SMALL WORD PARTS. BIG SCIENCE DISCOVERIES!

4–5 GRADE



EARTH AND SPACE GREEK & LATIN ROOTS IN SCIENCE

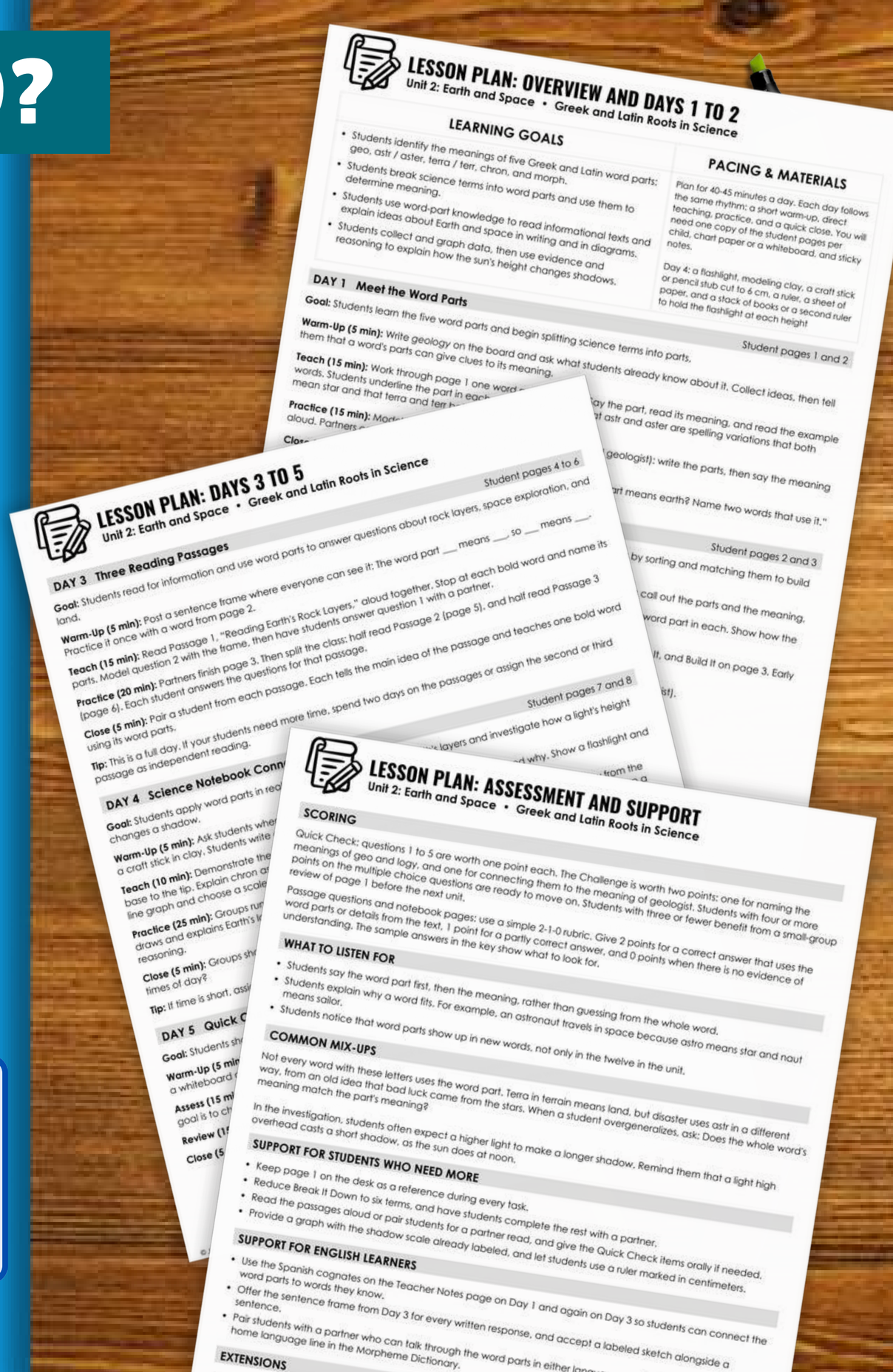
UNIT 2

KEEP SCROLLING TO SEE WHAT'S INSIDE!

