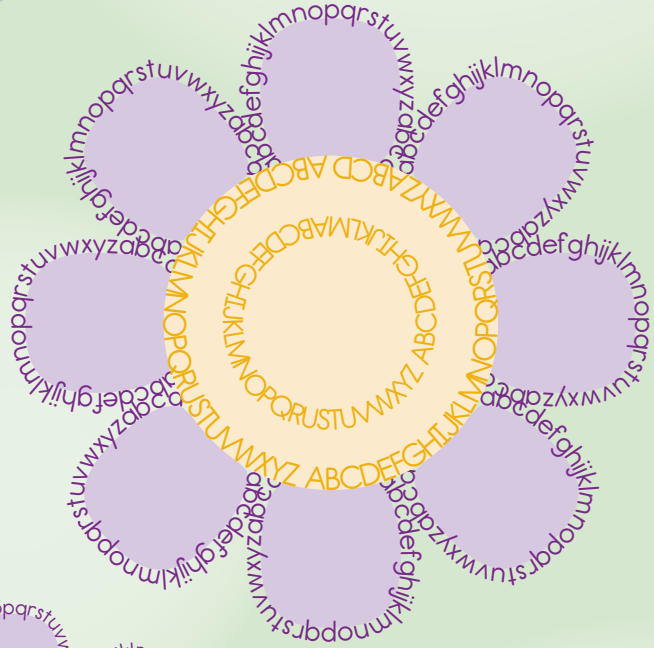
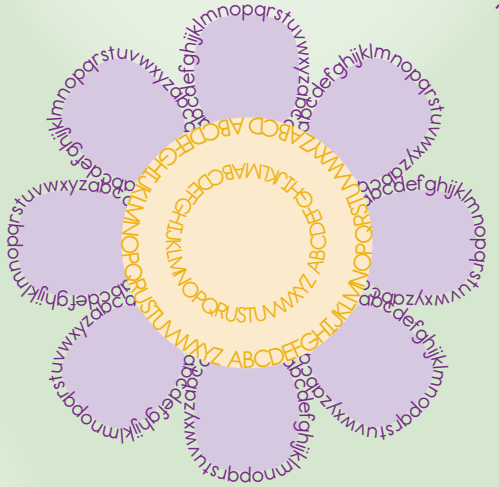
Unit 5
Skills Workbook





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Unit 5

Skills Workbook

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Unit 5
Skills Workbook

This Skills Workbook contains worksheets that accompany the lessons from the Teacher Guide for Unit 5. Each worksheet is identified by its lesson number and where it is intended to be used. For example, if there are two worksheets for Lesson 8, the first will be numbered 8.1 and the second 8.2. The Skills Workbook is a student component, which means each student should have a Skills Workbook.

Light

What is it?	
How do we get it? **What is the source?**	
How fast does it travel? **How does it travel?**	

Light

What kind of object ?	
What happens when it hits... ?	
What kinds are there?	

Name: _____

1.2

Take-Home Worksheet 

Dear Family Member,

Please help your child succeed in spelling by taking a few minutes each evening to review the words together. Helpful activities for your child to do include: spelling the words orally, writing sentences using the words, or simply copying the words.

Spelling Words

This week, we are reviewing all eight spelling patterns for the sound /ee/ that we have already learned. On Friday, your child will be tested on these words.

Students have been assigned two Challenge Words, *almost* and *really*. Challenge Words are words used very often. While *almost* does not follow the spelling pattern of /ee/, *really* does as the 'ea' and the 'y' in *really* are both pronounced /ee/.

The Content Word for this week is *electricity*. This word is directly related to the material that we are reading in *Adventures in Light and Sound*. The Content Word is an optional spelling word for your child. If your child would like to try it but gets it incorrect, it will not count against him or her on the test. We encourage everyone to stretch themselves a bit and try to spell this word.

The spelling words, including the Challenge Words and the Content Word, are listed below:

1 succeeded	12. stadium
2. money	13. chariot
3. enemy	14. degree
4. centipede	15. athlete
5. experience	16. chief
6. believe	17. grease
7. secret	18. scenic
8. increase	**19. Challenge Word**: almost
9. chimney	**20. Challenge Word**: really
10. tedious	**Content Word**: electricity
11. fancy	

Student Reader

The chapters your child will read this week in *Adventures in Light and Sound* include information about what light is, how shadows are made, and mirrors and reflections. Be sure to ask your child each evening about what he or she is learning.

Students will take home text copies of the chapters in the Reader throughout the unit. Encouraging students to read a text directly related to this domain-based unit will provide content and vocabulary reinforcement. Your child will also bring home a copy of the glossary for use in reading the text copies to family members. The bolded words on the text copies are the words found in the glossary.

Name: _____

2.1

What Is Light?

1. How fast does light travel?

   A. 106,000 miles a second in a vacuum

   B. 156,000 miles a second in a vacuum

   C. 186,000 miles a second in a vacuum

   D. 126,000 miles a second in a vacuum

   Page _____

2. How does all light travel?

   A. All light travels in the form of sources.

   B. All light travels in the form of waves.

   C. All light travels in the form of groups.

   D. All light travels in the form of gases.

   Page _____

3. What determines whether you can see light waves or not?

   A. the speed of the source

   B. the length of the source

   C. the speed of the wave

   D. the length of the wave

   Page _____

4. What is the meaning of the word **reflect** in this sentence from the selection:

The moon does, however, **reflect** light from the sun.

A. send back

B. make

C. absorb

D. create

5. Describe white light.

_____

_____

_____

Page _____

6. List three sources of light.

_____

_____

_____

Page _____

7. What is the main idea of this chapter?

_____

_____

Name: _____

2.2

Making Adverbs With the Suffix *–ly*

- **Draw a wiggly line under the verb.**
- **Then, change the adjective under the blank to an adverb by adding *–ly* to complete the sentence.**
- **Draw a triangle around the adverb and an arrow from the adverb to the verb. Then, answer the question after the sentence.**

1. We waited _____ (patient) for our turn to look through the telescope.

   How did we wait? _____

2. People were riding in the car _____ (illegal) because they weren't wearing their seatbelts.

   How were the people riding? _____

3. Our teacher drew lines _____ (vertical) on the paper so we would know where to write each separate part.

   How did our teacher draw lines? _____

4. I _____ (neat) arranged my books on the shelves when I cleaned my room.

   How did I arrange my books? _____

5. A woman at a table near us in the restaurant _____ (polite) asked the waiter for more water.

   How did the woman ask? _____

6. The new medicine the doctor gave me went down _____ (smooth) when I swallowed it compared to what I took last year when I was sick.

   How did the medicine go down? _____

Write a sentence using each adverb. Remember, the adverb should describe the verb.

1. *slowly*

   _____

   _____

   _____

   _____

2. *loudly*

   _____

   _____

   _____

   _____

Name: _____

2.3

Take-Home Worksheet 

What Is Light?

Did you know that the sun is the greatest **source** of light for our planet, Earth? But what is light? Why is it so important?

Hot gases of the sun give off both light and heat **energy**. Light carries **energy**, with the long **wavelengths** carrying the least and the short **wavelengths** carrying the most. When you think of something with lots of **energy**, what comes to mind?

Do you think of something fast like a race car? Do you think of something with great force like a very strong wind knocking down a tree?

Believe it or not, light can be many times more energetic than a car or the wind.

Light travels at 186,000 miles every second in a **vacuum**. At that **speed**, light can go around Earth more than seven times every second! No human-made machine can go that fast—not even a jet plane or rocket!

One way that light travels, including light from the sun, is in the form of **waves**. Scientists can measure how long light **waves** are. **Waves** can be different sizes—some are long and some are short. Some light **waves** are visible and some are invisible. Whether you can see light or not depends on the length of the **wave**. The longest **wavelength** of visible light is seen as red and the shortest **wavelength** is violet. Short **wavelengths** carry the most **energy**.

The sun gives off what is called **white light**. Perhaps you think of the light from the sun as having no color at all. Maybe you think the light from the sun is more yellow in color. It may surprise you to know that the sun's light, **white light**, is made up of all the colors of the rainbow. **White light** includes light of different **wavelengths**, including all the colors we can see.

Of all the **wavelengths** in the sun's light, there is just a little more of the yellow **wavelengths** than the other colors. This is why the sun looks yellow when we see it against the blue sky. Still, the light from the sun includes all of the other colors and **wavelengths**. You will learn more about **white light**, visible light, and colors in a later chapter in this Reader.

Although the sun is the greatest **source** of visible light, there are also other **sources** of light. What else in the sky provides light? The other stars in the night sky provide light, though it is not as bright as the light from the sun during the day. The moon is not a star and does not give off its own light.

Can you think of other **sources** of light? Is there light in your classroom right now? Perhaps it is from the sun shining through the windows. Chances are good, though, that some of the light in the room may be coming from light bulbs. Like the sun, most light bulbs give off **white light**. **Electric** lights are such a part of our everyday life, we don't even think about them—unless the **electricity** goes off! This doesn't happen often, but sometimes it does during a bad storm. When the electricity goes off and we do not have light from light bulbs, people sometimes use other **sources** of light, like flashlights or candles.

Light is important for many reasons. Light and heat **energy** from the sun warms Earth. Without the light and heat **energy** from the sun, Earth would be freezing cold. You also learned back in kindergarten that the sun's light is needed for plants to grow. Also, without light, there would be no colors. Can you think of another reason that light is important?

Try to imagine a world in which there is no light—no sun, no stars, no candles, and no light bulbs. What would be different? If you just said that it would be dark, you are only partly right. What else would change? Without light, you would not be able to see anything! A world without light is almost impossible to imagine.

Name: _____

2.4

Take-Home Worksheet 

Make Adverbs With the Suffix *–ly*

- **Draw a wiggly line under the verb.**
- **Then, change the adjective under the blank to an adverb by adding *–ly* to complete the sentence.**
- **Draw a triangle around the adverb and an arrow from the adverb to the verb. Then, answer the question after the sentence.**

Example:

Tom answered _____honestly_____ (honest) that he did not know how the vase got broken.

Tom answered how? honestly

1. The man on the subway _____ (kind) offered his seat to the older woman.

   How did the man offer his seat? _____

2. The little boy walked _____ (quick) down the stairs.

   How did the little boy walk? _____

3. The mayor _____ (official) announced that he would retire.

   How did the mayor announce he would retire? _____

4. Our teacher _____ explained what we were to do for homework.
(clear)

How did our teacher explain the homework? _____

5. My sister _____ dropped her jacket on the floor.
(careless)

How did my sister drop her jacket? _____

Write a sentence using each adverb. Remember, the adverb should describe the verb.

1. *softly*

_____

_____

_____

_____

2. *tightly*

_____

_____

_____

_____

Name: _____

3.1

How Are Shadows Made?

Label each of the following objects as either *transparent* or *opaque*.

1. desk _____
2. fish tank _____
3. human body _____
4. plastic wrap _____
5. car window _____

Write an X on the line to show where an object should be placed to make a big shadow.

6. Light source _____ _____ _____ = Big shadow

Write an X on the line to show where an object should be placed to make a small shadow.

7. Light source _____ _____ _____ = Small shadow

What kind of shadow will you see? Circle the answer.

8. Light source ___X___ _____ _____ =Big or small shadow

   Light source _____ _____ ___X___ =Big or small shadow

9. Why did the author most likely write this selection?

   A. to tell readers about candles

   B. to tell readers about skylights

   C. to tell readers about shadows

   D. to tell readers about lights

Name: _____

3.2

Suffixes: *–er*, *–or*, *–ist*, and *–ian*

This chart lists words with some of the suffixes studied in Grade 3. Some of these words are new to you. Use the chart to fill out Worksheet 3.3.

	–er	*–or*	*–ist*	*–ian*
a		actor	artist	
c		counselor	cartoonist	comedian
d	dancer			
e		editor		electrician
f	farmer			
g		governor	guitarist	
h	hunter			historian
i		inspector		
l				librarian
m				mathematician
n			novelist	
o			organist	
p	player			pediatrician
r	reporter			
s	singer	sailor		
t	teacher		tourist	
v		visitor	violinist	vegetarian
z			zoologist	

Name: _____

3.3

Suffixes: *–er*, *–or*, *–ist*, and *–ian*

Answer the following questions using the words on Worksheet 3.2.

1. Which word on the chart names a doctor who specializes in taking care of babies and children?

   _____

2. Which word on the chart names someone who can help you find good books to read at the library?

   _____

3. You might be one of these if you like to play on sports teams. _____

4. If you don't eat any meat, you are a _____.

5. If you like to tell jokes and make people laugh, you are a _____.

6. If you have done extensive research on ancient Rome, you are probably a _____.

7. If your job is to study animals and their habitats, you are probably a _____.

8. List the words that name people who play musical instruments.

   _____ _____ _____

9. If you like to draw, you could be either one of these. _____

   _____

10. If you want to be a person who makes or writes fictional books, you want to be a _____.

11. If you go to a new city to explore for a few days, you may be either one of these. _____ _____

12. If you understand how to put wires for electricity in a new house, you might be an _____.

Name: _____

3.4

Use Adjectives and Adverbs Correctly

Fill in the blank with an adjective or an adverb, depending on whether a noun or verb is described.

loud	careful	tight	slow	glad	silent
loudly	carefully	tightly	slowly	gladly	silently

1. The turtle walked _____ across the sidewalk towards the pond.

2. The _____ belt pinched my waist.

3. The _____ sound hurt my ears.

4. Our teacher asked us to read _____ instead of with a partner.

5. The father _____ buckled his seat belt.

6. She _____ put the baby down in his crib so she would not wake him up.

7. My brother _____ fastened his shoelaces so he would not trip.

8. People cheered _____ as the soccer team scored a goal to break the tie.

Bonus: Mark the adjectives with a box and the adverbs with a triangle, and then draw an arrow to the word they describe.

Name: _____

3.5

Blank Busters

succeeded	money	enemy	centipede
experience	believe	secret	increase
chimney	tedious	fancy	degree
athlete	chief	grease	scenic
chariot	stadium		
Challenge Word: almost **Challenge Word**: really **Content Word**: electricity			

Fill in the blanks in the sentences below with one of the spelling words in the chart. Only if needed, add a suffix to the end of a word in order for the sentence to make sense: *–s, –ed, –ing* or *–ly.*

1. The hiker trudged along _____ up the mountain.

2. She enjoyed watching the sprinters and other talented _____ race around the enormous _____.

3. It seemed that the _____ on the rooftop was _____ as tall as a skyscraper.

4. The _____ overlook on the mountain road was breathtaking!

5. Can you _____ that the amount of homework will be _____ in January?

6. It was a _____ that the many legged _____ in the story had pockets full of _____.

7. The _____ of police has a _____ office with a beautiful view of the city.

8. The fire on the stove was caused by _____ that spilled from the pan.

9. You have _____ in making me laugh for hours!

10. Do you understand how _____ works to make an oven heat up?

Write three sentences using spelling words of your choice that were not used in the first ten sentences. Make sure to use correct capitalization and punctuation. You may use the Challenge Words or the Content Word in your sentences.

1. _____

_____

_____

2. _____

_____

_____

3. _____

_____

_____

Name: _____

4.1

How Are Shadows Made?

Read the examples below carefully. If the light source causes a shadow, write "shadow" on the blank. If the light source does not cause a shadow, write "no shadow" on the blank.

1. The sunlight is streaming through a window hitting a rocking chair.

   _____

2. It is a rainy, cloudy day and you are standing outside under an umbrella.

   _____

3. It is midnight and there are no lights on anywhere.

   _____

4. It is a bright, sunny day at the beach and you are sitting under a beach umbrella.

   _____

5. You are swinging outside on a sunny, but cold day.

   _____

6. What is the main idea of this chapter?

   _____

   _____

   _____

Name: _____

4.2

Adverbs that Tell *how*, *when*, and *where*

There is one adverb in each sentence. Draw a triangle around each adverb and a wiggly line under the verb it describes. Then, draw an arrow from the adverb to the verb. On the blank line after the sentence, write whether the adverb tells *how*, *when*, or *where*.

