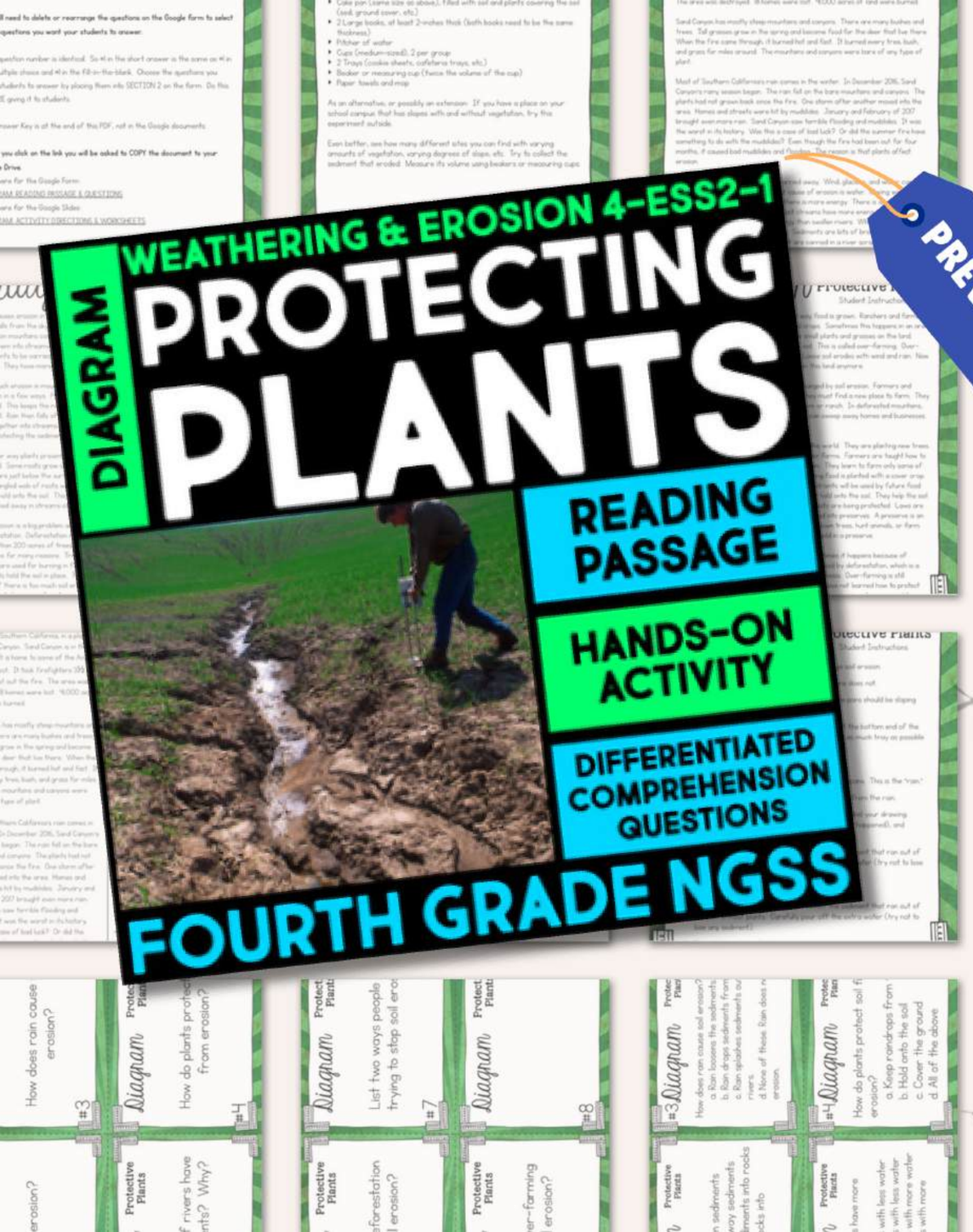


4TH GRADE

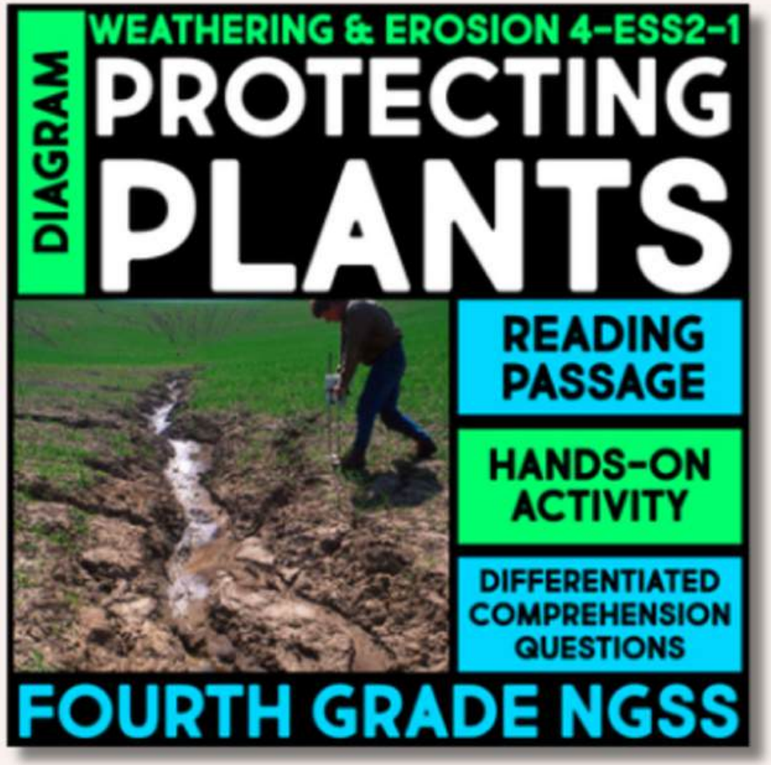
Plants vs. Erosion!

