

WonderHere[?]
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PALEONTOLOGIST

Problem Solvers

Math Project

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Printed in the Unites States of America.
Library of Congress Catalog Card Number Pending



become a
PALEONTOLOGIST
Problem Solver

Paleontologists are scientists who study animal and plant fossils. These scientists use math to measure, analyze, compare, and classify fossils. This is how they learn more about the plant or animal the fossil belongs to! In this math project, your child will get to use various math concepts and skills to become fossil experts!

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Mathematics Topics Addressed	Primary	Post-Primary	Comprehensive
Focus on asking and answering questions	✓	✓	✓
Compare, classify, and organize information through observations and measurements	✓	✓	
Focus on drawing conclusions	✓	✓	✓
Focus on solving everyday problems	✓	✓	✓
Follow simple step-by-step directions	✓	✓	✓
Sequence of numbers 0-100	✓		
Practice measuring accurately and with estimation		✓	✓
Understand the concepts of perimeter and area		✓	✓
Symmetry in proportion to a line		✓	✓
Rotational and translational symmetries in their surroundings			✓
Unit conversions with the most common units of measurement			✓



Hey, there! I'm Dr. Hahn, and you must be our new paleontologist! I'm glad you're here... we have a lot of work to do! Let me show you around.



This is our Excavation Site. We have spent the last three months digging in these three areas, and are finally making progress with our discoveries!

As you visit each site according to your expertise, you will use math to find, measure, and analyze, fossils!



TASK 1: Circle the largest dinosaur bone. Color the smallest dinosaur bone.



TASK 2: Draw a line from each fossilized tooth to the word that describes it.



LARGE

MEDIUM

SMALL



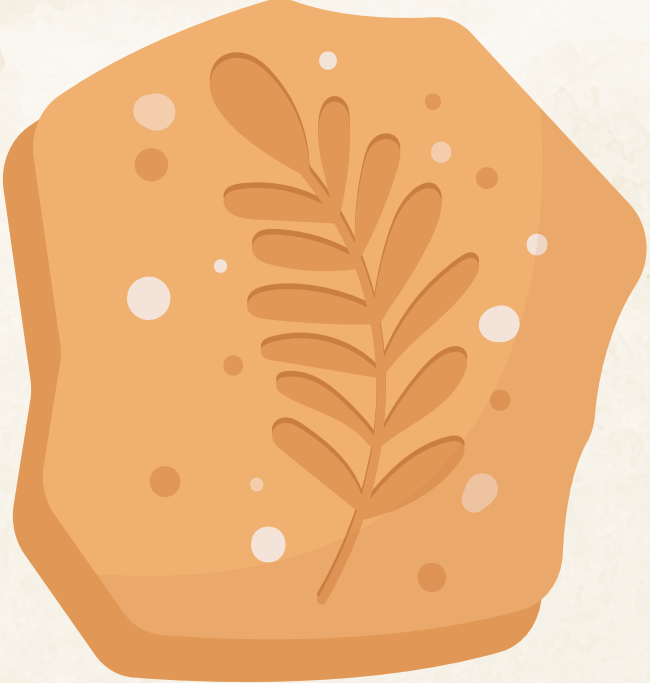
TASK 3: Count the leaves on each fossilized plant.



