

**4TH
GRADE**

Uncover Earth's Secrets!

CHANGING EARTH

**Earth Science Activities 4th
Grade Science Curriculum**



**KEEP SCROLLING TO SEE
WHAT'S INSIDE!**

PREVIEW

CHANGING EARTH

**GRADE 4
BUNDLE**

8 STATIONS

POSTERS

ACTIVITIES & LABS

PASSAGES

DIFFERENTIATED

VIDEOS & GAMES



12 pieces that
float on a layer of
molten rock.

When
own

osion
these se
carried o

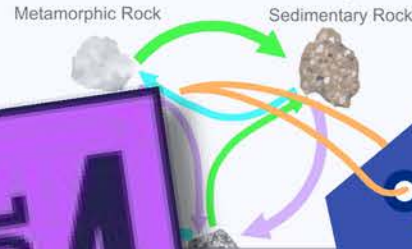
form
sedime
rock

aleontologists
ues about the
story
of
arth.

Rock on
the
surface of the
Earth.
Magma is



of rocks: igneous,
metamorphic, and
sedimentary.



the Earth
crust is made
up of plates
that are in
constant motion

the description
of how rocks
can be changed
from one type

molten rock round under the
surface of the Earth



**continental
drift**

movement of the
Earth's
continents, which
all started out as
one large
continent



the outer

**plate
tectonics**

theory that the Earth's
is made up of plates +
in constant motion

YOU WILL LOVE THIS BECAUSE



Hands-On and Interactive Learning

Students actively engage with science by modeling mountains, sorting erosion forces, exploring rock cycles, and completing real-world activities.



Aligned with NGSS

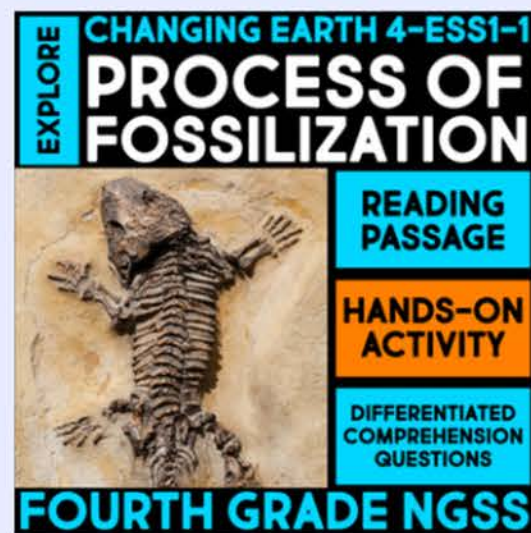
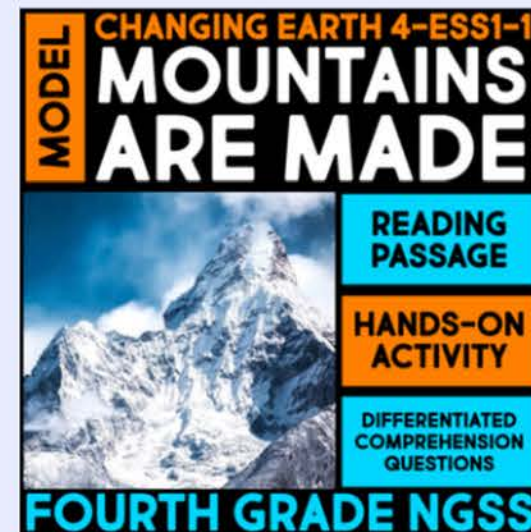
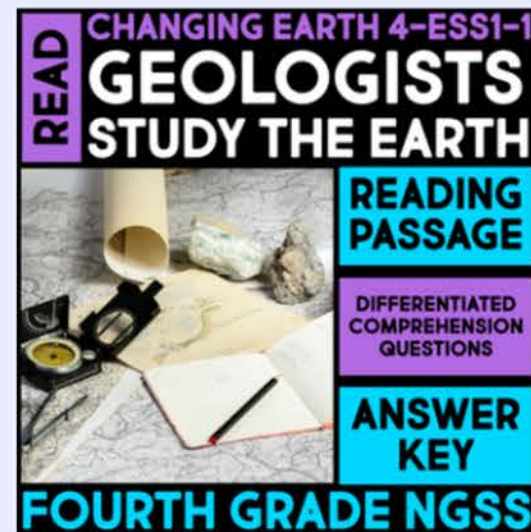
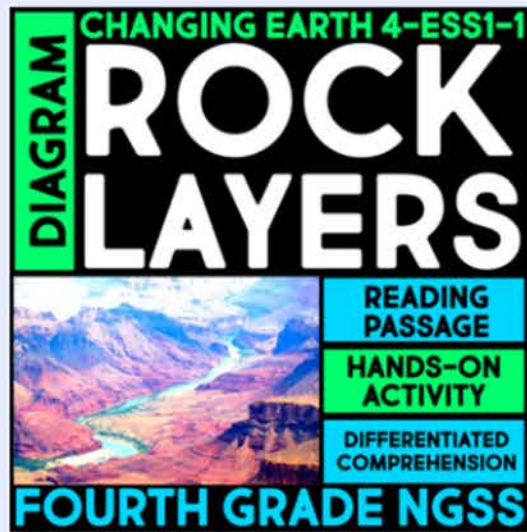
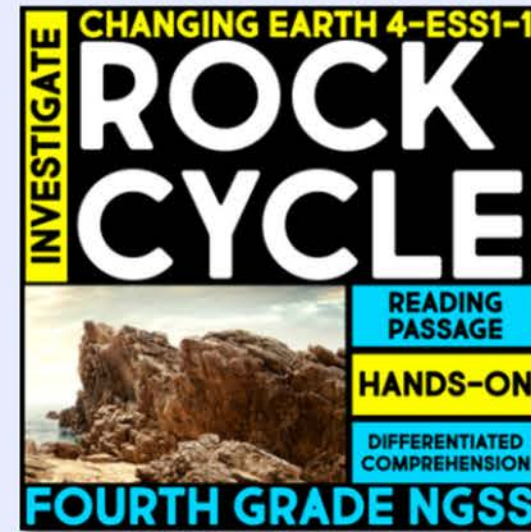
This resource aligns with NGSS 4-ESS1.C, so it will seamlessly integrate into your curriculum while meeting learning standards for 4th grade students.



