Define what is extinction. 2. Compare and contrast the many different types of dinosaurs. 3. Explain the reasons dinosaurs became extinct and how that is related or not to how animals extinction today. 4. Explain how people have the largest impact on our environment and animal extinction. 5. Explain how fossils provide evidence about the types of organisms that lived long ago and also about the nature of their environments. 6. Discuss how we can change our habits to help prevent the extinction of more animals. 7. Create a model to share and raise awareness of how we can help to stop the extinction of more animals. 		<p>Materials:</p> <ul style="list-style-type: none"> • ZINE (online or printed). • Literacy Handouts • Activity Handouts • Student Booklet. <p>Activity Specific Materials:</p> <ul style="list-style-type: none"> • Paper plates • Different types of pasta • Model Magic • Googly eyes • 5x7 cardstock paper or paper frames. • Notecards. <p>General Materials</p> <ul style="list-style-type: none"> • Markers • Poster Paper • Construction paper • Crayons • Scissor • Glue

Standards Alignment:

Each project meets reading and writing standards in most states and is aligned to national standards for science and social studies, 21st century skills and the arts. This module specifically supports:

Reading CCSS	Writing CCSS	Listening and Speaking CCSS	Science NGSS	SEL 21st Century Skills
Key Ideas and Details: 1-3 Craft and Structure: 4-6 Integration of Knowledge 7-9	Text Types and Purposes 1,2 Production and Distribution of Writing 4-6	Comprehension and Collaboration 1,2 Presentation of Knowledge and	K-ESS3-1, K-ESS 3-3, KLS 1-1 2-ESS1-1, 2-LS 4-1, 3.LS.4-4 SEPs: Asking questions,	Focus: Impact Awareness

Text Complexity - 10	Research and Build to Present Knowledge 7-8	ideas 1-6	creating models, obtaining, evaluating and communicating info.	
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At-A-Glance: The table below provides an overview of how you could implement this project. Online centers can be done at student's own pace. It's okay if students move ahead faster through the lessons online. They will go deeper when you revisit the content together as a class. The online lessons can also be additional source material for group lessons. Our hope is that all of these materials provide additional opportunities for kids to explore the content, answer the driving question and apply it to the take action project at the end.

Module	Purpose	Activities	Materials
Intro + Life Habit 1-2 Days	Kids are introduced to their mission: raising awareness about how we can prevent more animals from becoming extinct. The life habit is impact awareness. Kids engage in 2 impact awareness activities that help them reflect on what it means to be aware of our actions.	Whole or small group: <ul style="list-style-type: none"> Introductory video Life Habit activity 1a Life Habit activity 1b 	<ul style="list-style-type: none"> Introductory video Life habit activity 1&2 printed.
Life before humans 2-4 Days	The first chapter of the magazine is all about life before humans and learning about dinosaurs. Kids read page 1-11 noting key nonfiction text features like table of contents, image captions etc... Kids then engage in a series of online modules that teach them about what a dinosaur is, types of dinosaurs and sizes of dinosaurs. This week ends with a hands-on activity focused on creating a dinosaur out of paper plates and sorting herbivore vs. carnivore dinosaurs.	Whole or small group: <ul style="list-style-type: none"> Literacy Lesson #1 Online lesson 1-3 Independently: <ul style="list-style-type: none"> Hands-on activity #1a - Dino-art Hands-on activity #1b - Dino-sort 	<ul style="list-style-type: none"> Online magazine Handout 1 &2 Paper plates, markers, scissors, glue, Hands-on activity 1: Dino-plate & Dino-sort
Why do animals become extinct? 2-3 Days	Kids learn about why dinosaurs became extinct and how that is similar and different to the reasons why animals today are endangered. Students read the second chapter from page 12-17 looking for the central idea and key details. Kids then engage in online modules to further extend their understanding of dinosaur extinction and human impact on endangering animals today. The hands-on activity is an opportunity for students to explore the cause and effect relationships between human actions, it's impact on the environment and animals.	Whole or small group: <ul style="list-style-type: none"> Literacy Lesson #2 Independently: <ul style="list-style-type: none"> Online lesson 4-6 Hands-on activity #2 - Human impact on animals 	<ul style="list-style-type: none"> Online magazine Mystery Bag Handout 3 - Interesting vs. key details Computers & headphones
Who is helping?	Kids learn about what is paleontologist is and how the	Whole or small group:	<ul style="list-style-type: none"> Online magazine

