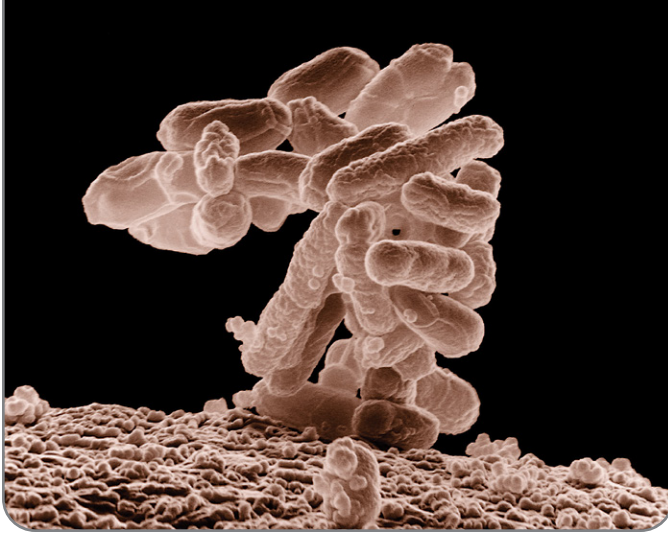


Lexicon Lab 1

Teacher Copy of the Passage



Microbe World

1 Animal or Plant...It's a Microbe!

Microbes are tiny living things, too small to be seen without a **microscope**. Microbes are not animals because they only have a single cell.

5 (By comparison, most animals have millions of

cells.) Microbes are not plants because they consume nutrients rather than using photosynthesis to turn sunlight into food. There are many types of microbes, including yeast (the fungus that makes bread rise), bacteria, and some parasites that cause disease. Viruses are sometimes considered microbes, but the definition of *microbe* is debatable. The average person might think of microbes in one way, but a
 10 **microbiologist** or doctor might have a different definition.

Microbes Everywhere

You do not see microbes, but they are everywhere, from the bottoms of the oceans, to the driest deserts, to the atmosphere miles above the planet's surface. Every time you take a breath, you inhale hundreds, if not thousands, of microbes. Most of these microbes are carried out on your next exhale, but some join
 15 all the other microbes that are already part of you. Microbes live in your nasal passages; on your skin, gums, and teeth; and in your stomach and digestive system.

You might have thousands of different kinds of microbes in various **microbiomes** in and on your body. The microbes in your armpits are different from the ones on your hands, which are different from the ones behind your ears. You have more microbes in your body than you do human cells, but don't
 20 worry—the vast majority of microbes either help us or are neutral and harmless.

Microbes to the Rescue

Microbes are beneficial in many ways. They manufacture important vitamins and proteins that your body needs. Microbial bacteria living on the skin defend against illness and injury, while internal

microbes help train your immune system to fight infections. Also, microbes in your gut help you
25 digest food. The particular mix of microbes in your stomach and intestines can affect how well you
absorb energy from food. Some scientists suspect that changes to the gut **microbiome** over time can
contribute to unhealthy weight gain.

Harmful Microbes

Although many microbes are beneficial, some can cause serious diseases. For example, *staphylococcus*
30 *aureus* may cause food poisoning and other dangerous infections. Yet, this common bacteria is often
found on the skin without causing harm. There's about a one in three chance you have this microbe in
your nostrils right now. Fortunately, you have a lot of good microbes in your nose, as well, and these
helpful microbes keep the harmful ones in check.

Unfortunately, the harmful microbes sometimes grow too strong or move to a different part of the body
35 where they can cause problems. Microbes that are harmless in your nose may cause an infection on your
skin. Bacteria that live in your intestines could cause food poisoning if transferred to your hands and
mouth where it is swallowed. Therefore, it is important to wash your hands after using the bathroom to
make sure you don't transfer any bacteria from one end of the digestive system to the other.

Battling Infections

If you get an infection caused by harmful bacteria, you may be prescribed **antibiotics**. **Antibiotics**
40 are valuable in fighting infections, but taking **antibiotics** kills the helpful microbes in the gut, as well
as any harmful ones. Sometimes people have digestive problems after taking **antibiotics** because they
have lost beneficial microbes. It's important to only take **antibiotics** when they are truly needed, to
avoid unnecessary side effects. For example, **antibiotics** won't work against viruses, so taking them for
45 a viral cold or flu does more harm than good.

Taking unnecessary **antibiotics** can also lead to infections that resist **antibiotics**. This happens when
some bacteria do not die from an **antibiotic** but instead change to become stronger. In this case, the
antibiotic no longer works against the infection, so the disease becomes more dangerous and harder
to cure. Like people, pets and livestock should only get **antibiotics** when they absolutely need them.
50 Some big farms give healthy animals **antibiotics** in hopes of preventing disease. This contributes to
antibiotic resistance in animals and people. According to the World Health Organization, **antibiotic**
resistance is one of the biggest threats to global health today.

Imagining the millions of microbes in and on your body may be uncomfortable, but don't try to
eliminate them! While a few microbes are harmful, most are neutral or beneficial, and we need all the
55 beneficial microbes in order to survive.



Learning Objective

- Students can accurately read and write multisyllable words, in isolation and in text.
- Students can accurately decode and define domain-specific vocabulary, using syllabication and the morphological structures of words.
- Students can read and respond to grade level text independently and proficiently.

DAY 1

Warm Up

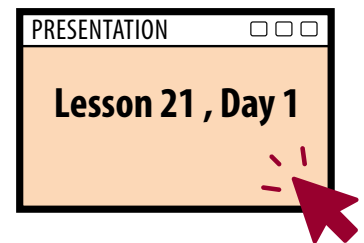


3 min

INTRODUCTION TO LEXICON LAB

Welcome to the **Lexicon Lab**! For the past 20 lessons, you have learned to accurately decode multisyllable words by identifying syllable patterns and applying both the simple and complex division rules. You have also studied meaningful parts of words, called *morphemes*. You are now ready to become word masters in the Lexicon Lab. The Lexicon Lab is a series of 10 lessons in which you will have the opportunity to apply your word study knowledge on a deeper level.

Before you begin your first Lexicon Lab, let's look at what the word **lexicon** means. The word *lexicon* is taken from a Greek word meaning "pertaining to words." Just like going to the gym builds strength for muscles, the Lexicon Lab will build your vocabulary strength and wisdom of words. Increasing your lexicon (or knowledge of words) will equip you with the tools to tackle text independently.





10 min

Multisyllable Word Work

READING MULTISYLLABLE WORDS

(Display paragraph 1 of “Microbe World”.)

Animal or Plant...It’s a Microbe!

Microbes are tiny living things, too small to be seen without a microscope. Microbes are not animals because they only have a single cell. (By comparison, most animals have millions of cells.) Microbes are not plants because they consume nutrients rather than using photosynthesis to turn sunlight into food. There are many types of microbes, including yeast (the fungus that makes bread rise), bacteria, and some parasites that cause disease. Viruses are sometimes considered microbes, but the definition of microbe is debatable. The average person might think of microbes in one way, but a microbiologist or doctor might have a different definition.



Turn to page 257 in your Student Workbook where you will find paragraph 1 from this week’s passage. There are 6 underlined words in this paragraph.

Let’s decode and read the first word together.

(Display microbes.)

Step 1: Underline the vowels.

- Which letters should I underline to represent the vowel sounds?
i* and *o-e
 - How do I mark the silent-e pattern? **draw a V connecting the *o* and *e***
- How many vowel sounds? **2** How many syllables? **2**

Step 2: Draw a line between the syllables.

- How many consonants are between the vowel sounds? **2**
 - Most often, when there are 2 consonants between the vowel sounds, we divide the consonants. In this word, the letters *c* and *r* spell a consonant blend. The letters in a consonant blend stick together.
 - Where do I draw a syllable division line? **between the *i* and *c***

microbes



microbes

mi|crobes

Step 3: Read each syllable. (Gesture and point to the vowel when going through the process of reading each syllable.)

<p>Read the first syllable.</p> <ul style="list-style-type: none"> – Syllable type and gesture? open – Vowel sound? /i/ – Syllable? mi 	<p>Read the second syllable.</p> <ul style="list-style-type: none"> – Syllable type and gesture? silent-e – Vowel sound? /ō/ – Syllable? crobes
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Step 4: Read the word.

