

Unit 5

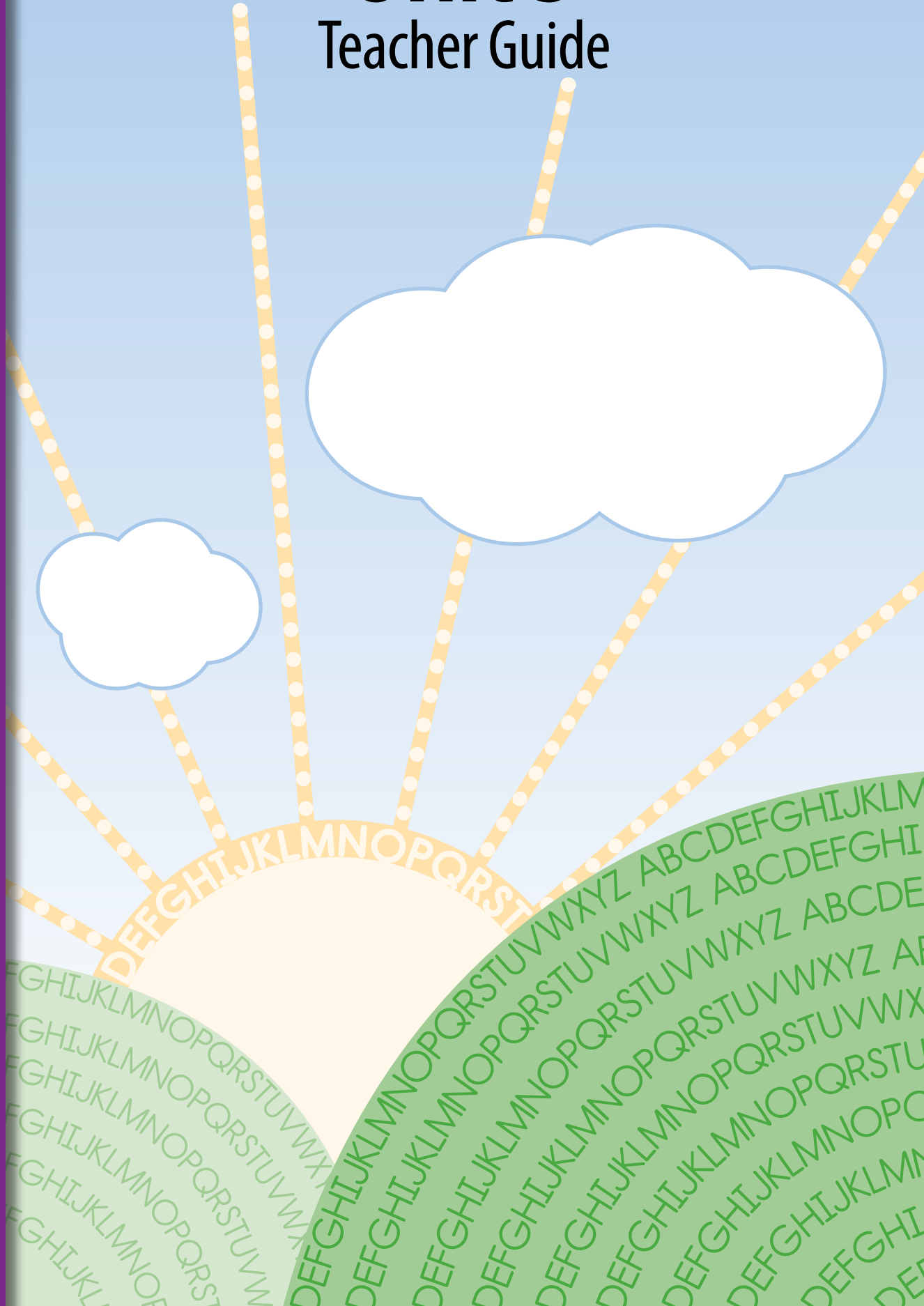
Teacher Guide

Core Knowledge Language Arts® • Skills Strand



Core Knowledge®

GRADE 3





Unit 5

Teacher Guide

Skills Strand

GRADE 3

Core Knowledge Language Arts®



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Alignment Chart for Unit 5

The following chart demonstrates alignment between the Common Core State Standards and corresponding Core Knowledge Language Arts (CKLA) goals.