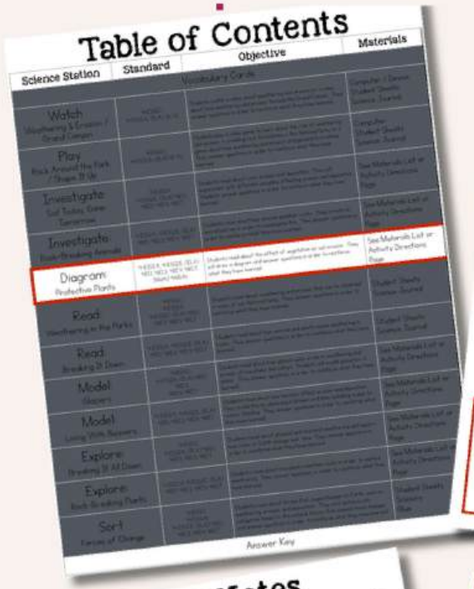
DIAGRAM PROTECTIVE PLANTS WEATHERING & EROSION

4th Grade. NGS Science Activity

KEEP SCROLLING TO SEE WHAT'S INSIDE!

ACTIVITY OVERVIEW




Table of Contents

Science Station	Standard	Objective	Materials
Watch			
Play			
Investigate			
Investigate			
Diagram: Protective Plants			
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.

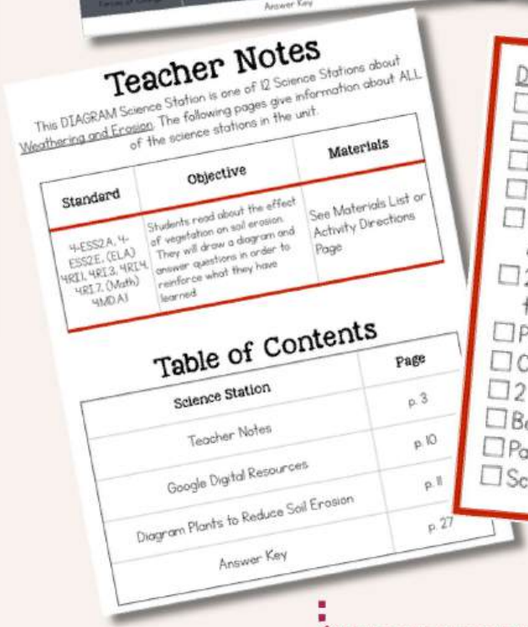
Draw a Diagram
Students draw and label a diagram specific to certain requirements. Students then explain how their diagram meets the requirements.

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 DIAGRAM Science Station is one of 12 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, (Math) 4.MD.A.1	Students read about the effect of vegetation on soil erosion. They will draw a diagram and answer questions in order to reinforce what they have learned.	See Materials List or Activity Directions Page

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Science Station	Page
Teacher Notes	p. 3
Google Digital Resources	p. 10
Diagram Plants to Reduce Soil Erosion	p. 11
Answer Key	p. 27

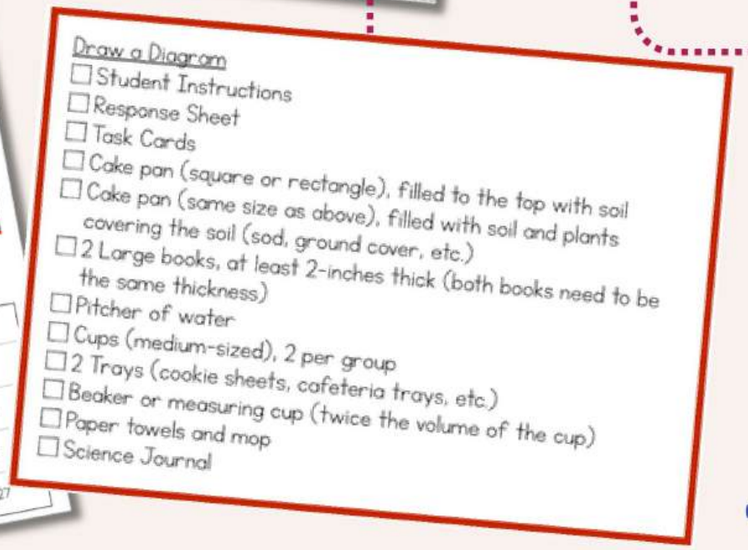

Draw a Diagram
- ☐ Student Instructions
- ☐ Response Sheet
- ☐ Task Cards
- ☐ Cake pan (square or rectangle), filled to the top with soil
- ☐ Cake pan (same size as above), filled with soil and plants covering the soil (sod, ground cover, etc.)
- ☐ 2 Large books, at least 2-inches thick (both books need to be the same thickness)
- ☐ Pitcher of water
- ☐ Cups (medium-sized), 2 per group
- ☐ 2 Trays (cookie sheets, cafeteria trays, etc.)
- ☐ Beaker or measuring cup (twice the volume of the cup)
- ☐ Paper towels and mop
- ☐ Science Journal