WHAT'S INCLUDED?

- Teacher Guide and Lesson Plans
- Word Parts Preview
- Break It Down
- Sort, Match, and Build
- 3 Informational Reading Passages
- Science Notebook Activities
- Assessment and Answer Key

20	9	3	5
Total PDF Pages	Student activity pages	Reading passages	Greek and Latin word parts



LESSON PLANS

PROVIDES A READY-TO-FOLLOW FIVE-DAY PLAN, SAVING TEACHERS TIME AND SIMPLIFYING LESSON DELIVERY.

LESSON PLAN: OVERVIEW AND DAYS 1 TO 2

Unit 2: Earth and Space • Greek and Latin Roots in Science

LEARNING GOALS

- Students identify the meanings of five Greek and Latin word parts: geo, astr / aster, terra / terr, chron, and morph.
- Students break science terms into word parts and use them to determine meaning.
- Students use word-part knowledge to read info
- Students collect and graph data, then use evi reasoning to explain how the sun's height cha

PACING & MATERIALS

Plan for 40-45 minutes a day. Each day follows the same rhythm: a short warm-up, direct teaching, practice, and a quick close. You will need one copy of the student pages per child, chart paper or a whiteboard, and sticky

DAY 1 Meet the Word Parts

Goal: Students learn the five word parts and beg

Warm-Up (5 min): Write geology on the board a them that a word's parts can give clues to its me

Teach (15 min): Work through page 1 one word words. Students underline the part in each exa mean star and that terra and terr both mean l

Practice (15 min): Model the first two terms on aloud. Partners complete the next three terms

Close (5 min): Give each student a sticky not Either geology or geosphere is correct.

DAY 2 Break It Down, Sort, Match,

Goal: Students finish decoding the twelve t words.

Warm-Up (5 min): Show three terms from p

Teach (10 min): Model Sort It on page 3 w Build It tiles snap together, then check th

Practice (25 min): Students finish page 2 finishers try the Challenge.

Close (5 min): Students share one word

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LESSON PLAN: DAYS 3 TO 5

Unit 2: Earth and Space • Greek and Latin Roots

DAY 3 Three Reading Passages

Goal: Students read for information and use word parts to answer quest land.

Warm-Up (5 min): Post a sentence frame where everyone can see it: T Practice it once with a word from page 2.

Teach (15 min): Read Passage 1, "Reading Earth's Rock Layers," aloud parts. Model question 2 with the frame, then have students answer q

Practice (20 min): Partners finish page 3. Then split the class: half read (page 6). Each student answers the questions for that passage.

Close (5 min): Pair a student from each passage. Each tells the mai using its word parts.

Tip: This is a full day. If your students need more time, spend two da passage as independent reading.

DAY 4 Science Notebook Connection

Goal: Students apply word parts in real science work: they explain changes a shadow.

Warm-Up (5 min): Ask students when their shadows are long and a craft stick in clay. Students write a prediction on page 8.

Teach (10 min): Demonstrate the setup: keep the flashlight 20 c base to the tip. Explain *chron* as you talk about time: shadows c line graph and choose a scale.

Practice (25 min): Groups run the investigation and record eac draws and explains Earth's layers on page 7. Then they graph t reasoning.

Close (5 min): Groups share their claims. Did the predictions m times of day?

Tip: If time is short, assign the explanation of Earth's layers on

DAY 5 Quick Check and Review

Goal: Students show what they have learned and fix any m

Warm-Up (5 min): Play Parts Race. Say a meaning, such as a whiteboard and hold it up.

