



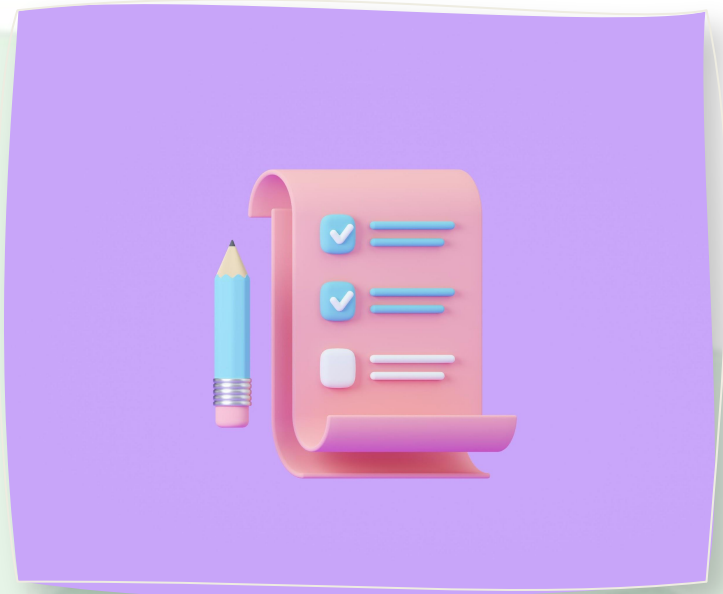
WELCOME!

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Agenda



Introduction

Theme Overview

Activity Overview

Further Resources

Share With Us!

Questions?

Introduction

Previously, the Detroit Zoo has supported summer reading in Michigan by partnering with the Library of Michigan for three summers.

We're excited to expand this year to support national Collaborative Summer Library Program!



Theme Overview

Using the excitement of the Detroit Zoo to learn STEAM concepts and inspire science reading!

Activity Overview

- *Unearth a Story*-aligned lesson plans developed for librarian-use.
- Accessible, shared Google Drive with all lesson plans and printables
- Activities use limited materials and are simple and hands-on
- Focus on flexibility
- Resources are available today!

Activities

STEAM activities that match the “Unearth A Story” theme



Activities

Grade Band	Lesson
K-2	Sensory Dig: Mini Excavation Station
	Dino Sort
3-5	Dino Mosaic
	Dino Tangrams
6-8	Creature Creator
	Flight Inquiry
9-12	"Fossil" Fuels
	Dino DNA

Activities

Library Partnerships > 2026- Unearth a Story > Unearth a Story Libraria... ▾

Type ▾

People ▾

Modified ▾

Source ▾

Name ▾

📁 K-2



📁 9-12



📁 6-8



📁 3-5



K-2 Activities

... > Unearth a Story Librari... > K-2 >



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Name ↑

Dinosaur Dig



DEDICATED TO EDUCATION
The Detroit Zoo is an accredited zoo. The Detroit Zoological Society is
committed to providing quality educational programs for all ages. To
ensure the highest quality of care, the Detroit Zoological Society is
committed to providing the highest quality of care to all animals.

Dinosaur Dig

EDUCATION ACTIVITY

The experience
Young learners will step into the role of paleontologist as they dig through sand
to find and identify rocks and fossils. Each learner can share what they found
and what they used to identify it.

SKILLS	CONCEPT/STANDARDS	TIME COMMITMENT	AGE GROUP
<ul style="list-style-type: none">ObservationClassification		<ul style="list-style-type: none">Activity: 5-15 min	<ul style="list-style-type: none">3-8 years