- Word? **microbes**

Now it's your turn. Here are the steps:

1. Write the underlined word in the box.
2. Underline the vowel letters.
3. Mark a V connecting the vowel letters if the syllable follows the silent-e pattern.
4. Use your knowledge of phonics and syllable patterns as well as affixes to help you decide where to draw a line to divide the syllables.
5. For each syllable, say the syllable type while showing the gesture, say the vowel sound, and then read the syllable.
6. Read the word.
7. Repeat these steps for each of the underlined words.
8. When you are finished decoding each word, read the paragraph in your Student Workbook.

Answer Key

1. m <u>i</u> <u>cro</u> b <u>e</u> s	3. ph <u>o</u> <u>to</u> syn the ¹ sis	5. par ³ a ¹ <u>si</u> t <u>e</u> s
2. nu tri ² <u>en</u> t <u>s</u> ¹	4. bac te ri ² a ¹	6. def i ¹ ni ⁴ <u>ti</u> o <u>n</u> ⁵

¹ The vowel in this syllable is pronounced with the schwa sound /ə/.

² The vowel letter *i* before a vowel suffix is most often pronounced with a long *e* sound (e.g., *premium*, *studious*).

³ When the *a-r* spelling occurs in a stressed syllable before a vowel letter, the vowel *a* is pronounced with its long sound /air/.

⁴ This is an unaccented open syllables pronounced /i/. When the vowel *i* occurs at the end of a syllable and is followed by a consonant, it can be pronounced with a short *i* sound.

⁵ The syllable *-tion* is pronounced /shūn/.

Routine for MS Word Reading

- Underline the vowels.
- Mark a V connecting the silent-e.
- How many consonants between the vowel sounds?
- Where do I divide the syllables?
- For each syllable, ask:
 - Syllable type and gesture?
 - Vowel sound?
 - Syllable?
- Word?

**Teacher Tip**

Although this section focuses on decoding by syllables, the goal is to encourage students to identify morphemes, or larger chunks of words they recognize, which leads to more efficient word reading. For example, in the word *microscope*, some students may recognize the Greek morpheme *micro* and will not need to decode this morpheme into 2 syllables (*mi|cro*) prior to reading the word. Similar to the decoding process in the Morphology sections of this lesson, differentiate by having students who are more proficient decoders highlight the morphemes they recognize in the words *after* they have decoded them by syllable patterns. This strategy will help students see that words can be decoded in multiple ways—by identifying syllable patterns or by recognizing morphemes.

Reading

5 min

BUILDING BACKGROUND

Let's try an exercise...take a deep breath in through your nose. Now, breathe the air out through your mouth. Did you notice anything odd, other than air, traveling in and out of your mouth or nose during those breaths?

Now I want you to take one hand and brush your arm, the side of your face, or your leg. Was there anything noticeable on your hand after completing that exercise? What if I told you there were thousands of microorganisms in the air that passed in and out of your nose and mouth during the breathing exercise. There were also microorganisms that moved to and from your hand as you touched each body part.

The term *micro* means "small." The term *organism* means "a life form." Over the next week, we will learn about microorganisms called **microbes** (pronounced mī-krōb-z). **Microbes are extremely small organisms that can only be seen under a *microscope*.**



Turn to page 257 in your Student Workbook. Now, look at the images of microbes displayed on the slide presentation. Take a minute to answer these questions about each microbe.

- What is each microbe's color?
- Does the microbe remind you of something?
- Where do you suspect the microbe can be found?

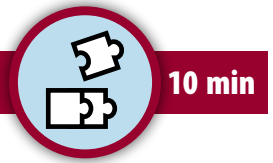
Write your answers in the table in your workbook.

(Display Examples of Microbes table.)



Microbes are on your skin and inside your body, as well as all throughout our planet. We will learn more about microbes throughout the week.

Morphology



DECODING

(Display Weekly Words.)

Now I will introduce some words you will see in your reading this week. There are 4 new Weekly Words from this week's passage as well as 2 review words from previous Weekly Word lists. The 2 review words are located at the bottom of the Weekly Word list in gray.



Turn to page 258 in your Student Workbook. Let's decode 1 of the Weekly Words together, and then you will decode the remaining 5 words on your own.

(Display antibiotic.)

Look at this word.

- First, we underline the vowel letters that spell the vowel sounds.
 - What are the vowel letters? **a, i, i, o, and i**
 - How many vowel sounds? **5** How many syllables? **5**
- Next, we identify any prefixes or suffixes in this word.
 - What prefix do you see? **anti-**
 - What suffix do you see? **-ic**
- Now we draw lines to divide the word.
 - First, we divide the prefix from the rest of the word. Where do we draw the syllable division line? **between the prefix anti- and the letter b**

antibiotic

antibiotic

antibiotic

Weekly Words	
antibiotic	microbiome
microbiologist	microscope
adaptable	humidity



- Next, we divide the suffix from the rest of the word. Where do we draw the syllable division line? **between the letter t and the suffix -ic**
- Finally, we look at the consonants between the remaining vowel sounds.
 - There are 0 consonants between the remaining vowel sounds.
 - When the vowel letter *i* comes before another vowel, it usually does *not* form a vowel team. Typically the *i* is the end of 1 syllable, and the other vowel letter begins a new syllable—the vowel letters do *not* stick together.
 - Where do we draw the syllable division line? **between the *i* and *o***

Help me decode each syllable and then read the word.

First and Second Syllables

- The prefix is *a-n-t-i*.
- Syllables? **anti-**

Third Syllable

- Syllable type and gesture? **open**
- Vowel sound? **/i/**
- Syllable? **bi**

Fourth Syllable

- Syllable type and gesture? **closed**
- Vowel sound? **/ō/**
- Syllable? **ot**

Fifth Syllable

- The suffix is *i-c*.
- Suffix? **-ic**

What's the word? **antibiotic**

Let's read a sentence using the word *antibiotic*: ***The doctor prescribed an antibiotic when I had a throat infection.***

Now it's your turn to decode the remaining words. Here are the steps:

1. Find the vowel letters and underline them.
2. Use your Morphology Key to identify if there are any prefixes or suffixes in the word.

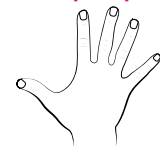
anti|bi|ot|ic



anti|bi|ot|ic



anti|bi|ot|ic



anti|bi|ot|ic



anti|bi|ot|ic



- If there are prefixes and suffixes, highlight them and then read them.
- Use your knowledge of phonics and syllable patterns, as well as affixes, to help you decide where to draw a line to divide the syllables.
- Mark a V connecting the vowel letters if the syllable follows the silent-e pattern.
- For each syllable, identify its syllable type, write the syllable in the correct column, and read the syllable.
- Read the word.

Answer Key

Word	Closed	Silent-e	Open	Vowel Team	Vowel-r	C-le
an ti bi ot ic	an ot ic		ti bi			
1. mi cro bi ol o gist	ol gist ³		mi cro bi o ¹			
2. mi cro bi ome		ome	mi cro bi			
3. mi cro scope		scope	mi cro ¹			
4. a dapt a ble	dapt		a ¹ a ¹			ble ¹
5. hu mid i ty	mid		hu i ² ty			

¹ The vowel in this syllable is pronounced with the schwa sound /ə/.

² When the vowel *i* occurs at the end of syllable and is followed by a consonant, it can be pronounced with a short i sound.

³ Most often when the letter *g* is followed by *e*, *i*, or *y*, it is pronounced with its soft sound—/j/.

Now put your finger on the first word in the table. Let's read each of the words together. **antibiotic, microbiologist, microbiome, microscope, adaptable, humidity**

Response to Reading


2 min

ESSENTIAL QUESTION

Today you extended your background knowledge of microbes. Over the next 4 days, you will read an informational text about microbes. Based on what you learn from your reading, you will be able to answer this Essential Question:

- Why is the definition of microbe debatable?* (RI.5.1)

DAY 2



3 min

Warm Up

GUESS THE PATTERN

To warm up today you will “Guess the Pattern” for a list of words. Get your personal whiteboard and dry erase marker ready. I will display a list of words that follow a common pattern. You will need to use your word study knowledge to guess this pattern. Once you have guessed the pattern, write a brief description of it on your whiteboard.

Ready? (Display the word list and set the timer for 2 minutes.) **Begin.**

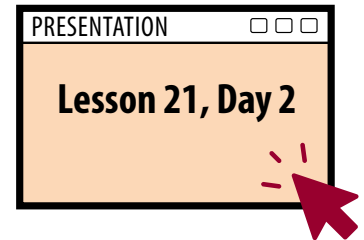
Answer Key

The pattern is: **multisyllable words with a silent letter or silent-letter pattern.**

Follow-up question:

What are some of the silent letters or silent-letter patterns in the words displayed? ***k-n, b, g-n, w-r, p, m-b, and s***

Let’s read aloud these words with a silent letter or silent-letter pattern. Ready? Begin. **knowledge, subtle, gnarly, wrestle, receipt, succumb, island, knapsack**



knowledge	receipt
subtle	succumb
gnarly	island
wrestle	knapsack



8 min

Multisyllable Word Work**READING MULTISYLLABLE WORDS**

(Display paragraph 4 of “Microbe World.”)