Assess (15 min): Students complete the Quick Check on p goal is to check word parts and not reading speed.

Review (15 min): Go over the answers together. For each missed ques

Close (5 min): Students choose their favorite new word from the unit and write what its parts mean in their

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LESSON PLAN: AS

Unit 2: Earth and Space

SCORING

Quick Check: questions 1 to 5 are worth one p meanings of geo and logy, and one for connecti points on the multiple choice questions are ready to m review of page 1 before the next unit.

Passage questions and notebook pages: use a simple 2-1-0 rubr word parts or details from the text, 1 point for a partly correct understanding. The sample answers in the key show what to

udents with four or more er benefit from a small-group

correct answer that uses the ts when there is no evidence of

WHAT TO LISTEN FOR

- Students say the word part first, then the mean rather than guessing from the whole word.
- Students explain why a word fits. For example, an astronaut travels in space because astro means star and naut means sailor.
- Students notice that word parts show up in new words, not only in the twelve in the unit.

COMMON MIX-UPS

Not every word with these letters uses the word part. Terra in terrain means land, but disaster uses astr in a different way, from an old idea that bad luck came from the stars. When a student overgeneralizes, ask: Does the whole word's meaning match the part's meaning?

In the investigation, students often expect a higher light to make a longer shadow. Remind them that a light high overhead casts a short shadow, as the sun does at noon.

SUPPORT FOR STUDENTS WHO NEED MORE

- Keep page 1 on the desk as a reference during every task.
- Reduce Break It Down to six terms, and have students complete the rest with a partner.
- Read the passages aloud or pair students for a partner read, and give the Quick Check items orally if needed.
- Provide a graph with the shadow scale already labeled, and let students use a ruler marked in centimeters.

SUPPORT FOR ENGLISH LEARNERS

- Use the Spanish cognates on the Teacher Notes page on Day 1 and again on Day 3 so students can connect the word parts to words they know.
- Offer the sentence frame from Day 3 for every written response, and accept a labeled sketch alongside a sentence.
- Pair students with a partner who can talk through the word parts in either language, and add the new words to the home language line in the Morpheme Dictionary.

EXTENSIONS

- Word families: students hunt for more words with these parts, such as geode, astronomer, territory, and synchronize, and make a poster that shows the parts and the meaning.
- Science link: make a timeline of Earth's history using the word chronology, and add at least thre rds.
- Invent a word: students use the Challenge on page 6 to create a new science word and explain w mean.
- Extend the investigation: repeat it at three distances from the stick and compare the grap

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WHAT'S INCLUDED?

WORD PARTS PREVIEW

Name: _____ Date: _____

These five word parts appear in science words about Earth, rocks, and space. Read each one, then add a word you already know.

geo — means earth
WORDS YOU MAY KNOW: geography geology geode geometry
My word: _____
I think it means: _____

astr / aster — means star
WORDS YOU MAY KNOW: astronomy astronaut asteroid asterisk
My word: _____
I think it means: _____

terr — means land
WORDS YOU MAY KNOW: terrain terrarium terrestrial
My word: _____
I think it means: _____

chron — means time
WORDS YOU MAY KNOW: chronological chronic synchronize
My word: _____
I think it means: _____

morph — means shape, form
WORDS YOU MAY KNOW: metamorphosis morphing metamorphic
My word: _____
I think it means: _____

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BREAK IT DOWN

Name: _____ Da

Split each science word into its parts. Then write what the word means in your own The first one is done for you.