_____ leaves



_____ leaves



_____ leaves

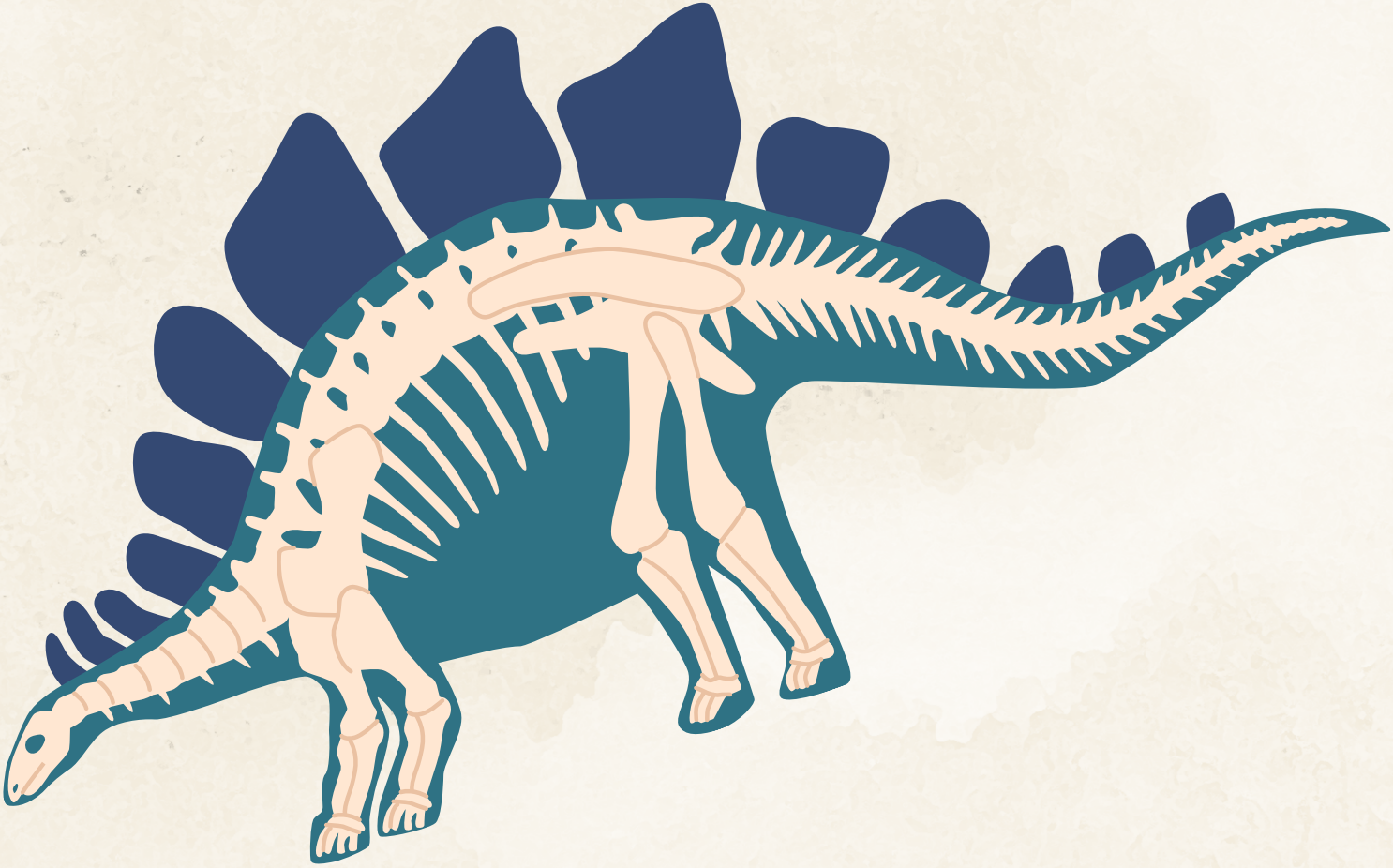


TASK 4: How many teeth does this dinosaur skull fossil have?



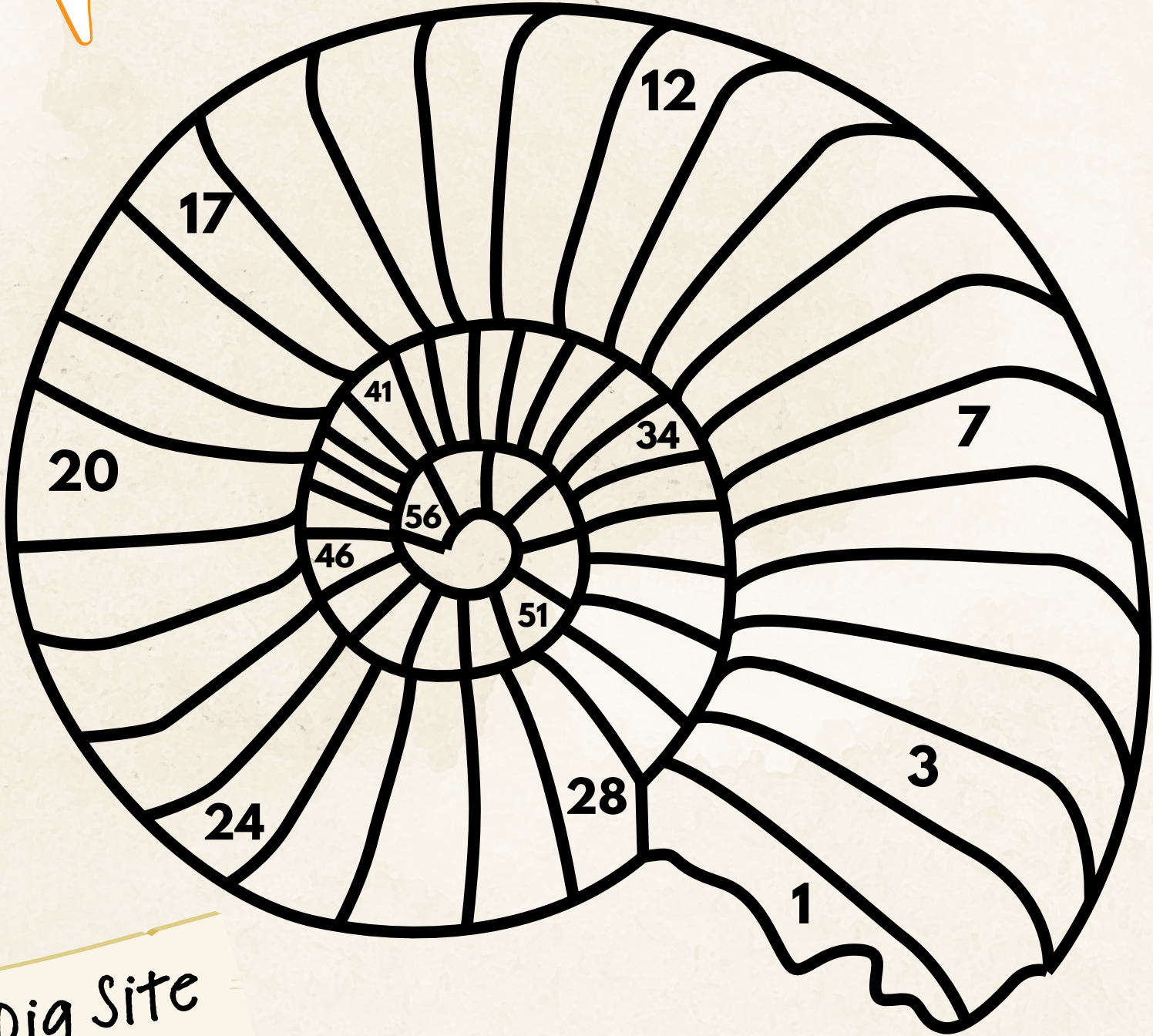
_____ **TEETH**

TASK 5: How many spines does this Stegosaurus skeleton have on its back?