Microbes to the Rescue

Microbes are beneficial in many ways. They manufacture important vitamins and proteins that your body needs. Microbial bacteria living on the skin defend against illness and injury, while internal microbes help train your immune system to fight infections. Also, microbes in your gut help you digest food. The particular mix of microbes in your stomach and intestines can affect how well you absorb energy from food. Some scientists suspect that changes to the gut microbiome over time can contribute to unhealthy weight gain.



Turn to page 259 in your Student Workbook where you will find paragraph 4 from this week's passage. There are 6 underlined words in this paragraph.

Let's decode and read the first word together.

(Display manufacture.)

Step 1: Underline the vowels.

- Which letters should I underline to represent the vowel sounds?
a, u, a, and u-r-e
 - Remember, when the consonant *r* follows a vowel letter, we will underline the *r* along with the vowel to represent the vowel sound.
 - I am not going to connect the vowel letter *u* and the final *e* with a V. I will explain why after we divide the syllables.
- How many vowel sounds? **4** How many syllables? **4**

Step 2: Draw a line between the syllables.

- How many consonants are between the first and second vowel sounds? **1**
 - There is 1 consonant between the first and second vowel sounds. Because of this, you can divide the syllable in 2 ways. In this word, we divide after the consonant *n*.
- How many consonants are between the second and third vowel sounds? **1**
 - We divide this syllable after the vowel letter *u*.
- How many consonants are between the third and fourth vowel sounds? **2**
 - Where do I draw the syllable division line? **between the c and t**

Step 3: Read each syllable. (Gesture and point to the vowel when going through the process of reading each syllable.)

manufacture



manufacture

man|u|fac|ture

<p>Read the first syllable.</p> <ul style="list-style-type: none"> – Syllable type and gesture? closed – Vowel sound? /ă/ – Syllable? man 	<p>Read the second syllable.</p> <ul style="list-style-type: none"> – Syllable type and gesture? open – Vowel sound? /ū/ – Syllable? u 	<p>Read the third syllable.</p> <ul style="list-style-type: none"> – Syllable type and gesture? closed – Vowel sound? /ă/ – Syllable? fac 	<p>Read the fourth syllable.</p> <ul style="list-style-type: none"> – Syllable type and gesture? vowel-r – In this syllable, the reduced long <i>u</i> sound affects the pronunciation of the letter <i>t</i>. The <i>t</i> is pronounced /ch/. The vowel sound is /er/. – Syllable? ture (/cher/)
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Step 4: Read the word.

- Word? **manufacture**

Now it's your turn. Here are the steps:

1. Write the underlined word in the box.
2. Underline the vowel letters.
3. Mark a V connecting the vowel letters if the syllable follows the silent-e pattern.
4. Use your knowledge of phonics and syllable patterns, as well as affixes, to help you decide where to draw a line to divide the syllables.
5. For each syllable, say the syllable type while showing the gesture, say the vowel sound, and then read the syllable.
6. Read the word.
7. Repeat these steps for each of the underlined words.
8. When you are finished decoding each word, read the paragraph in your Student Workbook.

Answer Key

1. man <u>u</u> <u>fac</u> <u>ture</u> ¹	3. in <u>fec</u> <u>tions</u> ³	5. en <u>er</u> <u>gy</u> ⁴
2. in <u>ter</u> <u>nal</u> ²	4. par <u>tic</u> <u>u</u> <u>lar</u> ²	6. un <u>health</u> <u>y</u>

¹The syllable *-ture* is pronounced /cher/.

²The vowel in this syllable is pronounced with the schwa sound /ə/.

³The syllable *-tion* is pronounced /shŭn/.

⁴Most often when the letter *g* is followed by *e*, *i*, or *y*, it is pronounced with its soft sound—/j/.

**Teacher Tip**

Although this section focuses on decoding by syllables, the goal is to encourage students to identify morphemes, or larger chunks of words they recognize, which leads to more efficient word reading. For example, in the word *microscope*, some students may recognize the Greek morpheme *micro* and will not need to decode this morpheme into 2 syllables (*mi|cro*) prior to reading the word. Similar to the decoding process in the Morphology sections of this lesson, differentiate by having students who are more proficient decoders highlight the morphemes they recognize in the words *after* they have decoded them by syllable patterns. This strategy will help students see that words can be decoded in multiple ways—by identifying syllable patterns or by recognizing morphemes.

**Routine for MS Word Reading**

- Underline the vowels.
- Mark a V connecting the silent-e.
- How many consonants between the vowel sounds?
- Where do I divide the syllables?
- For each syllable, ask:
 - Syllable type and gesture?
 - Vowel sound?
 - Syllable?
- Word?

Reading

10 min

READING FOR ACCURACY

Before you read the text in your workbook, let's practice reading the Weekly Words.

(Display the Weekly Words grid.) Prompt students by saying "Word?" at each box.

microbiome	microscope	humidity
microbiologist	antibiotic	adaptable

READ & ANNOTATE

Today you will read an article about microbes. Microbes can be found everywhere—some beneficial, some harmful.

(Display Annotation Key.)

The purpose for your reading today is to annotate while you read.

Let's review.

- **STAR:** This is an important idea.
- **QUESTION MARK:** I have a question about this.
- **LETTER C:** I have a connection to this.
- **UNDERLINE:** This word is unknown to me.
 - I can't decode this word.
 - I don't know the meaning.

You have completed 20 lessons with explicit instructions on how to annotate when reading. For the next 10 lessons, you are going to annotate the text based on your own understanding of what you are reading. Let's review the gestures used for each annotation.

(Display Questioning gesture.)

Questioning—When you wonder about words or ideas in the text, you are questioning. Whenever you have a question about the text, annotate by writing a question mark by the text and gesture by raising your hand by your side. (Model the questioning gesture.) Show me how you gesture when you are questioning.

Annotation Key

This is an important idea.



I have a question about this.



I made a connection.



I can't decode this word.

I don't know the meaning of this word.

**Questioning**

(Display Connecting gesture.)

Connecting—When you identify a text-to-text, text-to-self, or text-to-world connection, annotate by marking a C next to the text and gesture by linking your 2 hands with your pointer fingers and thumbs. (Model the connecting gesture.) Show me how you gesture when you are making a connection.

(Display Determining Importance gesture.)

Determining Importance—You determine importance by figuring out what the author wants you to learn and remember from a text. When you identify an important idea, you will draw a star in the margin next to the text and gesture by raising a pointer finger in the air at shoulder level. (Model the determining importance gesture.) Show me how you gesture when you identify an important idea.



Turn to page 255 in your Student Workbook. Let's read and annotate paragraph 1 together using the cloze reading procedure. I will read the paragraph aloud, pausing throughout the text. When I pause, you will read the next word in the text aloud. I will also stop and model how to annotate my thinking as we read.

(Display "Microbe World!")

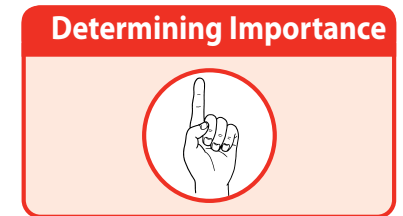
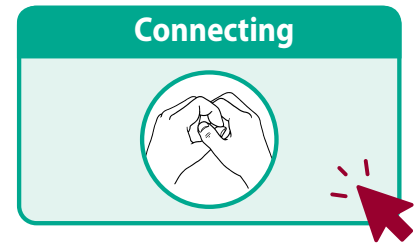
Begin reading the title and paragraph 1 aloud with the students. Reference the Think Aloud stopping points below to support your modeling of how to annotate the text.

Microbe World

Animal or Plant . . . It's a Microbe!

Microbes are tiny living things, too small to be seen without a microscope. Microbes are not animals because they only have a single cell. (By comparison, most animals have millions of cells.) Microbes are not plants because they consume nutrients rather than using photosynthesis to turn sunlight into food.


Think Aloud: I am going to stop here and gesture by raising my finger in the air while placing a star next to this section. Here, the author provides a definition and supporting background information about microbes. I think knowing this information is an important part of understanding the topic of *microbes*.