Lesson

Alignment Chart for Unit 5

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Reading Standards for Informational Text: Grade 3																
Key Ideas and Details																
STD RI.3.1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.															
CKLA Goal(s)	Ask and answer questions to demonstrate understanding of a nonfiction/informational text read independently, referring explicitly to the text as the basis for the answers	✓		✓		✓	✓		✓	✓	✓	✓				
	Ask and answer questions (e.g., <i>who, what, where, when, why, how</i>), orally or in writing, requiring literal recall and understanding of the details of a nonfiction/informational text read independently by explicitly referring to the text	✓		✓		✓	✓		✓	✓	✓	✓				
	Ask and answer questions, orally or in writing, that require making interpretations, judgments, or giving opinions about what is read independently in a nonfiction/informational text, by explicitly referring to the text, including asking and answering why questions that require recognizing or inferring cause/effect relationships	✓										✓				
STD RI.3.2	Determine the main idea of a text; recount the key details and explain how they support the main idea.															
CKLA Goal(s)	Determine the main idea of a nonfiction/informational text read independently; recount the key details and explain how they support the main idea	✓		✓												

Alignment Chart for Unit 5

Lesson

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Craft and Structure																
STD RI.3.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a Grade 3 topic or subject area.															
CKLA Goal(s)	Determine the meaning of general academic and domain-specific words and phrases in a nonfiction/informational text read independently relevant to a Grade 3 topic or subject area	✓		✓		✓	✓		✓	✓	✓	✓				
Integration of Knowledge and Ideas																
STD RI.3.7	Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).															
CKLA Goal(s)	Describe images, orally or in writing, and how they contribute to what is conveyed by the words in a nonfiction/informational text read independently (e.g., where, when, why, and how key events occur)	✓		✓		✓	✓		✓	✓	✓	✓				
	Use images (e.g., maps, photographs) accompanying a nonfiction/informational text read independently to check and support understanding	✓														
	Interpret information from diagrams, charts, graphs, and/or graphic organizers	✓		✓		✓	✓		✓	✓	✓	✓				
Range of Reading and Level of Text Complexity																
STD RI.3.10	By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the Grades 2–3 text complexity band independently and proficiently.															
CKLA Goal(s)	By the end of the year, read and comprehend nonfiction/informational texts, including history/social studies and science, at the high end of the Grades 2–3 text complexity band independently and proficiently															

Alignment Chart for Unit 5

Lesson

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----

Reading Standards for Foundational Skills: Grade 3

Phonics and Word Recognition

STD RF.3.3	Know and apply grade-level phonics and word analysis skills in decoding words.														
STD RF.3.3b	Decode words with common Latin suffixes.														
CKLA Goal(s)	Decode words with common Latin suffixes, e.g., <i>-er, -ist, -ian, -y, -al, -ous, -ive, -able, -ible, -tion</i>			✓	✓					✓	✓				
STD RF.3.3c	Decode multi-syllable words.														
CKLA Goal(s)	Decode multi-syllable words									✓					
STD RF.3.3d	Read grade-appropriate irregularly spelled words.														
CKLA Goal(s)	Independently read grade-appropriate irregularly spelled words	✓		✓	✓		✓		✓	✓		✓			

Fluency

STD RF.3.4	Read with sufficient accuracy and fluency to support comprehension.														
STD RF.3.4a	Read on-level text with purpose and understanding.														
CKLA Goal(s)	Independently read on-level text with purpose and understanding									✓					

Writing Standards: Grade 3

Text Types and Purposes: Informative/Explanatory

STD W.3.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.														
STD W.3.2c	Use linking words and phrases (e.g., <i>also, another, and, more, but</i>) to connect ideas within categories of information.														
CKLA Goal(s)	Use linking words, conjunctions, and phrases (e.g., <i>also, another, and, more, but</i>) to connect ideas within categories of information												✓		✓