Versatile and Flexible Implementation

With 8 stations designed for 15–20 minutes each, you can adapt the resource for rotations, small groups, independent work, or whole-class lessons over multiple days or weeks.

WHAT'S INCLUDED IN THE BUNDLE?



- ✓ 8 Science Stations aligned with the NGSS for 4th grade
- ✓ 6 Reading passages
- ✓ Hands-on activities
- ✓ Differentiated comprehension questions
- ✓ Digital Videos & Video Games
- ✓ Digital Google Slides & Forms

PRODUCT OVERVIEW

CHANGING EARTH

8 STATIONS

POSTERS

ACTIVITIES & LABS

PASSAGES

DIFFERENTIATED

VIDEOS & GAMES

GRADE 4 BUNDLE



Changing Earth UNIT		
Science Station	Standard	Objective
Watch Earthquakes / Where Do Mountains Come From?	4-ESSIC, 4-ESS2B, (ELA) SL43	Students watch a video about earthquakes or a video about how mountains are made. They answer questions in order to reinforce what they have learned.
Play Layers of Time / Rocks & Weathering	4-ESSIC, 4-ESS2A, 4-ESS2E, (ELA) RI41, RI43, RI44, RI47	Students play a game to learn about fossils in rock layers or a video game about rocks and weathering. They answer questions in order to reinforce what they have learned.
Investigate: Rock Around the Cycle	4-ESSIC, 4-ESS2A, (ELA) RI41, RI43, RI44, RI47	Students read about the rock cycle. They will investigate this by making the different types of "rocks" out of chocolate shavings. Students will answer questions in order to reinforce what they have learned.
Diagram: Layers of Time	4-ESSIC, 4-ESS2B, (ELA) RI41, RI43, RI44, RI47	Students read about fossils in layers of sedimentary rock. They will complete a diagram of fossils in rock layers and answer questions in order to reinforce what they have learned.
Read: Geologist	4-ESSIC, 4-ESS2B, (ELA) RI41, RI43, RI44	Students read about geologists. They will answer questions in order to reinforce what they have learned.
Model: Majestic Mountains	4-ESSIC, 4-ESS2B, (ELA) RI41, RI43, RI44, RI47, SL44, SL45	Students read about how mountains are made, make a model of the mountain-building process, and present their models in a digital format. They will answer questions in order to reinforce what they have learned.
Explore: Buried and Exposed	4-ESSIC, 4-ESS2A, (ELA) RI41, RI43, RI44, RI47	Students read about the processes of fossilization and how fossils are exposed in order to explore how scientists understand the history of the changing Earth. They will answer questions in order to reinforce what they have learned.
Sort: Changes Over Time	4-ESSIC, 4-ESS2A, (ELA) RI41, RI43, RI44, RI47	Students read about different kinds of erosion. They sort pictures of landscapes into categories describing the forces that caused the erosion. They then answer questions in order to reinforce what they have learned.

The Changing Earth Science Stations

These Science Stations contain several different ways students can display their understanding. Most of the variations are similar to each other, but differentiated for various classrooms and learning styles. Included are worksheets for both short-answer and fill-in-the-blank, and task cards for both short-answer and multiple choice responses. To provide even more support, give students a word list for the fill-in-the-blank options. Also included are vocabulary cards in two formats, which could become a ninth station if needed.

