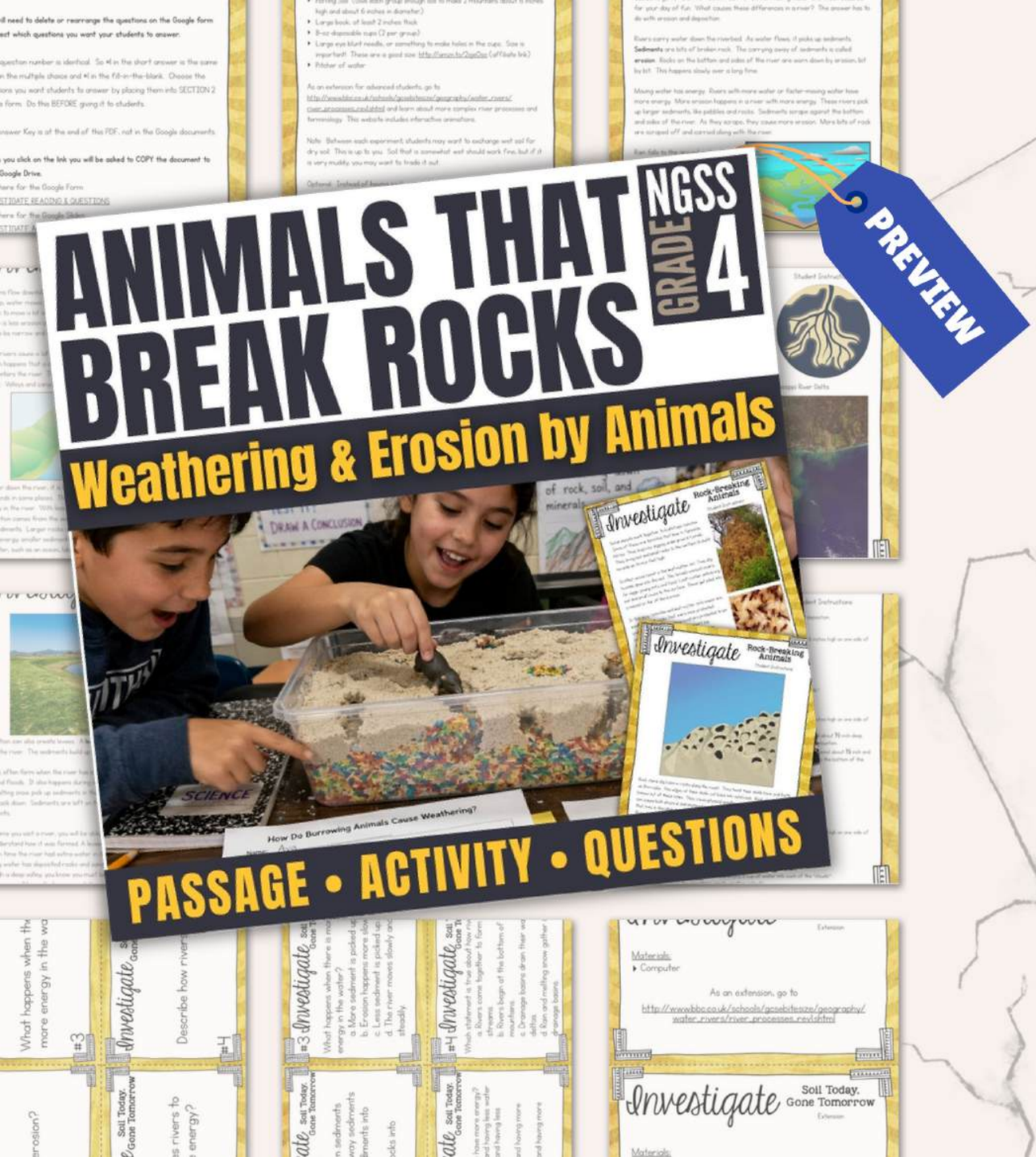


Burrowing Through Science!