Dinosaur Sort



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Dino-Sort

EDUCATION ACTIVITY

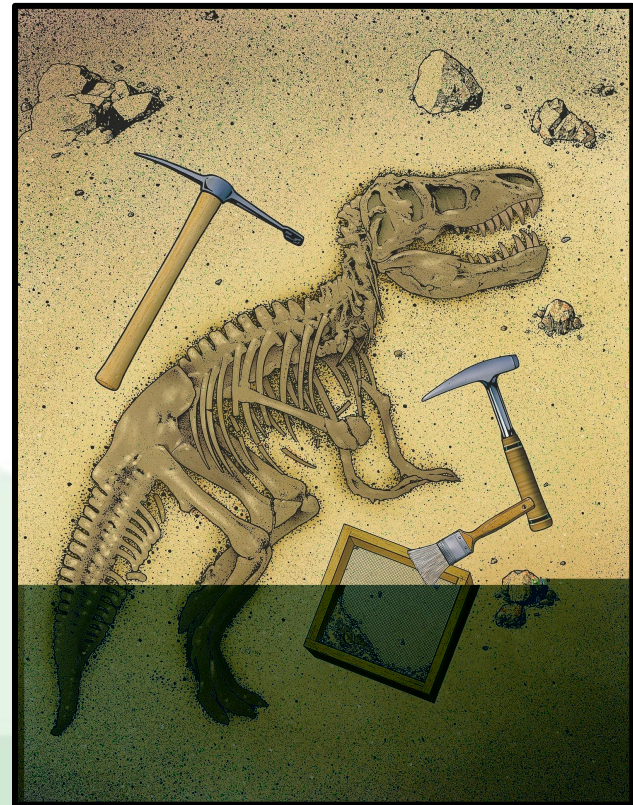
The experience
Young learners will step into the role of paleontologists as they explore and sort
dinosaur into categories of their choice like color, size, diet, or name. Each
learner can share their discoveries, comparing how they chose to classify their
prehistoric finds.

SKILLS	CONCEPT/STANDARDS	TIME COMMITMENT	AGE GROUP
<ul style="list-style-type: none">ObservationClassificationPattern Recognition	<ul style="list-style-type: none">Analogy and Grouping Skills → self-directed learning activity based on classroom rules	<ul style="list-style-type: none">Activity: 5-15 min	<ul style="list-style-type: none">3-8 years

Sensory Dig

K-2

Young learners step into the role of paleontologist as they dig through sand to find and identify rocks and fossils. Each learner can share what they found and what they used to identify it.



Sensory Dig

K-2

Students observe and describe traits that may relate to how dinosaurs lived.

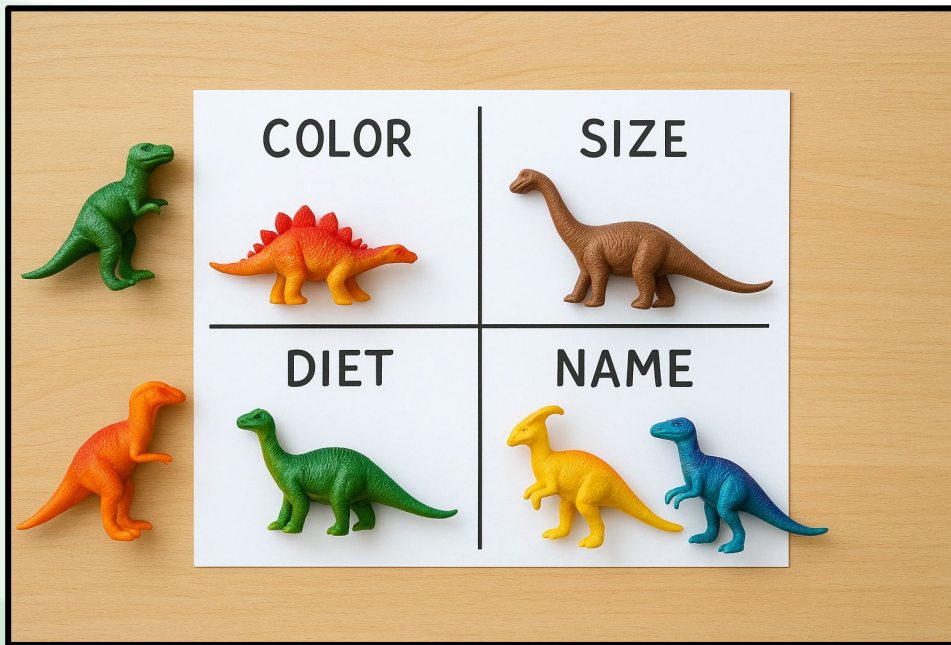
Discuss what body parts dinosaurs have (feet, tails, teeth) supports recognition of external structures and their potential functions.