Table of Contents

Science Station Overview

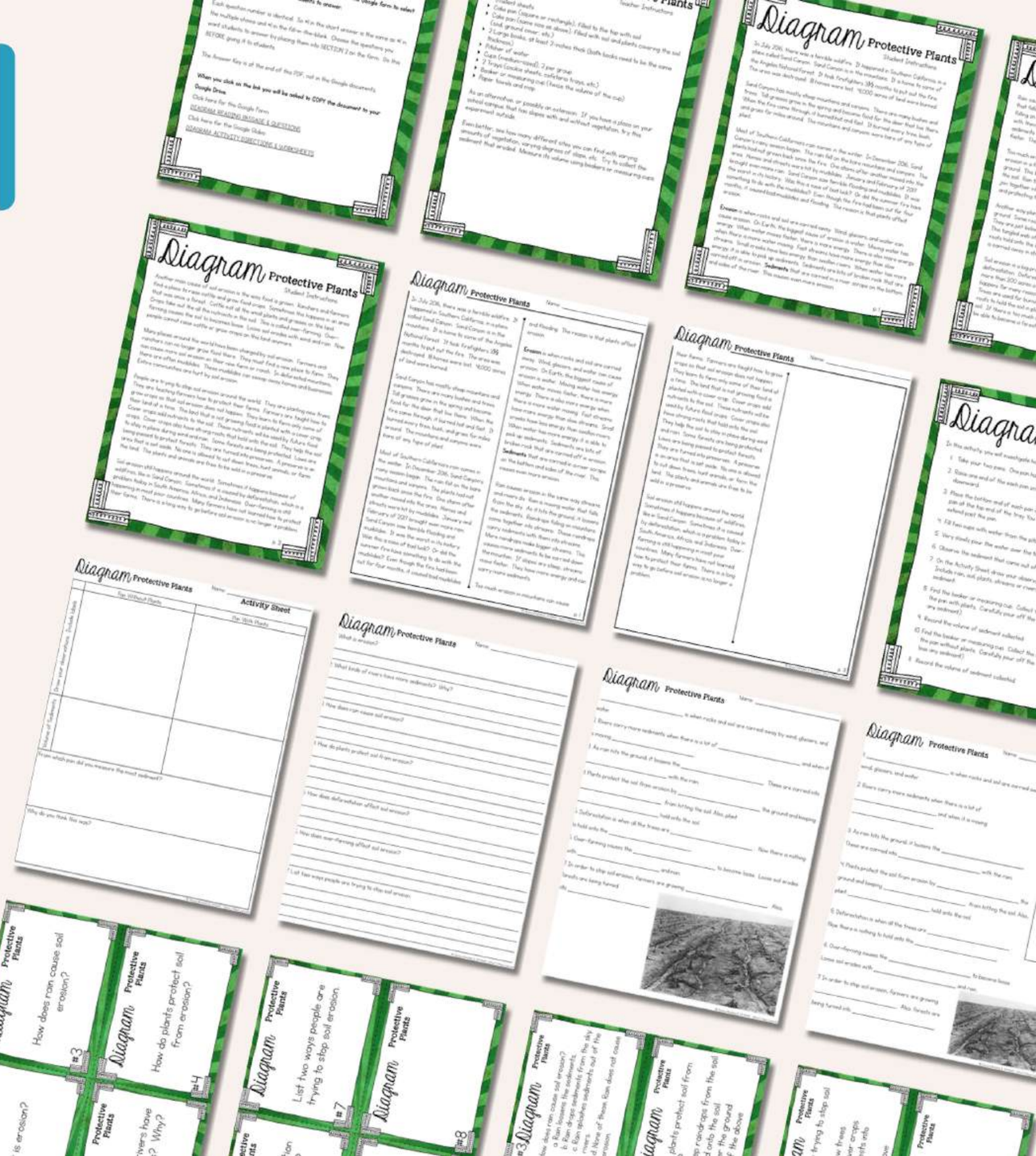
Materials Checklist

Table of Contents / Teacher's Notes

WHAT'S INCLUDED

DIAGRAM SCIENCE STATION