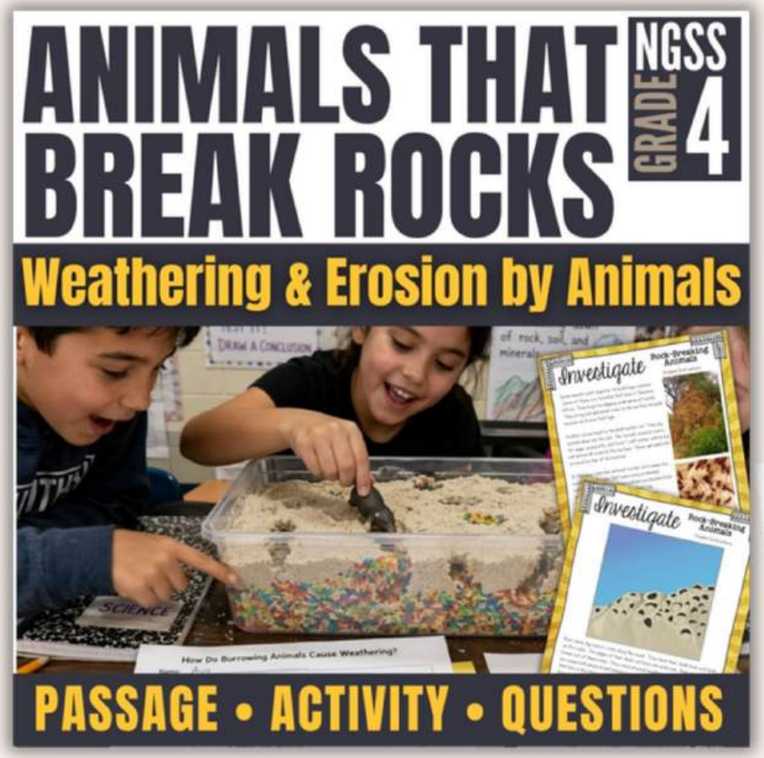
4TH GRADE

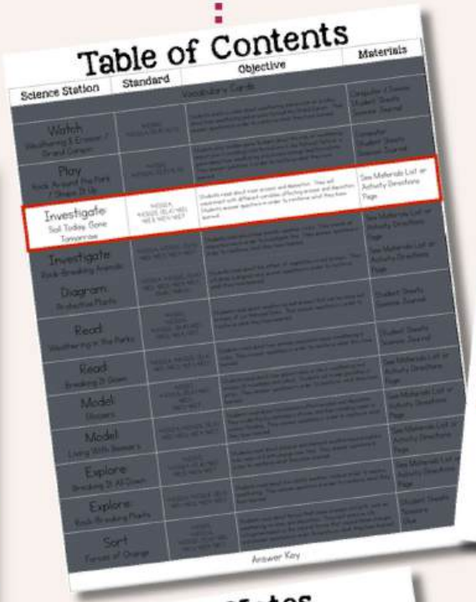
INVESTIGATE WEATHERING ANIMALS THAT BREAK ROCKS

4th Grade Science

KEEP SCROLLING TO SEE WHAT'S INSIDE!

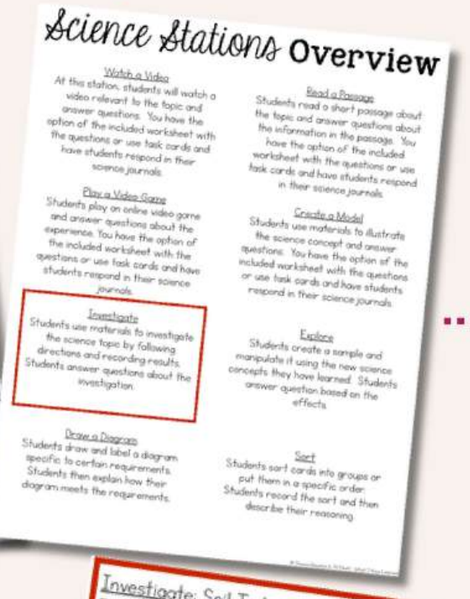
ACTIVITY OVERVIEW




Table of Contents

Science Station	Standard	Objective	Materials
Watch			
Play			
Investigate			See Materials List or Activity Directions Page
Investigate			
Diagram			
Read			
Read			
Model			
Model			
Explore			
Explore			
Sort			

Answer Key


Science Stations Overview

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

Play a Video Game
Students play an online video game and answer questions about the experience. You have the option of the included worksheet with the questions or use task cards and have students respond in their science journals.