I am also going to write a C in the margin by the word *photosynthesis* and make the connecting gesture because I have a text-to-text connection. I remember reading about *photosynthesis* in the article from Lesson 7—"Running on Sunlight: How Energy Powers Life." We learned that *photosynthesis* is the chemical process in which plants absorb the energy of sunlight and then transform the energy into sugar. This helps them grow.

Let's continue reading.

There are many types of microbes, including yeast (the fungus that makes bread rise), bacteria, and some parasites that cause disease. Viruses are sometimes considered microbes, but the definition of microbe is debatable. The average person might think of microbes in one way, but a microbiologist or doctor might have a different definition.

 **Think Aloud:** I will put question marks next to the words *yeast*, *fungus*, and *parasites* because I have questions about these words. I want to know how they relate to the microbes found on and in my body and everywhere on our planet.

Now it's your turn to read. Start at paragraph 2 that has the heading "Microbes Everywhere" (line 11), and read the rest of the text. Be sure to stop and annotate as you read. Make sure to use all of the annotation strategies as appropriate, while reading the article.



Teacher Tip

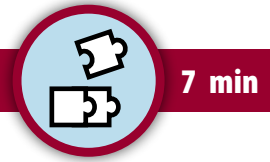
Differentiation during whole-group reading time is key to building proficient readers. Here are a couple ideas:

1. During whole-group reading time, pull together a small group of students (5 or fewer) who require extra support. Instead of having them read and annotate the entire article, use the process modeled above to read aloud the next paragraph. Continue the same process, reading the article paragraph by paragraph. As you do this, use the gradual release model: Have students read a paragraph or a few sentences by themselves, and then have them pause to share Think Alouds about how to annotate the section. If Think Alouds seem lacking, coach students on what to annotate. Continue this process until time is up. **Note:** The small group may not read the entire article, and this is okay. **The goal is quality over quantity**—strive for accurate reading and practice with supportive annotation.
2. As students read in the whole-group setting, kneel next to specific students and take anecdotal notes about reading habits, strategies, and needs for support.

Listen for opportunities to provide corrective and/or positive feedback.

Consistently providing feedback fosters proud, confident readers.

Morphology



DEFINE

Now we will use a word analysis table to look at the Weekly Words for this week.

(Display Weekly Words.)



Turn to page 259 in your Student Workbook. We will work together to identify the morphemes in 1 of the Weekly Words.

(Display table.)

Microbes are tiny living things, too small to be seen without a _____.

Definition	Morphemes
to see something small	
<p style="text-align: center;">Circle the synonym and draw a square around the antonym.</p> <p style="text-align: center;">scale enlarging lens handshake microscope</p>	

Put your finger on the sentence above the chart. Read aloud this sentence with me.

Microbes are tiny living things, too small to be seen without a _____.

The definition for the missing Weekly Word is “to see (something) small.”

Use your Morphology Key and context clues to help you determine which Weekly Word is missing. Because we have Weekly Words that share the same morpheme, let’s begin by finding the morpheme that is different in each word.

- In the word *antibiotic*, *anti-* is the morpheme that is different from the other 3 words. Find the prefix *anti-* in your Morphology Key.
 - What is the meaning of *anti-*? **against, opposite**

Weekly Words	
<i>antibiotic</i>	<i>microbiome</i>
<i>microbiologist</i>	<i>microscope</i>



Note: Not all letters from each word may be included in the spellings of the morphemes.

Microbes are tiny living things, too small to be seen without a _____.

- The meaning of *anti-* does not match any parts of the definition for the missing word.
- In the word *microbiologist*, *-ist* is the morpheme that is different from the other 3 words. Find the suffix *-ist* in your Morphology Key.
 - What is the meaning of *-ist*? **one who performs a specific action**
 - The meaning of *-ist* does not match any parts of the definition for the missing word.
- In the word *microbiome*, *biome* is the morpheme that is different from the other 3 words. Find the Greek word *biome* in the Other section of your Morphology Key.
 - What is the meaning of *biome*? **natural life zone or community**
 - The meaning of *biome* does not match any parts of the definition for the missing word.
- In the word *microscope*, *scope* is the morpheme that is different from the other 3 words. Find the Greek Combining Form *scope* in your Morphology Key.
 - What is the meaning of *scope*? **to watch or see**
 - The words “to see” in the meaning of *scope* can be found in part of the definition for the missing word.
 - To confirm this is the word that best completes the sentence, I will check the meaning of the remaining morpheme.
 - The Greek Combining Form *micro* means “small.” So, I know the word *microscope* means “to see (something) small.”

Based on the meanings of these morphemes, which Weekly Word best matches the definition? **microscope**

Reread the sentence inserting the word *microscope* in the blank.
Microbes are tiny living things, too small to be seen without a microscope.

- Does this make sense? **yes**
- Write the word *microscope* in the center of the table.

What is the first morpheme in this word? **micro**

- Write *micro* in the box in the Morphemes section.

Microbes are tiny living things, too small to be seen without a **microscope**.



What is the last morpheme in this word? **scope**

- Write *scope* in the box in the Morphemes section.

Now we will identify a synonym and an antonym. We will circle the synonym and draw a square around the antonym.

- Let's repeat the definition for the word microscope. **to see something small**
- First, we will identify a synonym.
 - Synonyms are words that have the same or similar meanings.
 - Let's look at each word or phrase.
 - What is the first word? **scale** This word names a tool used to determine the weight of an object. This does not mean the same as microscope.
 - What is the next phrase? **enlarging lens** This phrase contains the word *large* which relates to the purpose of a microscope—making things large enough to be seen. This could be the synonym, but let's look at the rest of the words.
 - What is the next word? **handshake** This word names a way for 2 people to greet each other or show they have come to an agreement. This does not mean the same as microscope.
 - What is the last word? **macroscope** This word names a tool used to study large objects. This word does not mean the same as microscope.
 - Which of these words or phrases means the same as microscope? **enlarging lens**
 - I will draw a circle around the words *enlarging lens*.
- Next, we will identify an antonym.
 - Antonyms are words with opposite meanings.
 - Which of these words is the antonym for the word microscope? **macroscope**
 - I will draw a square around the word *macroscope*.

Answer Key

Microbes are tiny living things, too small to be seen without a microscope.

Definition to see something small	Morphemes micro scope
<p>Circle the synonym and draw a square around the antonym.</p> <p>scale <u>enlarging lens</u> handshake macroscope</p>	

Response to Reading



2 min



In paragraph 4 of the article “Microbe World,” the author describes the various benefits of microbes. Turn to page 260 in your Student Workbook. Read each microbe benefit and match it to the part(s) of the body it affects. Refer back to the passage to help you. (RI.5.1)

Answer Key (answers vary)

Part of the Body	Letter	Microbe Benefit
1. entire body	c	a. fights infections
2. skin	e	b. helps digest food
3. stomach and intestines	d	c. manufacture important vitamins and proteins
4. gut	b	d. helps us absorb energy from food
5. immune system	a	e. defends against illness and injury

DAY 3



3 min

Warm Up

WORD CHAIN

Today we will warm up with a word chain. Get your personal whiteboard and dry erase marker ready. In this word chain, you will listen to each word and change 1 or more syllables or morphemes in the word to make a new word. Ready? Let's begin.

Note: Remind students to write each new word under the previously spelled word, so that all 4 words are listed vertically by the end of the task.

The first word is *photograph*.

- Word? **photograph** Write it.
- How do we spell it? **p-h-o-t-o-g-r-a-p-h**

Change *graph* to *genic*.

- What's the new word? **photogenic**
- Write the word *photogenic* under *photograph*.
- How do we spell the new word? **p-h-o-t-o-g-e-n-i-c**

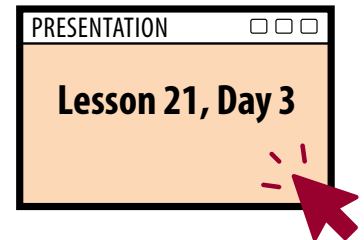
Next, change *photo* to *bio*.

- What's the new word? **biogenic**
- Write the word *biogenic* under *photogenic*.
- How do we spell the new word? **b-i-o-g-e-n-i-c**

Finally, change *genic* to *sphere*.

- What's the new word? **biosphere**
- Write the word *biosphere* under *biogenic*.
- How do we spell the new word? **b-i-o-s-p-h-e-r-e**

Let's read all 4 words. Ready? Begin. **photograph, photogenic, biogenic, biosphere**



photograph

photogenic

biogenic

biosphere



10 min

Multisyllable Word Work

SYLLABLE MAPPING

Today we're going to practice spelling multisyllable words. We've done syllable mapping before, so let's do one together.