SPINES

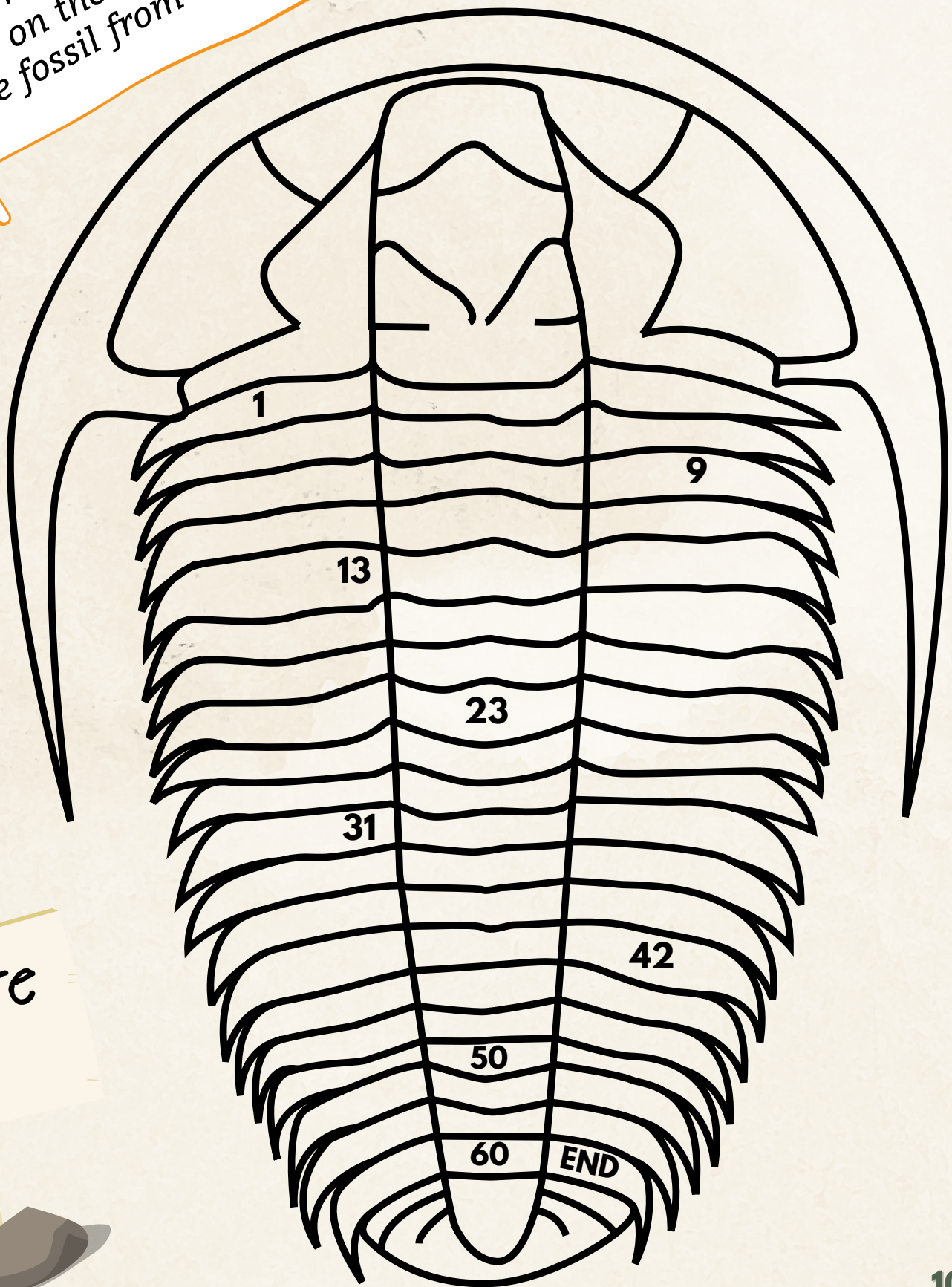
TASK 6: Write in the missing numbers on the sections of the Ammonoid Fossil.