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

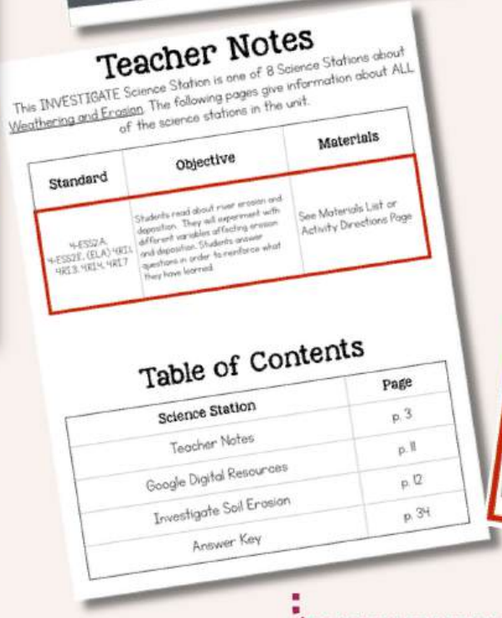
Draw a Diagram
Students draw and label a diagram specific to certain requirements. Students then explain how their diagram meets the requirements.

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 the included worksheet with the questions or use task cards and have 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 the included worksheet with the questions or use task cards and have students respond in their science journals.

Explore
Students create a sample and manipulate it using the new science concepts they have learned. Students answer question 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.

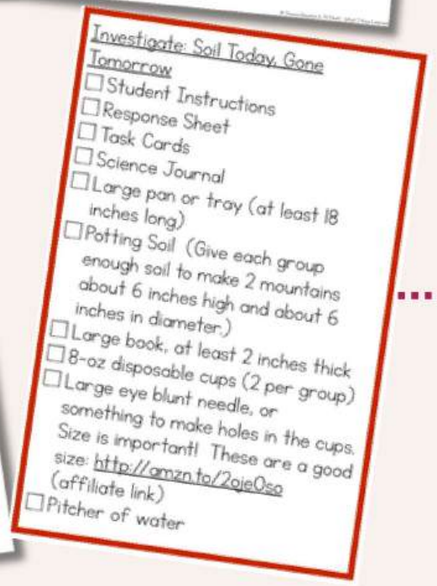

Teacher Notes

This INVESTIGATE Science Station is one of 8 Science Stations about Weathering and Erosion. The following pages give information about ALL of the science stations in the unit.

Standard	Objective	Materials
4-ESS2-A, 4-ESS2-E, (ELA) 4RI.1, 4RI.3, 4RI.4, 4RI.7	Students read about river erosion and deposition. They will experiment with different variables affecting erosion and deposition. Students answer questions in order to reinforce what they have learned.	See Materials List or Activity Directions Page

Table of Contents

Science Station	Page
Teacher Notes	p. 3
Google Digital Resources	p. 11
Investigate Soil Erosion	p. 12
Answer Key	p. 34


Investigate: Soil Today, Gone Tomorrow

- ☐ Student Instructions
- ☐ Response Sheet
- ☐ Task Cards
- ☐ Science Journal
- ☐ Large pan or tray (at least 18 inches long)
- ☐ Potting Soil (Give each group enough soil to make 2 mountains about 6 inches high and about 6 inches in diameter.)
- ☐ Large book, at least 2 inches thick
- ☐ 8-oz disposable cups (2 per group)
- ☐ Large eye blunt needle, or something to make holes in the cups. Size is important! These are a good size: http://amzn.to/2ojeOso (affiliate link)
- ☐ Pitcher of water