The word is *conversation*. Word? **conversation**

- Place a dot in the corner for each syllable we hear.
con/ver/sa/tion
- How many syllables? **4**

.	.	.	.
---	---	---	---

Now I write the letters that spell the sounds in each syllable.

First syllable? con – First sound? /k/ Letter? c – Second sound? /ɔ/ Letter? o – Third sound? /n/ Letter? n – Syllable type and gesture? closed – Syllable? con	Second syllable? ver – First sound? /v/ Letter? v – First sound? /er/ Letter or letters? e-r – Syllable type and gesture? vowel-r – Syllable? ver	Third syllable? sa – First sound? /s/ Letter? s – Second sound? /ā/ Letter? a – Syllable type and gesture? open – Syllable? sa	Fourth syllable? tion – This is a suffix you know. How is it spelled? t-i-o-n – Syllable? tion (/shŭn/)
---	--	---	---

- Word? **conversation**



Now it's your turn. Turn to page 261 in your Student Workbook. Here are the steps:

- I'll say a word and you'll repeat it.
- Tap 1 box for each syllable you hear.
- For each syllable, say the sounds, write the letters, and say the syllable type while showing the gesture.
- Mark a V connecting the vowel letters if the syllable follows the silent-e pattern.
- Write the multisyllable word in the last column and whisper read it to yourself.

CO	.	.	.
----	---	---	---

CO	ver	.	.
----	-----	---	---

CO	ver	sa	.
----	-----	----	---

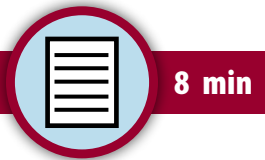
CO	ver	sa	tion
----	-----	----	------

Answer Key

Words to Dictate	Syllable 1	Syllable 2	Syllable 3	Syllable 4	Word
conversation	con	ver	sa	tion ¹	conversation
1. hexagon	hex	a ²	gon		hexagon
2. impressionist	im	pres	sion ¹	ist	impressionist
3. superhuman	su	per	hu	man ²	superhuman
4. refrigerate	re	frig ³	er	ate	refrigerate
5. recreation	rec	re	a	tion ¹	recreation

¹ The syllables *-sion* and *-tion* in these words are pronounced /shŭn/.
² The vowel in this syllable is pronounced with the schwa sound /ə/.
³ Most often when the letter *g* is followed by *e*, *i*, or *y*, it is pronounced with its soft sound—/j/.

Reading



WEEKLY WORDS IN CONTEXT

(Display Weekly Words.)

Today you are going to scan this week’s passage and locate the Weekly Words in the passage. **Scanning** is an effective strategy for finding specific information. Here is the process of scanning text:

1. Identify what information you need to retrieve from the text.
2. Quickly scan—or look through—the text for key words, headings, names, or dates that relate to the information you are hunting for.
3. Once you have identified the section of text containing the information you need, read the section carefully to ensure complete understanding.

Use the scanning strategy to identify this week’s 4 Weekly Words. Once you have identified each word, highlight it. Then use context clues to help you determine its part of speech. Before you begin, let’s review the 4 Parts of Speech.

Weekly Words

antibiotic microbiome
 microbiologist microscope



(Display 4 Parts of Speech Key.) Use the 4 Parts of Speech Key to define and provide examples of a noun, a verb, an adverb, and an adjective.

4 PARTS OF SPEECH KEY			
NOUN	VERB	ADVERB	ADJECTIVE
A noun names people, places, or things.	A verb tells an action or a state of being.	An adverb describes a verb, an adjective, or another adverb.	An adjective describes a noun or pronoun.
Example: <i>Adam is an intelligent young man.</i>	Example: <i>The teacher gave us an assignment.</i>	Example: <i>I gladly went to the store.</i>	Example: <i>The three dogs are rowdy.</i>



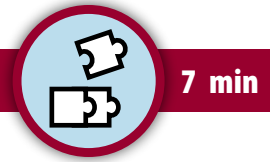
Now turn to page 261 in your Student Workbook. Here are the steps:

1. Scan the passage on pages 255-256.
2. Highlight the 4 Weekly Words.
3. Read the sentence where each Weekly Word appears.
4. Determine the part of speech for each Weekly Word as it is used in the passage
5. Then, turn to page 261 of your workbook and write the Weekly Word in the left column.
6. Finally, write the part of speech next to the word in the right column.

Answer Key

	Weekly Word	Part of Speech
1.	microscope	noun
2.	microbiologist	noun
3.	microbiome	noun
4.	antibiotic	noun

Morphology



DEFINE

Now we will use a word analysis table to study the remaining Weekly Words.

(Display Weekly Words.)



Turn to page 262 in your Student Workbook. We have already identified which morphemes are different in each of the Weekly Words and completed a word analysis table for the word microscope. Now you will complete word analysis tables for the remaining 3 Weekly Words.

Answer Key

- Some scientists suspect that changes to the gut **microbiome** over time can contribute to unhealthy weight gain.

Definition	Morphemes
small natural life zone	micro biome
microbiome	
Circle the synonym and draw a square around the antonym.	
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid blue; padding: 2px;">dead cells</div> terrain <div style="border: 1px solid blue; border-radius: 50%; padding: 2px;">living cells</div> repellent </div>	

- Antibiotics** are valuable in fighting infections, but taking **antibiotics** kills the helpful microbes in the gut, as well as any harmful ones.

Definition	Morphemes
having the characteristic of being against life (of microbes)	anti bio ic s
antibiotics	
Circle the synonym and draw a square around the antonym.	
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid blue; border-radius: 50%; padding: 2px;">medications</div> innovations assemblies <div style="border: 1px solid blue; padding: 2px;">germs</div> </div>	

Weekly Words	
antibiotic	microbiome
microbiologist	microscope



Note: Not all letters from each word may be included in the spellings of the morphemes.

3. The average person might think of microbes in one way, but a **microbiologist** or doctor might have a different definition.

Definition	Morphemes
one who studies small life	micro bio logy ist
microbiologist	
Circle the synonym and draw a square around the antonym.	
unknowledgeable person	uninterested person scientist advisor

Response to Reading



2 min

Yesterday we learned about the benefits of having microbes in and on our bodies. Unfortunately, there are also harmful effects of having microbes on our bodies. One example is *staphylococcus aureus* (pronounced stăf-ə-lə-kök-ŭs aw-ree-ŭs), which is one microbe that can cause food poisoning and other serious infections.



Turn to page 263 in your Student Workbook and write a response to the question. Cite evidence from the text when writing your response. (RI.5.8)

How can microbes that are "harmless" if found in your intestines still make you sick, and what can you do to prevent this sickness from happening?

Ready? Begin.

Answer Key (answers vary).

Possible student response:

Bacteria from the intestines can cause food poisoning if it is transferred to someone's hands and then swallowed. Lines 37-38 from the article tell us we can avoid sickness simply by washing our hands.

DAY 4

Warm Up



3 min

GUESS THE PATTERN

To warm up today you will “Guess the Pattern” for a list of words. Get your personal whiteboard and dry erase marker ready. I will display a list of words that follow a common pattern. You will need to use your word study knowledge to guess this pattern. Once you have guessed the pattern, write a brief description of it on your whiteboard.

Ready? (Display the word list and set the timer for 2 minutes.) **Begin.**

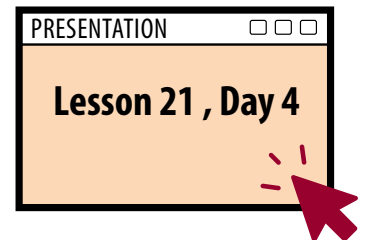
Answer Key

The pattern is: **words with the Greek Combining Form *graph*.**

Follow-up question:

What does the Greek Combining Form *graph* mean? **written, drawn**

Let’s read aloud these words with the Greek Combining Form *graph*. Ready? Begin. **autograph, geography, choreographer, biographic, pictograph, telegraph, holographic, digraph**



autograph	pictograph
geography	telegraph
choreographer	holographic
biographic	digraph

Multisyllable Word Work



10 min

SYLLABLE MAPPING

Today we’re going to practice spelling multisyllable words. We’ve done syllable mapping before, so let’s do one together.

The word is *intervene*. Word? **intervene**

- Place a dot in the corner for each syllable we hear: **in/ter/vene**
- How many syllables? **3**

Now I write the letters that spell the sounds in each syllable.