1. I am going to a birthday party tomorrow. _____

2. The dog slept outside. _____

3. I always ride the bus to school. _____

4. John has never taken the train. _____

5. Mary left her coat here. _____

6. Dad clapped loudly. _____

7. It snowed everywhere. _____

8. He picked up the baby carefully. _____

9. I ate my peas last because I don't like them. _____

10. The squirrel quickly gathered some acorns. _____

11. Please stack the books there. _____

12. I read my book silently. _____

Name: _____

4.3

Words with Suffixes *–y* and *–al*

Add the correct suffix to the root word provided. Write the new word in a sentence.

1. Root word: *mess*
   Add *–y* or *–al* to make: _____

2. Root word: *magic*
   Add *–y* or *–al* to make: _____

3. Root word: *culture*
   Add *–y* or *–al* to make: _____

4. Root word: *dirt*
   Add *–y* or *–al* to make: _____

5. Root word: *rust*

   Add *–y* or *–al* to make: _____

Circle the word that matches the meaning.

1. Meaning: related to sounds made by voices or instruments and arranged in a way that is pleasing to hear

   Word: music musical

2. Meaning: the unplanned occurrence of good events

   Word: luck lucky

3. Meaning: related to stories about things that are not real

   Word: fictional fiction

4. Meaning: full of a natural white substance used to flavor and preserve food

Word: salt salty

5. Meaning: the process of eating the right kind of food so you can be healthy and grow properly

Word: nutritional nutrition

6. Meaning: full of spirals or winding shapes

Word: curly curl

Name: _____

Word Sort

Identify the headers. Read the words in the box and circle the vowels that have the /ee/ sound. Write the words under each header that match the header's spelling pattern.

'y' > /ee/	**'e' > /ee/**	**'i' > /ee/**	**'ea' > /ee/**
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

'ee' > /ee/	**'ie' > /ee/**	**'ey' > /ee/**	**'e_e' > /ee/**
_____	_____	_____	_____
_____	_____	_____	_____

skied	debate	greeting	piano	recess
early	handy	wheat	honey	sweat
funny	element	sweet	seaside	recipe
cope	valley	head	Chinese	yellow
great	fly	bedding	fried	radiant

Name: _____

How Are Shadows Made?

Do you remember any interesting facts about how light travels? In the last chapter, you learned that it travels in waves that can be measured as wavelengths. You also learned that it travels at a very high rate of speed. Here's another interesting fact—light waves travel from a source in straight lines that spread out in all directions, like rays.

Take a look at the image on the opposite page. In this image, there are several light sources. Each source or dot of light has several rays of light shooting out. Put your finger on the source you can see. Now, using your finger, trace the lines of light coming out from that source. Each ray of light is a straight line.

Have you ever wondered what happens when a line or path of light bumps into something in its way? Different things may happen depending on what exactly is in the light's path.

If a path of light hits something that is **transparent**, most of the light will pass right through. Air, water, and glass are all **transparent**. When light hits these **transparent** objects, it passes through to the other side. It is almost as if the object isn't there.

Most buildings have glass windows so that natural sunlight can travel from the outdoors inside. Have you ever been in a building that has a glass roof or **skylight**? Sometimes you can even see blue sky and clouds through the **skylight**!

Light cannot travel through all materials. If a path of light hits something that is **opaque**, the light is **absorbed** and blocked by the object. It cannot continue in a straight line through the object. Wood, cardboard, and even a person's body are all **opaque** objects. Light cannot pass through to the other side. Instead, a **shadow** is created because the light is **absorbed**.

Look around your classroom. Do you see **transparent** objects through which light is passing? Can you also find **opaque** objects? You will probably find that your classroom has many more **opaque** objects than **transparent** objects. Do you see any **shadows**?

The **shadow** created by blocked light takes on the shape of the object. Can you guess the object or objects that are making the **shadows** in these images?

Name: _____

4.6

Take-Home Worksheet 

Adverbs that Tell *how*, *when*, and *where*

There is one adverb in each sentence. Draw a triangle around each adverb and a wiggly line under the verb it describes and draw an arrow from the adverb to the verb. On the blank line after the sentence, write whether the adverb tells *how*, *when*, or *where*.

Example: The nurse gently cleaned my cut finger. **how**

1. I carried the newspaper inside. _____

2. I will wash the dishes later. _____

3. The people folded the laundry there. _____

4. Sam ripped his pants today. _____

5. The boys whispered quietly. _____

6. Beth has never met her aunt. _____

7. The boy pounded his fists madly. _____

8. My dog always wags his tail. _____

9. Sometimes I walk home from school. _____

Name: _____

Spelling Assessment

As your teacher calls out the words, write them under the correct header.

‘y’ > /ee/	‘ey’ > /ee/
_____	_____
_____	_____
_____	_____
_____	_____

‘ee’ > /ee/	‘i’ > /ee/
_____	_____
_____	_____
_____	_____
_____	_____

‘ea’ > /ee/	‘ie’ > /ee/
_____	_____
_____	_____
_____	_____
_____	_____
‘e’ > /ee/	**‘e_e’ > /ee/**
_____	_____
_____	_____
_____	_____
_____	_____

Challenge Word: _____ **Challenge Word**: _____

Content Word: _____

Dictated Sentences:

1. _____

_____.

2. _____

_____.

Name: _____

Mirrors and Lenses

Write *plane*, *convex*, or *concave* on the line for each mirror. Then, look back in the Reader to find the page numbers where the information can be found.

kaleidoscope
(mirrors)

_____

Page _____

solar hot dog cooker
(mirror)

_____

Page _____

corner mirror
(mirror)

_____

Page _____

According to the selection, which of the following is true?

A. Plane mirrors are curved inward.

B. Concave mirrors are curved inward.

C. Convex mirrors are curved inward.

D. All of the above.

Name: _____

Choose An Adverb

With your group, write an adverb to describe the verb in the sentence. Do not use the same adverb more than once. Review the example if needed.

We ran quickly to the car when the storm started.
Adverb: quickly **Verb described by adverb**: ran

1. We _____ hammered the nail into the wall so we could hang the heavy picture.

   Adverb: _____ **Verb described by adverb**: _____

2. The squirrel _____ crawled down the tree to gather some nuts.

   Adverb: _____ **Verb described by adverb**: _____

3. He _____ walked to the door to let the dog in.

   Adverb: _____ **Verb described by adverb**: _____

4. Ross _____ read the story about the fire to himself.

   Adverb: _____ **Verb described by adverb**: _____

5. Other students on the bus _____ sang a song they had learned in music.

   Adverb: _____ **Verb described by adverb**: _____

Write a sentence using the following adverbs:

1. *bravely*

_____

_____

_____

Adverb: _____ **Verb described by adverb**: _____

2. *proudly*

_____

_____

_____

Adverb: _____ **Verb described by adverb**: _____

3. *secretly*

_____

_____

_____

Adverb: _____ **Verb described by adverb**: _____

Name: _____

Dictionary Skills

Use the following portion of a dictionary page to answer the questions below.

chest **chisel**

chief 1. *noun* A leader of a group. 2. *adjective* Most important or main.

chimney *noun* A pipe that carries smoke out of a building, usually through the roof.

1. What are the two guide words on the page?

   _____ _____

2. What are the two entry words on the page?

   _____ _____

3. How many definitions are there for *chief?*

   _____

4. Would the word *choir* be on this page?

   _____

5. Circle the word(s) that would come before **chest** from the following list: choke, cherry, chestnut.

6. Which definition of *chief* matches the use of the word in the sentence:

   The *chief* of police is a friend of mine. _____

   What part of speech is *chief* in this sentence? _____

7. Which definition of *chief* matches the use of the word in the sentence:

   My *chief* reason for going to the movies was to see my favorite actor. _____

   What part of speech is *chief* in this sentence?_____

Name: _____

6.1

Take-Home Worksheet 

Dear Family Member,

Please help your child succeed in spelling by taking a few minutes each evening to review the words together. Helpful activities for your child to do include: spelling the words orally, writing sentences using the words, or simply copying the words.

Spelling Words

This week, we are reviewing three of the seven spelling patterns for /ae/. Your child learned to spell words with the /ae/ sound in second grade, so this should be a review. On Friday, your child will be tested on these words.

Students have been assigned two Challenge Words, *family* and *young*. Challenge Words are words used very often. Neither Challenge Word follows the spelling pattern of /ae/.

The Content Word for this week is *straight*. This word is directly related to the material that we are reading in *Adventures in Light and Sound*. The Content Word is an optional spelling word for your child. If your child would like to try it but gets it incorrect, it will not count against him or her on the assessment. We encourage everyone to stretch themselves a bit and try to spell this word.

The spelling words, including the Challenge Words and the Content Word, are listed below:

1. subway
2. daydreams
3. payment
4. daisies
5. awaited
6. obtain
7. ballplayers
8. breaker
9. yesterday
10. betrayer
11. crayons
12. beefsteak
13. explain
14. dainty
15. mermaid
16. trainees
17. great
18. giveaway
19. **Challenge Word**: family
20. **Challenge Word**: young

Content Word: straight

Student Reader

The chapters your child will read this week in *Adventures in Light and Sound* include information about refraction and lenses, color and light, what sound is, and the characteristics of sound. Be sure to ask your child each evening about what he or she is learning.

Students will take home text copies of the chapters in the Reader throughout the unit. Encouraging students to read a text directly related to this domain-based unit will provide content and vocabulary reinforcement. Please remind your child that the glossary can be used for finding the meaning of the bolded words.

Name: _____

Take-Home Worksheet 

Mirrors and Reflections

Have you been to the dentist recently? Do you remember if he or she used a tool with a **mirror** to look at your teeth? Think for a minute about how useful that **mirror** is. Why does the dentist use it? This simple tool allows him or her to see the back of your teeth. He or she can also see teeth way in the back of your mouth. Without it, he or she couldn't do his or her job nearly as well! Ask to see this tool the next time you're at the dentist.

So what is a **mirror**? A **mirror** has a smooth, shiny **surface** that **reflects** light. Light that is **reflected** bounces off of something in its path. You have already learned that light travels in a straight line, unless it runs into something in its way. If light hits a transparent object, it passes right through the object. If it hits an opaque object, the light is absorbed and blocked so a shadow is made. If light hits a smooth, shiny surface like a **mirror**, it is **reflected**.

When a **mirror** is made, glass is coated with hot, **silvery** metals and then cooled. This coating makes the **mirror** shiny so it **reflects** back all the light that hits it.

Did you know that there are different types of **mirrors**? You probably use a **plane mirror** every morning when you get ready for school. A **plane mirror** has a more or less flat **surface**. The **reflection** of something in a **plane mirror** is almost the same size as the real object.

Plane mirrors are used in many tools. Cameras, telescopes, and microscopes sometimes use **plane mirrors**. Some toys even use **plane mirrors**. Have you ever looked through a toy called a **kaleidoscope**?
A **kaleidoscope** is a tube with **plane mirrors** inside. There are also tiny bits of colored glass and beads sealed up inside the **kaleidoscope**. You look through a small hole at one end of the **kaleidoscope** and point it toward the light. As you

rotate the tube, you will see beautiful, colored patterns.

There are two other types of mirrors that are different from **plane mirrors**. **Plane mirrors** have flat surfaces, but **concave** and **convex** mirrors have **curved** surfaces. The smooth, shiny side of a **concave mirror curves** inward like a spoon. The smooth, shiny side of a **convex mirror curves** outward.

Here's another way that **concave** and **convex mirrors** are different from **plane mirrors**. Remember that in a **plane mirror,** the **reflection** of an object is about the same size as the object. In **concave** and **convex mirrors**, the **reflection** can look larger or smaller than the real object.

Concave and **convex mirrors** are also useful. **Concave mirrors** can be used to provide heat using the light from the sun. Remember that sunlight is a form of light and heat energy. The large **concave mirror** in the image on the next page **reflects** the sun's energy so that people can warm their hands or bodies outside.

What about **convex mirrors**? The next time you get on a bus, take a look at the mirrors on the sides of the bus. Most buses and large trucks have a small, extra **convex mirror** on the side-view **plane mirror**. The **convex mirror** makes objects look smaller but shows a wider area so you can see more. It helps drivers avoid hitting something they might not see in the regular **plane mirror**.

So now you see how useful **mirrors** are in our everyday lives. **Mirrors** can also be a lot of fun. A circus or carnival sometimes has a place called the "Funhouse," or "House of **Mirrors**." If you go in, there are lots of **concave** and **convex mirrors**. When you look in these **mirrors**, you might not recognize yourself! Your **reflection** is **distorted**. What makes that happen? Now you know it's **concave** and **convex mirrors**.

Name: _____

How Are Shadows Made?

Do you remember any interesting facts about how light travels? In the last chapter, you learned that it travels in waves that can be measured as wavelengths. You also learned that it travels at a very high rate of speed. Here's another interesting fact—light waves travel from a source in straight lines that spread out in all directions, like rays.

Take a look at the image on the opposite page. In this image, there are several light sources. Each source or dot of light has several rays of light shooting out. Put your finger on the source you can see. Now, using your finger, trace the lines of light coming out from that source. Each ray of light is a straight line.

Have you ever wondered what happens when a line or path of light bumps into something in its way? Different things may happen depending on what exactly is in the light's path.

If a path of light hits something that is **transparent**, most of the light will pass right through. Air, water, and glass are all **transparent**. When light hits these **transparent** objects, it passes through to the other side. It is almost as if the object isn't there.

Most buildings have glass windows so that natural sunlight can travel from the outdoors inside. Have you ever been in a building that has a glass roof or **skylight**? Sometimes you can even see blue sky and clouds through the **skylight**!

Light cannot travel through all materials. If a path of light hits something that is **opaque**, the light is **absorbed** and blocked by the object. It cannot continue in a straight line through the object. Wood, cardboard, and even a person's body are all **opaque** objects. Light cannot pass through to the other side. Instead, a **shadow** is created because the light is **absorbed**.

Look around your classroom. Do you see **transparent** objects through which light is passing? Can you also find **opaque** objects? You will probably find that your classroom has many more **opaque** objects than **transparent** objects. Do you see any **shadows**?

The **shadow** created by blocked light takes on the shape of the object. Can you guess the object or objects that are making the **shadows** in these images?

The size of a **shadow** depends on several different things. The closer an object is to a light source, the larger the **shadow** will be. If you move the same object farther away from the light source, the **shadow** will become smaller. So the size of the **shadow** changes, even though the size of the object does not. What makes the **shadow** larger or smaller is the distance of the object from the source of light.

You can experiment making larger and smaller **shadows** just by using your hand. You will need:

- a light source, such as a flashlight or **projector**
- several sheets of large white paper and a marker
- masking tape
- a blank wall
- several helpers
- a cardboard cutout of a tree

First, tape a piece of white paper to the wall. Then, mark a spot on the floor and tell a classmate to stand on that spot to **project** the light. He or she should not move. Now, try holding the cutout of the tree in front of the light so that a shadow is **projected** onto the white paper. Have one classmate put a piece of masking tape marked "1" on the floor next to where you are standing. At the same time, another classmate should trace the **shadow** of the tree on the white paper. Mark this tracing of your **shadow** with a "1."

Next, tape up another sheet of white paper. This time, move away from the light, closer to the sheet of paper. Have your classmates mark the floor and **shadow** tracing with a "2."