Table of Contents

Science Station Overview

Materials Checklist

Teacher Notes & Table of Contents

WHAT'S INCLUDED
INVESTIGATE SCIENCE STATION

- Teacher Notes
- Two Student Text in two formats
- Student Instructions
- Activity Sheets for observation
- Differentiated Questions
- Answer Key
- Google Form
- Google Slides



INVESTIGATE

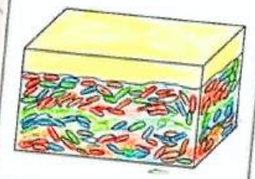
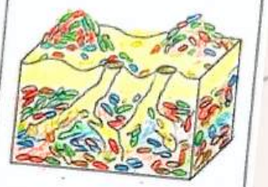
READING IN TWO FORMATS

ENGAGING ACTIVITY & WORKSHEETS

Investigate Rock-Breaking Animals

Name: Liam P.

Date: Oct 26 Activity Sheet

Landscape before the burrow:	Diagram of the Burrow:	Landscape after the burrow:
Draw your landscape: 		Draw your landscape: 
Describe your observations: The rice is all mixed up at the bottom. The sand is nice and flat on top. You can't see the rice.		Describe your observations: Now there are piles of sand and colored rice on top of the sand! The rice came up. The sand is bumpy.

How did the burrow change the landscape?

The animal dug tunnels and pushed sand and rice out. It made the ground all lumpy and covered with stuff.

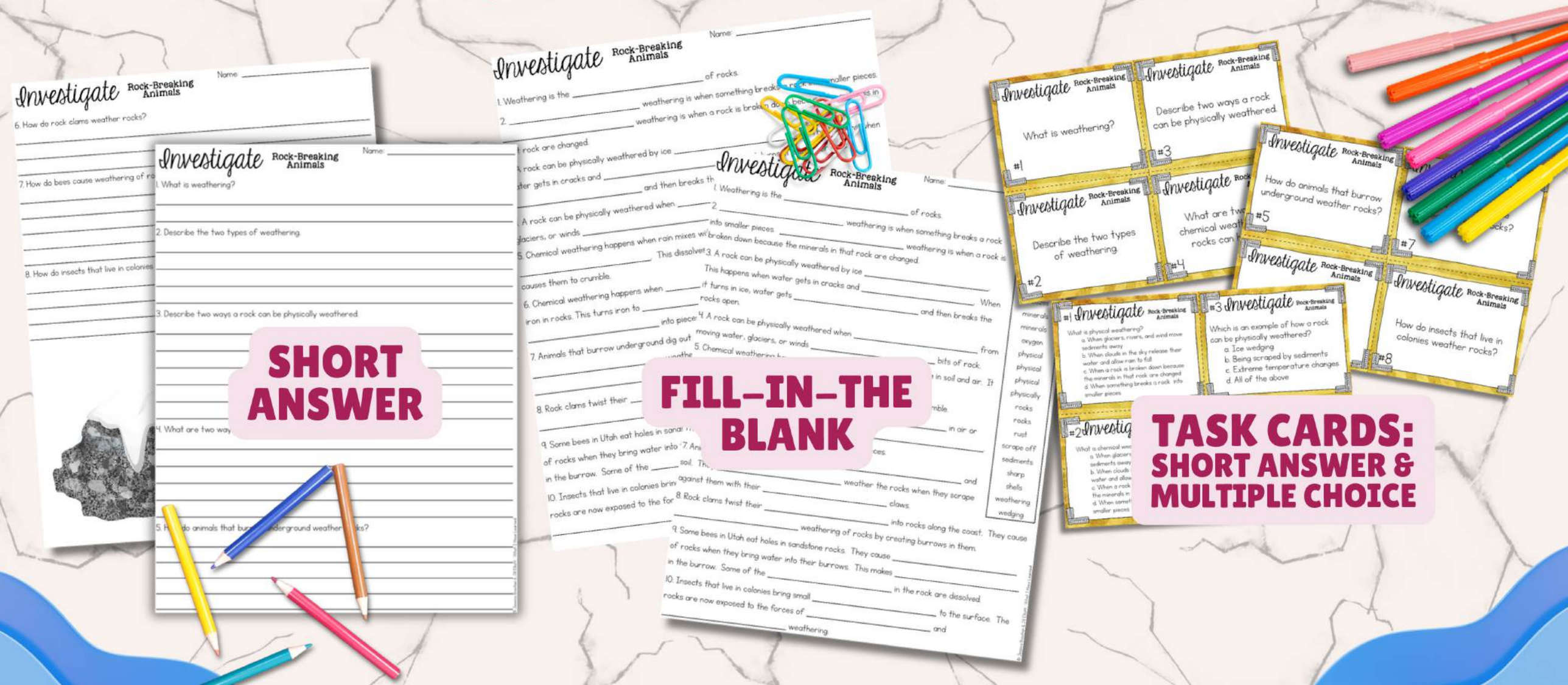
If this were a real landscape, what would the rice be?