Paleontology framing supports early exposure to Earth's history; optional depending on how deep the discussion goes.

*K-LS1-1 – Use observations to describe patterns of what plants and animals need to survive.
2-LS4-1 – Make observations of plants and animals to compare the diversity of life in different habitats.
2-ESS1-1 – Use information from several sources to provide evidence that Earth events can occur quickly or slowly.*

Dino Sort

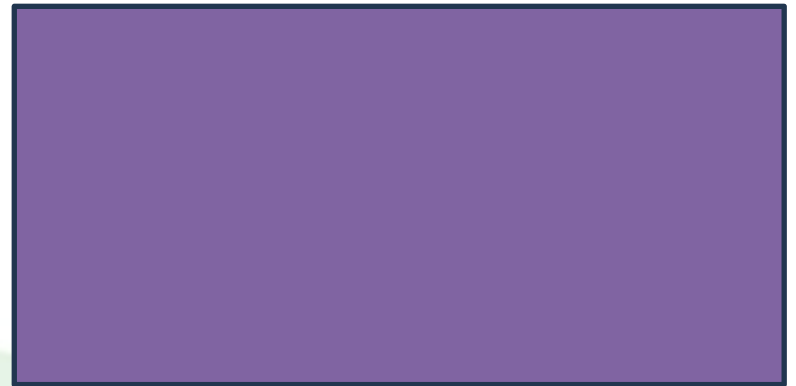
K-2



Young learners explore and sort dinosaurs into categories of their choice like color, size, diet, or name. Each learner can share their discoveries, comparing how they chose to classify their prehistoric finds.

Dino Sort

K-2



3-5 Activities

... > Unearth a Story Librari... > 3-5 ▾



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Name ↑

 Dino Tangrams ⋮

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As a member of our mission the Detroit Zoological Society is dedicated to innovative education. Our education programs are designed to capture the hearts of all ages. To learn more, visit our website or contact us at 313.487.2000 or education@detzoo.org.


Dinosaur Tangrams

EDUCATION ACTIVITY

The experience
Students will explore how shapes can represent real objects in nature by constructing and solving tangram puzzles. They will create dinosaurs using geometric tangram pieces and reflect on how different body structures helped prehistoric animals survive.

SKILLS	CONCEPTS/STANDARDS	TIME COMMITMENT	AGE GROUP
<ul style="list-style-type: none">Spatial reasoningProblem solving and creativityFine motor coordination	<ul style="list-style-type: none">Structure and function in living organismsGeometry and spatial awarenessAdaptation and survival	<ul style="list-style-type: none">Activity 15-20 min or scale to fit time needs	<ul style="list-style-type: none">3-5 (MS)Grade



 Dinosaur Mosaic ⋮

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Dino-Mosaic

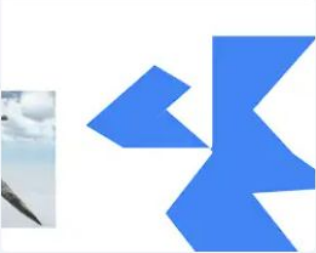
EDUCATION ACTIVITY


The experience
Participants will use the art of mosaic to learn about different features that make up a dinosaur using geometric shapes and patterns.