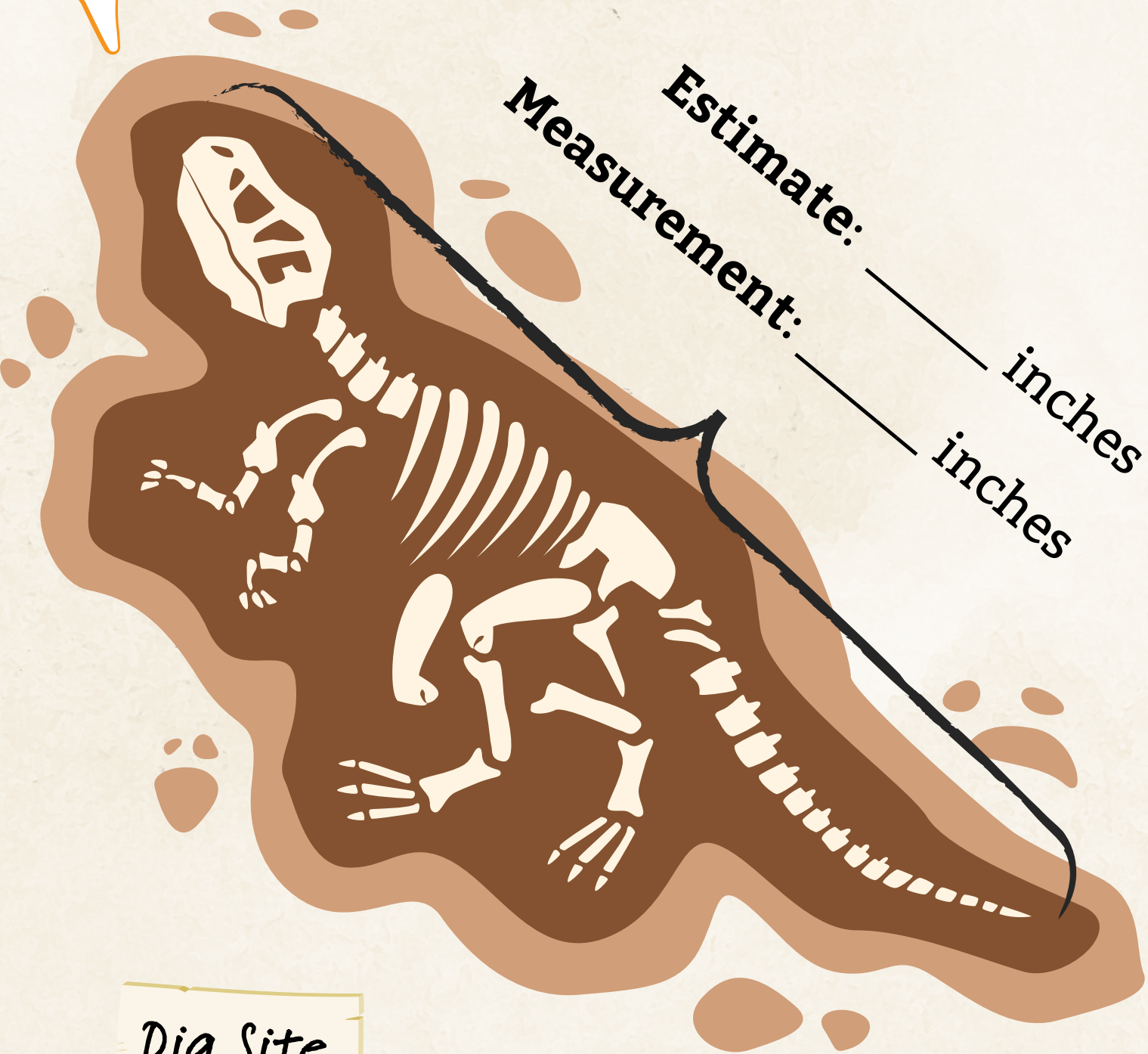
Dig Site #1



TASK 7: Write in the missing numbers on the sections of the Trilobite fossil from left to right.



TASK 1: Estimate the length of this fossil in inches. Then use a ruler to measure it.



Dig Site #2



TASK 2: Estimate the length of this fossil in inches. Then use a ruler to measure it.

Estimate: _____ inches

Measurement: _____ inches



Dig Site
#2



12 FEET

12 FEET



12 FEET

12 FEET

Task 3: Find the perimeter and area of this dig site. Use the Perimeter & Area Cheat Sheet on the following page to help you.

Dig Site
#2

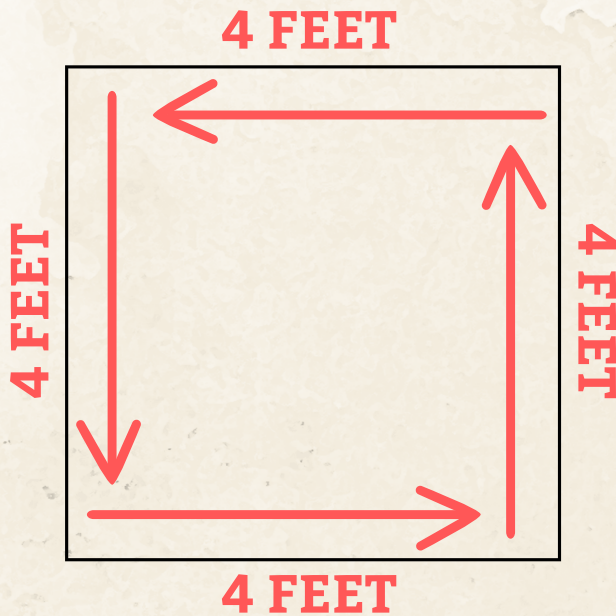
Perimeter: _____ ft.

Area: _____ ft.



Perimeter & Area Cheat Sheet

PERIMETER



Perimeter is the distance around a two-dimensional shape.

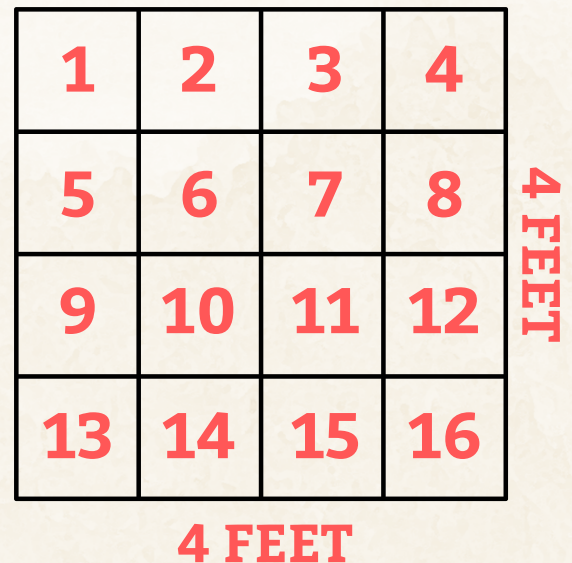
You can calculate the perimeter by adding the distance of all sides of the shape.

$$4 + 4 + 4 + 4 = \underline{16 \text{ feet}}$$

AREA

Area is the total space taken up by a two-dimensional shape.

You can calculate the area by multiplying the distance of two joining sides of the shape.



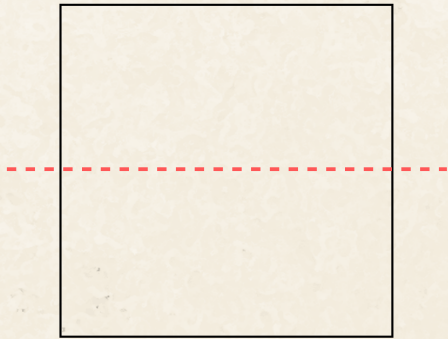
$$4 \times 4 = \underline{16 \text{ feet squared}}$$

Dig Site
#2

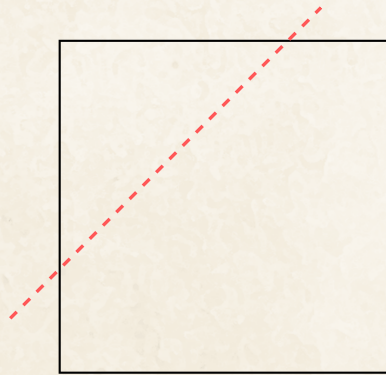


REFLECTIVE SYMMETRY

Reflective Symmetry is a balanced similarity found in two halves of an object; one-half is the exact mirror image of the other half.