Students are encouraged to use their Science Journals with the task cards, but worksheets are provided as well. Use the checklist to monitor student progress through the stations. The Science Stations are designed to last about 20 minutes each. Students may do one a day for eight days or two a day for four days. The following checklists will help you organize the stations.

Crosscutting Concept: "Patterns can be used as evidence to support an explanation." This Crosscutting Concept is met in every station. Students will learn that observable patterns in rocks and land formations are used to explain Earth's history and how it has changed over time.

Connections to Nature of Science: "Science assumes consistent patterns in natural systems." This Connection to the nature of science is met in every station. Students will learn that there are consistent patterns in rocks and land formations that explain how rocks and land formations are created (or "made") over time. These explanations are used to develop theories about the history of the planet Earth.

In Fourth Grade, students are expected to "identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time" (4-ESS1-1). This correlates with the DCI 4-ESS1C, which states, "Local, regional, and global patterns of rock formations reveal changes over time due to earth forces, such as earthquakes. The presence and location of certain fossil types indicate the order in which rock layers were formed." All stations in this set meet the DCI, helping students gain an understanding of how rocks, rock layers, and land formations provide evidence of the history of the Planet Earth.

There is no specific Engineering DCI in this standard strand.

Videos & Game links are included in three formats: the original full link, a bitly link and a Google Shortlink. YouTube Videos are also available via SafeShare links in the three formats.

Watch a Video

Students watch a video about earthquakes or a video about mountain formation. They answer questions in order to reinforce what they have learned.

Play a Game

Students play a game to learn about fossils in rock layers or a video game about rocks and weathering. They answer questions in order to reinforce what they have learned.

Investigate

Students read about the rock cycle. They will investigate this by making the different types of "rocks" out of chocolate shavings. Students will answer questions in order to reinforce what they have learned.

Draw a Diagram

Students read about fossils in layers of sedimentary rock. They will complete a diagram of fossils in rock layers and answer questions in order to reinforce what they have learned.

Read a Passage

Students read about geologists. They will answer questions in order to reinforce what they have learned.

Create a Model

Students read about how mountains are made, make a model of the mountain-building process, and present their models in a digital format. They will answer questions in order to reinforce what they have learned.

Explore

Students read about the processes of fossilization and how fossils are exposed in order to explore how scientists understand the history of the changing Earth. They will answer questions in order to reinforce what they have learned.

Sort

Students read about different kinds of erosion. They sort pictures of landscapes into categories describing the forces that caused the erosion. They then answer questions in order to reinforce what they have learned.

© Science Station 1.3d Edition What I Have Learned

Science Stations Overview

This is a general overview of all science stations in each UNIT BUNDLE.

Watch a Video

At this station, students will watch a video relevant to the topic and answer questions. You have the option of using the included worksheet with the questions or using the task cards and having students respond in their science journals.

Play a Game

Students play a game and answer questions about the experience. Students play a video game, a board game, do a crossword puzzle or a word search.

Investigate

Students use materials to investigate the science topic by following directions and recording results. Students answer questions about the investigation.

Draw a Diagram

Students draw and label a diagram specific to certain requirements. Students then explain how their diagram meets the requirements.

Read a Passage

Students read a short passage about the topic and answer questions about the information in the passage. You have the option of using the included worksheet with the questions or using the task cards and having students respond in their science journals.

Create a Model

Students use materials to illustrate the science concept and answer questions. You have the option of using the included worksheet with the questions or using the task cards and having students respond in their science journals.

Explore

Students create a sample and manipulate it using the new science concepts they have learned. Students answer questions based on the effects.

Sort

Students sort cards into groups or put them in a specific order. Students record the sort and then describe their reasoning.

© Science Station 1.3d Edition What I Have Learned

Materials Checklist The Changing Earth

Use the following checklist to make sure you have all the materials for your stations.

Watch a Video

- ☐ Computer / Device
- ☐ Directions Card
- ☐ Worksheet
- ☐ Task Cards
- ☐ Science Journal

Play a Video Game

- ☐ Computer
- ☐ Student Sheets
- ☐ Science Journal
- ☐ Student Direction Card
- ☐ Board Game (die & game pieces)
- ☐ Word Search or Crossword Puzzle

Investigate

- ☐ Student Directions
- ☐ 2 Aluminum foil sheets
- ☐ Small handful each of 2 or 3 types of chocolate chips (use high-contrast colors, maybe use mint or butterscotch flavors)
- ☐ Plates (1 per type of chips)
- ☐ Scissors or butter knife
- ☐ Rolling pin
- ☐ Metal pan--slightly bigger than the foil sheets
- ☐ Heat source (Options: Use a tub of hot water, a pan on a burner set to low heat, etc. Chocolate burns easily, so you don't want it too hot.)
- ☐ Colored pencils
- ☐ Optional: Sample of each type of rock (sedimentary, metamorphic, and igneous)
- ☐ Student Worksheet
- ☐ Response Sheet
- ☐ Task Cards
- ☐ Science Journal