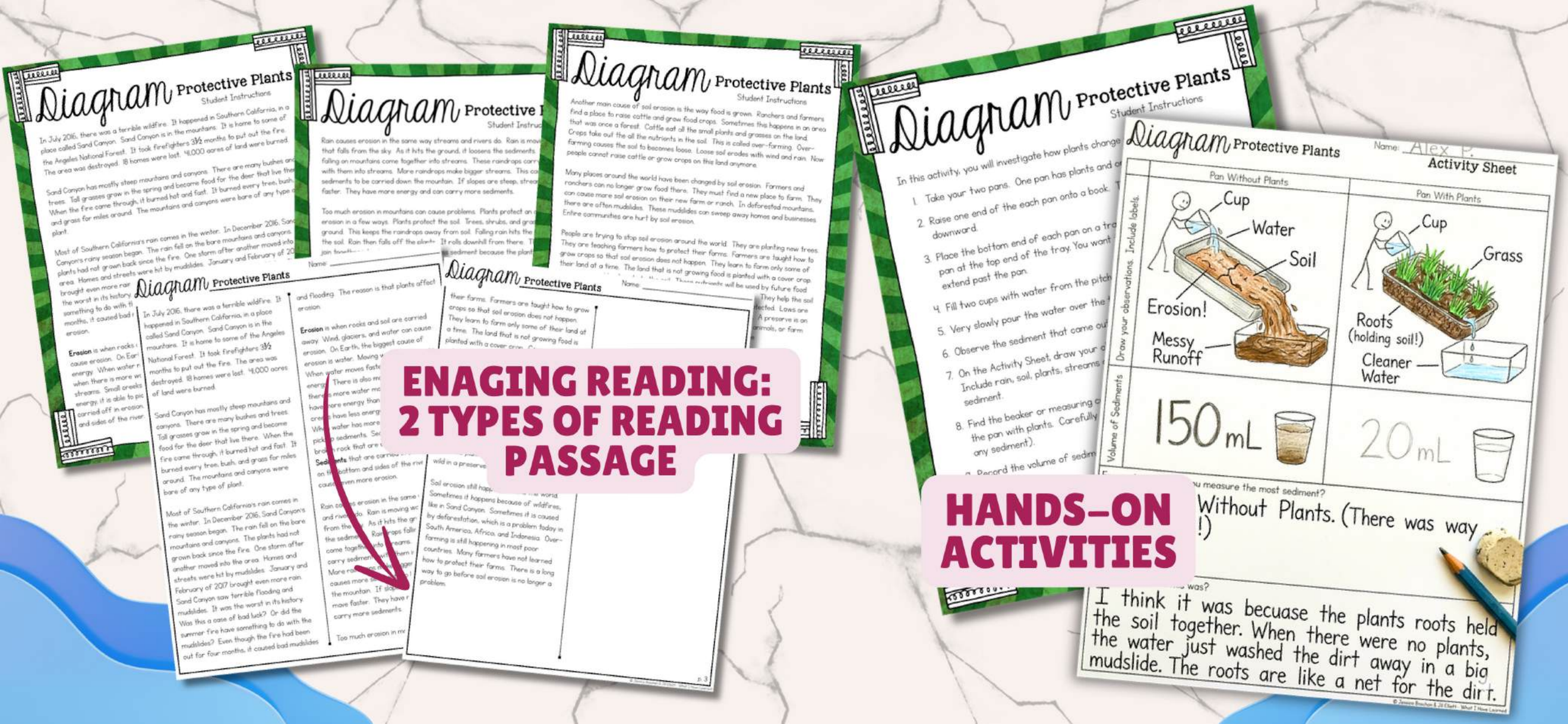
- Teacher Notes
- Student Text in two formats
- Student Instructions
- Activity Sheets for the diagram
- Differentiated Questions
- Answer Key
- Google Form
- Google Slides