Last, try it one more time. This time move closer to the light—even closer than the spot marked "2." Have your classmates mark the floor and **shadow** tracing with a "3."

Now, compare the tracings. Which is the biggest? Where were you standing in relation to the light when the tree made the biggest **shadow**? Where were you standing when the tree made the smallest **shadow**?

You can have even more fun making **shadows** with your hands. Try making the **shadows** in these drawings. Look carefully at one drawing at a time. Try placing your hands exactly as shown in the drawing. Practice several times. When you think you have it right, try making the shape in front of the light. If you get really good, you might want to put on a show for your family!

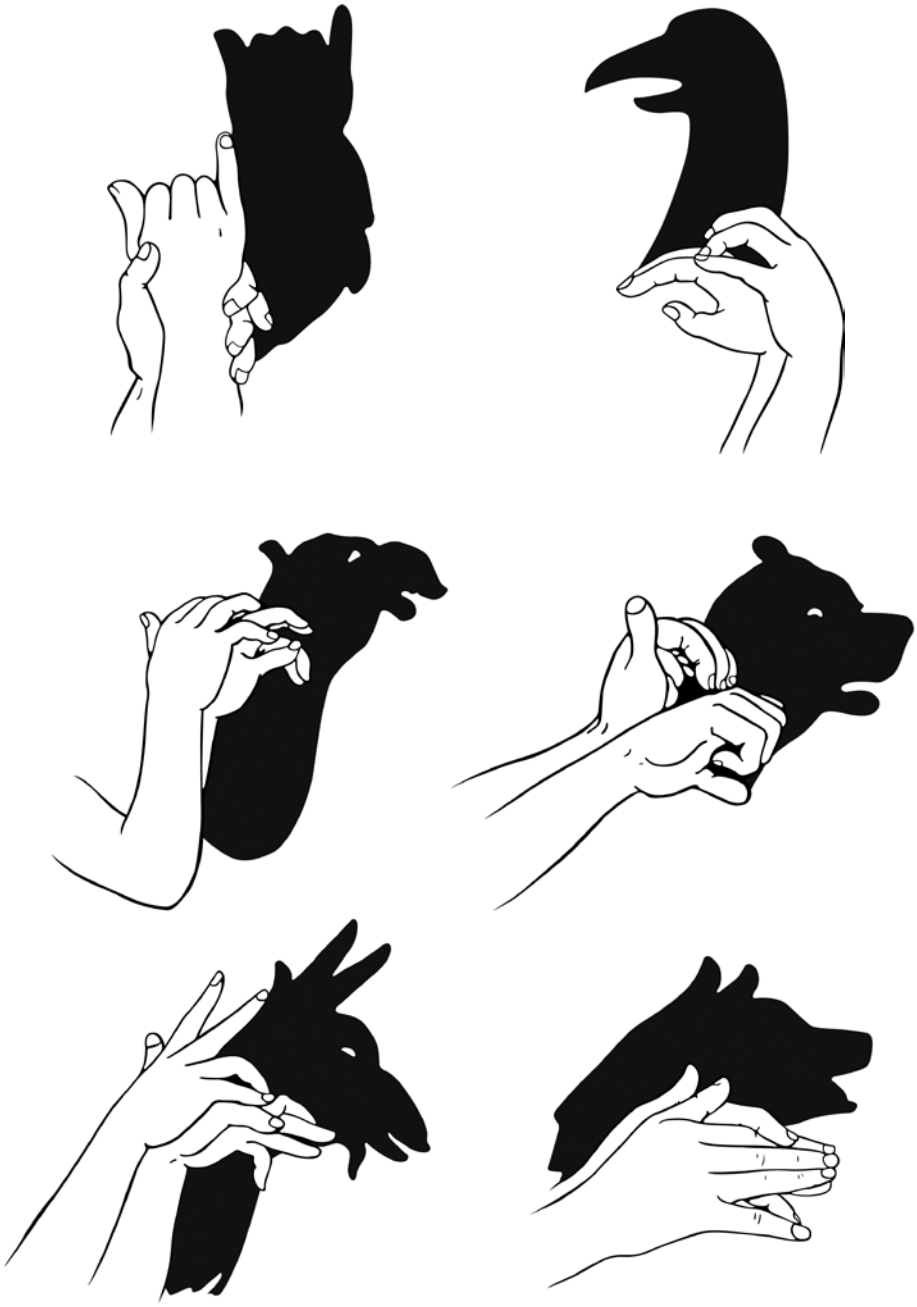
Name: _____

6.3

Take-Home Worksheet

Dear Family Member,

We learned about shadows in our lesson today. We have provided a portion of the chapter here so that your child may show you how to make some fun shadows. We hope you enjoy doing this activity with your child.



Name: _____

7.1

Refraction and Lenses

If the sentence is true, write *true* on the first blank. If the sentence is false, write *false* on the blank following the sentence and correct the sentence by rewriting it, changing the incorrect part of the sentence. Add the page number where you found your answer.

1. Light travels in curvy lines. _____

_____

_____

Page _____

2. Shadows are formed because light is absorbed by a transparent object. _____

_____

_____

Page _____

3. The denser an object is the more quickly light travels through it. _____

_____

_____

Page _____

4. Light rays change and appear to bend when light travels through just one transparent object. _____

_____

_____

Page _____

5. A magnifying glass is a good example of a concave lens. _____

_____

_____

Page _____

6. Peepholes make objects look larger. _____

_____

_____

Page _____

Name: _____

7.2

Build Sentences

Read each simple sentence. Then, brainstorm adjectives, adverbs, and synonyms that you might add to the sentence, and write these words in the boxes provided. You do not need to write words in every box, but try your best. Write a new, more interesting sentence in the blank space provided, using some of the adjectives and adverbs.

Starter Sentence: The Romans fought the enemy.			
Adjectives to describe **the Romans**	Adjectives to describe **the enemy**	Adverbs to describe **when**	Adverbs to describe **where**
Synonyms for **fought**			

New Sentence: _____

_____

_____

_____

_____

Starter Sentence: The king treated the people.				
Adjectives to describe **the king**	Adjectives to describe **the people**	Adverbs to describe **how**	Adverbs to describe **where**	Adverbs to describe **when**
Synonyms for **treated**				

New Sentence: _____

_____

_____

_____

_____

Name: _____

7.3

Take-Home Worksheet 

Refraction and Lenses

In the previous chapters, you have been reading about how light travels. You already know that light travels at a very fast speed—faster than any machine made by humans.

You also know that light travels in a straight line, unless it runs into something in its way.

One of the things we haven't studied yet is what happens to the speed of light when it passes through something transparent. As fast as light is, when it passes through something transparent, it does slow down. So, when light passes through windows, water, and even air, it slows down. The **denser** or heavier something is, the slower light travels through it. For example, light travels more slowly through glass than it does through water or air. It travels more slowly through water than it does through air.

When light moves through one thing that is transparent to something different that is transparent, it changes speed. When light changes speed, the **angle** of the light rays change and appear to bend.

Take a straw and put it in a glass of water. Now, look at the straw where it enters the water. Can you see that it appears to be at a different **angle**? That is called **refraction**. It's caused by the slowing down of light as it moves from air to water. As the light enters the water, it changes **angle** direction because it slows down. It seems like magic, but it's really just how light travels—no trick.

You may be surprised to learn that there are many ways that we use light **refraction** every day. Do you or any of your classmates wear eyeglasses? The **lenses** in eyeglasses correct different kinds of vision problems by **refracting** light. Transparent glass or plastic **lenses** are made to **refract** light in different ways. Like mirrors, these **lenses** can be convex **lenses** or concave **lenses**.

Remember that something convex curves outward. A convex **lens refracts** and bends light rays closer together. When you look through a convex **lens**, an object will look larger and closer. It looks **magnified** because the light rays are closer together.

A concave lens curves inward. A concave **lens refracts** and spreads light rays apart. If you look through a concave **lens**, an object will look smaller. It looks smaller because the light waves are spread apart.

A **magnifying glass** is an example of a simple convex **lens**. If you hold and look at something closely through a magnifying glass, it will look larger. People use a **magnifying glass** to more clearly see the details of something small.

Convex **lenses** are also found in scientific instruments. A scientist might look through a microscope with a convex **lens**. The **lens magnifies** very small things that cannot be seen with the naked eye.

Scientists study outer space with telescopes. Telescope **lenses** are also convex. They make the moon, stars, and planets look larger and closer so scientists can learn more about them.

Concave **lenses** are also useful. Remember that concave **lenses** spread out light rays. Concave **lenses** are used in **security cameras** because they provide a wider view of a place.

Do you have a peephole in your door at home? If so, you may have a concave **lens**. In many homes and apartments, the peepholes of doors have two lenses, one of which is concave. The other lens is convex and magnifies the image made by the concave **lens**. The people looking in from the outside can barely see what's inside. (Remember, concave **lenses** make things look smaller.) However, if you are looking from the inside out, you can see who is standing in front of your door.

Name: _____

8.1

Color and Light

Take notes as you read, using the questions to guide you.

1. What is a prism and what is it used for?

_____

_____

_____

2. Why does the sun look yellow?

_____

_____

_____

3. What creates a rainbow after it rains? How can we see it?

_____

_____

_____

4. What are the colors of a spectrum?

_____

_____

_____

5. Why does clothing appear to be certain colors?

_____

_____

_____

6. What is ultraviolet light and what can happen as a result of it?

_____

_____

_____

7. What are x-rays and how would they be used?

_____

_____

_____

8. What makes your remote control for the TV work?

_____

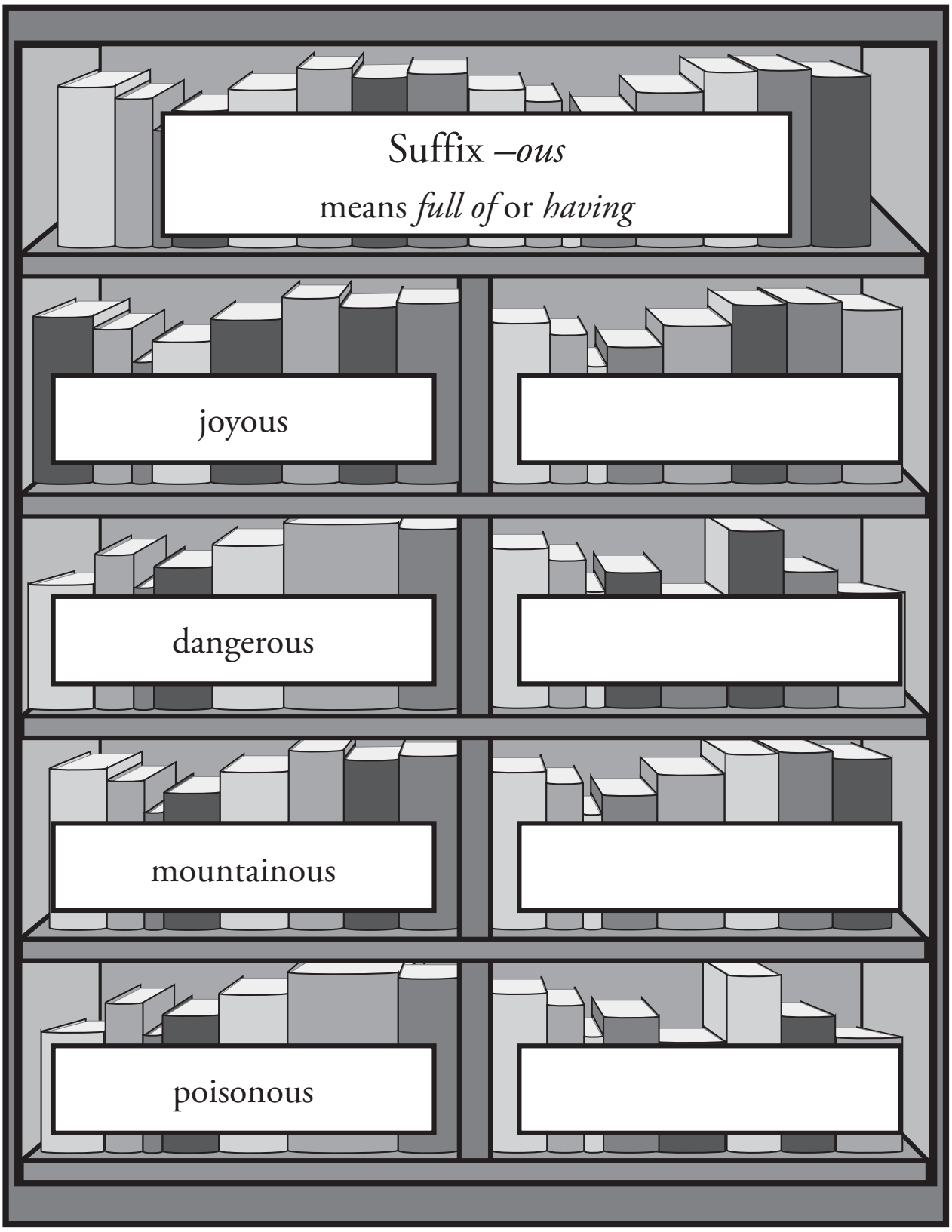
_____

_____

Name: _____

8.2

Word Shelf



Name: _____

8.3

–ous: Suffix meaning "*full of*"

joyous—(adjective) full of a feeling of great happiness	
dangerous—(adjective) full of the chance that something bad will happen	
mountainous—(adjective) full of land that rises very high above its surroundings	
poisonous—(adjective) full of a substance that can hurt or kill people or animals if touched, swallowed, or inhaled	

Write the correct word to complete each sentence.

famous	poisonous	mysterious	furious	dangerous	humorous

1. The _____ ending to the movie had everyone in the theater laughing

2. When I got to school, there was a _____ smell in our classroom and I couldn't figure out what it was coming from.

3. My _____ brother could not believe our little sister has scribbled all over his history paper with crayons.

4. A _____ basketball player is said to be coming to our community fair next week but nobody knows who it is.

5. Some farmers put _____ chemicals on their crops to keep the bugs from eating them but they can be harmful to people who eat the food.

Write your own sentence using the one word left in the box.