Draw a Diagram

- ☐ Student Instructions
- ☐ Response Sheet
- ☐ Task Cards
- ☐ Scissors
- ☐ Glue
- ☐ Science Journal

Read a Passage

- ☐ Reading Passage
- ☐ Student Response Sheet
- ☐ Task Cards
- ☐ Science Journal

Create a Model

- ☐ Directions Cards
- ☐ Student Sheet
- ☐ Task Cards
- ☐ Science Journal
- ☐ Modeling clay in several colors (Can be play-doh or homemade clay)
- ☐ Toothpicks
- ☐ Flags for toothpicks (strips of paper 1/2 inch x 2 inches)
- ☐ Tape or glue (to affix the flags on the toothpick)
- ☐ Device for recording a video

Explore

- ☐ Directions Card
- ☐ Worksheet
- ☐ Response Sheet
- ☐ Task Cards
- ☐ Science Journal
- ☐ Foam cups (8 oz size is best)
- ☐ Ball of modeling clay, large enough to fill 2 inches of the cup. (Use modeling clay, not play-doh.)
- ☐ Small plastic dinosaurs, plants, and other figures to make fossils
- ☐ 100 mL plaster of paris in a cup
- ☐ 50 mL of water in a cup
- ☐ Stir stick

Sort

- ☐ Directions Card
- ☐ Sort Cards
- ☐ Scissors
- ☐ Glue
- ☐ Response Sheet
- ☐ Task Cards
- ☐ Science Journal

© Science Station 1.3d Edition What I Have Learned

Changing Earth Unit

Science Station Overview

Materials Checklist

Science Stations

CHANGING EARTH STATION ACTIVITIES

SUGGESTED USES

Learning Stations

Use all eight stations or just a few as learning stations that students complete at their own pace.

Science Centers

Set up a rotation where students visit each center to complete the activities.

Whole Class

Use the activities in a whole class format.

Small Group

Use the activities with a small group who need extra help.

6 READING PASSAGES



6 Reading Passages that provide
all scientific background
knowledge for each station

Available in two
formats + Digital

Includes pictures and
visuals

BIG IDEA POSTERS

The Earth's crust is made of 12 pieces that float on a layer of molten rock.



Weathering happens when rocks are broken down into sediments.



Erosion happens when these sediments are carried away by wind or water.

Lava is molten rock on the surface of the Earth.

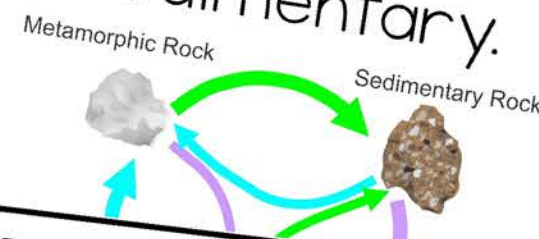


Magma is molten

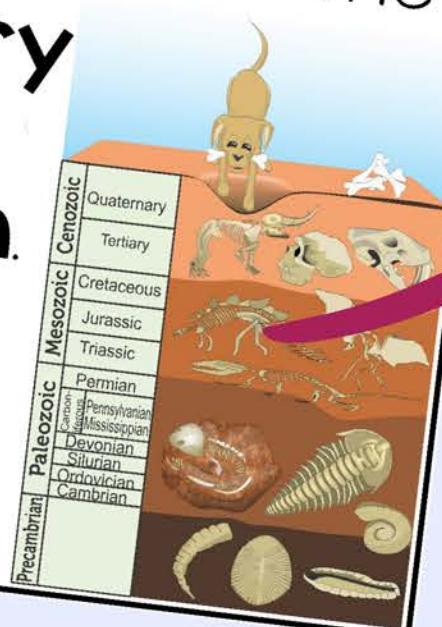
Fossils are formed in sedimentary rocks.



The **rock cycle** forms three types of rocks: igneous, metamorphic, and sedimentary.



Fossils give paleontologists clues about the story of earth.



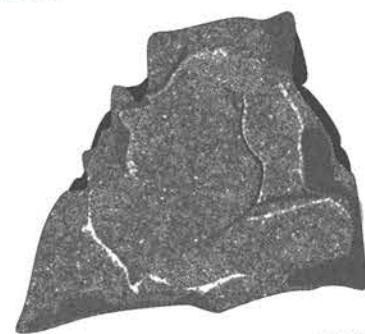
BIG IDEA POSTERS THAT EXPLAIN THE KEY CONCEPTS.