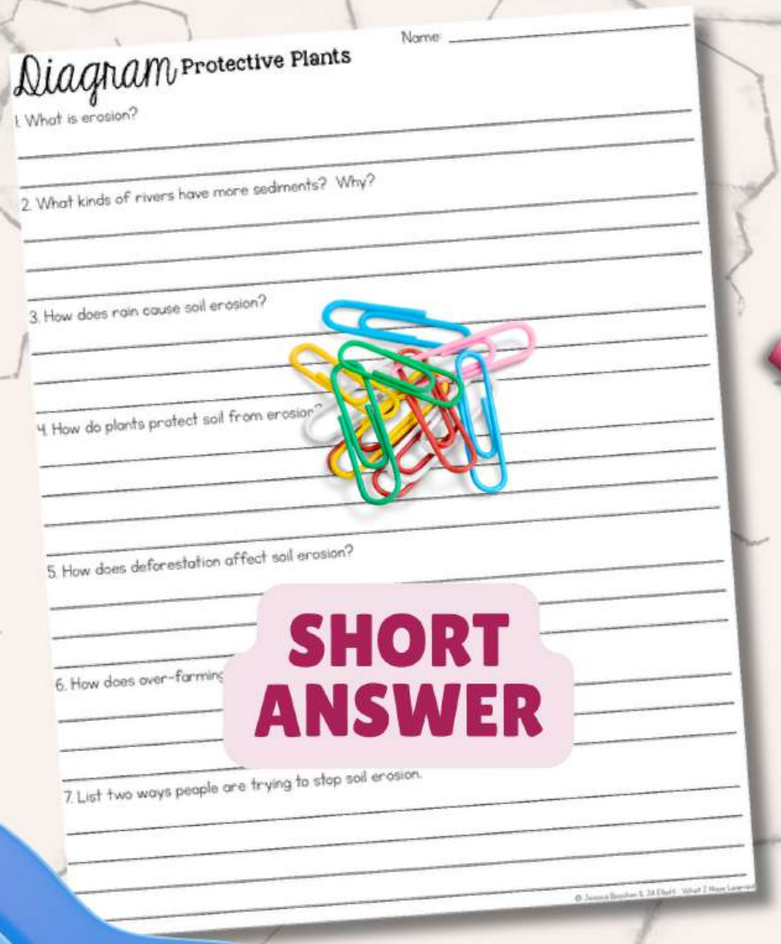
READING PASSAGE & ACTIVITIES

ENAGING READING: 2 TYPES OF READING PASSAGE

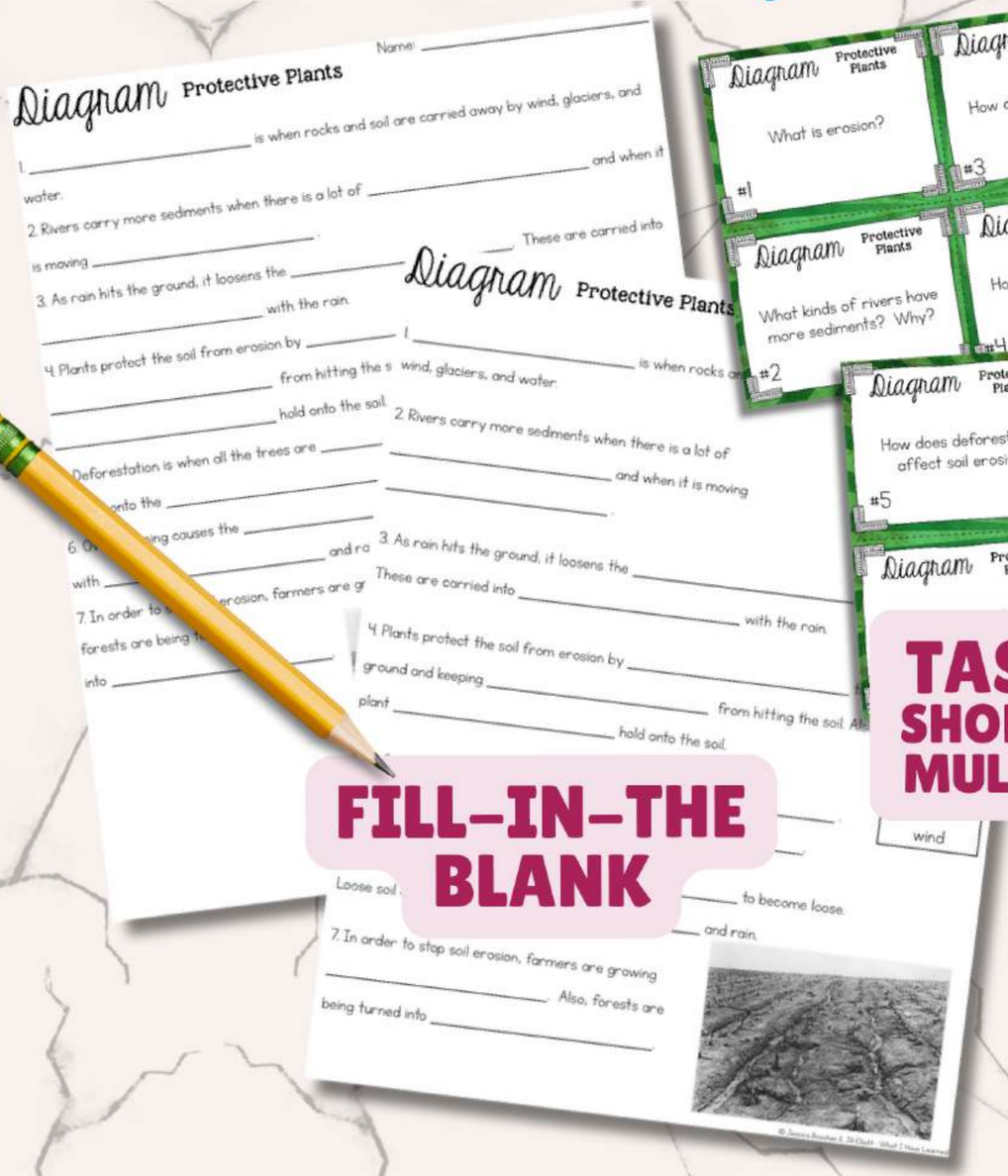
HANDS-ON ACTIVITIES



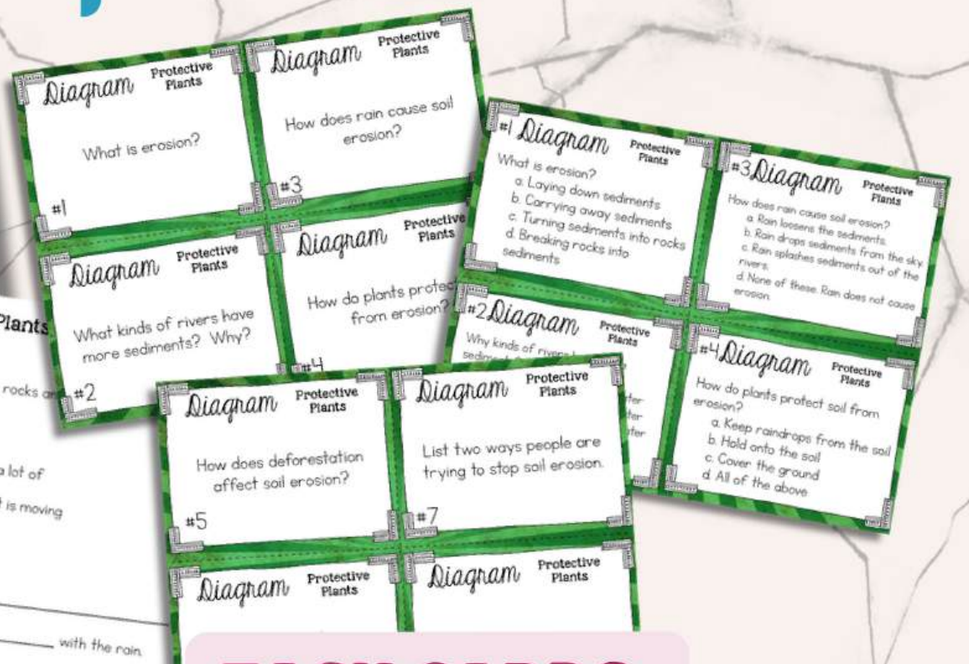
Differentiated Questions



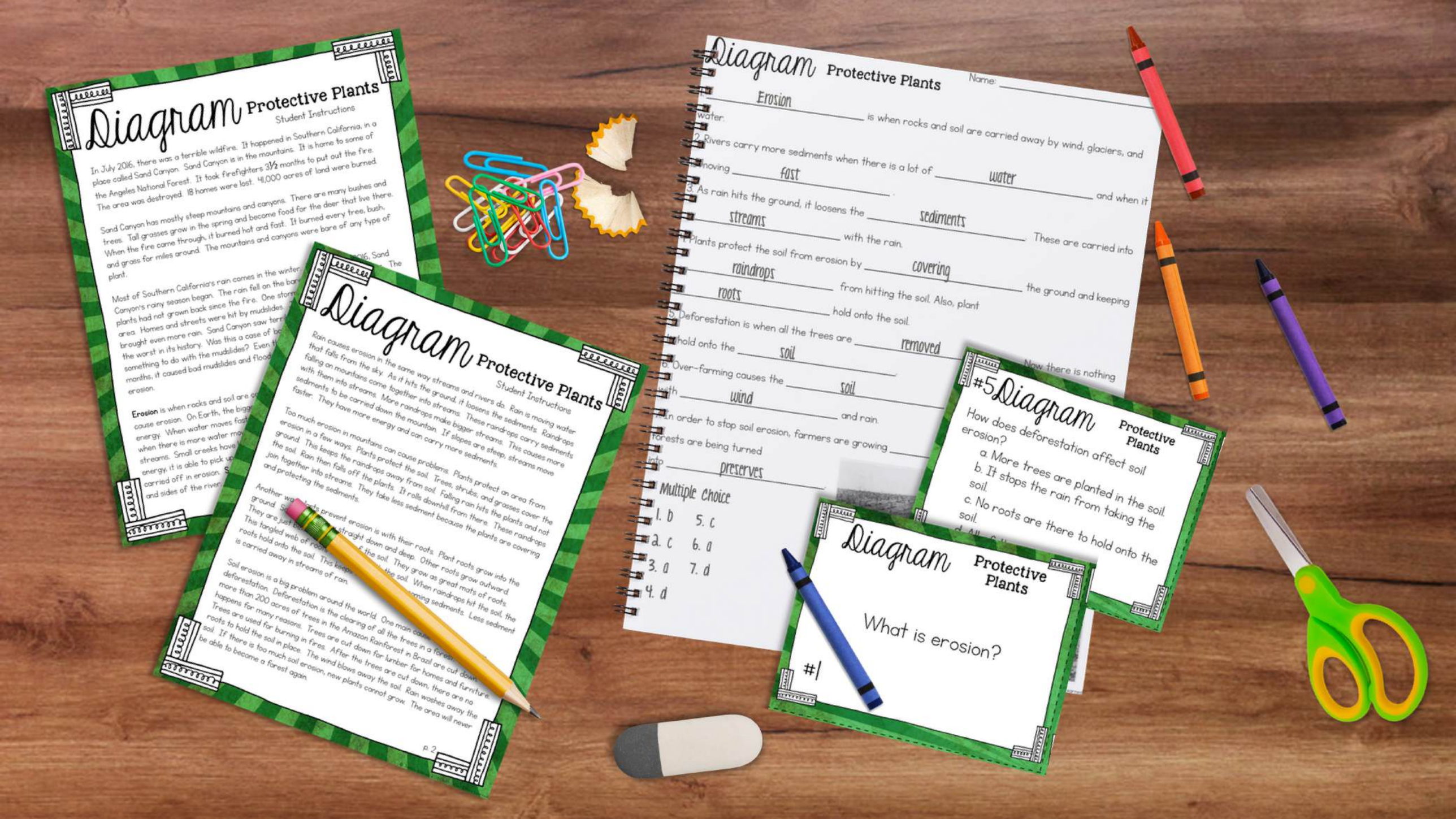
SHORT ANSWER



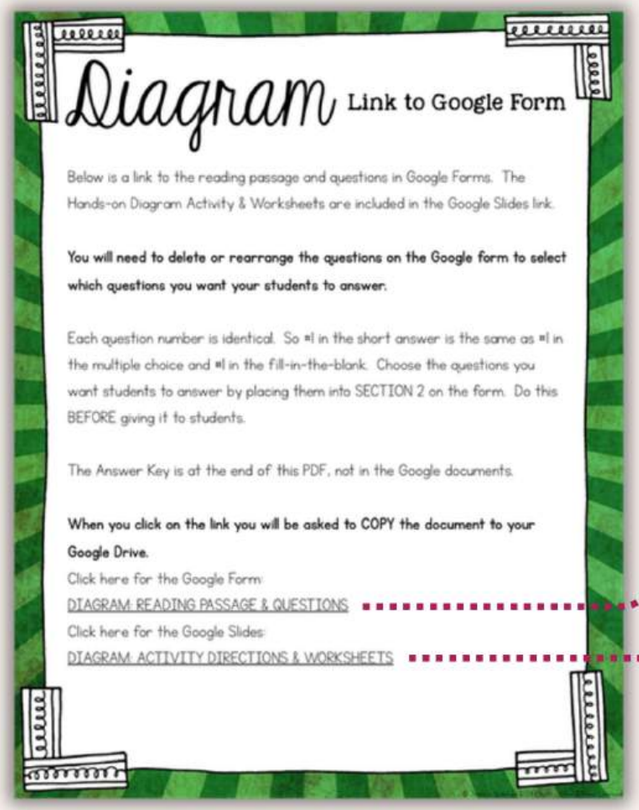
FILL-IN-THE BLANK

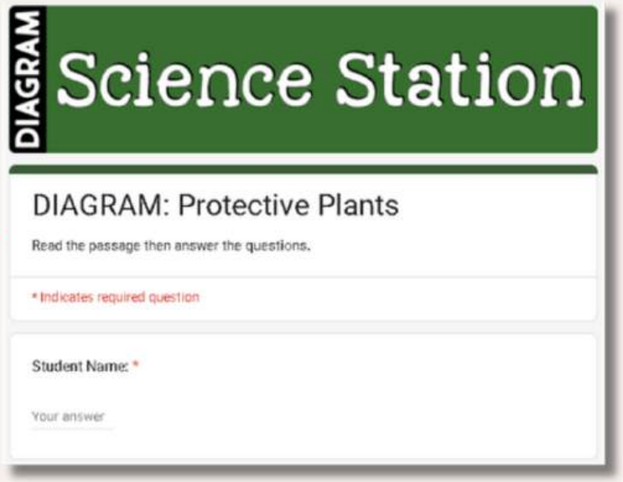


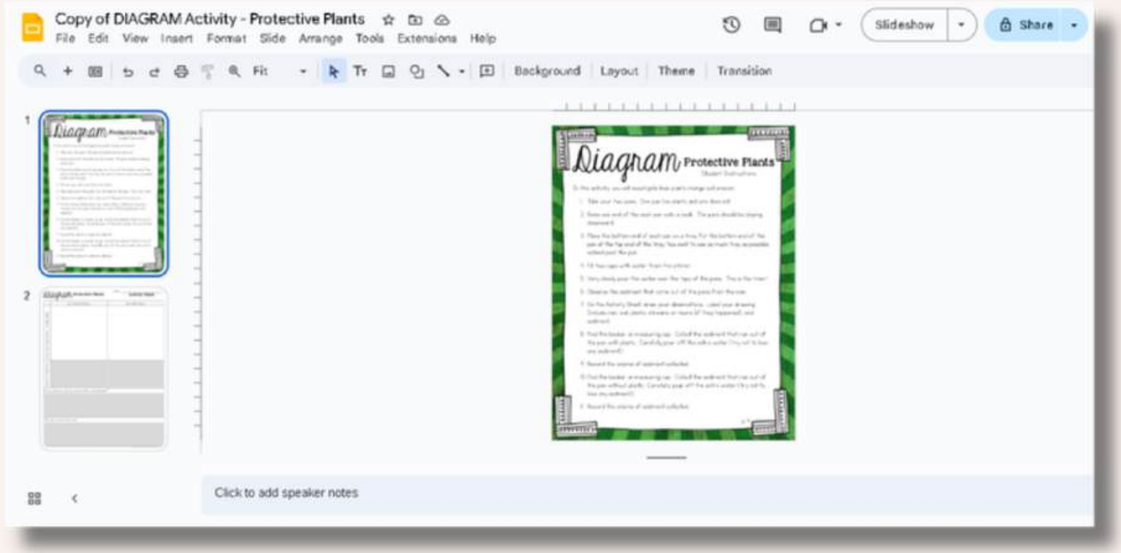
TASK CARDS:
SHORT ANSWER & MULTIPLE CHOICE


Diagram Protective Plants
Student Instructions
In July 2016, there was a terrible wildfire. It happened in Southern California, in a place called Sand Canyon. Sand Canyon is in the mountains. It is home to some of the Angeles National Forest. It took firefighters 3½ months to put out the fire. The area was destroyed. 18 homes were lost. 41,000 acres of land were burned.
Sand Canyon has mostly steep mountains and canyons. There are many bushes and trees. Tall grasses grow in the spring and become food for the deer that live there. When the fire came through, it burned hot and fast. It burned every tree, bush, and grass for miles around. The mountains and canyons were bare of any type of plant.
Most of Southern California's rain comes in the winter. Sand Canyon's rainy season began. The rain fell on the bare mountains. The plants had not grown back since the fire. One storm brought even more rain. Sand Canyon saw terrible mudslides. This was the worst in its history. Was this a case of bad luck? Or did the fire have something to do with the mudslides? Even though it had been months, it caused bad mudslides and flooding.