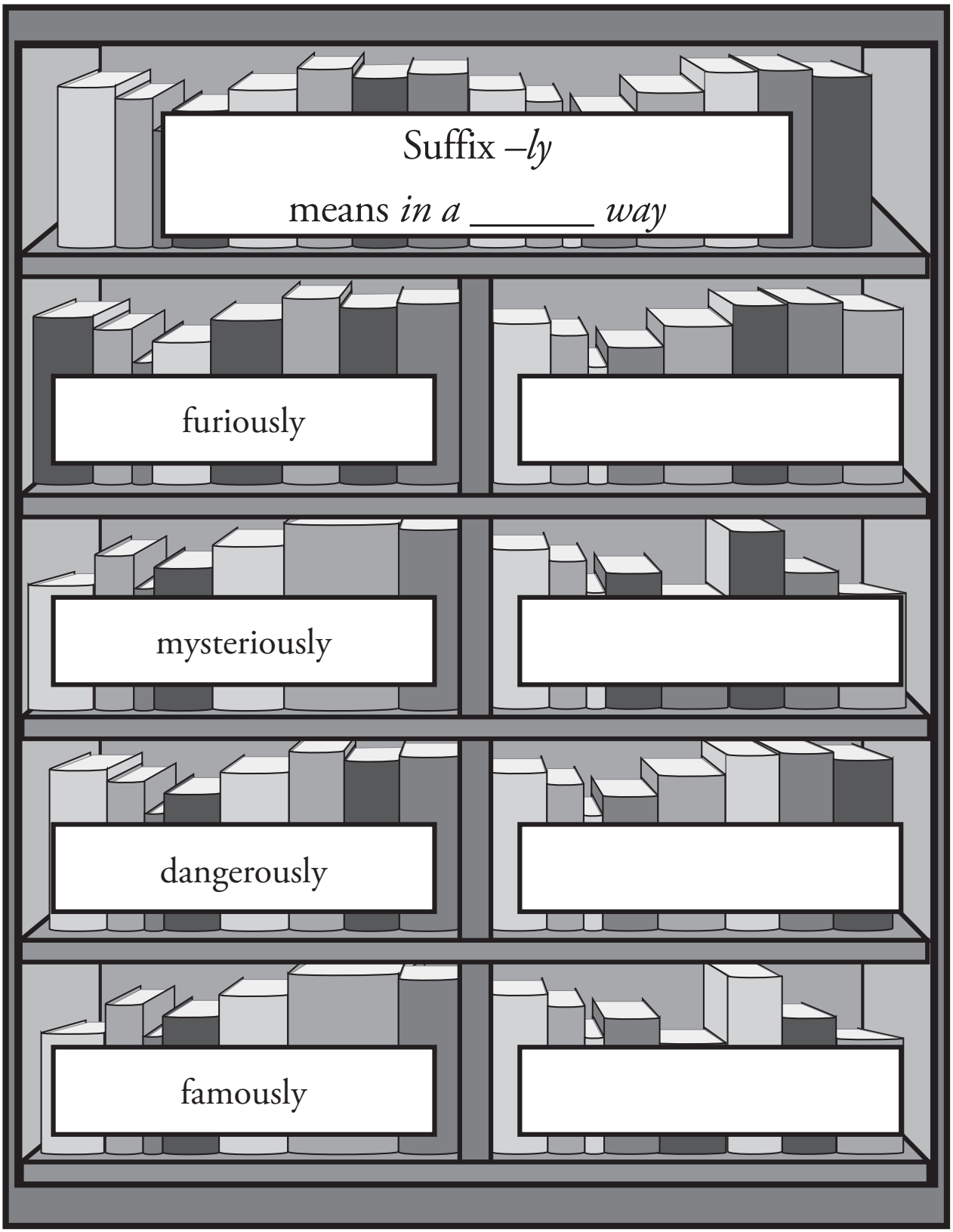
6. _____

_____

Name: _____

8.4

Word Shelf



Name: _____

–ous: Suffix Meaning "full of"

furiously—(adverb) in a furious way	
mysteriously—(adverb) in a mysterious way	
dangerously—(adverb) in a dangerous way	
famously—(adverb) in a famous way	

Write the correct word to complete each sentence.

dangerously	furiously	mysteriously	famously	humorously

1. My cell phone _____ turned itself off when I put it down on the table.

2. My uncle _____ asked his girlfriend to marry him at the family reunion in a way that nobody will forget.

3. My sister_____ wore a small hat for a baby as part of her costume for the party.

4. A little boy in the subway station walked _____ near the edge of the passenger platform above the tracks.

Write your own sentence using the one word left in the box.

5. _____

_____

Name: _____

Build Sentences

Read each simple sentence. Then, brainstorm adjectives, adverbs, and synonyms that you might add to the sentence, and write these words in the boxes provided. You do not need to write words in every box, but try your best. Write a new, more interesting sentence in the blank space provided, using some of the adjectives and adverbs.

Starter Sentence: The lion made a loud noise.			
Adjectives to describe **the lion**	Adverbs to describe **how** the lion made a loud noise	Adverbs to describe **when** the lion made a loud noise	Adverbs to describe **where** the lion made a loud noise
Synonyms for **made a loud noise**			

New Sentence: _____

_____

_____

Starter Sentence: The gladiator walked.			
Adjectives to describe **the gladiator**	Adverbs to describe **how** he walked	Adverbs to describe **where** he walked	Adverbs to describe **when** he walked
Synonyms for **walked**			

New Sentence: _____

_____

_____

Starter Sentence: The children played.			
Adjectives to describe **the children**	Adverbs to describe **how** they played	Adverbs to describe **where** they played	Adverbs to describe **when** they played
Synonyms for **played**			

New Sentence: _____

_____

_____

Name: _____

8.7

Blank Busters

subway	payment	awaited	ballplayers
yesterday	great	crayons	explain
mermaid	obtain	breaker	daydreams
daisies	dainty	trainees	betrayer
beefsteak	giveaway		
Challenge Word: family **Challenge Word**: young **Content Word**: straight			

Fill in the blanks in the sentences below with one of the spelling words in the chart. Only if needed, add a suffix to the end of a word in order for the sentence to make sense: *–s, –ed, –ing,* or *–ier.*

1. At the end of their meal, the waitress _____ change from the cashier for her customers.

2. The butcher offered many _____ of free _____.

3. The talented artist puts her _____ aside and uses oil paint on these portraits.

4. Our beautiful, yellow _____ finally bloomed _____.

5. The smallest _____ was the only one who could wear the _____ seashell necklace.

6. The ride on the _____ car was very scary because the lights went out.

7. Our _____ is made up of two adults and five _____ children.

8. The _____ were lost in their _____ and didn't pay attention to the game, so they lost.

9. My teacher is _____ multiplication so I better pay attention!

10. Our long _____ Spring Break is approaching!

Write three sentences using spelling words of your choice that were not used in the first ten sentences. Make sure to use correct capitalization and punctuation. You may use the Challenge Words or Content Word in your sentences.

1. _____

_____

2. _____

_____

3. _____

_____

Name: _____

Color and Light

Do you remember what color sunlight is? I hope you didn't say, "No color!" You learned that sunlight is white light. You also learned that instead of being "no color," white light is made up of all the colors of the rainbow. Remember, the sun looks yellow because it gives off more yellow light than it does the other colors.

You can prove that white light is really many colors if you have a wedge-shaped piece of transparent glass called a **prism**. If you hold a **prism** near a sunny window, light will shine through and make a rainbow-like band of colors. This shows that white light is really made up of all colors.

Do you remember what you learned about refraction? What happens to light when it passes through something transparent like glass? The light slows down and changes its path. A **prism** has a special shape that refracts white light into all of the colors of the rainbow.

Have you ever seen a rainbow in the sky when the sun comes out after it rains? Raindrops in the sky refract the light, just like a **prism**. This is what creates the rainbow.

When white light is refracted, it often separates into a combination of colors called the **spectrum**. The colors in the **spectrum** always appear in the same order: red, orange, yellow, green, blue, **indigo**, and violet. These colors are part of the visible light **spectrum**. They are the light waves that humans can see. The colors of visible light are a result of differences in wavelength. Red light has long wavelengths and violet light has short wavelengths.

You can remember the names of the colors in the visible light **spectrum** in the right order if you can remember this funny name: "Roy G. Biv." Each

letter in that name stands for a color in the rainbow. Say it out loud. Try to remember it!

Did you know that the color of any object depends on what light wavelengths it reflects? Different objects absorb light wavelengths of some colors, but reflect others. This is what creates color.

Blue jeans appear blue because something in the **material** reflects blue light and absorbs all of the other light colors. Do you see anyone in your class today wearing a red sweater? The sweater appears red because something in the **material** reflects red light and absorbs all of the other light.

What about things that appear to be white? They look white because the object reflects all of the white light wavelengths and doesn't absorb any light. Can you guess why something looks black? Things that appear black do not reflect any light. They absorb all of the light wavelengths.

Remember that the colors we see are from light of specific wavelengths. But, there is much more to light than just the wavelengths we can see. In fact, visible light is only a small part of the energy waves that come from sunlight.

For example, on the shorter wavelength end of the light **spectrum**, there are invisible **ultraviolet** light waves that cause sunburn. X-rays are even shorter wavelengths of light. We can't see these light x-rays but they can travel through the human body. You learned in *How Does Your Body Work?* that x-rays are used to create black and white photos of what's inside the body. Do you know of any other ways that x-rays are used?

Another type of invisible light is **infrared** waves. The wavelengths of **infrared** light are longer than those of red light. These are the type of light waves that you use when you click on the **remote control** to change television channels!

Sound

What is it?	
How do we get it?	
How does it travel?	
Speed of Sound vs. Speed of Light	

Name: _____

Sound

Pitch	
Volume	
Human Voices	

Name: _____

9.2

What Is Sound?

With your Reader closed, use the words in the box to fill in the blanks below. Then, check your work by looking back in the Reader and writing the page numbers where you found the answers.

medium	gas	750 mph
energy	solid	farther
vibrating	186,000 mps	waves

1. Sound is a form of _____ that moves in _____.
   Page _____

2. Sound waves move out from a _____ object.
   Page _____

3. The _____ away you get, the weaker sounds become.
   Page _____

4. Sound waves need a _____ to carry them.
   Page _____

5. Sound travels faster through a _____ than a _____.
   Page _____

6. Sound travels at this speed: _____

   Page _____

7. What is the meaning of the word **medium** in this sentence from the selection?

There is no sound in outer space because there is no **medium** to carry it.

   A. a substance that creates color

   B. a substance that sound is unable to travel through

   C. a substance that sound travels through

   D. a substance that creates spectrums

Name: _____

9.3

Grammar Review

Read each sentence. Circle the noun(s), draw a wiggly line under the verb(s), draw a box around the adjective(s), and draw a triangle around the adverb(s). For adjectives, draw an arrow to the noun described, and for adverbs, draw an arrow to the verb described. On the line, write whether the adverb tells *how, when* or *where.* Then divide each sentence into subject and predicate.

Example: We ran quickly to catch the last bus. how

1. The rain poured down and soaked the brown grass. _____

2. I used blue and green markers during art class. _____

3. My brother slowly ate his spicy chili. _____

4. Andy leaves soon for winter vacation. _____

Read the simple sentence. Then, brainstorm adjectives, adverbs, and synonyms that you might add to the sentence and write these words in the boxes provided. You do not need to write words in every box, but try your best.Write a new, more interesting sentence in the blank space provided, using some of the adjectives and adverbs.

Starter Sentence: Androcles helped the lion.			
Adjectives to describe **Androcles**	Adjectives to describe **the lion**	Adverbs to describe **how** Androcles helped	Adverbs to describe **when** Androcles helped
Synonyms for **helped**			

New Sentence: _____

_____

_____

_____

Name: _____

9.4

Practice Using Suffixes *–ous* and *–ly*

Choose the correct word to complete each sentence. Write the word and its part of speech below the sentence.

1. We attended the _____ party to celebrate Michael's graduation.
   (joyous, joyously)
   Word: _____ Part of Speech: _____

2. My new pen _____ appeared on my desk after dinner even though it was not there before we ate.
   (mysteriously, mysterious)
   Word: _____ Part of Speech: _____

3. For a history project, we had to write a biography of a _____ person from the American Revolution.
   (famously, famous)
   Word: _____ Part of Speech: _____

4. The _____ troll shouted at the Billy Goats Gruff.
   (furiously, furious)
   Word: _____ Part of Speech: _____

5. The crane at the construction site sways _____ when there is a thunderstorm with lots of wind.
   (dangerous, dangerously)
   Word: _____ Part of Speech: _____

6. The actor in the play _____ sang while dressed in a ridiculous costume.
   (humorous, humorously)
   Word: _____ Part of Speech: _____

7. Our neighbor _____ announced that his son was admitted to the college he likes the most.
(joyous, joyously)

Word: _____ Part of Speech: _____

8. The governor had a _____ response to a serious question during the interview.
(humorously, humorous)

Word: _____ Part of Speech: _____

Bonus: Circle the correct answer and write the part of speech.

1. Which of the following words means "full of care to avoid danger or mistakes"?

cautious cautiously

Part of Speech: _____

2. Which of the following words means "in a curious way"?

curiously curious

Part of Speech: _____

3. Which of the following words means "full of something wonderful"?

fabulously fabulous

Part of Speech: _____

Name: _____

Word Sort

Identify the headers. Read the words in the box and circle the vowels that have the /ae/ sound. Write the words under each header that match the header's spelling pattern.

'ay' > /ae/	**'ai' > /ae/**	**'ea' > /ae/**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

paid	breakneck	headers	maybe	sailing
monkey	waylay	read	prairie	mailman
maids	aisle	bricklaying	waiter	always
bluejay	raisins	greatest	despair	prepaid

Name: _____

What Is Sound?

An alarm clock rings, a dog barks, a voice calls, "Time to get up!" Every day is full of familiar sounds but what exactly is sound?

Sound is caused by a back and forth movement called vibration. Try this. Close your lips and hum. While you are humming, feel your throat under your chin. Do you feel something buzzing or vibrating? What you feel is caused by something moving back and forth very fast. When you hum, the **vocal cords** in your throat vibrate back and forth. This makes the air around them vibrate, which then creates the sound you hear.

Sound, like light, is a form of energy. Also like light, sound moves in waves. **Sound waves** move out from a vibrating object, making the air move back and forth in a way that we can't see.

Two things must happen to create a sound. First, something needs to vibrate and create **sound waves**. Then, something like air or another **medium** needs to carry the **sound waves**. You hear sounds more clearly if you are close to whatever is vibrating and making the **sound waves**. The farther away that the **sound waves** spread out, the weaker they get. That is why you can hear a friend standing right next to you better than if they are calling to you from across the street

Sound travels not only through air, which is a gas, but through other **mediums**. In fact, sound can travel through solids, liquids, and gases.

Think about sound traveling through solids, like a window or even a closed door. If you are close enough, you can still hear sounds on the other side of a window or door.

How about liquids? Have you ever been underwater in a swimming pool when you have heard someone's voice or another sound? It probably sounded different than it would if you were not under water, but you were still able to

hear it. This is an example of sound traveling through a liquid—the water in the pool.

One place that sound cannot travel is in outer space. Sound cannot travel through the emptiness, or vacuum, of space. There is no sound in outer space because there is no **medium** to carry it.

You might wonder about the speed at which sound travels. **Sound waves** travel much slower than light waves. **Sound waves** travel at about 750 miles per hour. That's fast, but not close to the 186,000 miles per second that light can travel. It would take a sound 33 hours to travel around Earth once. Remember that light can go seven times around Earth every second!

Here's an example to prove that light travels faster than sound. Think about the last time you were around a storm with thunder and lightning. Did you notice that you saw each flash of lightning before you heard the clap of thunder? That's because light travels faster than sound!

The **medium** through which sound travels affects its rate of speed. Interestingly, **sound waves** travel fastest through solids. In old western movies, you may have seen a cowboy put his ear down to the steel railroad tracks to hear if a train is coming. That is because the sound travels faster through the steel than through the air.

Try this. Listen while you drum your fingers on your desk. Now, rest your ear right on the surface of the desk and drum your fingers again. Which way sounded louder?

The sound was louder when you put your head on the desk. This is because the sound traveling through the solid wood of your desk traveled faster than if it had first traveled through the air. Every time sound changes **mediums**, it loses some of its loudness.

Name: _____

10.1

Spelling Assessment

As your teacher calls out the words, write them under the correct header.

‘ay’ > /ae/	‘ai’ > /ae/	‘ea’ > /ae/
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Challenge Word: _____ **Challenge Word: _____**

Content Word: _____

Dictated Sentences:

1. _____

_____.

2. _____

_____.

Name: _____

Characteristics of Sound

1. What is pitch?

   A. Pitch is how loud or soft a sound is.

   B. Pitch is how high or low a sound is.

   C. Pitch is how fast sound travels through a medium.

   D. Pitch is the intensity of a sound.

2. What is volume?

   A. Volume is how high or low a sound is.

   B. Volume is the intensity of a sound.

   C. Volume is how long or short a sound wave is.

   D. Volume is how fast sound travels through a medium.

3. Describe how the length of sound waves affects pitch.

   _____

   _____

4. List three sources of a low-pitched sound.

   _____

   _____

   _____

5. Which of these books would be the best to find out more facts about the characteristics of sound?

   A. *Adventures in Light*

   B. *Can You Hear Me Now?*

   C. *All About Animals*

   D. *Experiments with Food*

6. Read this sentence from the selection: *Very loud sounds can damage your hearing.* Based on the sentence, which phrase best describes what loud sounds can do.