VOCABULARY CARDS IN TWO FORMATS



fossil

the remains or impression of an organism in sedimentary rock



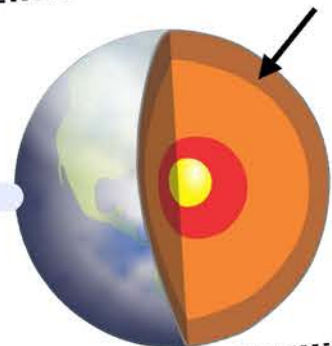
igneous rock

forms when magma cools and hardens



lava

molten rock on the surface of the Earth



crust

the outer layer of the Earth

igneous rock

scientist who studies the Earth and its history

crust

the outer layer of the Earth

**WITH
PICTURES**

**WITHOUT
PICTURES**

ONE VIDEO FROM THE WATCH STATION



STUDENTS WATCH ONE OF TWO VIDEOS AND THEN ANSWER QUESTIONS ABOUT THE VIDEOS. VIDEOS INCLUDE: EARTHQUAKES AND HOW MOUNTAINS ARE MADE.



“Great introduction lesson or activity to leave with sub.”

- Marie Dobson

LEARN MORE



WATCH STATION

ONE GAME FROM THE PLAY STATION

Play a Video Game
Layers of Time

1. Sedimentary rock layers are made from _____ sand _____, and dead _____ silt _____ animals _____.

2. The dead plants and animals that are in sedimentary rock become _____ fossils _____.

3. The column of species in the sedimentary rock layers show the amount of _____ time _____ that a fossil species _____ existed _____.

4. When a species becomes extinct, the _____ column _____ record _____ disappears from the _____ fossil species _____.

For each of these questions, select Difficulty Level I. Follow the instructions to complete the game.

Play 2 or more rounds. Find the following types of fossils and describe them:

5. Pterosaur: They were flying _____ reptiles _____ and some had _____ 40 _____.

sparrows _____ mollusks _____ nautilus. T _____ to swim. _____ crocodile _____ filled v _____ ly _____.

Play a Video Game
Layers of Time

Use your computer to play the video game at the following web address:

STUDENTS PLAY A VIDEO GAME AND LEARN ABOUT THE FOSSILS IN ROCK LAYERS OR A VIDEO GAME ABOUT ROCKS AND WEATHERING. STUDENTS ANSWER QUESTIONS TO REINFORCE NEW LEARNING.

“Made distance learning engaging for students.”

- Claudia L.

LEARN MORE



PLAY STATION



A FEW PAGES FROM THE INVESTIGATE STATION

STUDENTS READ ABOUT THE ROCK CYCLE AND INVESTIGATE DIFFERENT TYPES OF ROCKS. STUDENTS THEN ANSWER QUESTIONS TO REINFORCE THE CONCEPTS LEARNED.

“Great for taking notes on the different types of rocks.”

- Nancy B.

LEARN MORE



INVESTIGATE STATION



A FEW PAGES FROM THE DIAGRAM STATION

STUDENTS READ ABOUT FOSSILS IN LAYERS OF SEDIMENTARY ROCK AND COMPLETE A DIAGRAM OF FOSSILS IN ROCK LAYERS. THEY THEN ANSWER QUESTIONS IN ORDER TO REINFORCE WHAT THEY HAVE LEARNED.