WORD	WORD PARTS	WHAT IT MEANS
geology	geo + logy	the study of Earth's rock land
geologist		
geosphere		
geography		
astrono		
astr		
aste		
terrain		
terrarium		
terrestrial		
chronology		
metamorphic		

EXTRA WORDS AND WORD PARTS TO KNOW
logy = study of; sphere = a round layer or ball; graph = write, draw; nomy = system of knowledge; naut = sailor, traveler; oid = like, shaped like; ain / estrial = relating to; arium = a place for; meta = change; ic = relating to

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SORT, MATCH, AND BUILD

Name: _____ Date: _____

A. SORT IT Write each word under the word part it uses.

terrain geosphere astronomy terrestrial geology astronaut asteroid geography terrarium

geo	astr / aster	terra / terr

B. MATCH IT Write the word that fits each meaning.

aste

1. a p
2. the
3. a list of events in
4. a container for land p
5. relating to rock that h
6. a small rocky object in space

C. BUILD IT Use the parts to build three science words. Write each word and what it means.

geo astro terr chron morph meta logy sphere naut ist

1. _____ means _____
2. _____ means _____
3. _____ means _____

CHALLENGE
Scientists often build new words from Greek and Latin word parts. Invent a word that uses one part from this unit. Write it and tell what it would mean.

_____

_____

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WORD PARTS PREVIEW

BREAK IT DOWN

SORT, MATCH, & BUILD

WHAT'S INCLUDED?

DRAW & EXPLAIN

SCIENCE ACTIVITY

QUICK CHECK

SCIENCE NOTEBOOK: EARTH'S LAYERS

Name: _____ Date: _____

1. DRAW IT

Draw and label a cross section of Earth. Show the crust, the mantle, the outer core, and the inner core, and tell which layer is the geosphere's outer shell.

crust · mantle · outer core · inner core · geosphere

SKETCH

2. EXPLAIN

Explain how the geosphere is made of layers. Use at least four words from this unit in them.

CHECK YOUR WORK

- ☐ My diagram shows four layers in the right order.
- ☐ I labeled the crust, mantle, outer core, and inner core.
- ☐ I used at least four un
- ☐ My diagram shows t outer shell.

WORD BANK

geosphere geology geologist terrestrial terrain metamorph

Add other words from the unit that fit your diagram.

SCIENCE NOTEBOOK: MEASURE IT

Name: _____ D

QUESTION How does the height of a light change the length of a shadow?

MY PREDICTION

I predict that as the flashlight moves higher, the shadow will get _____

PROCEDURE

1. Stand a craft stick, 6 cm tall, in clay on a sheet of paper. Place a flashlight 20 cm away, pointed at the stick.
2. Hold the flashlight 10 cm above the table. Measure the shadow from the base of the stick to its tip. Record it.
3. Raise the flashlight in 5 cm increments, fro cm. Keep it 20 cm from the stick and aim each shadow.
4. Graph your data. Then compare the sha the longest one.

DATA TABLE Measure in centimeters (cm)

HEIGHT (CM)	SHADOW LENGTH (CM)
10	
15	
20	

LINE GRAPH

ANALYZE

At 10 cm, the shadow was _____ cm long. At 35 cm, it was _____

The shadow got shorter by _____ cm in all.

CLAIM As the light moved higher, the shadow got _____

EVIDENCE _____

REASONING The sun's height in the sky changes through the day. Use the word astronomy to explain how your results match what happens to shadows from morning to noon.

WORD PARTS Break astronomy into parts. Tell why the name fits this science.

QUICK CHECK

Name: _____ Date: _____

Fill in the bubble for the best answer.

1. The word part geo means

- ○ A. water
- ○ B. star
- ○ C. earth
- ○ D. time

2. Astro means star, and naut means sailor. An astronaut is

- ○ A. a person who travels in space
- ○ B. a tool for seeing stars
- ○ C. a person who studies
- ○ D. a kind of star

3. Terra means land, and a

- ○ A. land, plants, and small
- ○ B. stars

4. A chronology lists events

- ○ A. alphabetical order
- ○ B. time order

5. Morph means form. Metamorphic rock has

- ○ A. changed form
- ○ . come from stars
- ○ C. stayed the same
- ○ D. been under water only

ALLENGE

A geologist studies rocks and land. Use the word parts geo and logy to e this scientist has this title.