The rocks and soil inside the earth.

If this were a real landscape, how would you expect the rice to change over time?

The rocks (rice) would break down more and move around. The ground would get more worn out. It shows weathering.

INVESTIGATE
DIFFERENTIATED QUESTIONS



Investigate Rock-Breaking Animals

Student Instructions

Prairie dogs and rabbits live in underground burrows. Earthworms and moles dig tunnels to find food. Muskrats and frogs make their dens on river banks. African termites build huge dirt mounds for their homes. Some clams and bees make their homes in rocks. While these animals may be small, they are able to cause big changes on Earth. They do this by weathering the rocks around them.



Animals that make underground burrows must
These prairie dogs are part of a large colony
network of burrows. This network is called
hundreds of miles of underground tunnels
many openings to their burrows.

Prairie dogs use their sharp claws to dig
their claws scrape against them. They
The rocks that were underground ha
the surface of the Earth and expose

Investigate Rock-Breaking Animals

What is weathering?

#1

Investigate Rock-Breaking Animals

How do animals that burrow underground weather rocks?

#5

#8 Investigate Rock-Breaking Animals

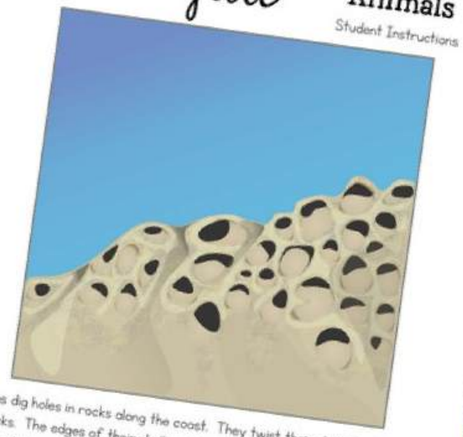
How do insects that live in colonies weather rocks?

a. Twist their shells into rocks
b. Chew rocks with their mouths
c. Scrape against the rocks with their sharp claws
d. Bring rocks to the surface, exposing them to forces of weathering

---

Investigate Rock-Breaking Animals

Student Instructions



Rock clams dig holes in rocks along the coast. They twist their shells back and forth on the rocks. The edges of their shells cut holes into solid rock. Rock clams make homes out of these holes. They cause physical weathering of rocks. Some animals can cause both physical and chemical weathering of rocks. One such animal is a bee that lives in the Utah desert. This bee eats holes into sandstone cliffs. To make these burrows, they chew the rock with their mouths. This is physical weathering of the rocks. The bees also collect water and take it into the holes. The water mixes with the minerals in the rock and becomes an acid. The acid dissolves parts of the rock, making the hole bigger. This is chemical weathering. The bees then lay their eggs in the holes and hide from the desert heat.