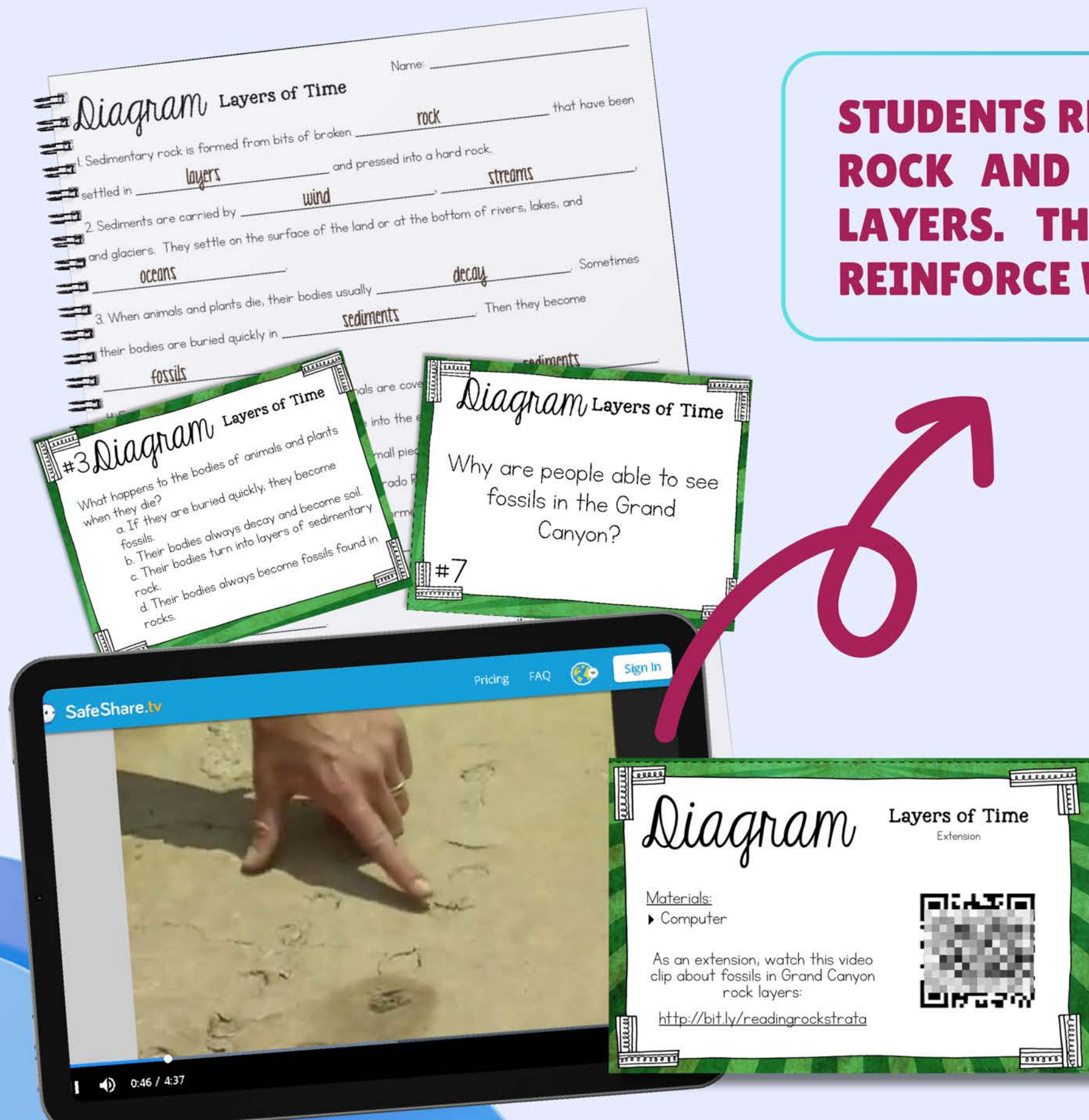
“ They did a great job preparing this resource. Overall I really enjoyed it!

- Kailey Crockett ”

LEARN MORE



DIAGRAM STATION



A FEW PAGES FROM THE READ STATION

STUDENTS READ ABOUT GEOLOGISTS. THEY ANSWER QUESTIONS IN ORDER TO REINFORCE WHAT THEY HAVE LEARNED.

“My students were learning about geology/geologist in reading/science and this resource was a great addition to the subject matter.”