SKILLS	CONCEPTS/STANDARDS	TIME COMMITMENT	AGE GROUP
<ul style="list-style-type: none">Identification	<ul style="list-style-type: none">Identify and describe a dinosaur's body parts and how they would have worked together to help the dinosaur move, defend, and survive.	<ul style="list-style-type: none">Activity 15-20 min	<ul style="list-style-type: none">3-5 (MS)



 Dinosaur Tangram... ⋮



 Table Sign_Dino... ⋮

Detroit ZOO

Dino Tangrams

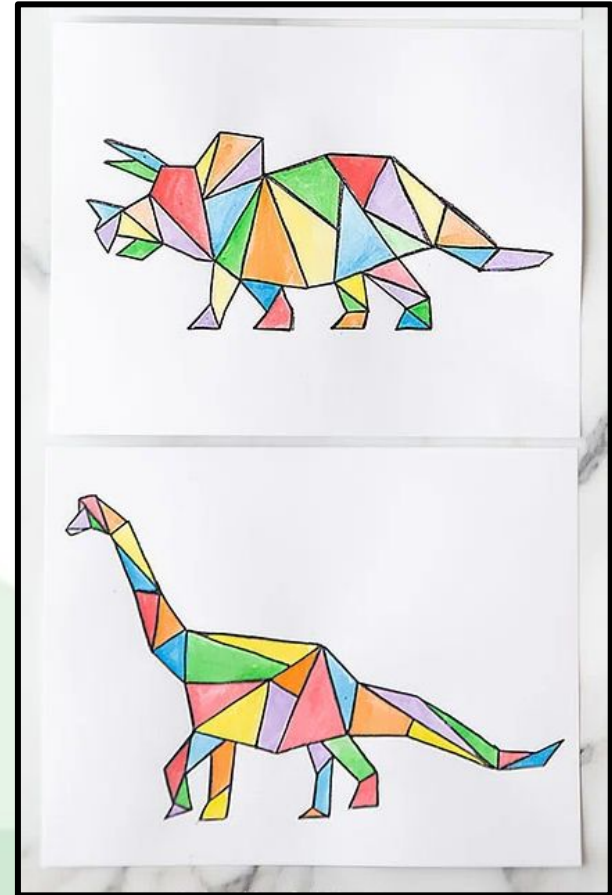
EDUCATION ACTIVITY

Explore how shapes can represent real objects in nature by constructing and solving tangram puzzles. Create dinosaurs using geometric tangram pieces and reflect on how different body structures helped prehistoric animals survive.

Dino Mosaic

3-5

Participants will use the art of mosaic to learn about different features that make up a dinosaur using geometric shapes and patterns.



Dino Mosaic

3-5

Students identify and represent dinosaur body parts linked to survival.

The lesson encourages comparing dinosaur traits with modern backyard animals.

Lesson discusses dinosaur features and variation.

- 4-LS1-1 — Construct an argument that animals have internal and external structures that function to support survival.*
- 3-LS4-3 — Construct an argument with evidence that in a particular ecosystem, some organisms thrive and others do not.*
- 3-LS3-1 — Analyze and interpret data to provide evidence that organisms have traits inherited from parents.*

Dino Tangrams

3-5

Students will explore how shapes can represent real objects in nature by constructing and solving tangram puzzles. They will create dinosaurs using geometric tangram pieces and reflect on how different body structures helped prehistoric animals survive.

Dino Tangrams

3-5

Students discuss how dinosaur shapes relate to survival and adaptation.

Students identify body structures via tangram shapes and infer their functional roles.

3–5 Engineering Practices:

- *Developing and using models*
- *Analyzing and interpreting data (shape choices and reasoning)*

3-LS4-2 — Use evidence to construct an explanation for how variations in traits affects survival.

4-LS1-1 — Construct an argument that animals have internal and external structures that supports survival, growth, behavior, and reproduction.

Creature Creator

6-8

Students will explore how animals adapt to their habitats by observing their colors and patterns. Then, they'll choose a habitat and design their own animal. Through this activity, students will gain a deeper understanding of how coloration and patterns help animals survive in their environments.



Creature Creator

6-8

Students will learn how different dinosaurs adapted their coloration or patterns to fit their habitat.

Students can hypothesize what dinosaurs lived in specific habitats based on their coloration and pattern.

Students can visualize and create a dinosaur with color and pattern adaptations that would allow them to thrive in a given habitat.

MS-LS1-4 -- Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants, respectively.

MS-LS4-4 – Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.

Flight Inquiry

6-8

Flight Inquiry

6-8

Students manipulate variables such as weight, wing surface area, and balance, then test how those changes affect flight distance and direction, directly tying to forces, lift, drag, thrust, and mass effects.