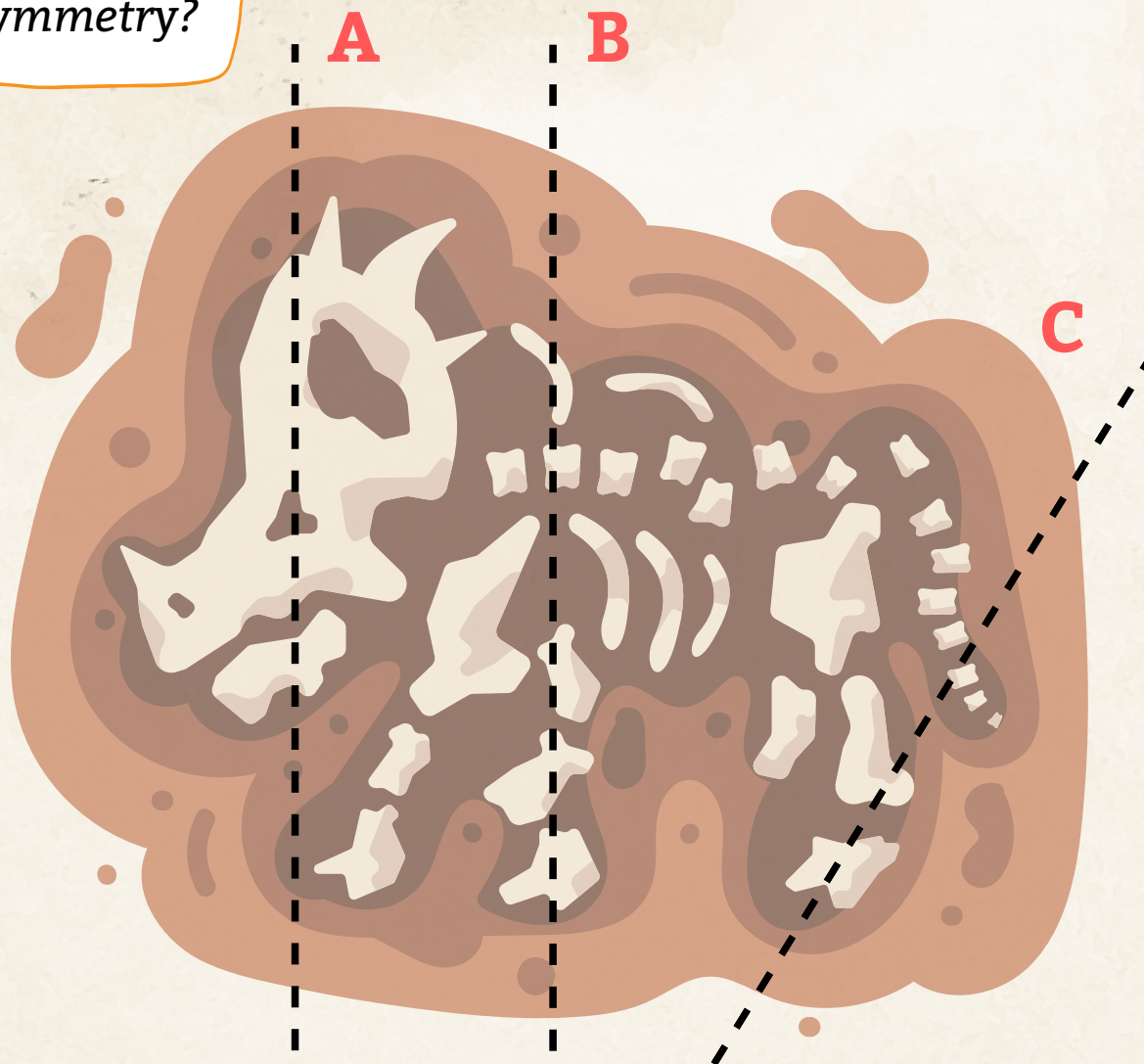
This is a line of symmetry.



This is NOT a line of symmetry.

TASK 4: Which line is the correct line of symmetry?