   A. They can make you hear well.

   B. They can hurt your hearing.

   C. They can make you able to hear from great distances.

   D. They can make you able to hear a whisper better.

7. How would the world be different if all sounds were the same pitch and volume?

_____

_____

_____

_____

Name: _____

10.3

Build Sentences

Read each simple sentence. Then, brainstorm adjectives, adverbs, and synonyms that you might add to the sentence, and write these words in the boxes provided. You do not need to write words in every box, but try your best. Write a new, more interesting sentence in the blank space provided, using some of the adjectives and adverbs.

Starter Sentence: The baby slept.			
Adjectives to describe **the baby**	Adverbs to describe **how** the baby slept	Adverbs to describe **when** the baby slept	Adverbs to describe **where** the baby slept
Synonyms for **slept**			

New Sentence: _____

_____

_____

Starter Sentence: The general rode his horse.			
Adjectives to describe **the general**	Adverbs to describe **how** he rode his horse	Adverbs to describe **where** he rode his horse	Adverbs to describe **when** he rode his horse
Synonyms for **rode**			

New Sentence: _____

_____

_____

Starter Sentence: The boys laughed.			
Adjectives to describe **the boys**	Adverbs to describe **how** they laughed	Adverbs to describe **where** they laughed	Adverbs to describe **when** they laughed
Synonyms for **laughed**			

New Sentence: _____

_____

_____

Name: _____

Dictionary Skills

Use the following portion of a dictionary page to answer the questions below.

part **pickle**

pay 1. *verb* To give money to buy something. 2. *verb* To be worthwhile. 3. *noun* Money earned from working at a job.

peck 1. *verb* To pick up something with a beak. 2. *verb* To eat something in small bites with no enjoyment 3. *noun* A light kiss.

1. What are the two guide words on the page?

   _____ _____

2. What are the two entry words on the page?

   _____ _____

3. Would the word *pill* be on this page?

   _____

4. Circle the word(s) that would come before *part* in the following list: pattern, peace, pack

5. Which definition of *pay* matches the use of the word in the sentence:

   It *pays* to be an honest person. _____

   What part of speech is *pay* in this sentence? _____

6. Which definition of *pay* matches the use of the word in the sentence:

   My mother receives her *pay* on Fridays. _____

   What part of speech is *pay* in this sentence? _____

7. Write a sentence using the definition of *pay* not already used in the sentences above.

   _____

   _____

8. Which definition of *peck* matches the use of the word in the sentence:

   The child *pecked* at her food without eating much. _____

   What part of speech is *peck* in this sentence? _____

9. Which definition of *peck* matches the use of the word in the sentence:

   My grandmother gives me a *peck* on my cheek each time I see her. _____

   What part of speech is *peck* in this sentence? _____

10. Write a sentence using the definition of *peck* not already used in the sentences above.

    _____

    _____

Name: _____

11.1

Take-Home Worksheet 

Dear Family Member,

Please help your child succeed in spelling by taking a few minutes each evening to review the words together. Helpful activities for your child to do include: spelling the words orally, writing sentences using the words, or simply copying the words.

Spelling Words

This week, we are reviewing two of the seven spelling patterns for /ae/. Your child learned to spell words with the /ae/ sound in second grade, so this should be a review. On Friday, your child will be assessed on these words.

Students have been assigned two Challenge Words, *another* and *finally*. Challenge Words are words used very often. Neither Challenge Word follows the spelling pattern of /ae/.

The Content Word for this week is *concave*. This word is directly related to the material that we are reading in *Adventures in Light and Sound*. The Content Word is an optional spelling word for your child. If your child would like to try it but gets it incorrect, it will not count against him or her on the test. We encourage everyone to stretch themselves a bit and try to spell this word.

The spelling words, including the Challenge Words and the Content Word, are listed below:

1. translate	12. spacious
2. major	13. inhale
3. nation	14. changes
4. famous	15. basic
5. pancake	16. elevator
6. danger	17. hurricane
7. cascade	18. fragrant
8. escape	**19. Challenge Word**: another
9. refrigerate	**20. Challenge Word**: finally
10. invade	**Content Word**: concave
11. earthquake	

Student Reader

The chapters your child will read this week in *Adventures in Light and Sound* include information about the characteristics of sound and the human voice. Additional chapters your child may read include information about light and photography, a biography about Alexander Graham Bell, and a biography about Thomas Edison. Be sure to ask your child each evening about what he or she is learning.

Students will take home text copies of the chapters in the Reader throughout the unit. Encouraging students to read a text directly related to this domain-based unit will provide content and vocabulary reinforcement. Please remind your child that the glossary can be used for finding the meaning of the bolded words.

Name: _____

Take-Home Worksheet 

Characteristics of Sound

Let's review what you have learned so far about sound by comparing it to light. How is sound different from light? Sound must have a medium to travel through—a solid, liquid, or gas. Light does not need a medium. Remember, light can travel through the emptiness, or vacuum, of outer space. Sound cannot.

The speed at which light and sound travel is also different. Light travels much faster than sound.

There are important ways that light and sound are similar. They are both forms of energy that travel in waves. There are also other similarities.

When you learned about light, you learned that light waves can be different lengths. Some are long and some are short. It is the length of a light wave that makes it appear to be a particular color.

Perhaps you are wondering whether sound waves differ from one another. Imagine these two sounds—a baby crying for its mother and an adult yelling. Both of these are sounds. The sound waves of each travel through the same medium, air, so they are alike in that way. But a baby crying surely sounds different than an adult yelling! The baby makes a high-**pitched**, "screeching" sound. When an adult yells, it is a low-**pitched**, deep tone. Could this difference in **pitch**, or how high or how low a sound is, come from different kinds of sound waves?

The answer is yes and it has to do with the length of the sound waves! It helps if we first understand how vibrations affect sound waves. Faster vibrations produce shorter sound waves, which make sounds with a higher **pitch**. The baby's screeching sound vibrates very rapidly, making shorter,

but more, sound waves. Can you think of some other sounds that have a high **pitch**?

Slower vibrations produce longer waves, which make sounds with a lower **pitch**. A yelling voice makes longer, fewer waves so you hear a lower **pitch**. **Pitch** describes the highness or lowness of a sound. Can you think of some sounds that have a low **pitch**?

Try changing your voice **pitch**. Can you speak in a high, squeaky voice? Can you speak in a low, rumbling voice?

Sound also varies in loudness. If you're listening to the radio and a favorite song comes on, you might say, "Turn it up!" and reach for the knob marked **VOLUME**.

When you turn up the **volume**, you are making the sound louder. A scientist might say that you are increasing the sound's **intensity**. More **intense** sound waves carry more energy and make louder sounds.

How far away you can hear a sound depends on its **intensity**. A quiet sound, like a whisper, doesn't travel very far. A really loud sound can travel for hundreds of miles. When fireworks are set off, the sound can be heard miles away.

Very loud sounds can **damage** your hearing. People who work around loud sounds all day long often wear ear coverings or plugs to protect their hearing. You should be careful, too, not to turn the **volume** too loud if you like to listen to music.

Name: _____

12.1

The Human Voice

Take notes as you read, using the questions to guide you.

1. Describe what happens in your lungs, trachea, and larynx in order for you to make sounds.

_____

_____

_____

_____

2. How do your vocal cords work?

_____

_____

_____

_____

3. Do babies need to learn how to breathe? Why or why not?

4. How did you learn the language you speak?

5. When you make loud sounds, what happens to make the sounds louder?

Name: _____

Conjunction *and*

Write the letter 'S' over the subjects and the letter 'P' over the predicates in each simple sentence. Draw a line to separate the subject and predicate in each simple sentence. Then, join the two simple sentences together using the conjunction *and* to make a compound sentence. Draw two lines under the word *and* to show that it is a conjunction.

Example: The beautiful fish swim in the bowl. They watch me carefully!

S P S P

The beautiful fish | swim in the bowl and they | watch me carefully!

1. Sally went to the circus to see the clowns. Her friends joined her there.

_____

_____

_____

2. The sports car roared down the street. The police car with a siren was right behind it.

_____

_____

_____

3. The goldfish swims around in its bowl. The children love to watch it swim in circles.

_____

_____

Name: _____

Take-Home Worksheet 

The Human Voice

Have you ever noticed how well you know your mother or grandmother's voice? You have heard it so often that you can tell right away who it is. Each person has a distinct voice. It's a voice that can make many sounds with different pitch and intensity. It can make high- and low-pitched sounds, loud and soft sounds.

So how does your body make all of those different sounds? You already know that something needs to vibrate to create sound waves. You also know that sound needs a medium, like air, to travel through. Here's how it works in the human body.

Air passes in and out of your body all of the time when you breathe. Inside your chest, your **lungs** expand to take in air and then contract to let it out.

Leading out of your **lungs** is a long tube called the **trachea**, or "windpipe." At the top of your trachea is another part of your body called the **larynx**, or "voice box."

Inside the **larynx** are two bundles of muscle that are known as vocal cords. When you breathe in, the vocal cords relax so that air can move past them and into your lungs. When you speak, you force the air out of your **lungs** and over the vocal cords in your **larynx**. The vocal cords vibrate to make waves in the air that continue up your throat and out of your mouth.

When you were a baby, you did not need to learn how to breathe. Your **lungs** worked **automatically**, bringing air into and out of your body. You also did not need to learn how to use your vocal cords to make sounds.

When you were a baby, you made lots of funny noises and grunts. Ask your parents!

You did, however, need to learn how to change those grunts and noises into words so you could talk. You did this by listening to the people who talked to you when you were a baby. You practiced saying the same sounds and words. You learned to speak whatever language all of those people were speaking to you. If your family spoke only English to you, you learned to speak English. If your family spoke only Spanish to you, you learned to speak Spanish. People can learn to speak more than one language. Maybe you or some of your classmates speak more than one language.

Your vocal cords grow as you grow. When you have shorter vocal cords, you tend to speak at a higher pitch. This is why small children have higher-pitched voices than adults. The pitch of your voice depends on the size of your vocal cords and **larynx**.

The volume of your voice, or how loudly you speak, depends on how much air is produced by your **lungs** and comes out of your mouth. When more air is pushed out of your mouth, your voice will be louder.

Name: _____

12.4

Take-Home Worksheet 

Practice the Conjunction *and*

Write the letter 'S' over the subjects and the letter 'P' over the predicates in each simple sentence. Draw a line to separate the subject and predicate in each simple sentence. Then, join the two simple sentences together using the conjunction *and* to make a compound sentence. Draw two lines under the word *and* to show that it is a conjunction.

Example: **S P S P**
Alan | entertained all of us. Eli | served snacks.

Alan entertained all of us, <u>and</u> Eli served snacks.

1. Alan sings wacky songs. Eli juggles apples.

_____

_____

_____

2. Alan throws lots of parties. The neighbors always come.

_____

_____

_____

3. Eli makes brownies. The neighbors enjoy them.

_____

_____

_____

4. Alan likes to entertain. Eli likes to cook.

_____

_____

_____

Challenge: Mark the subject(s) and predicate(s) and underline the conjunction *and* with two lines in the following sentences. Write 'Yes' on the line if the sentence is a compound sentence with two independent clauses and 'No' if it is not a compound sentence.

S P
Example: Meg | baked a cake and chocolate chip cookies. No

5. Allen and John rode their bikes to the park. _____

6. Derek read a book and watched TV last night. _____

7. My mother cooked dinner and my sister made dessert. _____

Name: _____ 13.1

Unit Assessment

Tuning Forks

A tuning fork is not the kind of fork you use at the dinner table. It is a fork you might use if you play a musical instrument.

If you strike a tuning fork on a hard surface, the two prongs of the fork will begin to vibrate. That means they are moving back and forth very rapidly. As the prongs vibrate, they give off a sound.

Every tuning fork is designed to vibrate at a certain speed, or frequency. It's the frequency that determines the pitch of the sound the fork makes. A fork that vibrates fast makes a high-pitched sound. A fork that vibrates more slowly makes a sound with a lower pitch.

Tuning forks make a very pure kind of sound. Most other things do not. If you bang on a kitchen pot, it will make several sounds all at once. You will hear the sound of the thick metal on the bottom of the pot vibrating. You will also hear the sound of the thinner metal on the sides vibrating. You may even hear the sound of the handle vibrating. Each of these parts of the pan will give off a different pitch. The sound you will hear will not be a pure sound. It will be a mix of several different pitches. Tuning forks are not like that. They do not give off a mix of sounds. They emit a single, pure sound.

Musicians use tuning forks to tune their instruments. A guitar player can play a note on her guitar. Then, she can compare that note with the note made by a tuning fork. If the note from the guitar sounds too high,

she can loosen the string. If the note sounds too low, she can tighten the string. Then, she can try it again.

Every tuning fork makes a specific pitch. For example, a tuning fork might vibrate at 440 hertz. That means the vibrating prongs go through a cycle of back-and-forth motion 440 times a second. Those vibrations make a note that musicians call "A."

This kind of tuning fork is widely used. It makes the same pitch as one of the strings on a violin. It is used by musicians in orchestras to help them tune their instruments before they play.

Suppose you wanted a higher pitch. You would need to get a tuning fork with shorter prongs. The shorter the prongs, the higher the note. You might use a shorter tuning fork that vibrated at 659 hertz. That would make a note that musicians call "E."

Tuning forks also have other uses. Some ear doctors use them to check hearing. Here is how it works. The doctor asks her patient to listen for sounds. She then strikes a tuning fork where the patient can see her. She waits to see if the patient hears the tone. If the patient cannot hear the sound, that may mean there is a problem with the patient's hearing.

Tuning forks are very useful tools.

1. What is the selection mainly about?

   A. Doctors use tuning forks to test hearing.

   B. Playing a guitar is difficult.

   C. Tuning forks are useful tools.

   D. Musical instruments have different pitches

2. What does the word **pure** mean in the following sentence from the selection?

   Tuning forks make a very **pure** kind of sound.

   A. mixed with other sounds

   B. not mixed with other sounds

   C. beautiful sounds

   D. not beautiful sounds

3. What determines the pitch of the sound a tuning fork makes?

   A. the speed of vibration

   B. the frequency of vibration

   C. the length of the prongs

   D. all of the above

4. Write *true* or *false* on the line following the sentence.

   The longer the prongs on a tuning fork, the higher the pitch. _____

5. What does the word **specific** mean in the following sentence from the selection?

Every tuning fork makes a **specific** pitch.

A. exact

B. unknown

C. varied

D. unfamiliar

6. Why did the author write this selection?

A. to inform the reader about pitch

B. to inform the reader about musical instruments

C. to inform the reader about tuning forks

D. to inform the reader about hearing loss

7. The selection mentions that a guitar player can use a tuning fork. What is another name for a person who plays the guitar, that includes the suffix *–ist*?_____

8. Draw a triangle around the adverb and a wiggly line under the verb. Write whether the adverb tells *how, when*, or *where* on the line following the sentence.

Dad set the hammer on the table there. _____

9. If someone is *famous* for something, what does that mean?

   A. That person is full of a funny or amusing quality.

   B. That person is full of something that is hard to understand.

   C. That person is full of the state of being well-known.

   D. That person is full of extreme anger or force

10. Draw a triangle around the adverb and a wiggly line under the verb. Write whether the adverb tells *how, when*, or *where* on the line following the sentence.

    Sometimes I ride my bike to school. _____

The Bell of Atri

The town of Atri, in Italy, was famous for its bell. The bell hung in the town square, where it had been placed many years before by an ancient king.