Students consider how energy is transferred during launch, and how design features affect glider speed, lift, and glide duration.

Students make modifications by changing mass, adjusting wing shape, altering angles, and test again.

MS-PS2-2 — Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces and the mass of the object.
MS-PS3-5 — Construct, use, and present arguments to support that when the motion energy of an object changes, energy is transferred to or from the object.
MS-ETS1-4 — Develop a model for iterative testing and modification to improve a design.

9-12 Activities

... > Unearth a Story Librari... > 9-12 ▾



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Name ↑

"Fossil" Fuels

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"Fossil" Fuels
FOSSILS AND ACTIVITY

The experience
Students will explore how fossil fuels formed and uncover the truth behind a common misconception: that fossil fuels come from dinosaurs. Working collaboratively, students will discover how fossils from dinosaurs. Then, they'll create short stories to help teach others how fossil fuels really began.

SKILLS

- Scientific reasoning
- Debate and persuasive writing
- Creative communication

CONCEPTS/STANDARDS

- Nature & resource formation
- Higher use of Earth's resources
- Clear and coherent writing

TIME COMMITMENT

- Activity 10-20 min

AGE GROUP

- 8th-10th Grade

Dino DNA

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Dino DNA
FOSSILS AND ACTIVITY

The experience
Students will explore the concept of DNA and how genetic information determines traits in living organisms by using gumdrops and toothpicks to model DNA molecules. Students will discover how different nucleotide sequences express specific dinosaur traits and recognize the connections between genes and their trait characteristics.

SKILLS

- Modeling and representation
- Observation and analysis
- Understanding structure and function

CONCEPTS/STANDARDS

- Inherited traits and genetic coding
- DNA structure and base pairing
- Phenotypes and genotypes

TIME COMMITMENT

- Activity 10-20 min

AGE GROUP

- 8th-10th Grade

Table Sign_Dino...

Dino DNA

Use gumdrops and toothpicks to model DNA molecules. Discover how sequencing expresses specific dinosaur traits are expressed characteristics are expressed

INSTRUCTIONS

- Share what makes you unique, like eye color or height. These traits come from DNA.
- Pick a dinosaur card and use the DNA Color Key and Code Table to find the DNA sequence for its traits.

Table Sign_Fossil...

"Fossil" Fuels

How did fossil fuels get their name? Piece together a narrative to discover how fossil fuels formed. Then, create a short story to help teach others how fossil fuels really began.

INSTRUCTIONS

- Write or draw what comes to mind when you hear the word fossil, and place your sticky note on the board.
- Work with a partner to use the Fossil Fuel Strips to discuss the assets & describe how fossil fuels.

"Fossil" Fuels

9-12

Students will explore how fossil fuels formed and uncover the truth behind a common misconception: that fossil fuels come from dinosaurs. Working collaboratively, students will discover how fossil fuels developed. Then, they'll create short stories to help teach others how fossil fuels really began.



"Fossil" Fuels

9-12

Students arrange formation events and understand fossil fuels' origins.

Students learn fossil fuels formed hundreds of millions of years before dinosaurs and Earth-process origins of fossil fuels.

*The storytelling component aligns with **WHST.9–12.3** (narrative writing in science contexts).*