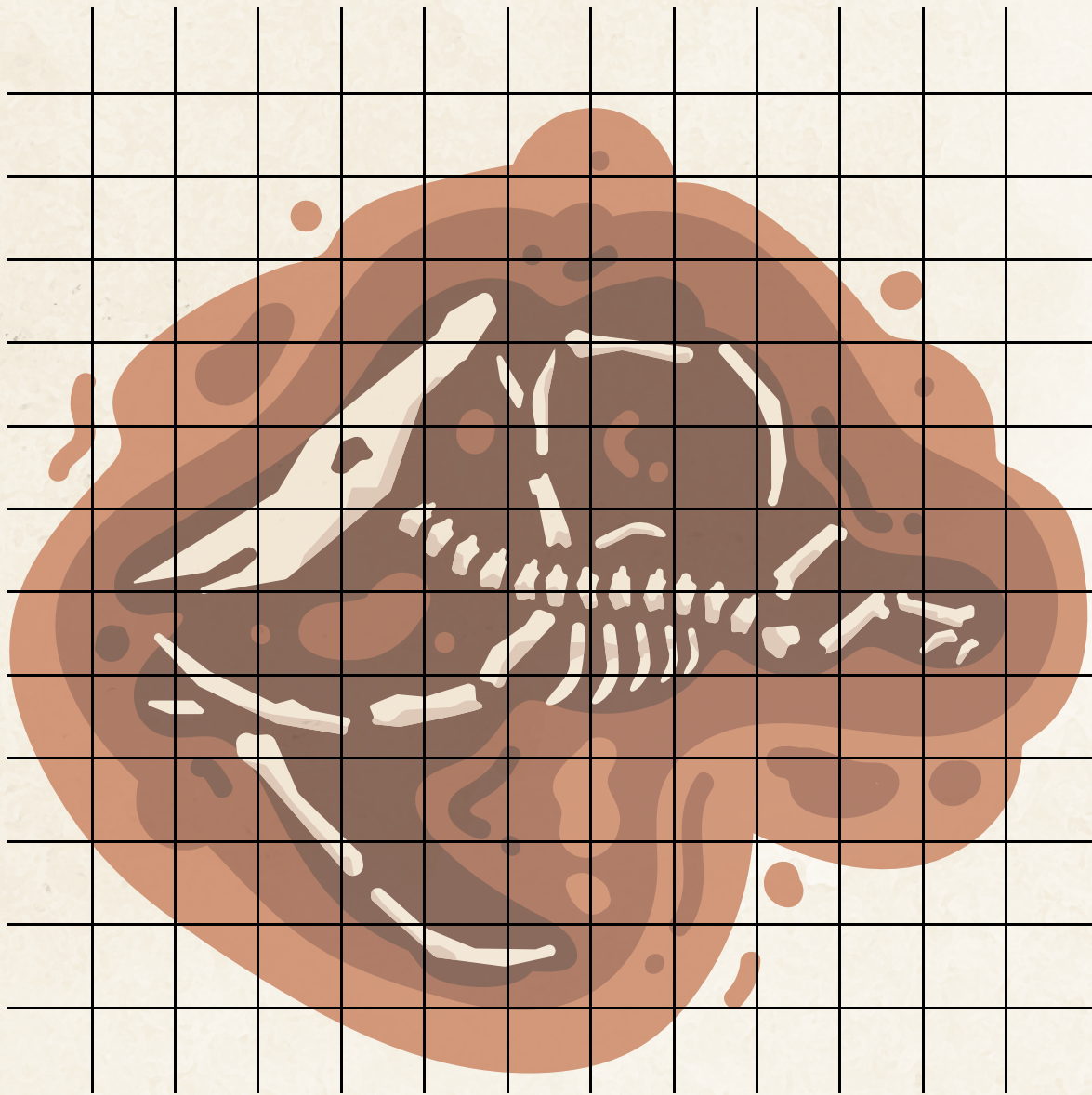
Line _____



Dig Site #2



TASK 5: Use the grid to draw four lines of symmetry on the fossil below.



*Dig Site
#2*



TASK 1: Estimate the length of this plant fossil in inches. Then, use a ruler to measure it. Lastly, convert the measurement.



Estimate: _____ centimeters (cm)

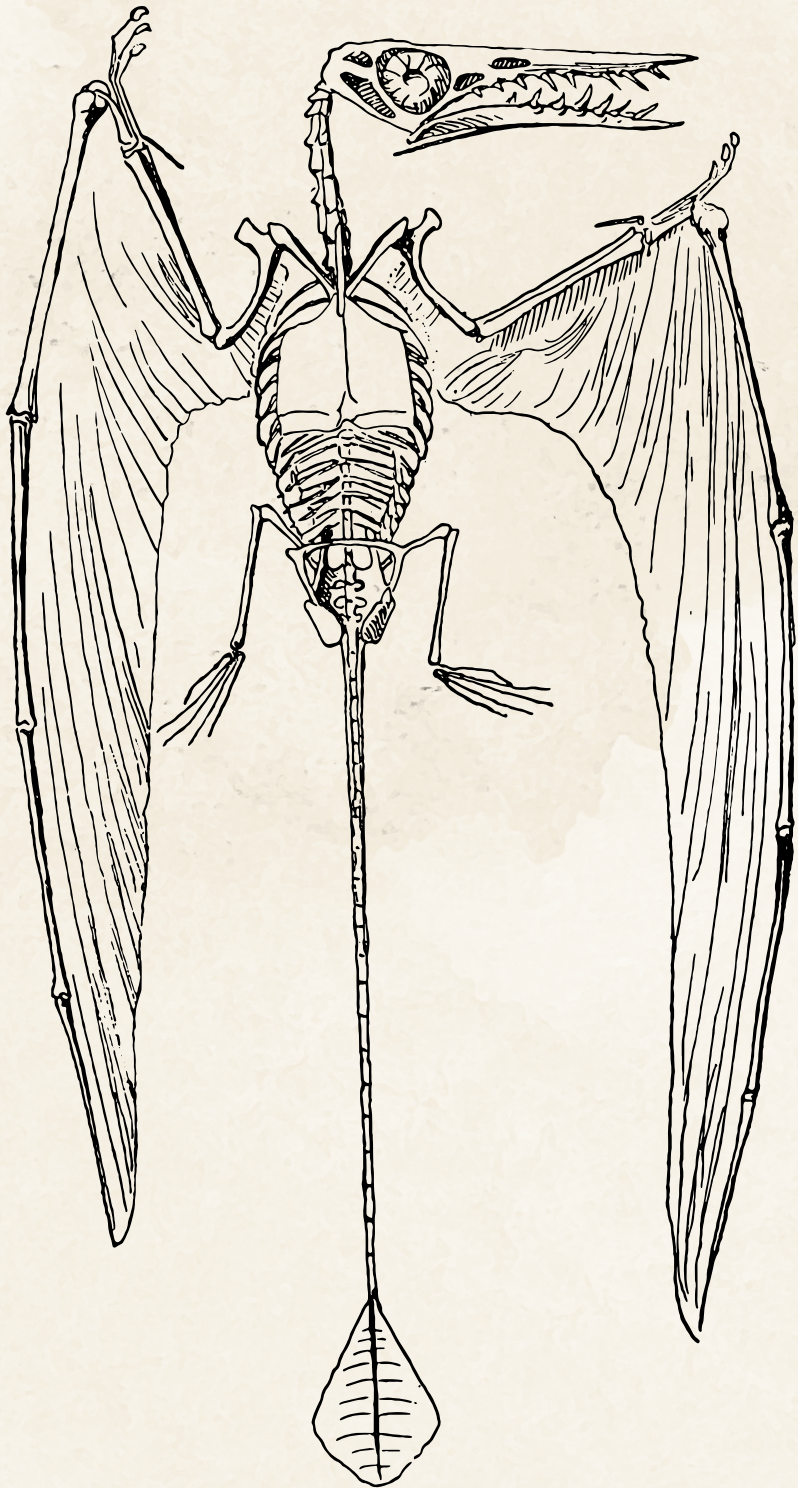
Measurement: _____ centimeters (cm)