Speaking and Listening Standards: Grade 3

Alignment Chart for Unit 5

Lesson

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Comprehension and Collaboration																
STD SL.3.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on Grade 3 topics and texts, building on others' ideas and expressing their own clearly.															
STD SL.3.1a	Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.															
CKLA Goal(s)	Demonstrate preparedness for a discussion, having read or studied required material, explicitly drawing on preparation and other information known about the topic to explore content under discussion		✓		✓			✓					✓			
	Prior to independently reading a text, identify (orally or in writing) what they know and have learned that may be related to the specific read-aloud or topic			✓	✓	✓	✓		✓		✓	✓				
	Make predictions (orally or in writing) prior to and while reading a text independently, based on the title, images, and/or text heard thus far, and then compare the actual outcomes to predictions	✓														
STD SL.3.1d	Explain their own ideas and understanding in light of the discussion.															
CKLA Goal(s)	During a discussion, explain ideas and understanding in relation to the topic		✓		✓			✓					✓			
Language Standards: Grade 3																
Conventions of Standard English																
STD L.3.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.															
STD L.3.1a	Explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in particular sentences.															
CKLA Goal(s)	Use nouns, verbs, and adjectives and explain their functions in sentences								✓	✓	✓	✓				
STD L.3.1h	Use coordinating and subordinating conjunctions.															
CKLA Goal(s)	Use adverbs and explain their function in sentences		✓	✓	✓	✓		✓	✓	✓	✓					
	Use coordinating and subordinating conjunctions (e.g., <i>and, but, or, so, because</i>)												✓		✓	

Alignment Chart for Unit 5

Lesson

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
STD L.3.1i	Produce simple, compound, and complex sentences.															
CKLA Goal(s)	Produce compound sentences							✓	✓	✓	✓		✓		✓	
	Produce complex sentences							✓	✓	✓	✓					
STD L.3.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.															
STD L.3.2f	Use spelling patterns and generalizations (e.g., word families, position-based spellings, syllable patterns, ending rules, meaningful word parts) in writing words.															
CKLA Goal(s)	Use spelling patterns and generalizations (e.g., word families, position-based spelling, syllable patterns, ending rules, meaningful word parts) in writing words	✓		✓	✓		✓		✓	✓		✓				
Vocabulary Acquisition and Use																
STD L.3.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on Grade 3 reading and content, choosing flexibly from a range of strategies.															
STD L.3.4b	Determine the meaning of the new word formed when a known affix is added to a known word (e.g., <i>agreeable/disagreeable</i> , <i>comfortable/uncomfortable</i> , <i>care/careless</i> , <i>heat/preheat</i>).															
CKLA Goal(s)	Determine the meaning of the new word formed when a known affix is added to a known word (e.g., <i>agreeable/disagreeable</i> , <i>comfortable/uncomfortable</i> , <i>care/careless</i> , <i>heat/preheat</i>)			✓	✓				✓	✓						
STD L.3.4d	Use glossaries or beginning dictionaries, both print and digital, to determine or clarify the precise meaning of key words and phrases.															
CKLA Goal(s)	Use root words, affixes, and glossaries or beginning dictionaries, both print and digital, to determine or clarify the precise meaning of key words and phrases.	✓		✓		✓	✓		✓	✓	✓	✓				
STD L.3.5b	Identify real-life connections between words and their use (e.g., describe people who are <i>friendly</i> or <i>helpful</i>).															
CKLA Goal(s)	Identify real-life connections between words and their use (e.g., describe people who are <i>friendly</i> or <i>helpful</i>)			✓	✓				✓	✓						

✓ These goals are addressed in all lessons in this domain. Rather than repeat these goals as lesson objectives throughout the domain, they are designated here as frequently occurring goals.

* Skills marked with an asterisk (*) in Language Standards 1–3, are particularly likely to require continued attention in higher grades as they are applied to increasingly sophisticated writing and speaking.

Introduction to Unit 5

The content focus of Unit 5 is light and sound. Students will be learning about the properties of light and sound, how light and sound travel, and how light and sound can be manipulated.