3-PAGE READING PASSAGE

READ: PASSAGE #1 Name: Date:

Read the passage. The bold words use word parts from this unit.

READING EARTH'S ROCK LAYERS

Earth's rocks hold a record of the past. **Geology** is the study of Earth's rocks and land. A **geologist** reads that record much like a historian reads old books. Over millions of years, rivers, wind, and oceans carry sand and mud to new places. The sand settle in layers, and over time they harden into rock.

The layers show ey happened. places, the old st are on top. a layer show w ayer formed Canyon, th ord near years of hi

Rocks can h can of rock int hic. Fo limestone c arth c

geosphere, and geologists study how it never stops changing.

THINK ABOUT THE WORD PARTS

1. Break **geologist** into word parts. Explain what this scientist does.

2. What does **chronology** mean? How do rock layers make a chronolog

3. Break **metamorphic** into parts: meta means change, and morph m happened to a metamorphic rock?

4. What is the **geosphere**? How does the word part geo help you ur

Greek a

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ROCK LAYERS

READ: PASSAGE #2 Name: Date

Read the passage. The bold words use word parts from this unit.

EXPLORING SPACE

People have studied the night sky for thousands of years. **Astronomy** is the stud stars, planets, and everything else in space. Early **astronomers** used only their e Later, they invented telescopes, which show faraway objects much more clec Today, astronomers also use huge mountaintop telescopes and even telesco orbit Earth.

Space is ful ocky that travel n Mar Jupiter. Th opes looked like

A person who travels i art naut comes Greek word for sailor, s tars. Astronauts years. On the International Space Station, they run experiments, fix equipm study how the human body changes without gravity. What they learn help astronomers and engineers plan future trips beyond Earth.

THINK ABOUT THE WORD PARTS

1. Break **astronomy** into word parts. What does an astronomer study?

2. What does the word **asteroid** mean? Why did early astronomers choose this

3. Naut means sailor. Explain why **astronaut** is a good name for someone who travels in space.

4. Name two jobs astronauts do on the International Space Station.

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EXPLORING SPACE

READ: PASSAGE #3 Name: Date:

Read the passage. The bold words use word parts from this unit.

LAND, MAPS, AND TERRARIUMS

Terrestrial animals live on land, and terrestrial planets are rocky like Earth. Mercury, Venus, Earth, and Mars are all terrestrial planets. The word comes from terra, which means land or earth. A scientist who studies a place often starts by looking at its **terrain**, which is the shape and features of its land.

Terrain can be flat, hilly dy desert supports differe study of Earth's surface travelers can see whe so

You can study terrestr that holds soil, plants, moisture. Water evap er down, much like Earth habitat that you can v

THINK ABOUT THE WORD PARTS

1. How does terra help you understand the word terrestrial? Name one ter net.

2. Explain terrain in your own words. Name two kinds of terrain from the passage.

3. Break terrarium into parts (terra and arium). Why is th

4. How is a terrarium like Earth's water cycle? Use details from th age.

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LAND & MAPS



WAYS TO USE IN THE CLASSROOM

- **Whole-Group Instruction:** Introduce and practice science vocabulary together.
- **Learning Centers:** Rotate through sorting, matching, building, and reading activities.
- **Science Notebooks:** Apply learning through diagrams and hands-on investigations.
- **Independent Practice:** Use for enrichment, review, early finishers, or sub plans.

YOU WILL LOVE THIS BECAUSE



Cross-Curricular Learning

Integrates science vocabulary, reading comprehension, writing, and scientific investigation into meaningful interdisciplinary classroom learning experiences.



Hands-On Science Connections

Encourages students to apply learning through diagrams, investigations, graphing, and evidence-based explanations.



Ready-to-Use Teacher Support

Provides structured lesson plans, differentiation strategies, assessments, and answer keys for flexible classroom implementation.



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