"If any man has been wronged," the king proclaimed, "let him ring this bell and a judge will appear."

The people of Atri made use of the bell. Whenever a man felt he had been wronged, he would ring the bell. Then, the judge would put on his robes and make his way to the town square to investigate.

A braided rope hung from the bell. After a while, this rope began to wear out. The braid broke apart into cords, and the cords themselves began to fray.

A farmer saw that the rope was about to give way. He cut grape vines from his vineyard and wrapped the vines around the fraying rope.

While the farmer was mending the rope, an old knight was limping out to his stable. In his youth, this knight had been an avid hunter. He had spent many days on his favorite horse, sounding the horn and chasing wild boars.

These, however, were the pleasures of the knight's youth. As he grew older, he lost interest in hunting. He turned into a bitter, old miser. The old knight was so stingy that he barely fed the horse who had served him so well for many years. The poor animal stood all day in his stall, starving and neglected.

At last, the old knight decided to get rid of the horse.

"Why should I keep that old nag?" he said to himself. "It costs a

fortune to feed it, and I don't even need a horse anymore."

The old knight limped out to his stable. He threw open the stable door and drove the horse away.

"Get out!" he shouted. "Go and fend for yourself. I have no need for you anymore"

The old horse limped into town. The dogs barked at him and nipped at his heels as he went. At last, he came to the town square, where the Bell of Atri hung. The horse sniffed the rope. He smelled the grape leaves wrapped around the old rope and began to nibble on the vines. The bell began to swing from side to side.

Ding, dong! Ding, dong! Ding, dong!

The judge heard the bell. He put on his robes and walked to the town square. When he arrived, he found a horse standing beneath the bell and an angry crowd gathered around.

"What is the meaning of this?" the judge asked.

"That's the old knight's horse," said a man in the crowd.

"Just look at him!" said another. "It looks like the poor beast hasn't been fed in weeks."

"The old miser never feeds him!" called another. "But look! The horse has rung the bell! He is calling for justice!"

"Justice for the horse!" shouted the crowd. "Justice! Justice!"

The judge sent for the old knight.

The knight did not pretend he was sorry for his actions.

"It's my horse," he said, with a sneer. "I can do what I want with him.

It doesn't matter what the rest of you think."

The knight turned to go but the judge stopped him.

"Sir Knight," said the judge, "Shame on you! Where is your sense of honor? Have you forgotten the code of chivalry? This horse served you loyally for many years. How can you let him starve in his old age? You have done him wrong and I order you in the king's name to right that wrong. Take care of this animal. Give him food and shelter. Let him live out his last days in peace!"

The old knight scowled but he did as he was told. The crowd cheered as he led the horse away.

When the king heard what had happened, he was pleased.

"Other bells call men to church," he said. "But the Bell of Atri calls men to justice. We should be proud of this bell of ours, for it pleads the victim's case—be he man or beast!"

11. What does the word **stingy** mean in the following sentence from the selection?

> The old knight was so **stingy** that he barely fed the horse who had served him so well for many years.

A. mean and unkind

B. unwilling to give or spend

C. lacking food

D. starving

12. What happened when someone rang the bell in Atri's town square?

_____

_____

13. What might have happened if the farmer had not fixed the rope that hung from the bell?

_____

_____

14. Why wasn't the old knight sorry for his actions regarding his horse?

A. He felt he owned the horse and could treat it as he wished.

B. He didn't like the judge who ruled that he should take the horse home and care for him.

C. He thought justice for a horse was silly.

D. He was deaf and could not hear the bell.

15. What happened in the selection to show that the whole town approved of the judge's ruling regarding the old knight's horse?

_____

16. Circle the true statement.

A. The bell of Atri had been hung two years earlier.

B. The bell of Atri hung in the judge's front yard so he could hear it.

C. The bell of Atri rang when someone pulled on its rope.

D. The bell of Atri was only used by people.

17. Draw a triangle around the adverb and a wiggly line under the verb. Write whether the adverb tells *how, when*, or *where* on the line following the sentence.

The girl screamed loudly. _____

18. Which of the following words would be on a dictionary page with the following guide words?

ballroom	**bingo**

A. bell

B. brush

C. bunch

D. baby

19. Write adjectives, adverbs, and synonyms in the appropriate boxes. Then write a new, more interesting sentence in the space provided using some of the words from the boxes.

Starter Sentence: The child spoke.			
Adjectives to describe **the child**	Adverbs to describe how **the child** spoke	Adverbs to describe when **the child** spoke	Adverbs to describe where **the child** spoke
Synonyms for **spoke**			

New Sentence: _____

_____

20. Circle the two words in the following sentences from the selection that have the suffix *–er*. Write their meanings on the lines.

While the farmer was mending the rope, an old knight was limping out of his stable. In his youth, this knight had been an avid hunter.

Word: _____

Meaning: _____

Word: _____

Meaning: _____

Hearing Aids

"Grandpa," Ben said, "will you yell me a story?"

"What?" said Grandpa, cupping his hand to his ear.

"I said, will you tell me a story?"

"I'm sorry, Benjamin. You'll have to repeat that. My hearing aid is not working."

Ben repeated the question while Grandpa looked at him carefully, "Will you tell me a story?"

"Oh," said Grandpa. "Sure thing. I'd be delighted to tell you a story. Just give me a minute. I have to change the battery in my hearing aid."

Grandpa went to his room. When he came back a few minutes later, he had a tiny, silver battery in one hand and his pinkish hearing aid in the other.

He showed Ben the battery. It was shiny and shaped like a cake.

He showed Ben how to install the battery. Then, he slipped the hearing aid into his ear.

"Can you hear me now?" Ben asked.

"Yes," said Grandpa. "Much better!"

"How does that thing work?" Ben asked

"What thing?" Grandpa asked.

"Your hearing aid."

"Oh, that! Well, let me see. How can I explain it? Have you ever seen a pop star singing at a concert?"

"Sure."

"Well, then you know that the singer sings into a microphone. Then, her voice comes out of a big box called a speaker, but when it comes out, it's much louder."

Ben nodded.

"Well, my hearing aid works more or less the same way. It has a little microphone on the outside that listens for sounds. Then, it has another part that makes the sounds louder. That part is called an amplifier. Last but not least, it has a speaker that directs the amplified sounds into my ear canal."

"Do all hearing aids run on batteries?"

"Yep," said Grandpa. "The battery supplies power to make my hearing aid work."

Ben sat thinking for a minute. He was making a connection to something he had learned in school earlier in the year.

"So, does that mean they did not have hearing aids back in history? Miss Tarbuck told us in class that they didn't have any batteries back then."

"That's right," said Grandpa. "They didn't have batteries back then, so they didn't have hearing aids like mine back then. But they did have a kind of hearing aid. But it didn't run on batteries. It was called an ear trumpet."

"An ear trumpet?"

"That's right. An ear trumpet was a pipe that bent outward on both ends. You put one right up next to your ear. Then, you held the other end out to try to catch the sounds other people were making. The idea was that some of the sounds would go down the pipe and end up in your ear."

"Did those ear trumpets work pretty well?"

"I'm not sure," said Grandpa. "But I'm guessing they didn't because nobody uses them anymore. Have you ever heard of the German composer Ludwig van Beethoven?"

"No."

"Well, he went deaf late in life and had to use an ear trumpet."

"So hearing aids with batteries are better than ear trumpets?"

"Definitely. But they've developed something recently which they say is even better. It's called a cochlear implant. A cochlear implant is sort of like a hearing aid. But it's not the sort of thing you can take out and put back in. It's installed inside your head. A cochlear implant is like a really good hearing aid. It's so good it can even help kids who are born deaf learn to hear!"

"Cool!" said Ben. "Can I get you a cochlear implant for your birthday?"

Grandpa chuckled.

"That's awfully sweet of you," he said. "But they are pretty expensive. Plus, you have to go to the hospital and have surgery done. For now, I'm okay with my hearing aid. It does have one advantage over a cochlear implant for me, you know."

"What's that?"

Grandpa bent down and explained, in a whisper: "Cochlear implants stay on all the time, but I can turn my hearing aid off. When loud sounds start to bother me, sometimes I do!"

21. Why did the author write this selection?

A. to help the reader hear sounds from far away

B. to instruct the reader about how to change batteries

C. to sell the reader an ear trumpet

D. to instruct the reader about hearing aids and cochlear implants

22. What does the word **amplified** mean in the following sentence from the selection?

> Last but not least, it has a speaker that directs the **amplified** sounds into my ear canal.

A. louder

B. softer

C. higher

D. lower

23. Circle the true statement.

A. Beethoven was famous for inventing cochlear implants.

B. Beethoven was a German composer who went deaf late in life.

C. Beethoven used an eye trumpet to see better.

D. Beethoven constructed batteries for hearing aids.

24. What would happen if Ben could buy a cochlear implant for Grandpa and Grandpa could have it implanted?

A. Loud sounds would never bother Grandpa again.

B. Grandpa would not need his old hearing aid.

C. Grandpa would sell his old ear trumpet.

D. Grandpa would buy batteries to make it work.

25. Why didn't people back in history use hearing aids like the one Grandpa has?

A. Hearing aids were too expensive back then.

B. People back in history used cochlear implants.

C. People back in history were not deaf.

D. Those hearing aids had not been invented yet.

26. Write *true* or *false* on the blank following the sentence.

Grandpa's hearing aid includes a microphone and a speaker.____

27. Write adjectives, adverbs, and synonyms in the appropriate boxes. Then write a new, more interesting sentence in the space provided using some of the words from the boxes.

Starter Sentence: The puppy slept.			
Adjectives to describe **the puppy**	Adverbs to describe how **the puppy** slept	Adverbs to describe when **the puppy** slept	Adverbs to describe where **the puppy** slept
Synonyms for **slept**			

New Sentence: _____

_____

28. Which of the following words would be on a dictionary page with the following guide words?

toenail	**tomato**

A. today

B. toad

C. topple

D. together

29. If Grandpa acted *humorously*, what would he be doing?

_____

30. Write the letter 'S' over the subject and the letter 'P' over the predicate. Then, join the two simple sentences together using the conjunction *and* to write a compound sentence.

The motorcycle sped down the street. Other motorcycles followed close behind.

_____

_____

Name: _____

Fluency Assessment

Pupils

"Class," said Mr. Brown, "today we are going to learn some more about how our eyes work. James, would you please turn out the lights?" 11 23 25

James walked to the door and switched off the lights. Mr. Brown closed the blinds. It got darker in the classroom. It was not completely black. Some light came through the blinds, but not very much. The children giggled in the dimly-lit room. 36 49 60 69

"Now," said Mr. Brown. "I'd like all twenty-two of you to turn and look at the person who sits next to you. Sally, you look at Mick. Jen, you look at Stan. That's it! Lean close and look your partner right in the eyes. Can you see your partner's pupils? Remember: the pupil is the black part in the center of the eye. It's the part that lets in light from the outside world." 82 97 110 122 138 144

Mr. Brown walked over to the door. "Can you all see your partner's pupils?" 156 158

"Yes!" said the students. 162

"Keep looking at your partner's pupils!" said Mr. Brown. Then, he turned on the lights. In an instant, the room went from dim to bright. 172 186 187

Sally was staring at Mick's pupils. She watched them shrink. 197

"Cool!" she called out. "Mick's pupils got smaller when you turned on the lights!"

"Sally's did, too!" said Mick.

All around the room, students noticed the same thing. When the lights came on, their partner's pupils got smaller.

Mr. Brown explained: "The pupil's job is to let light into the eye and to keep it out. If it's dark, your pupil opens wide to let in a lot of light. If it's bright, your pupil shrinks to let in less light. This is a reflex. You don't have to think, I believe I shall open my pupil a bit wider. Your pupils work all by themselves, without you even thinking about it. The pupil is like the gatekeeper of the eye. It decides what gets in and what has to stay out."

"Do it again!" shouted Mick. "Shut off the lights!"

"Okay," said Mr. Brown. "Keep your eyes on your partner's pupils."

He threw the switch. Forty-four pupils grew larger in the dimness.

Mr. Brown waited a few seconds. Then, he turned the lights back on. Forty-four pupils shrank in the bright light.

"So," said Mr. Brown. "Do we understand what the pupils do?"

The students nodded their heads in agreement.

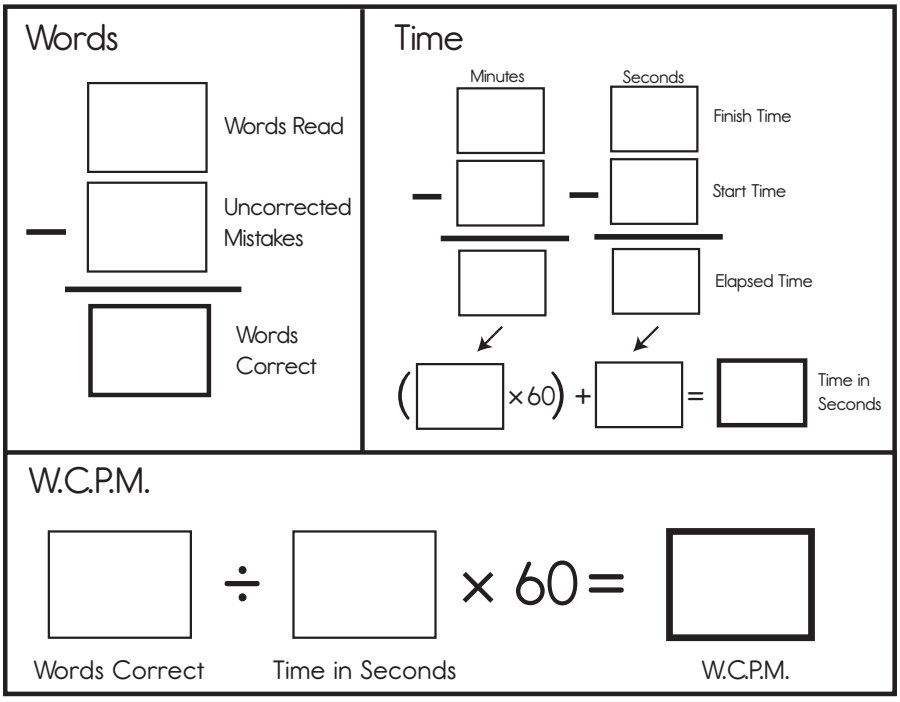
Name: _____

W.C.P.M. Calculation Worksheet

Student: _____ Date: _____

Story: *Pupils*

Total words: 400



Compare the student's W.C.P.M. score to national norms for Winter of Grade 3 (Hasbrouck and Tindal, 2006):

W.C.P.M	National Percentiles for Winter, Grade 3
146	90th
120	75th
92	50th
62	25th
36	10th

Comprehension Total ____ / 6

Answers Correct	Level
6	Independent comprehension level
4-5	Instructional comprehension level
2-3	Frustration comprehension level
0-1	Intensive remediation warranted for this student

Name: _____

14.1

Conjunction *but*

Create compound sentences by connecting the two simple sentences with the conjunction *but*. Draw two lines under the conjunction and label the subject(s) with the letter 'S' and the predicate(s) with the letter 'P'.

1. Brownies are fun to make. They are sometimes hard to get out of the pan.

_____

_____

2. The day is rainy and dreary. The sky is brightening off in the distance.

_____

_____

3. My new puppy is very naughty. I love her so much.

_____

_____

4. This math homework seems very hard. I'm going to keep trying.

_____

_____

5. We knocked on the door. No one was at home.

_____

_____

Create the second part of a compound sentence using the conjunction *but*.