--	--	--

First syllable? in – First sound? /i/ Letter? i – Second sound? /n/ Letter? n – Syllable type and gesture? closed – Syllable? in	Second syllable? ter – First sound? /t/ Letter? t – Second sound? /er/ Letter or letters? e-r – Syllable type and gesture? vowel-r – Syllable? ter	Third syllable? vene – First sound? /v/ Letter? v – Second sound? /ē/ Letter or letters? e with a silent-e after the next consonant – Third sound? /n/ Letter? n – Syllable type and gesture? silent-e – How do I mark the silent-e? a V connecting the e and e – Syllable? vene
---	---	--

in . . .

in . ter . .

in . ter . vene .



- Word? **intervene**



Now it's your turn. Turn to page 264 in your Student Workbook. Here are the steps:

1. I'll say a word and you'll repeat it.
2. Tap 1 box for each syllable you hear.
3. For each syllable, say the sounds, write the letters, and say the syllable type while showing the gesture.
4. Mark a V connecting the vowel letters if the syllable follows the silent-e pattern.
5. Write the multisyllable word in the last column and whisper read it to yourself.

Answer Key

Words to Dictate	Syllable 1	Syllable 2	Syllable 3	Syllable 4	Words
intervene	in	ter	vene		intervene
1. violin	vi	o ¹	lin		violin
2. motorcycle	mo	tor ¹	cy ²	cle ¹	motorcycle
3. artifact	ar	ti ³	fact		artifact
4. reflection	re	flec	tion ⁴		reflection
5. biofeedback	bi	o	feed	back	biofeedback

¹The vowel in this syllable is pronounced with the schwa sound /ə/.

²Most often when the letter *c* is followed by *e*, *i*, or *y*, it is pronounced with its soft sound—/s/.

³When the vowel *i* occurs at the end of syllable and is followed by a consonant, it can be pronounced with a short *i* sound.

⁴The syllable *-tion* is pronounced /shŭn/.

Reading**8 min**

Note: Prior to reading, have students pre-select reading partners or you can strategically assign partners.



Turn to page 256 of your Student Workbook and get out a highlighter. You and your partner will read the “Battling Infections” section independent of each other. As you read this section, highlight words and phrases that describe how the use of *antibiotics* can have a *negative* effect on fighting infections.

After you finish reading and highlighting, compare your highlighted details with your partner's. If you have something highlighted that your partner does not, explain to your partner how the detail supports the idea that *antibiotics* can have negative effects on fighting infections.

If you finish reading before your partner, reread the section again, focusing on building accuracy and fluency.

Answer Key (answers vary)

Possible details students could highlight:

Line 42	<i>“digestive problems”</i>
Line 44	<i>“unnecessary side effects”</i>
Line 46	<i>“can also lead to infections that resist antibiotics”</i>
Lines 48-49	<i>“disease becomes more dangerous and harder to cure”</i>
Lines 50-51	<i>“contributes to antibiotic resistance in animals and people”</i>

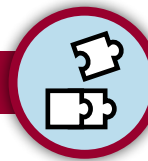
**Teacher Tip**

Differentiation during whole-group reading time is key to building proficient readers. Here are a couple ideas:

1. Pull together a small group of students (5 or fewer) who require extra support. Ask students to whisper read the article to themselves. Lean in close to 1 student at a time. Ask the student to increase his or her reading volume slightly, while reading a short portion of the text. Listen and provide corrective feedback, if needed. Be sure to spend time with each student in the group.
2. As students read in the whole-group setting, kneel next to specific students and take anecdotal notes about reading habits, strategies, and needs for support.

Listen for opportunities to provide corrective and/or positive feedback.

Consistently providing feedback fosters proud, confident readers.

Morphology**7 min****WORD CONSTRUCTION WITH MORPHEME CARDS**

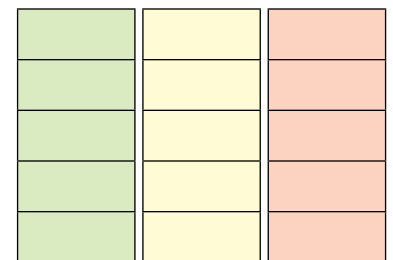
Note: Students will use their morpheme cards and morphology mat. Word Construction is most efficient and engaging when students are working in collaborative groups of 2 or 3 students. Manage materials by having each group share 1 set of morpheme cards and 1 morphology mat. Make 1 student responsible for preparing the green prefix cards, another for preparing the red suffix cards, and another for preparing the yellow root cards. Then have students begin building words with the cards. This is when the academic conversation gets exciting! As students construct new words, have them discuss how to decode and define the words.

Today you will construct words using prefixes, suffixes, and Latin roots you have previously learned.

To help you construct words, you will need the following materials:

- 5 green prefix cards
- 5 yellow root cards
- 5 red suffix cards
- morphology mat

You will use a morphology mat and colored morpheme cards to construct different words using Latin roots and affixes.



Before you start constructing words, you and your partner will need to prepare your morpheme cards by labeling them with the prefixes, suffixes, and roots you will use.

(Display list of morphemes.)

at	con	dis
ive	tract	ment
vis	(u)al	in
tain	ex	ible

On the display, you see a list of 12 different morphemes. Some are prefixes, some are suffixes, and some are Latin roots.

When I say go, you and your partner will have 3 minutes to identify which of the morphemes are Latin roots and write them on the **yellow cards**. Then, you will decide which morphemes are prefixes and write them on the **green cards**. Finally, you will write the suffixes on the **red cards**.

You have 3 minutes to prepare your cards. Ready? Begin. (Set the timer for 3 minutes.)

(Displayed labeled Morpheme Cards.)

Now let's check your cards to see if you labeled them correctly.

- Lay **green prefix cards** to the right of your morphology mat and check that you have all 5 correct.
- Place your **yellow Latin root cards** in the top middle of your mat and check that you completed them correctly. You should have 2 blank yellow cards remaining.
- Finally, put your **red suffix cards** to the right of your morphology mat and check that these cards are correct. You should have 1 that is left blank.

at	tain	(u)al
con	tract	ible
dis	vis	ive
ex		ment
in		



Now it's time for you and your partner to construct words. Turn to page 264 in your Student Workbook. To construct your words, follow these steps:

1. Place 1 root card in a center rectangle on your mat.
2. Next, try adding green prefix and/or red suffix cards to the mat, next to the root, until you have built a word.
3. Read the word to see if it is a word you recognize.

- Record your words in the Constructed Words table in your workbook.
- Repeat these steps to see how many words you can build before the time is up.

Ready? (Set the timer for 3 minutes.) **Begin.**

Answer Key

Constructed Words

Possible words: attain, attainment, contain, containment, distain, attract, attractive, contract, contractual, contractible, contractive, distract, distractive, distractible, extract, extractible, extractive, visual, visible, invisible

If time permits, ask students to share a few of the words they constructed. As students are sharing, write the words on chart paper or on the board.

Extension Activity: In a literacy station or during independent work time, have students define and write sentences using a few of the words they constructed.

Note: Some words students build may not be “real” words. The objective for this task is to have students manipulate the morphemes to build words that can be decoded and defined, even if they are not “real” words. As you monitor students’ work, you can coach them on combinations to try.

Response to Reading



2 min

Note: Prior to reading, have students return to their partners from the previous activity.



Earlier today, you highlighted details relating to the negative effects of *antibiotics*. Turn to page 265 in your Student Workbook. Use the information you highlighted in the “Battling Infections” section to complete the next activity. You and your partner will work together to read each sentence and then fill in its blanks correctly. Once you have finished the activity, read the sentences together. (RI.5.1, RF.5.4)

Answer Key

- Antibiotics are valuable in **fighting infections**, but taking antibiotics kills the **helpful** microbes in the **gut**, as well as any **harmful** ones.
- Sometimes people have **digestive** problems after taking antibiotics because they have **lost** beneficial **microbes**.
- It’s important to only take **antibiotics** when they are truly **needed**, to **avoid** unnecessary **side** effects.

DAY 5

Warm Up



3 min

FOLLOW THE PATTERN

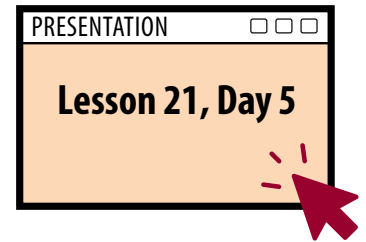
To warm up today, you will “Follow the Pattern” of a list of words. Get your personal whiteboard and dry erase marker ready. I will display a list of words that follow a common pattern. You will need to use your word study knowledge to write at least 3 more words that follow this pattern.