Convert to millimeters (1 cm = 10 mm): _____ mm

Dig Site
#3



TASK 2: Estimate the height of this pterosaur fossil in inches. Then, use a ruler to measure it. Lastly, convert the measurement.



Estimate: _____ centimeters (cm)

Measurement: _____ centimeters (cm)

Convert to millimeters (1 cm = 10 mm): _____ mm

Dig Site #3



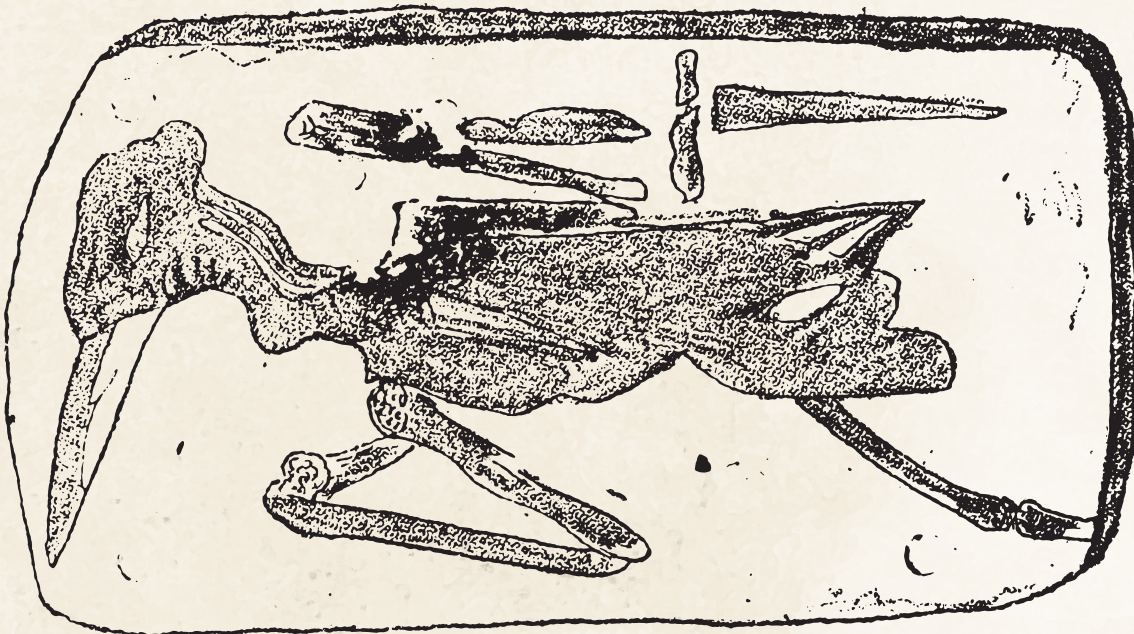
TASK 3: Calculate the perimeter and area of each fossil. Use the Cheat Sheet on page 14 for assistance.

Perimeter:

_____ in.

Area:

_____ in.

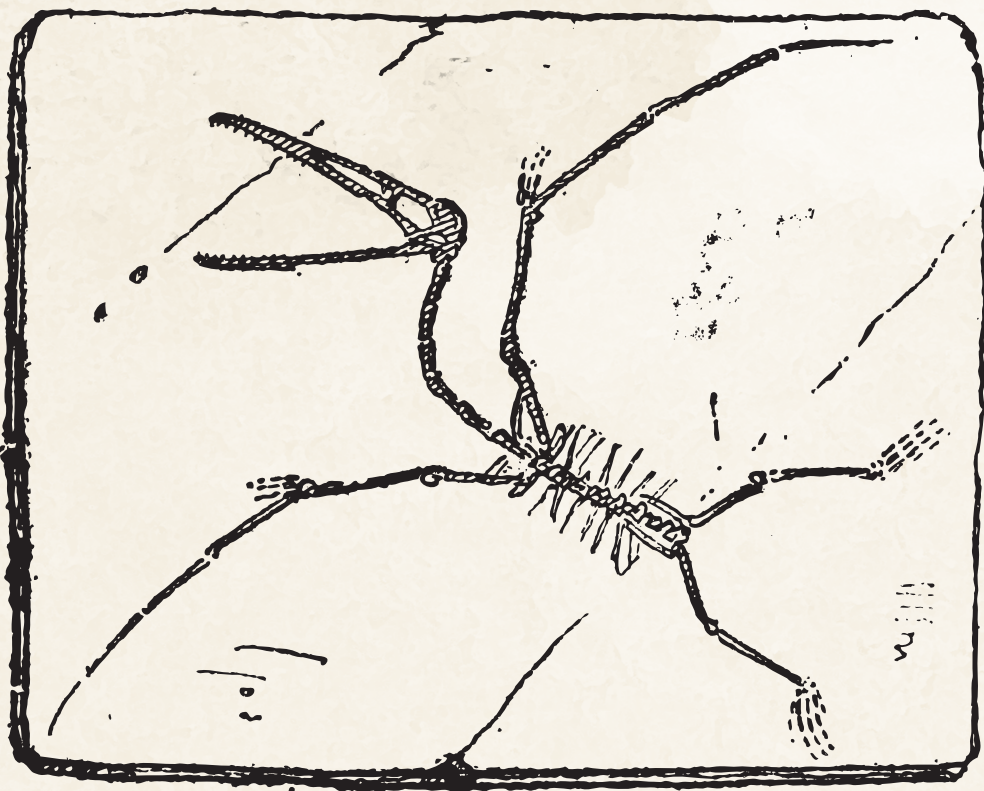


Perimeter:

_____ in.

Area:

_____ in.



Dig Site
#3



TASK 4: Calculate the perimeter and area of each fossil. Use the Cheat Sheet on page 14 for assistance.



Perimeter: _____ in.

Area: _____ in.



Perimeter: _____ in.

Area: _____ in.

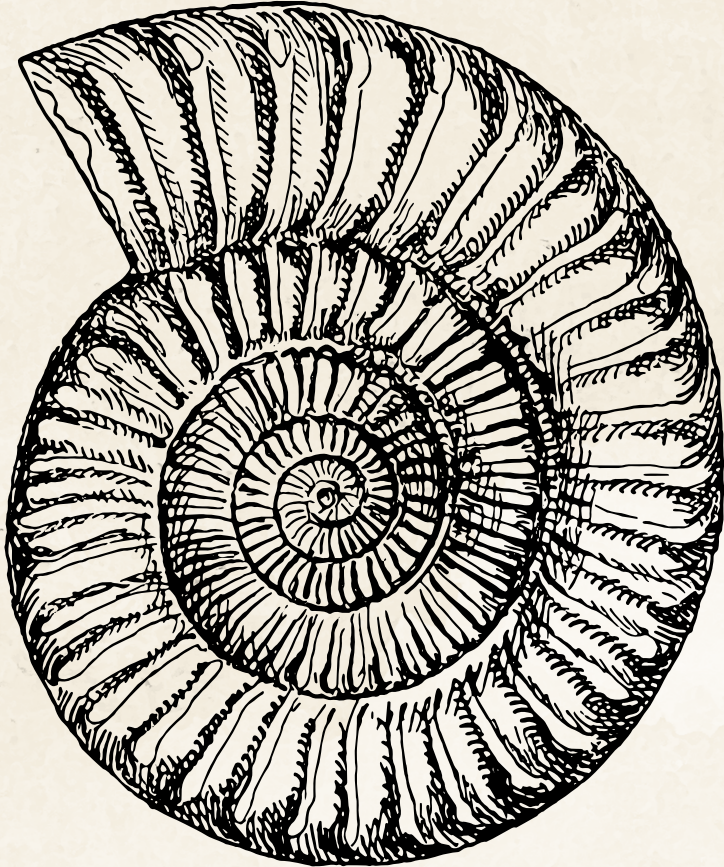
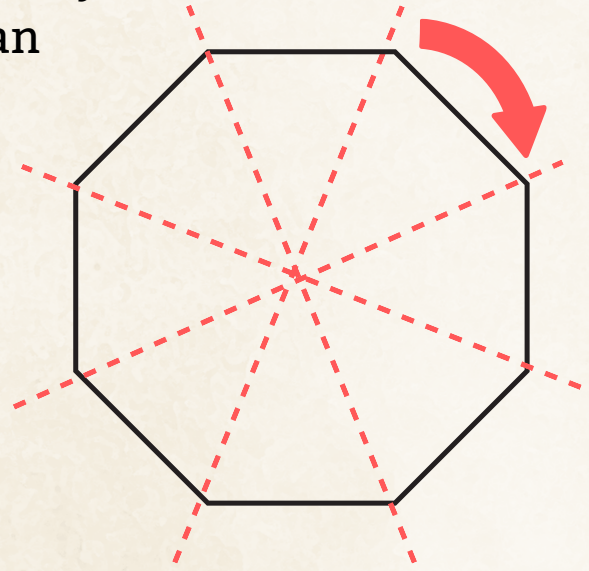
Dig Site #3



ROTATIONAL SYMMETRY

Rotational Symmetry is the type of symmetry in which an object fits onto itself more than once while being rotated through.

TASK 5: Determine whether the Ammonite fossil below show rotational symmetry.



Does this fossil show rotational symmetry?

YES

NO

Explain.

Dig Site #3



TRANSLATION SYMMETRY

Translation Symmetry is type of symmetry where an object moves from one position to another, with the same position (not rotated).

TASK 6: Determine whether the Ammonite fossil below show translation symmetry.



Do these fossils show translation symmetry?

YES

NO

Explain.

Dig Site #3





You did it! You make a great paleontologist. Keep up practicing your math skills and making incredible fossil discoveries.



Math Project Rubric

	Neatness	Effort	Mathematic Understanding
Mastery	The project was completed very neatly with great attention to detail.	The child put a lot of time and effort into this project, taking great pride in their work.	The child showed thorough understanding of the math skills reviewed in this project.
Progressing	The project was completed somewhat neatly. The child displayed some attention to detail.	The child put some time and effort into this project, sometimes taking pride in their work.	The child showed some understanding of the math skills reviewed in this project.
Developing	The project was incomplete or completed messily with little or no attention to detail.	The child showed disinterest and put little effort into the project.	The child showed little-to-no understanding of the math skills reviewed in this project.

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