- Kevin Warnimont

LEARN MORE



READ STATION



A FEW PAGES FROM THE MODEL STATION

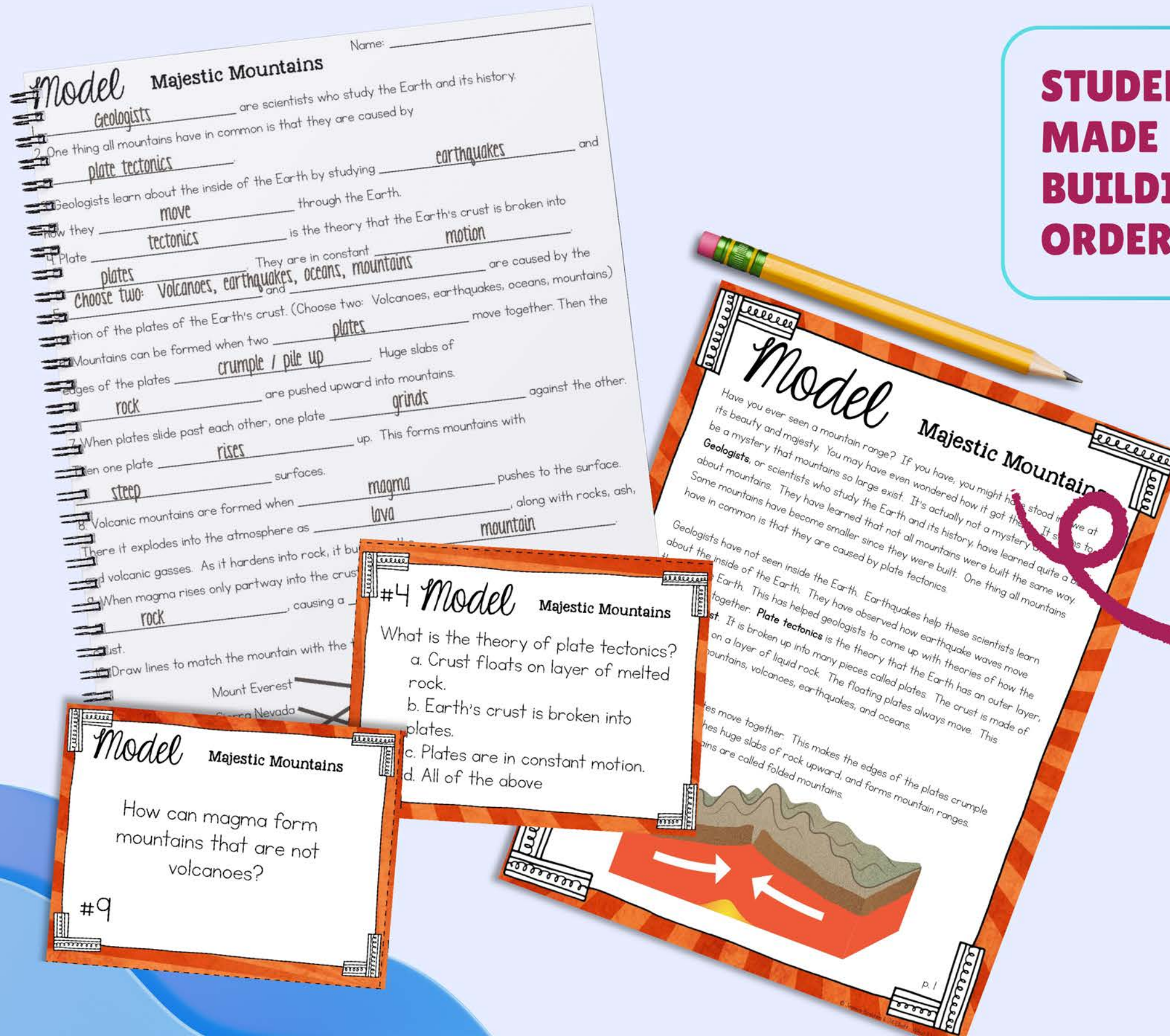
STUDENTS READ ABOUT HOW MOUNTAINS ARE MADE AND MAKE A MODEL OF THE MOUNTAIN-BUILDING PROCESS. THEY ANSWER QUESTIONS IN ORDER TO REINFORCE WHAT THEY HAVE LEARNED.

“This is a great resource for my STEM classes! Thank you!”
- Mandi D.