<p>1-2 Days</p>	<p>study of dinosaurs is helping us learn about our world today. Kids also learn that museums are key ways that people can learn about dinosaurs and fossils. Kids read pages 18-21 and engage in a main idea and key details sort. Online, kids learn about the concept of Pangea, engage with some real paleontologists from the Natural History Museum and reflect on what we can learn from fossils. The hands-on activity puts kids in the shoes of a paleontologist artist by having them create fossil art.</p>	<ul style="list-style-type: none"> ● Literacy Lesson #3 <p>Independently:</p> <ul style="list-style-type: none"> ● Online lesson 7-9 ● Hands-on activity #3 - Fossil Art Drawing 	<ul style="list-style-type: none"> ● Guess who I am? ● Handout 4: Cut & Sort ● Hands-On Activity #3 - Fossil Art ● Computers & headphones
<p>How can we help? 1-2 Day</p>	<p>Kids learn that there are many ways we can help to slow the extinction of animals. Kids read pages 22-24 to think about what actions they can start and stop doing. Students then commit to one way they want to take action to help save endangered animals on our planet. The online module helps kids think about how we can help by stopping some actions and starting others. Kids then engage in a hands-on activity, sorting each action into something we can start or stop doing to help animal extinction.</p>	<p>Whole or small group:</p> <ul style="list-style-type: none"> ● Literacy Lesson #4 <p>Independently:</p> <ul style="list-style-type: none"> ● Online lesson 6-8 ● Hands-on activity #4: Stop and Start Sort. 	<ul style="list-style-type: none"> ● Online Magazine ● Guess who I am? ● Handout 5 ● Hands-On Activity #3 - Fossil Art. ● Computers & headphones
<p>Take Action Project My Own Natural History Museum 1-2 Days</p>	<p>Students raise awareness about endangered animals by creating their own Natural History Museum. Students create a fossil art exhibit of one dinosaur and one animal that they know is endangered. They design it using model magic, different types of pasta and cardstock. Students then write on a notecard with 1-2 facts about why the species is endangered or why it went extinct.</p>	<p>Whole Group or independently:</p> <ul style="list-style-type: none"> ● Create fossil exhibit ● Create fact cards. ● Practice presenting their exhibit. 	<ul style="list-style-type: none"> ● Model magic ● Pasta ● Cardboard/card frame. ● Notecard ● Marker
<p>Share & Reflect 1 Day</p>	<p>Students present and share their models with community members and/or through video to raise awareness about endangered animals. They then reflect on the life habit of impact awareness and how we can continue to practice impact awareness in our everyday lives.</p>	<p>Whole Group or with a partners.</p> <ul style="list-style-type: none"> ● Share and present your fossil exhibit. You can also record this on video to share with others. ● Reflect on what you learned about yourself and impact awareness. 	<ul style="list-style-type: none"> ● Mission Log ● Optional: video recorder.

Lesson Sequence

The orange shaded rows note the student online module and the light blue shaded rows note the aligned hand-on activity.

Lesson	Objective and Description	Materials Needed	Standards Alignment
Engage			
Your mission	<p>Objectives:</p> <ul style="list-style-type: none"> Internalize the unit topic and mission: What can we learn from dinosaurs to help prevent the extinction of more animals? <p>Methods:</p> <ul style="list-style-type: none"> Invest: Share with kids that this month they will be learning all about how we can prevent animal extinction by learning from creatures who have already gone extinct: Dinosaurs. Activating Prior Knowledge: Ask students if they know of any animal that used to be on our earth but now does not exist (Hint: movie-Ice Age). Flip the cards to review a few animals: mammoth, sabre tooth tiger, splendid poison frog, tasmanian tiger. Show the introductory video. 	Computer + Projector Speakers Online Module Student Mission Log - Pg 3	CCSS.ELA-LITERACY: <ul style="list-style-type: none"> SL k.1 1.1, 1.4, 2.1, 2.4
Life Habit - Impact Awareness (1 day)			
What is Impact Awareness?	<p>Objectives:</p> <ul style="list-style-type: none"> Students define and examine impact awareness and how our actions have an affect on others and the environment. <p>Methods:</p> <ul style="list-style-type: none"> Review the online lesson about impact awareness. Discuss a time where someone made a student feel happy or sad. What did they do? Have students write one example of how someone's actions made them feel sad or happy. 	Online Module Student Mission Log - Pg 4	21st Cent Framework CCSS.ELA-LITERACY: <ul style="list-style-type: none"> RI k.1, 1.1, 1.2, 2.1, 2.4 SL k.1 1.1, 1.4, 2.1, 2.4
	<p>Objectives:</p> <ul style="list-style-type: none"> Students describe examples of impact awareness. 	Online Module	21st Cent Framework CCSS.ELA-LITERACY:

<p>Pausing before you act.</p>	<ul style="list-style-type: none"> Students connect how our actions causes an effect. <p>Methods:</p> <ul style="list-style-type: none"> Discuss the importance of pausing before we act and how pausing to think about our actions can help to prevent harmful actions. Have students turn and talk about how they can practice impact awareness to prevent harm to others or their environment. Close by having students share what impact awareness is in their own words. 		<ul style="list-style-type: none"> RI k.1, 1.1, 1.2, 2.1, 2.4 SL k.1 1.1, 1.4, 2.1, 2.4 <p>NGSS: K-ESS 3-3</p>
<p>Life Before Humans (2-4 days)</p>			
<p>Literacy Lesson 1</p> <p>What is a dinosaur?</p>	<p>Objective:</p> <ul style="list-style-type: none"> Students define tier 2 and tier 3 words related to dinosaurs and endangered animals. Students use text features in an informational text to note main idea and key details in a text. <p>Methods:</p> <ul style="list-style-type: none"> Complete a K-W-L chart about dinosaurs. Vocab: Review the key vocabulary on page 3. First Read: Read a-loud or share read pages 1-11 in the Zine all the way through to model fluent reading. Highlight key text features like bold print, subheadings, captions, timeline. Second Read: Jot down key details and summarize how the key details help to identify the main idea. Post Read: Define the difference between a key detail and interesting detail. 	<p>Literacy Lesson</p> <p>Online Module</p> <p>Student Mission Log - Pg 5 & 6</p>	<p>CCSS.ELA-LITERACY:</p> <ul style="list-style-type: none"> RI 1.7 RI 2.5
<p>Student Online Module</p> <p>Lesson 1: What is a dinosaur?</p>	<p>Objective:</p> <ul style="list-style-type: none"> Students explore key facts about a dinosaur to explain what type of creatures roamed the earth before our time. <p>Method:</p> <ul style="list-style-type: none"> Flip cards: Students click on each card on screen to read 	<p>Student Online Module</p>	<p>CCSS:</p> <ul style="list-style-type: none"> CCRA.L.6 <p>NGSS:</p> <ul style="list-style-type: none"> 2-LS4-1