Ready? (Display the pattern description and word list and then set the timer for 2 minutes.) **Begin.**

Answer Key (answers vary)

After students have finished, have them trade whiteboards with a partner and read their partners' words.

What is a consonant blend? 2 or 3 consonants side by side and each consonant is pronounced



The pattern is multisyllable words containing consonant blends.

stalagmite	friendly
proportional	classical


Multisyllable Word Work



5 min

FLUENCY

We have learned to read multisyllable words with common Latin roots. This week we will build fluency by reading words with the Latin roots *sect* and *vid/vis*.

 Turn to page 266 in your Student Workbook. When I say “Begin,” point to the first word. Begin whisper reading across the page. If you finish before I say “Stop,” start at the top and read the words again. **Ready? Begin.** (Time students for 1 minute.)

section	transected	intersection	sector
insect	dissecting	transect	resection
division	vision	revise	invisible
visualize	individual	provision	visual

Next, we’re going to read phrases. Let’s practice 4 phrases together.

(Display phrases.)

will make individual	were transected	revise the plan	this entire section
----------------------	-----------------	-----------------	---------------------

Now it's your turn. When I say "Begin," point to the first phrase in your Student Workbook and whisper it. Continue reading across the page. If you finish before I say "Stop," start at the top and read the phrases again. Ready? Begin. (Time students for 1 minute.)

revise the plan	was dissecting
for the resection	each sector will
has an invisible	this entire section
carried the provisions	her vision was
entire visual field	the division of
will make individual	visualize the location
near the intersection	if we transect
the insect flies	were transected

Reading



10 min



Turn to page 255 of your Student Workbook. Before you begin rereading "Microbe World," let's review the Essential Question for this week. Read it with me.

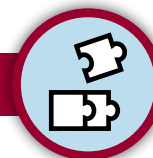
(Display Essential Question.)

Why is the definition of microbe debatable? (RI.5.1)

Today while you read, think about how you will answer the Essential Question. I will leave it displayed on the slide for you to refer to. Use information from the article to support your response.

Ready? Begin reading.

Morphology



7 min

REVIEW & APPLY

Today you will do an activity that asks you to apply the meanings of morphemes and words you have learned.



Turn to page 267 in your Student Workbook. Read each sentence. Use your Morphology Key and the context clues to help you identify the missing word in each sentence. Finally, fill in the blank with the correct word from the Word Bank. Cross off the word once it has been used.

Answer Key

Word Bank			
assembly	intercept	adaptable	accusation
humidity	algorithm	recognize	dorsal
Sentences			
1. The shark has a large scar over his <u>dorsal</u> fin.			
2. You have to be <u>adaptable</u> and willing to change your plans due to the weather conditions.			
3. The <u>humidity</u> was so high the air felt wet when we visited Florida.			
4. The <u>accusation</u> of theft was proven false.			
5. The programmer created an <u>algorithm</u> to predict possible number patterns.			

Response to Reading



5 min

This week you read the article “Microbe World” and learned about the benefits and harmful effects of these microorganisms.



Turn to page 268 of your Student Workbook, and write a response to this Essential Question:

Why is the definition of microbe debatable? (RI.5.1)

When writing your response, use at least 2 of the Weekly Words.

(Display Weekly Words.)

Answer Key (answers vary)

Possible student response:

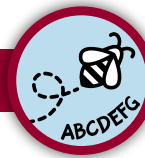
People agree that microbes have one cell and are only visible under a *microscope*. But the definition of microbe is debatable because there are many different kinds of microbes. Also, the same type of microbe can be helpful or harmful, depending on where you find it. As *microbiologists* continue to study microbes, our understanding of what they are will continue to shift.

Weekly Words

antibiotics	microbiome
microbiologist	microscope
adaptable	humidity



Spelling + Match the Meaning



5 min



Turn to page 269 in your Student Workbook. Write your name at the top of page 269, carefully tear the page out, then put your workbook away.

Now it's time for a spelling test. I will dictate 6 Weekly Words—4 from this week and 2 review words. You will complete each word by filling in the blank with the correctly spelled morpheme or letter combination. After you have finished spelling these 6 words, you will match each one to its definition by writing the definition's letter next to the word.

Words to Dictate	Letter	Definitions
1. <u>antibiotic</u>	d	a. one who studies small life
2. <u>microbiologist</u>	a	b. condition of being moist or wet (in the air)
3. <u>microbiome</u>	c	c. small natural life zone
4. <u>microscope</u>	f	d. having the characteristic of being against life (of microbes)
5. <u>humidity</u>	b	e. able to fix or can adjust
6. <u>adaptable</u>	e	f. to see (something) small

Now I will dictate a sentence to you. You will repeat it. Then you will write it.

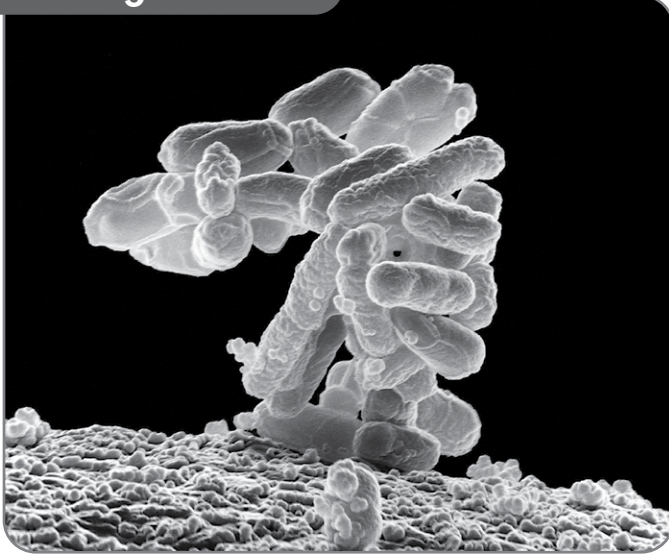
Sentence: Oliver collected various mushrooms to study in the laboratory.

Repeat it with me. **Oliver collected various mushrooms to study in the laboratory.** Now write it.

Underline the word in the sentence that has a *closed* vowel team syllable pattern.

Answer Key: mushrooms

Passage



Microbe World

1 Animal or Plant...It's a Microbe!

Microbes are tiny living things, too small to be seen without a microscope. Microbes are not animals because they only have a single cell.

5 (By comparison, most animals have millions of

cells.) Microbes are not plants because they consume nutrients rather than using photosynthesis to turn sunlight into food. There are many types of microbes, including yeast (the fungus that makes bread rise), bacteria, and some parasites that cause disease. Viruses are sometimes considered microbes, but the definition of *microbe* is debatable. The average person might think of microbes in one way, but a
 10 microbiologist or doctor might have a different definition.

Microbes Everywhere

You do not see microbes, but they are everywhere, from the bottoms of the oceans, to the driest deserts, to the atmosphere miles above the planet's surface. Every time you take a breath, you inhale hundreds, if not thousands, of microbes. Most of these microbes are carried out on your next exhale, but some join
 15 all the other microbes that are already part of you. Microbes live in your nasal passages; on your skin, gums, and teeth; and in your stomach and digestive system.

You might have thousands of different kinds of microbes in various microbiomes in and on your body. The microbes in your armpits are different from the ones on your hands, which are different from the ones behind your ears. You have more microbes in your body than you do human cells, but don't
 20 worry—the vast majority of microbes either help us or are neutral and harmless.

Microbes to the Rescue

Microbes are beneficial in many ways. They manufacture important vitamins and proteins that your body needs. Microbial bacteria living on the skin defend against illness and injury, while internal

microbes help train your immune system to fight infections. Also, microbes in your gut help you
25 digest food. The particular mix of microbes in your stomach and intestines can affect how well you
absorb energy from food. Some scientists suspect that changes to the gut microbiome over time can
contribute to unhealthy weight gain.

Harmful Microbes

Although many microbes are beneficial, some can cause serious diseases. For example, *staphylococcus*
30 *aureus* may cause food poisoning and other dangerous infections. Yet, this common bacteria is often
found on the skin without causing harm. There's about a one in three chance you have this microbe in
your nostrils right now. Fortunately, you have a lot of good microbes in your nose, as well, and these
helpful microbes keep the harmful ones in check.

Unfortunately, the harmful microbes sometimes grow too strong or move to a different part of the body
35 where they can cause problems. Microbes that are harmless in your nose may cause an infection on your
skin. Bacteria that live in your intestines could cause food poisoning if transferred to your hands and
mouth where it is swallowed. Therefore, it is important to wash your hands after using the bathroom to
make sure you don't transfer any bacteria from one end of the digestive system to the other.