During this unit's **spelling** exercises, students will review words with spelling patterns of /ee/ spelled 'y', 'e', 'i', 'ea', 'ee', 'ie', 'ey', and 'e_e' for Lessons 1–5. For Lessons 6–10, students will review words with spelling patterns of /ae/ spelled 'ay', 'ai', and 'ea'. Finally, in Lessons 11–15, students will review words with spelling patterns of /ae/ spelled 'a_e' and 'a'. In addition, students will have two Challenge Words added to each spelling list. Each week, students will continue to have the option of trying to spell a content-related word on the weekly spelling assessment. The Content Word may follow the spelling pattern for the week.

You will also continue to teach **dictionary** skills. As this unit progresses, students should become proficient in the application of guide words. The dictionary worksheets have been designed to provide ample practice. If you find that there is insufficient time to complete every worksheet item, you may select fewer items for each student to complete.

In **grammar**, students will review a part of speech introduced at the end of Grade 2: adverbs ending with *-ly* that tell *how* an action takes place. They will go further in their study of adverbs by also examining those that tell *when* and *where*. Students will be introduced to conjunctions as a new part of speech. They will learn the meanings and usages of the conjunctions *and* and *but*.

During the **morphology** portion of the lessons, students will review the suffixes *-er*, *-or*, *-ist*, *-ian*, *-y*, and *-al*. In addition, students will learn the suffixes *-ous* and *-ly*. They will review how suffixes change the meaning of root words. They will also review how suffixes added to a word can change the part of speech of that word. Students will have opportunities to apply their knowledge of the changed meaning of the words during Workbook practice.

Unit Overview

Here is an overview of the Unit 5 schedule. Please see the *Tell It Again! Read-Aloud Anthology for Light and Sound* for the corresponding Listening & Learning schedule.

Week One					
Min.	Day 1 (Lesson 1)	Day 2 (Lesson 2)	Day 3 (Lesson 3)	Day 4 (Lesson 4)	Day 5 (Lesson 5)
25	Chapter 1 “What Is Light?”	Chapter 1 “What Is Light?”	Chapter 2 “How Are Shadows Made?”	Chapter 2 “How Are Shadows Made?”	Spelling Assessment / ee/ Spelled ‘y’, ‘e’, ‘i’, ‘ea’, ‘ee’, ‘ie’, ‘ey’, and ‘e_e’
25	Spelling: Review /ee/ Spelled ‘y’, ‘e’, ‘i’, ‘ea’, ‘ee’, ‘ie’, ‘ey’, and ‘e_e’	Grammar: Introduce Adverbs that Tell <i>how</i> and End with <i>-ly</i>	Grammar: Practice Adverbs that Tell <i>how</i> and End with <i>-ly</i>	Grammar: Introduce Adverbs that Tell <i>when</i> and <i>where</i>	Chapter 3 “Mirrors and Reflections”
15	Due to the extended time needed to introduce the unit, there is no small group/independent work today	Extension	Morphology: Review Suffixes <i>-er</i> , <i>-or</i> , <i>-ist</i> , and <i>-ian</i>	Morphology: Review Suffixes <i>-y</i> and <i>-al</i>	Grammar: Practice Adverbs
15			Spelling: Practice /ee/ Spelled ‘y’, ‘e’, ‘i’, ‘ea’, ‘ee’, ‘ie’, ‘ey’, and ‘e_e’	Spelling: Practice /ee/ Spelled ‘y’, ‘e’, ‘i’, ‘ea’, ‘ee’, ‘ie’, ‘ey’, and ‘e_e’	Spelling: Practice Dictionary Skills

Week Two					
Min.	Day 6	Day 7	Day 8	Day 9	Day 10
25	Chapter 4 “Refraction and Lenses”	Chapter 4 “Refraction and Lenses”	Chapter 5 “Color and Light”	Chapter 6 “What Is Sound?”	Spelling Assessment: / ae/ Spelled ‘ay’, ‘ai’, and ‘ea’
25	Spelling: Introduce /ae/ Spelled ‘ay’, ‘ai’, and ‘ea’	Grammar: Build Sentences Using Adjectives, Adverbs, and Synonyms	Morphology: Introduce Suffixes <i>-ous</i> and <i>-ly</i>	Grammar: Review	Chapter 7 “Characteristics of Sound”
15	Extension	Extension	Grammar: Build Sentences Using Adjectives, Adverbs, and Synonyms	Morphology: Practice Suffixes <i>-ous</i> and <i>-ly</i>	Grammar: Build Sentences Using Adjectives, Adverbs, and Synonyms
15			Spelling: Practice /ae/ Spelled ‘ay’, ‘ai’, and ‘ea’	Spelling: Practice /ae/ Spelled ‘ay’, ‘ai’, and ‘ea’	Spelling: Practice Dictionary Skills