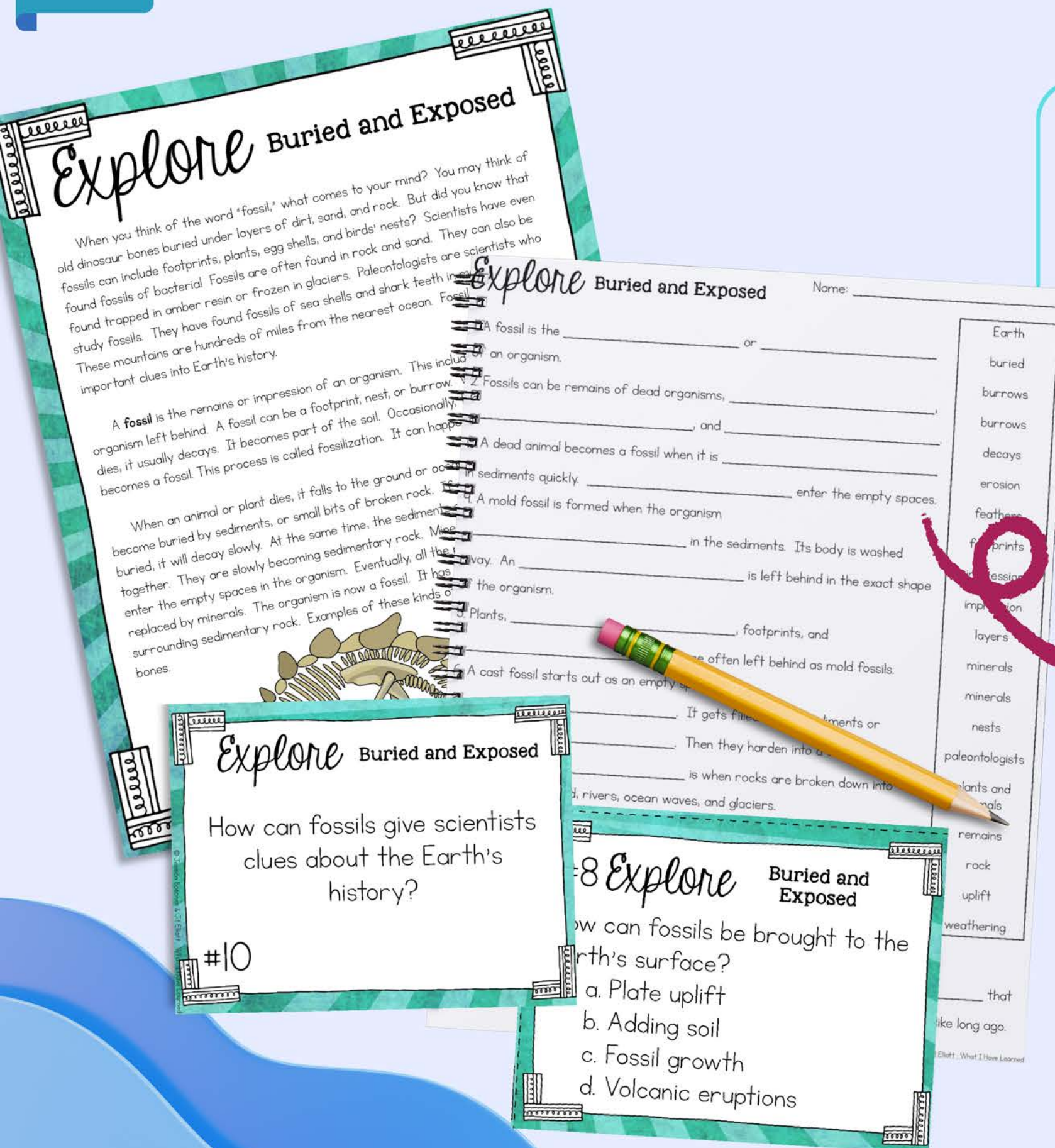
LEARN MORE



MODEL STATION



A FEW PAGES FROM THE EXPLORE STATION



STUDENTS READ ABOUT THE PROCESS OF FOSSILIZATION AND HOW FOSSILS GET EXPOSED IN ORDER TO EXPLORE HOW SCIENTISTS UNDERSTAND THE HISTORY OF THE CHANGING EARTH. THEY THEN ANSWER QUESTIONS ABOUT THE EXPLORATION.

“Using this resource to teach science and hands on activities. Our current science curriculum and materials do not provide anything engaging as this, thanks!”

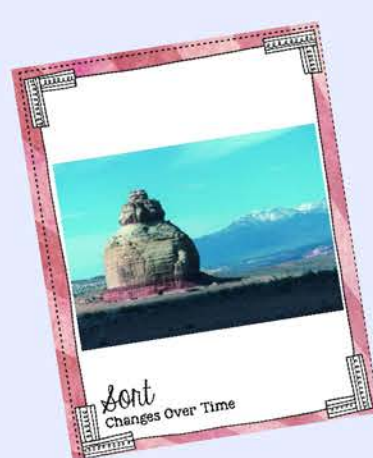
-Naomy V.

LEARN MORE



EXPLORE STATION

A FEW PAGES FROM THE SORT STATION



STUDENTS READ ABOUT DIFFERENT KINDS OF EROSION. THEY SORT PICTURES OF LANDSCAPES INTO CATEGORIES DESCRIBING THE FORCES OF EROSION THAT CAUSED THE EROSION. STUDENTS THEN ANSWER QUESTIONS IN ORDER TO REINFORCE WHAT THEY HAVE LEARNED.

“ Love this resource! My students loved learning Science concepts with this resource.
- Paige B. ”

LEARN MORE



SORT STATION



All activities have the same basic components:

- Student Directions
- Short Answer Worksheet
- Fill-in-the-Blank Worksheet
- Cut & Paste Worksheet
- Short Answer Task Cards
- Multiple Choice Task Cards

Some activities have more reading to build background knowledge and additional worksheets or activity sheets to help organize the new information.

**NOT ALL VERSIONS OF THE PAGES ARE
DISPLAYED ON THE FOLLOWING PAGES,
BUT ALL ARE IN EACH RESOURCE**

DIGITAL VERSIONS

- ✓ Google Forms and/or
- ✓ Google Slides for every station
- ✓ Videos
- ✓ Video Games
- ✓ Digital Crossword Puzzles & Word Searches

Answer keys provided

CAN BE INDEPENDENT

- Watch
- Play
- Read
- Sort

MAY REQUIRE TEACHER SUPPORT

- Investigate
- Diagram
- Model
- Explore

TEACHER PREP

- Choose a topic and activities
- Choose which type of questions students will answer
- Set up the station using the included materials list
- Have students read the passage to build background knowledge (optional)
- Have students complete the stations using the included student directions

TEACHERS LOVE IT!



This product allowed me to provide great activities for my students to use during our rotation time. I love the many options that were provided to chose from. This allowed me to change up how I presented the activities each day.

Alicia M.



Students enjoyed the variety of the centers for this module. It paired nicely with my curriculum and students loved each of the activities. Will definitely use it again and again!

Susan B.



My passion is making learning accessible to all students.
I love scaffolding learning, breaking down the concepts and
building them up so that students can see the connections.
I love figuring out the small components that build up to
the big ideas and helping students see it all.



What I have **LEARNED**