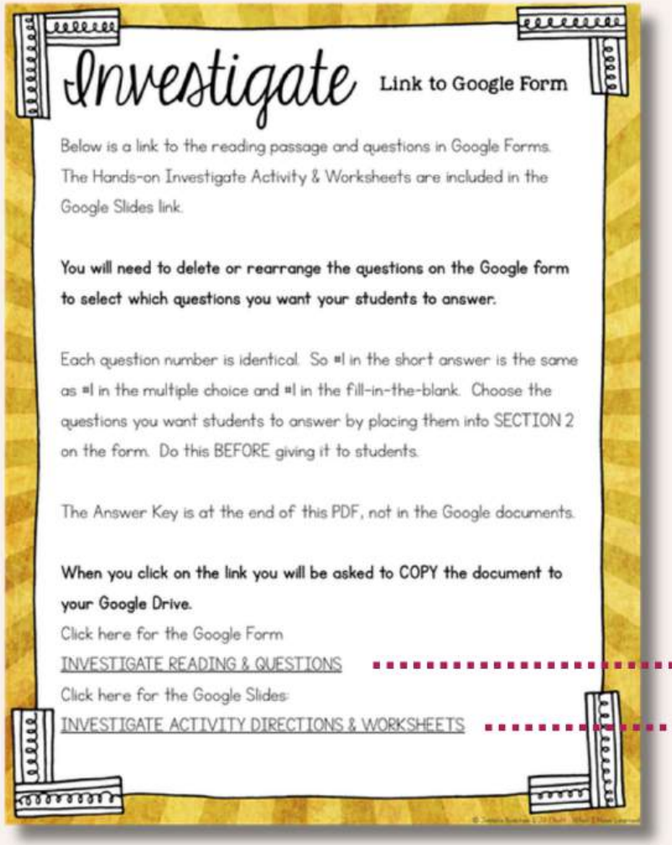
p. 2

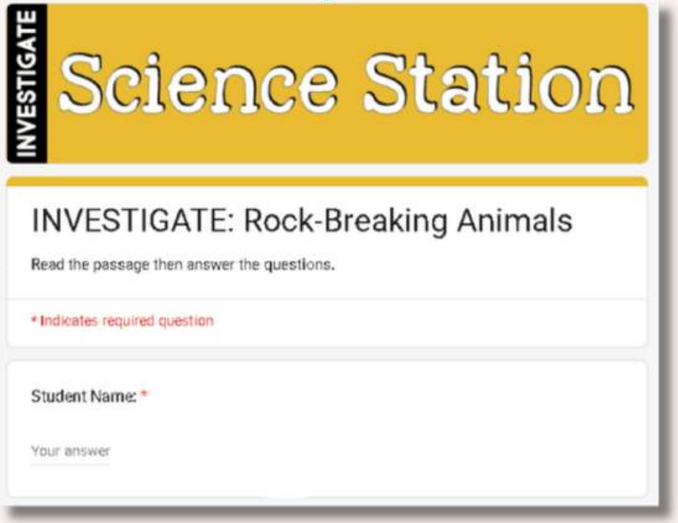
Investigate Rock-Breaking Animals Name: _____