Erosion is when rocks and soil are carried away by wind, glaciers, and water. Erosion can cause erosion. On Earth, the biggest cause of erosion is water. Water has energy. When water moves fast, it has more energy. When there is more water moving, it has more energy. Rivers and streams. Small creeks have energy, it is able to pick up and carried off in erosion. Sediments and sides of the river.
Diagram Protective Plants
Student Instructions
Rain causes erosion in the same way streams and rivers do. Rain is moving water that falls from the sky. As it hits the ground, it loosens the sediments. Raindrops falling on mountains come together into streams. These raindrops carry sediments with them into streams. More raindrops make bigger streams. This causes more sediments to be carried down the mountain. If slopes are steep, streams move faster. They have more energy and can carry more sediments.
Too much erosion in mountains can cause problems. Plants protect an area from erosion in a few ways. Plants protect the soil. Trees, shrubs, and grasses cover the ground. This keeps the raindrops away from soil. Falling rain hits the plants and not the soil. Rain then falls off the plants. It rolls downhill from there. These raindrops join together into streams. They take less sediment because the plants are covering and protecting the sediments.
Another way plants prevent erosion is with their roots. Plant roots grow into the ground. Some roots grow straight down and deep. Other roots grow outward. They are just below the surface of the soil. They grow as great mats of roots. This tangled web of roots holds onto the soil. When raindrops hit the soil, the roots hold onto the soil. This keeps the soil. When raindrops hit the soil, the is carried away in streams of rain. forming sediments. Less sediment
Soil erosion is a big problem around the world. One main cause is deforestation. Deforestation is the clearing of all the trees in a forest. more than 200 acres of trees in the Amazon Rainforest in Brazil are cut down happens for many reasons. Trees are cut down for lumber for homes and furniture. Trees are used for burning in fires. After the trees are cut down, there are no roots to hold the soil in place. The wind blows away the soil. Rain washes away the soil. If there is too much soil erosion, new plants cannot grow. The area will never be able to become a forest again.
p. 2
Diagram Protective Plants
Name:
Erosion is when rocks and soil are carried away by wind, glaciers, and water.
2. Rivers carry more sediments when there is a lot of water and when it moving fast.
3. As rain hits the ground, it loosens the sediments. These are carried into streams with the rain.