6. Denise likes pepperoni pizza, but

_____

_____

(Hint: think about a family member who likes a different topping better)

7 . Linda loved the movie she just saw, but

_____

_____

(Hint: think about a friend who went to the movie with her who had a different idea about the movie)

Name: _____

15.1

Spelling Assessment

As your teacher calls out the words, write them under the correct header.

‘a’ > /ae/	‘a_e’ > /ae/
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Challenge Word: _____ **Challenge Word: _____**

Content Word: _____

Dictated Sentences:

1. _____

_____.

2. _____

_____.

Name: _____

PP1

Light and Photography

1. What does the word *photography* mean?

_____

_____

Page _____

2. Describe a pinhole camera.

_____

_____

3. Louis Daguerre developed daguerreotypes that used _____ to make an image on a glass plate.

Page _____

4. George Eastman invented _____ that replaced the glass plates used in earlier cameras.

Page _____

5. The invention of _____ led to the creation of the box camera.

Page _____

6. Describe how you would get your photos using a box camera.

_____

_____

_____

_____

Page _____

7. Why were instant film cameras so popular?

_____

_____

_____

_____

Page _____

8. Today's digital cameras don't use film but rather a _____ .

Page _____

9. Write the main idea of this chapter.

_____

_____

_____

Name: _____

PP2

Take-Home Worksheet 

Light and Photography

The word **photography** comes from two Greek words. *Photo* means "light" and *graphein* means "to draw." So you might say that **photography** means "to draw with light."

The earliest ideas for making pictures using light came in the 4th century BC from a Greek man named **Aristotle**. He observed and made notes about how light acts.

The first person to put **Aristotle's** ideas into practice was an Arab scientist, Alhazen, around 1000 AD. He made the first pinhole camera. It was a box with a small hole in one side. Light from the outside came through this little hole and projected an image on the opposite side of the box. Alhazen used it to help him draw. His camera did not take **photographs** as we know them today. Others continued to experiment with and improve pinhole cameras. Even today, some people still enjoy making their own simple pinhole cameras.

The first thing similar to a **photograph** was made in 1826 by a Frenchman named Joseph Niepce [NEEP-see]. He **invented** what were called **heliographs**. *Helio* is the root for "sun." He used sunlight to create images. The sunlight mixed with a form of coal and some other natural chemicals on a square, glass plate to make an image. It took eight hours in the sunlight before the image appeared! Then, it faded.

Another Frenchman named Louis Daguerre [Də-GAIR] took Niepce's ideas and improved them. He was able to use light to create an image in less than thirty minutes. His images were called **daguerreotypes**, named for their **inventor**. **Daguerreotypes** used light-sensitive chemicals like silver and iodine to make an image on a metal plate. These became popular around the world.

The late 1800s brought even more improvements to **photography** thanks to some very creative **inventors**. One such **inventor** was the American George Eastman. In 1888, he **invented** flexible, rolled film that could replace the glass plates that were used in earlier cameras.

The **invention** of film led to the creation of the box camera, which was a tight box with a simple lens. The camera had film that could take as many as 100 **photos**. People could take **photos** and then send the camera back to Eastman's company to print the **photos**. The company then sent both the **photos** and camera back to you. Ask to see your family's older **photo** album. Chances are that some of the much older **photos** may have been taken with a box camera.

Color films were not **invented** until the late 1930s and early 1940s. By then, most families owned at least one camera and **photo** albums became a common, household item.

Cameras improved at a fast rate around the 1950s. Instant photography was **invented** by Edwin Land, who sold his first camera in 1948. With his camera, one minute after you took the **photo**, you would have a fully developed **photograph** from the camera. These cameras were popular because people did not have to wait to get their **photos**. They had them right after they shot the **photo** with their camera.

Chances are that if you or your family has a camera now, it is a digital camera. Digital cameras do not use film like the early cameras described previously. Digital cameras have a special computer "chip" that takes the place of film. In fact, many cell phones now also have digital cameras. Imagine how amazed the early **inventors** would be to see all of the cameras we have today!

Name: _____

PP3

Alexander Graham Bell, Part I

1. What did Aleck explore when he lived outside Edinburgh?

_____

_____

Page _____

2. How was Aleck's mother able to hear the music she played?

_____

_____

Page _____

3. Describe the Visible Speech Aleck's father invented.

_____

_____

Page _____

4. What motivated Aleck's father to invent Visible Speech?

_____

_____

Page _____

5. What characteristics did Aleck's parents have that served as an inspiration for him?

_____

_____

6. Write the main idea of this chapter.

_____

_____

Name: _____

PP4

Take-Home Worksheet 

Alexander Graham Bell, Part I

What makes someone famous? Who would you think of if you were asked to name someone famous today? Would you name a famous athlete? An actor or musician? Maybe you would think of a president or famous leader. One of the most famous inventors of all time lived over 100 years ago. His name was Alexander Graham Bell.

Alexander Bell was born March 3, 1847. He was the middle of three sons born to Alexander and Eliza Bell of Edinburgh, Scotland. His parents nicknamed him "Aleck" as a young boy. Aleck's childhood was happy. He lived the best of both worlds by spending time at his home in the city of Edinburgh and also in the country on the weekends. More than anything, Aleck loved to learn new things.

At Milton Cottage near Edinburgh, young Aleck enjoyed exploring nature. He collected plants and studied animals.

In school, Aleck's best subjects were science and music, which he learned from his mother. Aleck's mother was nearly deaf, so she played music mostly by feel. To hear the music, she would put a **hearing trumpet** to the strings of the instrument. The **trumpet** magnified the sound.

Aleck's father was an important speech **professor**. He studied the sounds of the English language, similar to the phonics you studied to learn to read. He very much wanted to help his wife, Eliza, and other deaf people. In 1864, he invented a "sound alphabet" called **Visible Speech**. He spent years coming up with **symbols** to stand for any sound the human voice could make. The **symbols** that he used looked the way a person's mouth looked when making certain sounds. **Visible Speech** helped deaf

people learn how to talk better so that they could communicate with others.

The example of both his mother and father was an **inspiration** for Aleck. He became interested in inventing things on his own. He especially wanted to invent things to help other people. Aleck and his brother actually made a "speaking machine." The machine used the voice box (larynx) of a dead sheep. Part of the machine acted like a mouth and throat and could say the word "mama."

As an adult, Aleck worked with deaf students. He later took a job as a **professor** at Boston University. Inventing things was a big part of Aleck's life. After one invention, he set his mind on others, never satisfied with the past invention. The invention that he is most famous for, however, was yet to come.

Name: _____

PP5

Alexander Graham Bell, Part II

1. What is a telegraph?

   A. A telegraph is a machine that allows people to send dots and dashes across wires.

   B. A telegraph is a machine that allows people to hear each others' words across wires.

   C. A telegraph is a way to record voices so people can hear each other.

   D. A telegraph is a way to record written words so people can communicate with each other.

   Page _____

2. Why was the Massachusetts Institute of Technology so important to Aleck Bell?

   _____

   _____

   _____

   Page _____

3. Aleck Bell said that electric current could be used to carry sound. Why do you think that people thought he was crazy?

   _____

   _____

   _____

   Page _____

4. Describe how an accident led to the invention of the first telephone.

_____

_____

_____

Page _____

5. Alexander Graham Bell felt that "self-education is a life-long affair." What does that mean to you as a student who is learning new things every day?

_____

_____

_____

Page _____

Name: _____

PP6

Take-Home Worksheet 

Alexander Graham Bell, Part II

Aleck Bell loved thinking of new things to invent more than anything else in the world, especially to help other people. In 1837, another inventor, Samuel Morse, created a machine called the **telegraph**. The **telegraph** was a way to send messages long distances across wires. It was limited to dots and dashes and could not **transmit** human sounds. Aleck began to think about ways that he might improve upon this new invention. "I used to tell my friends that one day we should speak by **telegraph**," said Bell. He devoted all his time to this new goal. So did many others and the race for a new invention was on.

Boston, Massachusetts became an important place for many inventors. The Massachusetts Institute of Technology (MIT) made space in one of its labs for Aleck to do his experiments. His days were filled with teaching and then trying over and over to make human sound travel across a wire. All of his energy was spent on this creative idea. He wrote that his idea of using **electric current** to carry a sound would likely make others think him "crazy." So, he kept most of his ideas and experiments secret.

Aleck hired a young mechanic to help him. Thomas Watson knew how electricity worked. At first, their experiments failed more than they succeeded. Aleck thought they were getting closer to success. "I think the **transmission** of the human voice is much more nearly at hand than I thought." On June 2, 1875, his dreams came true.

Like many inventions, an accident led to an important **discovery**. With the electricity turned off, Watson sent a message to Aleck that Aleck could hear. He heard tones, not just one single-pitched sound. He knew instantly

it was a huge step forward! "I have (by accident) made a **discovery** of the very greatest importance," wrote Bell.

Three days later, the first telephone recorded, "Mr. Watson, come here, I want to see you." To Bell's great joy, Watson had heard and understood what Bell had said!

Fame and fortune came to Alexander Graham Bell and Thomas Watson. They soon formed the Bell Telephone Company to make and sell their new invention.

Bell continued to invent the rest of his life. "Self-education is a life-long affair," said Bell. "There is no failed experiment," he said to convince people to keep going with their ideas. He passed his love of learning on to his grandchildren and inspired a whole group of new inventors.

Name: _____

PP7

Thomas Edison: The Wizard of Menlo Park

1. According to the selection which of the following is true?

A. Thomas Edison is in the "Hall of Fame."

B. Thomas Edison's teachers did not like him.

C. Thomas Edison worked on telegraph machines.

D. Thomas Edison liked to work with telescopes.

2. Read the following from the selection:

> At the age of 12, he **worked** selling newspapers on the railroad near his home.

Replacing the *–ed* with *–er* in **worked** makes a new word. Write the new word in the blank and then choose the best meaning.

_____

A. someone who works

B. full of work

C. without work

D. someone who sells things

3. What does the author want you to know about Thomas Edison?

A. He kept trying even when things went badly.

B. He gave up easily.

C. He liked the color blue in the sky.

D. He wanted to learn how to make fire.

4. For what invention is Edison best known?

A. phonograph

B. light bulb

C. microphone

D. iPod

5. Write the main idea for this chapter.

_____

_____

_____

_____

Name: _____

PP8

Take-Home Worksheet 

Thomas Edison: The Wizard of Menlo Park

Have you figured out why inventors are so important? They have helped every person's life in one way or another. Shouldn't there be an inventors' "Hall of Fame?" If there were, then a man named Thomas Alva Edison would be quickly voted in.

Thomas Alva Edison was born February 11, 1847, in a small, northern Ohio town. He was the last of seven children born to Sam and Nancy Edison. Al, the nickname his friends gave him, was a sickly child. He didn't even attend school until he was eight years old. Because of **scarlet fever** as a child, Al was left more than partially deaf. His illnesses did not stop his interest in nature. He asked questions that teachers didn't know how to answer: "Why is the sky blue?" or "How does fire work?" He was curious about everything and liked to figure out things on his own.

At the age of 12, he worked selling newspapers on the railroad near his home. On the train, he heard people talking about many new ideas and inventions. He learned by listening to their stories. At 15, Al landed a job working the telegraph machine. He became an expert telegraph operator over the next six years. Even though he was deaf, he could feel the vibration of the wire.

Al liked to work with electric machines. He found a way to make the telegraph faster and sold the idea to Western Union Telegraph Company for $40,000. With the money he made from the sale, he set up his first lab to continue his experiments.

When the work Al was doing outgrew this lab, he built a bigger lab in Menlo Park, New Jersey. He hired some of the smartest scientists and

engineers from around the world to work with him. Much of his early work was on sound. They called him the Wizard of Menlo Park because some of the inventions seemed magical.

In this new lab, he discovered a way to make Alexander Graham Bell's new telephone louder. He sold the **patent** for his new invention for $100,000. That was a huge sum or money at the time.

His next invention was the **phonograph**. He was able to record sound on a cylinder wrapped in tinfoil. He played a version of "Mary Had a Little Lamb" to his fellow scientists. This was the first time anyone was able to listen to recorded music.

The invention that Edison is best known for came next. In 1879, he invented the first **incandescent** (glowing) electric light bulb. Three years later, he lit up 85 homes at once in New York City and the age of electric light began.

By the time Edison "retired," he had **patents** on over 1,000 inventions. They include the **kinetoscope**, which is a machine for showing movies, and the **microphone**.

What people sometimes forget is that many of Edison's experiments "failed" at first. He caused explosions at his labs and was forced to start all over many times. However, he kept moving forward each time. He always had a positive attitude. He knew he was closer to his next success!

Name: _____

PP9

Adverbs that Tell *how*

Write an adverb to describe the verb in the sentence. Do not use the same adverb more than once.

We ran quickly to the car when the storm started.
Adverb: quickly **Verb described by adverb**: ran

1. The referee blew his whistle _____ after the play.

   Adverb: _____ **Verb described by adverb**: _____

2. Our dog _____ sits in the doorway at night.

   Adverb: _____ **Verb described by adverb**: _____

3. He searched _____ for his math homework.

   Adverb: _____ **Verb described by adverb**: _____

4. We walked _____ into the kitchen for dinner.

   Adverb: _____ **Verb described by adverb**: _____

5. The posters on the wall were placed _____.

   Adverb: _____ **Verb described by adverb**: _____

Change the adjective under the blank to an adverb by adding *–ly* to complete the sentence. Answer the question after the sentence.

1. The storm _____ (bad) damaged the car.

   How was the car damaged? _____

2. The big baseball uniform hung _____ (loose) on Devon.

   How did the baseball uniform hang? _____

3. Dad _____ (proud) clapped when I scored a goal.

   How did Dad clap? _____

4. The music played _____ (loud) through the speakers.

   How did the music play? _____

5. She _____ (shy) walked into her new classroom.

   How did she walk? _____

Name: _____

PP10

Adverbs that Tell *when* and *where*

Choose the adverb that best fits in each blank and write it in.

weekly	always	last	after	sometimes

We visit my grandfather _____.
We _____ go on Sunday afternoon. I like to bring books _____ and read them to him. When I do bring books, he asks me to read my favorite book _____. He knows I will be excited about it and read it well at the end. _____ I read my books to him, we have dinner.

Write a sentence using each adverb.

1. *recently*

_____

_____

2. *tomorrow*

_____

_____

Choose the adverb that best fits in each blank and write it in.

here	already	home	outside

My brother and I ran _____ to look for our friends. We did not see anyone so we walked _____. When we got _____ we saw a note on the door. It was from David and said "Meet at my house, and we'll go to the park together!" We got to David's house and another note said he had _____ gone to the park. We found him at the park and played until it got dark!

Write a sentence using each adverb.

1. *never*

_____

_____

2. *inside*

_____

_____

Name: _____

PP11

Conjunction *and*

Write the letter 'S' over the subjects and the letter 'P' over the predicates in each simple sentence. Draw a line to separate the subject and predicate in each simple sentence. Then, join the two simple sentences together using the conjunction *and* to make a compound sentence. Draw two lines under the word *and* to show that it is a conjunction.

S P S P
Example: Carla | sings a song. Connie | dances a jig.

Carla sings a song, <u>and</u> Connie dances a jig.

1. Matthew loves basketball. Tina enjoys tennis.

2. The bucket is rusty. It leaks on my foot.

3. The silly kitten paws at the string. He plays joyfully!

4. The dentist uses a mirror to check my teeth. She is very gentle with me.

_____

_____

_____

Challenge: Mark the subject(s) and predicate(s) and underline the conjunction *and* with two lines in the following sentences. Write 'Yes' on the line if the sentence is a compound sentence with two independent clauses and 'No' if it is not a compound sentence.