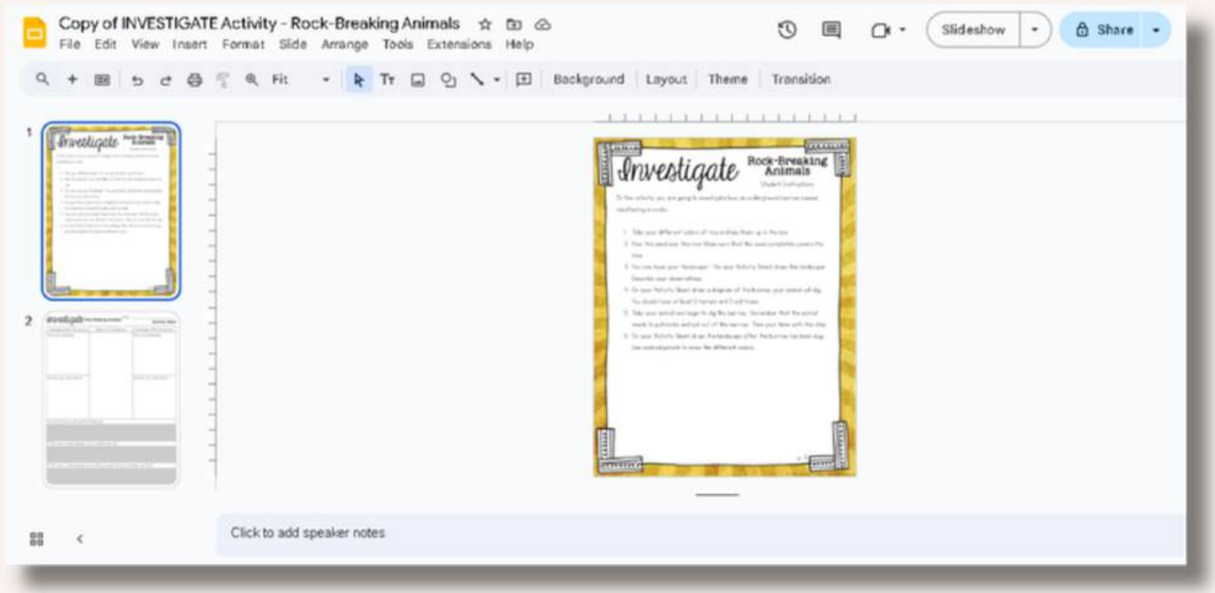
1. Weathering is the _breaking down_ of rocks.
2. _Physical_ weathering is when something breaks a rock into smaller pieces.
Chemical weathering is when a rock is broken down because the minerals in that rock are changed.
3. A rock can be physically weathered by ice _wedging_. This happens when water gets in cracks and _freezes_. When it turns in ice, water gets _bigger_ and then breaks the rocks open.
4. A rock can be physically weathered when _sediments_ from moving water, glaciers, or winds _scrape off_ bits of rock.
5. Chemical weathering happens when rain mixes with carbon dioxide in soil and air. It makes an _acid_. This dissolves _minerals_ in rocks, and causes them to crumble.
6. Chemical weathering happens when _oxygen_ in air or water mixes with iron in rocks. This turns iron to _rust_. The rocks _crumble_ into piec
7. Animals that burrow underground _physically_ and soil. They _sharp_ against them with their
8. Rock clams twist their _physical_ weathe ong the coast. They cause ows in them.
9. Some bees in Utah eat holes in sandstone roc _weathering_ of rocks when they bring water into their burrows _acid_ in the burrow. Some of the _minerals_ re dissolved.
10. Insects that live in colonies bring small _rocks_ o the surface. The rocks are now exposed to the forces of _chemical_ _physical_ weathering.

© Teaching Upper Elementary Math

DIGITAL VERSIONS







DIGITAL VERSIONS

- ✔ Google Sheet with Activity & Directions
- ✔ Google Form with Reading & Questions

Answer keys provided

YOU WILL LOVE THIS BECAUSE



Hands-On STEM Exploration

Instead of just reading about weathering, students actively investigate how animals contribute to breaking down rocks.



Differentiated for All Learners

Multiple question formats (short answer, fill-in-the-blank, task cards) ensure accessibility and engagement for diverse student needs.



Easy Prep, Maximum Engagement

Teacher notes, student instructions, and answer keys provide everything you need for an exciting, stress-free lesson!

TEACHERS LOVE IT!

My students loved using this resource. I will tell you that I had no idea how much kinetic sand was until I had to purchase enough to use with three classes. But the kids enjoyed the station and got something out of the hands-on project. I cleaned out the sand from the rice and now have it for next year.

Officially Ohio



My students and I enjoyed reading these passages and my students found it very interesting. It was a great addition to my unit!

Kristy 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.



teach MATH | teach SCIENCE | teach READING | teach WRITING

What I have LEARNED