Battling Infections

40 If you get an infection caused by harmful bacteria, you may be prescribed antibiotics. Antibiotics
are valuable in fighting infections, but taking antibiotics kills the helpful microbes in the gut, as well
as any harmful ones. Sometimes people have digestive problems after taking antibiotics because they
have lost beneficial microbes. It's important to only take antibiotics when they are truly needed, to
avoid unnecessary side effects. For example, antibiotics won't work against viruses, so taking them for
45 a viral cold or flu does more harm than good.

Taking unnecessary antibiotics can also lead to infections that resist antibiotics. This happens when
some bacteria do not die from an antibiotic but instead change to become stronger. In this case, the
antibiotic no longer works against the infection, so the disease becomes more dangerous and harder
to cure. Like people, pets and livestock should only get antibiotics when they absolutely need them.
50 Some big farms give healthy animals antibiotics in hopes of preventing disease. This contributes to
antibiotic resistance in animals and people. According to the World Health Organization, antibiotic
resistance is one of the biggest threats to global health today.

Imagining the millions of microbes in and on your body may be uncomfortable, but don't try to
eliminate them! While a few microbes are harmful, most are neutral or beneficial, and we need all the
55 beneficial microbes in order to survive.

DAY 1

Reading Multisyllable Words

Animal or Plant...It's a Microbe!

Microbes are tiny living things, too small to be seen without a microscope. Microbes are not animals because they only have a single cell. (By comparison, most animals have millions of cells.) Microbes are not plants because they consume nutrients rather than using photosynthesis to turn sunlight into food. There are many types of microbes, including yeast (the fungus that makes bread rise), bacteria, and some parasites that cause disease. Viruses are sometimes considered microbes, but the definition of *microbe* is debatable. The average person might think of microbes in one way, but a microbiologist or doctor might have a different definition.

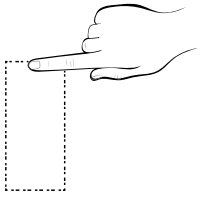


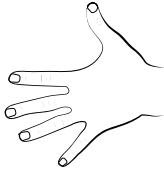


1. microbes	4.
2.	5.
3.	6.

Building Background

Look at each microbe displayed on the slide presentation. Then write your answers to these questions about each microbe in the table below: 1) What is the microbe's shape and color? 2) Does the microbe remind you of something? 3) Where do you suspect the microbe can be found?

Image 1	Image 2	Image 3

Decoding

C-le 						
Vowel-r 						
Vowel Team 						
Open 						
Silent-e 						
Closed 						
Word	1. antibiotic	2. microbiologist	3. microbiome	4. microscope	5. adaptable	6. humidity

DAY 2

Reading Multisyllable Words

Microbes to the Rescue

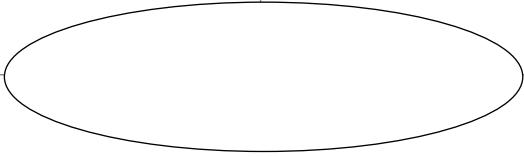
Microbes are beneficial in many ways. They manufacture important vitamins and proteins that your body needs. Microbial bacteria living on the skin defend against illness and injury, while internal microbes help train your immune system to fight infections. Also, microbes in your gut help you digest food. The particular mix of microbes in your stomach and intestines can affect how well you absorb energy from food. Some scientists suspect that changes to the gut microbiome over time can contribute to unhealthy weight gain.

1. manufacture	4.
2.	5.
3.	6.

Define

Microbes are tiny living things, too small to be seen without a

_____.

Definition	Morphemes
to see something small	
	
Circle the synonym and draw a square around the antonym.	
scale	enlarging lens handshake microscope

Weekly Words: antibiotic, microbiologist, microbiome, microscope

Response to Reading

Read each microbe benefit and match it to the part(s) of the body it affects.

Refer back to the passage to help you.

Part(s) of the Body	Letter	Microbe Benefit
1. entire body		a. fights infections
2. skin		b. helps digest food
3. stomach and intestines		c. manufacture important vitamins and proteins
4. gut		d. helps us absorb energy from food
5. immune system		e. defends against illness and injury

DAY 3

Syllable Mapping

	Syllable 1	Syllable 2	Syllable 3	Syllable 4	Word
	con •	ver •	sa •	tion •	conversation
1.					
2.					
3.					
4.					
5.					

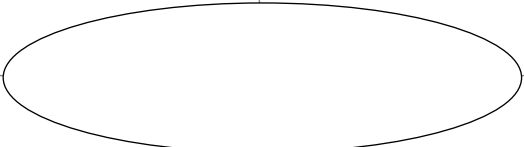
Weekly Words in Context

	Weekly Word	Part of Speech
1.		
2.		
3.		
4.		

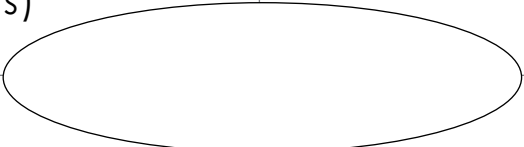
Define

Complete the word analysis tables using these Weekly Words: antibiotic, microbiologist, microbiome.

1. Some scientists suspect that changes to the gut _____ over time can contribute to unhealthy weight gain.

Definition	Morphemes
small natural life zone	
 <p>Circle the synonym and draw a square around the antonym.</p> <p>dead cells terrain living cells repellent</p>	

2. _____ are valuable in fighting infections, but taking _____ kills the helpful microbes in the gut, as well as any harmful ones.

Definition	Morphemes
having the characteristic of being against life (of microbes)	
 <p>Circle the synonym and draw a square around the antonym.</p> <p>medications innovations assemblies germs</p>	

3. The average person might think of microbes in one way, but a _____ or doctor might have a different definition.

Definition	Morphemes
one who studies small life	
<p>Circle the synonym and draw a square around the antonym.</p> <p>unknowledgeable uninterested scientist advisor person person</p>	

Response to Reading

How can the "harmless" microbes in your intestines still make you sick, and what can you do to prevent this sickness from happening?

DAY 4

Syllable Mapping

	Syllable 1	Syllable 2	Syllable 3	Syllable 4	Word
	in •	ter •	vene •		intervene
1.					
2.					
3.					
4.					
5.					

Word Construction

Constructed Words	

Response to Reading

You and your partner will work together to read each sentence and then fill in its blanks correctly. Use your highlighted text from the "Battling Infections" section to help you. Read the sentences together to check your work.

1. Antibiotics are valuable in _____, but taking antibiotics kills the _____ microbes in the _____, as well as any _____ ones.

2. Sometimes people have _____ problems after taking antibiotics because they have _____ beneficial _____.

3. It's important to only take _____ when they are truly _____, to _____ unnecessary _____ effects.

DAY 5**Fluency**

section	transected	intersection	sector
insect	dissecting	transect	resection
division	vision	revise	invisible
visualize	individual	provision	visual

revise the plan	was dissecting
for the resection	each sector will
has an invisible	this entire section
carried the provisions	her vision was
entire visual field	the division of
will make individual	visualize the location
near the intersection	if we transect
the insect flies	were transected

Morphology

Read each sentence. Use your Morphology Key and the context clues to help you identify the missing word in each sentence. Finally, fill in the blank with the correct word from the Word Bank. Cross off the word once it has been used.

Word Bank			
assembly	intercept	adaptable	accusation
humidity	algorithm	recognize	dorsal

Sentences	
1.	The shark has a large scar over his _____ fin.
2.	You have to be _____ and willing to change your plans due to the weather conditions.
3.	The _____ was so high the air felt wet when we visited Florida.
4.	The _____ of theft was proven false.
5.	The programmer created an _____ to predict possible number patterns.

Response to Reading

Why is the definition of microbe debatable? Use at least two Weekly Words in your response.

A spiral-bound notebook with lined pages, intended for writing a response to the reading prompt. The notebook is shown from a slightly elevated angle, with the spiral binding on the left side. The pages are white with light gray horizontal lines. The bottom edge of the notebook is slightly wavy, suggesting it's a softcover or has a decorative edge.

Spelling + Match the Meaning

1. _____biotic	a. one who studies small life
2. microbi_____	b. condition of being moist or wet (in the air)
3. micro_____	c. small natural life zone
4. _____scope	d. having the characteristic of being against life (of microbes)
5. humid_____	e. able to fix or can adjust
6. _____able	f. to see (something) small

Write the dictated sentence on the lines below.