S P
Example: Tom | fixed breakfast and dinner for his family. _____No_____

1. Lindsay and Tony walked to the library. _____

2. Linda jumped rope and played soccer yesterday. _____

3. Tina chose the movie and Jeff picked out the candy. _____

Name: _____

PP12

Conjunction *and*

Write the letter 'S' over the subjects and the letter 'P' over the predicates in each simple sentence. Draw a line to separate the subject and predicate in each simple sentence. Then, join the two simple sentences together using the conjunction *and* to make a compound sentence. Draw two lines under the word *and* to show that it is a conjunction.

Example: S P S P
The straw | is broken. I | can't drink out of it.

The straw is broken, and I can't drink out of it.

1. The beavers are playful. Their babies splash around in the lake.

_____

_____

_____

2. We watched the beavers. We took pictures of them.

_____

_____

_____

3. The white clouds float across the sky. They make me feel good.

_____

_____

_____

4. Clouds are beautiful. The whole class loves to watch them.

_____

_____

_____

Challenge: Mark the subject(s) and predicate(s) and underline the conjunction *and* with two lines in the following sentences. Write 'Yes' on the line if the sentence is a compound sentence with two independent clauses and 'No' if it is not a compound sentence.

S P
Example: Steve | wore a coat and gloves. _____No_____

1. Emma and Ryan visited the zoo._____

2. Amy painted a picture and read a book on Saturday. _____

3. Kate washed the dishes and Sam cleaned the sink. _____

Name: _____

PP13

Conjunction *but*

Create compound sentences by connecting the two simple sentences with the conjunction *but*. Draw two lines under the conjunction and label the subjects with the letter 'S' and the predicates with the letter 'P'.

1. Marshmallows are fun to melt. They can make a mess.

_____

_____

2. The day is sunny and beautiful. The sky is getting dark off in the distance.

_____

_____

3. My new kitten is very naughty. I laugh at her so often.

_____

_____

4. This grammar homework seems very easy tonight. I'm going to do my best and not hurry.

_____

_____

5. The salesman knocked on our door. We were out of town.

_____

_____

Create the second part of a compound sentence using the conjunction *but*.

1. David likes peanut butter and jelly sandwiches, but

_____

_____

(Hint: Think about a family member who likes a different kind of sandwich.)

2. Lulu loved the book she just read, but

_____

_____

(Hint: Think about a friend who read the same book but who had a different idea about it.)

Name: _____

PP14

Suffix Review: *–er*, *–or*, *–ist*, and *–ian*

This chart lists words with some of the suffixes studied in Grade 3. Some of these words are new to you. Use the chart to fill out Worksheet PP15.

	–er	*–or*	*–ist*	*–ian*
a		actor	artist	
b	builder			
c	climber	counselor	cellist	cosmetician
d	designer	dictator		
e		editor		electrician
f	farmer			
g		governor	guitarist	guardian
h	hunter			historian
i		inspector		
l	leader		lyricist	librarian
m				musician
n		navigator	novelist	
o			organist	optician
p	player		pianist	pediatrician
r	reporter			
s	speaker	sailor	stylist	
t	teacher			
v		visitor	vocalist	

Name: _____

PP15

Use the chart on Worksheet PP14 to fill in the blanks.

1. Which words on the chart are people who play musical instruments?

   _____ _____

   _____ _____

2. Which word on the chart is what Julius Caesar had himself appointed for life?

   _____

3. Which word on the chart names someone who can help you pick out books at the library?

   _____

4. Which words on the chart name people that might work together while they are on a boat?

   _____ _____

5. Which word on the chart names someone who writes lyrics, or words to songs, for a vocalist to sing?

   _____

6. Which words on the chart name people who might work together to build a house?

   _____ _____ _____

7. Which word on the chart names someone that every team needs as someone to guide, or lead them?

   _____

8. Which words on the chart name people who might work at a school?

_____ _____ _____

9. Which words on the chart name people who do things outside?

_____ _____ _____

_____ _____ _____

10. Which words on the chart name people who might work together to help someone look his or her best?

_____ _____ _____

BONUS:

11. Alphabetize the words that begin with 'c'.

_____

_____

_____

_____

12. Count the number of words on the chart for each suffix and write the number here. Circle the suffix that has the most words.

–er: _____ *–or:* _____ *–ist:* _____ *–ian:* _____

Name: _____

PP16

Words with Suffixes *–y* and *–al*

Add the correct suffix to the root word provided. Write the new word in a sentence.

1. Root word: *nutrition*
   Add *–y* or *–al* to make: _____
   _____

2. Root word: *leak*
   Add *–y* or *–al* to make: _____
   _____

3. Root word: *curl*
   Add *–y* or *–al* to make: _____
   _____

4. Root word: *tradition*
   Add *–y* or *–al* to make: _____
   _____

5. Root word: *music*
   Add *–y* or *–al* to make: _____
   _____

Circle the word that matches the meaning.

1. Meaning: full of soil

   Word: dirty dirt

2. Meaning: the traditions, beliefs, and arts of a group of people

   Word: culture cultural

3. Meaning: something that is untidy and dirty

   Word: mess messy

4. Meaning: a power that allows people to do impossible things by saying special words or performing special actions

   Word: magical magic

5. Meaning: full of a reddish brown substance that forms on certain metals when they are exposed to moisture

   Word: rusty rust

6. Meaning: related to the land near the sea or ocean

   Word: coast coastal

Name: _____

PP17

Practice Using Suffixes *–ous* and *–ly*

Choose the correct word to complete each sentence. Write the word and its part of speech below the sentence.

1. The mayor _____ (famous, famously) denied he did anything wrong but an investigation proved otherwise.
   Word: _____ Part of Speech: _____

2. Marcus drew a _____ (humorous, humorously) representation of the animal he wrote about for his report.
   Word: _____ Part of Speech: _____

3. The road curved _____ (dangerous, dangerously) when you got near the top of the mountain.
   Word: _____ Part of Speech: _____

4. I heard a _____ (mysteriously, mysterious) sound coming from the somewhere by the window but I couldn't figure out what it was.
   Word: _____ Part of Speech: _____

5. The crew who worked to clean up hazardous materials kept the _____ (poisonous, mountainous) items in a special container when they collected them.
   Word: _____ Part of Speech: _____

6. The passenger _____ (furious, furiously) ran through the terminal, upset that the security line had been so long and worried he would miss his flight.
   Word: _____ Part of Speech: _____

7. The class responded _____ when they found out they had won the attendance prize for the month.
(joyous, joyously)

Word: _____ Part of Speech: _____

8. If you are outside and have no shelter when a thunderstorm hits, you are in a _____ situation.
(dangerous, humorous)

Word: _____ Part of Speech: _____

Bonus: Circle the correct answer and write the part of speech

1. Which of the following words means "full of danger and excitement"?

adventurously adventure

Part of Speech: _____

2. Which of the following words means "in a courteous way"?

courteously courteous

Part of Speech: _____

3. Which of the following words means "full of the feeling of wanting what someone else has"?

envious enviously

Part of Speech: _____

Name: _____

PP18

Practice Dictionary Skills

Use the following portion of a dictionary page to answer the questions below.

preschool **prod**

present 1. *verb* To give a gift. 2. *verb* To introduce a person. 3. *adjective* To be in a place.

private 1. *noun* A soldier of a low rank. 2. *adjective* Not for sharing. 3. *adjective* Belonging to one person and no one else.

1. What are the two guide words on the page?

   _____ _____

2. What are the two entry words on the page?

   _____ _____

3. Would the word *presentation* be on this page?

   _____

4. Circle the word(s) that would come before the word *preschool* in the following list: presently, prescribe, prepare

5. Which definition of *present* matches the use of the word in the sentence:
   May I *present* the governor of our state? _____
   What part of speech is *present* in this sentence? _____

6. Which definition of *present* matches the use of the word in the sentence:
   Every student is *present* today. _____
   What part of speech is *present* in this sentence?_____

7. Write a sentence using the definition of *present* not already used in the sentences above. _____

_____

8. Which definition of *private* matches the use of the word in the sentence:
   My diary is *private* property and should not be read by anyone else.
   _____
   What part of speech is *private* in this sentence? _____

9. Which definition of *private* matches the use of the word in the sentence:
   The *private* saluted the general when he walked by. _____
   What part of speech is *private* in this sentence? _____

10. Write a sentence using the definition of *private* not already used in the sentences above.

_____

_____

Glossary for *Adventures in Light and Sound*

A

absorb—to take in or soak up (**absorbed**)

angle—the space formed when two lines or surfaces meet

Aristotle—a Greek philosopher who made notes about how light acts; His notes later helped inventors make cameras.

automatically—operating on its own without direct control

C

camera—an instrument for taking photographs (**cameras**)

concave—curved inward, like a spoon

convex—curved outward

curve—to bend (**curved**, **curves**)

D

daguerreotype—a type of early photograph invented by Daguerre; It appeared in less than 30 minutes and did not disappear as quickly as a heliograph. (**daguerreotypes**)

damage—hurt, harm

dense—thick, heavy (**denser**)

discovery—an event in which someone finds or learns something for the first time

distort—to twist out of normal shape (**distorted**)

E

electric current—the flow of electricity

electricity—energy carried over wires (**electric**)

energy—a supply of power

H

hearing trumpet—a cone-shaped tool that helps a person hear better by placing the small end in one ear

heliograph—a type of early photograph made by mixing coal and other natural elements that are then left in the sun to make the images; They took a long time to appear and disappeared quickly. (**heliographs**)

I

incandescent—glowing

indigo—a dark purplish-blue color

infrared—long light waves, beyond red on the spectrum, that can only be seen with special instruments

inspiration—something that gives a person an idea about what to do or create

intense—strong (**intensity**)

invent—to make something new that no one else has ever made (**invented**, **inventor**, **inventors**, **invention**)

K

kaleidoscope—a tube with plane mirrors and pieces of colored glass that you hold up to the light and rotate to make colorful patterns

kinetoscope—an early machine for showing movies

L

larynx—the organ in your throat that holds the vocal cords and makes it possible to speak; voice box

lens—a clear piece of curved glass or plastic that is used to make things look clearer, larger, or smaller (**lenses**)

lung—one of a pair of organs that allows animals to breathe by filling with air (**lungs**)

M

magnify—to make something look larger or sound louder (**magnified**, **magnifies**)

magnifying glass—a convex lens that makes things look larger when they are held close to the lens

material—cloth or fabric

medium—a substance that light or sound can travel through, like a solid, a liquid, or a gas (**mediums**)

microphone—an instrument for recording sound or making sound louder

mirror—a shiny surface that reflects light (**mirrors**)

Morse Code—a way of communicating with dots and dashes using the telegraph

O

opaque—not clear, blocking all light so that none gets through

P

patent—the rights to make and sell something (**patents**)

phonograph—an instrument that reproduces sounds that have been recorded on a grooved disk

photograph—a picture made with a camera (**photography**, **photographs**, **photos**, **photo**)

pitch—how high or low a sound is (**pitched**)

plane—a more or less flat surface

prism—a wedge-shaped piece of transparent glass that breaks up light into all the colors of the spectrum

professor—a college teacher

project—to cause light to appear on a surface (**projected**, **projector**)

R

reflect—to throw back light, heat, or sound from a surface (**reflections**, **reflects**, **reflected**, **reflection**)

refract—the appearance of light bending when it moves from one medium to another (**refraction**, **refracting**, **refracts**)

remote control—a device that uses infrared waves to operate equipment, such as a TV, from a distance

S

scarlet fever—a disease that causes a fever, sore throat, and a red rash

security—protection from danger

shadow—a dark shape or outline of something that is made when light is blocked (**shadows**)

silvery—shiny or silver in color

skylight—a window in a ceiling or roof that lets in light

sound wave—a series of vibrations that can be heard (**sound waves**)

source—a starting place, where something comes from (**sources**)

spectrum—the distribution of all the colors that make up the light we see

speed—how fast or slow something moves

surface—the outside layer of something

symbol—an object or picture that stands for something (**symbols**)

T

telegraph—a tool for communicating by sending electrical signals by wire or radio

trachea—a tube that air passes through going to and from the lungs; windpipe

transmit—to move or send something from one place to another (**transmission**)

transparent—clear, see-through so light gets through

U

ultraviolet—short, invisible light waves, beyond violet on the spectrum, that cause sunburn

V

vacuum—emptiness

Visible Speech—a system of communication used by deaf people in which symbols represent sounds

vocal cords—muscles that produce sound when air passes over them

volume—the loudness or intensity of a sound

W

wave—an amount of energy that moves in a rippling pattern like a wave (**waves**)

wavelength—how long a wave is, the distance from the top of one wave to the top of the next wave (**wavelengths**)

white light—light that is made up of waves with different wavelengths and includes all the colors we can see

Writing Prompts

Unit 5:

1. Write **instructions** for taking a picture with a digital camera and sending it to a friend.
2. Research Thomas Edison and write a paragraph about the phonograph that he **invented**.
3. Explain how your eyes see color.
4. Make a **graphic organizer** to help you organize facts about Alexander Graham Bell.
5. Research a periscope and write a paragraph describing how one works. Remember to include facts about mirrors.
6. Read about kaleidoscopes and write a description about how they work.

Either fiction or nonfiction:

1. Summarize the story or chapter you read in three to five sentences.
2. After reading this story or chapter, I wonder...
3. Name three things you liked about the story or chapter.
4. Make a timeline of three to five events in your reading today.
5. Pretend you are a TV reporter who has to interview the main character or person in the story or chapter you read, and write down five questions you would ask.
6. Make a prediction about what will happen next in the story or chapter you just read. Explain why you think this will happen.
7. Pretend you are the main character or a person in the story or chapter you read today and write a diary entry for that person.
8. Tell about something in the story or chapter you read today that is similar to something you have already read.
9. Draw a Venn diagram to show what is alike and/or different between two characters or people in the story or chapter you read.
10. How does the title fit the story or chapter? Suggest another title.
11. Write down three new words you learned while reading and tell what they mean. Use each word in a new sentence.
12. Name three questions you would ask the author of the story or chapter.

Fiction:

1. Tell about the setting.
2. Tell about the plot.
3. Tell about your favorite character. Write three reasons why you chose that character.
4. Which character is your least favorite? Write three reasons why you chose that character.
5. Give examples of personification from the story.
6. Draw a line down the center of your paper. On one side write the title of your favorite story. On the other side write the title of whatever you read today. Compare and contrast the main characters, the settings, and the plots.
7. Write a different ending for the story.
8. If you could be any character in the story or chapter you read today, who would you be? Give three reasons why.
9. Invent a conversation or dialogue between two characters or people in the story or chapter that you read. Write what each character says and don't forget to use quotation marks.
10. Describe a character, setting, or plot that surprised you. Explain what it was and why it surprised you.
11. Tell about a problem that someone in the story or chapter had and what he or she did about it.

Nonfiction:

1. Describe something that you learned from what you read today.
2. Write at least three questions you have after reading the chapter about the topic in the chapter.
3. In three sentences, summarize what you read today.

Conference Record For Reader's Journal

Date: _____

Title of Book Student is Reading: _____

Is journal complete? Yes ___ No ___

Teacher notes:

Date: _____

Title of Book Student is Reading: _____

Is journal complete? Yes ___ No ___

Teacher notes:

Date: _____

Title of Book Student is Reading: _____

Is journal complete? Yes ___ No ___

Teacher notes:

Name: _____

Date: _____

Title of Book Student is Reading: _____

Is journal complete? Yes ___ No ___

Teacher notes:

Date: _____

Title of Book Student is Reading: _____

Is journal complete? Yes ___ No ___

Teacher notes:

Date: _____

Title of Book Student is Reading: _____

Is journal complete? Yes ___ No ___

Teacher notes:

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Unit 5
Skills Workbook

Skills Strand
GRADE 3

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