4. Plants protect the soil from erosion by covering the ground and keeping raindrops from hitting the soil. Also, plant roots hold onto the soil.
5. Deforestation is when all the trees are removed. Now there is nothing to hold onto the soil.
6. Over-farming causes the soil to be carried away with wind and rain.
7. In order to stop soil erosion, farmers are growing preserves.
Multiple Choice
1. b 5. c
2. c 6. a
3. a 7. d
4. d
#5 Diagram Protective Plants
How does deforestation affect soil erosion?
a. More trees are planted in the soil.
b. It stops the rain from taking the soil.
c. No roots are there to hold onto the soil.
Diagram Protective Plants
What is erosion?
#1

DIGITAL VERSIONS







DIGITAL VERSIONS

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

Answer keys provided

YOU WILL LOVE THIS BECAUSE



Hands-On Learning Through Diagrams

Instead of just reading about soil erosion, students conduct a real experiment to see the impact of plants firsthand.



Aligned with NGSS

These lesson plans aren't just random; they're laser-focused on Next Generation Science Standards. No more curriculum guesswork!



Encourages Science Journaling

Students analyze and record their findings, reinforcing observation and explanation skills.

TEACHERS LOVE IT!

Like how I can use some of the components for other grade levels. Thank you for creating.

Mrs B's Learning Lab



Very thorough reading!

Lisa L.



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