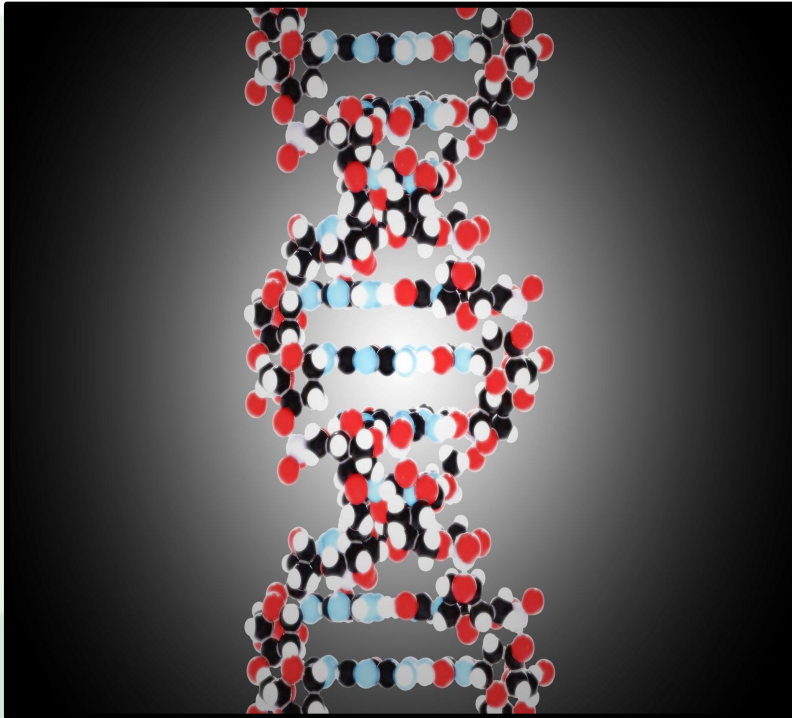
HS-ESS3-1 — Construct an explanation based on evidence for how natural resources are formed and distributed.

HS-ESS1-4 — Use evidence to construct an explanation for how Earth's processes operate over geologic timescales.

MS-ESS3-1 — Construct a scientific explanation based on evidence for how natural resource uneven distribution is the result of geologic processes.

Dino DNA

9-12



Students will explore the concept of DNA and how genetic information determines traits in living organisms by using gumdrops and toothpicks to model DNA molecules. Students will discover how different nucleotide sequences express specific dinosaur traits and recognize the connections between genes and inherited characteristics.

Dino DNA

9-12

Students model base-pairing, gene sequences, and how genetic code expresses traits.

The activity explicitly examines how DNA sequences map to dinosaur characteristics.

Students compare differences among dinosaur DNA models and trait variations.

HS-LS1-1 — *Construct an explanation based on evidence for how DNA structure determines protein structure, which leads to the functions of cells and organisms.*

HS-LS3-1 — *Ask questions to clarify the relationship between DNA and chromosomes in coding the instructions for traits.*

HS-LS3-2 — *Make and defend a claim based on evidence that inheritable genetic variation may result from new genetic combinations.*

Nature Connections

- Explore how living things interact with their environment
- Build empathy by noticing shared traits and behaviors
- Strengthen personal connections through hands-on discovery
- Compare prehistoric animals with species in our own backyards
- Inspire curiosity about local ecosystems

Extinction & Contemporary Conservation

- Understand how habitat and climate changes affect survival
- Explore how scientists use evidence to protect today's wildlife
- Compare ancient ecosystems with current biodiversity needs
- Identify conservation actions learners can take locally
- Encourage stewardship to support sustainable futures

Tips for Facilitation

- Wait 3-5 seconds after asking a question
- Acknowledge all responses
- Use follow-up prompts
- Encourage peer-to-peer discussion
- Model curiosity

Using open-ended questions to facilitate activities:

- Promotes curiosity and deeper thinking
- Encourages learners to explain their reasoning
- Supports multiple perspectives and ideas
- Builds confidence and communication skills (facilitator and participant)

Key Types of Open-Ended Questions

Observation: What do you notice? What do you see?

Comparison: How is it different? How is it the same?

Explanation: Why do you think that is?

Prediction: What do you think will happen next?

Connection: Where else have you seen something like this?

Reflection: What was the most surprising thing you learned today?

Reflective questions help learners:

- **Build relevancy:** Why should I care?
- **Consolidate Learning:** By connecting new ideas to prior knowledge
- **Think metacognitively:** How do I know what I know
- **Identify patterns and meaning** in their experiences
- **Build ownership** over the learning process to encourage continued exploration
- **Develop communication and empathy** through sharing perspectives.

Let's Reflect

- What questions do you still have?
- How has your thinking changed?
- How would you do this differently?



THANK YOU

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