Week Three					
Min.	Day 11	Day 12	Day 13	Day 14	Day 15
25	Spelling: Introduce /ae/ Spelled ‘a_e’ and ‘a’	Grammar: Introduce Conjunction <i>and</i>	Unit Assessment	Grammar: Introduce Conjunction <i>but</i>	Spelling Assessment: /ae/ Spelled ‘a_e’ and ‘a’
25	Chapter 8: “The Human Voice”	Chapter 8: “The Human Voice”		Remediation and Enrichment Chapters 9–12	Remediation and Enrichment Chapters 9–12

Spelling

Students will review sound-spelling patterns throughout the year. In the first two weeks of this unit, there will be follow-up classroom spelling activities two days a week.

In Lessons 1–5, students will review words with spelling patterns of /ee/ spelled ‘y’, ‘e’, ‘i’, ‘ea’, ‘ee’, ‘ie’, ‘ey’, and ‘e_e’. For Lessons 6–10, students will review words with spelling patterns of /ae/ spelled ‘ay’, ‘ai’, and ‘ea’. Finally, in Lessons 11–15, students will review words with spelling patterns of /ae/ spelled ‘a_e’ and ‘a’.

On the first day of each week, teachers should introduce the spelling list by reproducing the table in Lessons 1, 6, and 11 on the board or chart paper. Students should be told that this table will remain posted all week for reference, but will be taken down prior to the assessment.

Challenge Words will also be introduced with each spelling list and should be added to the table as they will be on the spelling assessment. Challenge Words are words used very often. They may not follow spelling patterns and need to be memorized. If needed, a guide to pronunciation will be outlined when the Challenge Words are introduced.

The Content Word will continue. Each week, students will have the option of trying to spell a content-related word on the weekly spelling assessment. The Content Word may follow the spelling pattern for the week, but will be more challenging than the other spelling words.

Students will continue to apply their skill of alphabetizing words in finding and using guide words in the dictionary to locate words. Students will also identify multiple definitions and parts of speech of entry words.

In Week 1, the spelling assessment will be a review of the past five weeks. On the remaining weekly spelling assessments, students will write the 18 assigned words as well as the two Challenge Words. The Content Word is optional for students and will not count as incorrect if not attempted or spelled incorrectly. As in previous units, students will continue to correct their own spelling assessment. Some teachers find it helpful to have students write the spelling assessment with a pen. Then, they have students turn the pen back in to them and use a pencil for corrections. In this way, teachers can more clearly see exactly what errors students are making. Correcting their own errors heightens students’ awareness of specific spelling errors and will solidify their understanding of correct spelling. A classroom chart is provided for you

at the end of each week so that you may analyze mistakes that students are making. The results of this chart, paired with other classroom observations, may help you identify students who would benefit from targeted, remedial instruction in certain letter-sound correspondences, using the *Assessment and Remediation Guide*.

Grammar

Grammar continues with a review and expansion of skills introduced in second grade. Students will identify adverbs that tell *how* and end with *-ly*, as well as other adverbs that tell *when or where*. They will apply their new knowledge of adverbs by choosing whether the descriptive word called for in a given sentence should be an adjective or adverb. In the later part of the unit, students will also practice writing increasingly detailed and expanded sentences using adjectives and adverbs. Students will identify the word *and* as a new part of speech, a conjunction, that means “plus, along with, or also.” They will also identify the conjunction *but*, which signals “something different,” such as a different idea that is coming next.

As an alternative to grammar worksheets with more challenging activities, we recommend that the writing prompts found in the Teacher Resources section at the back of this Teacher Guide and at the end of the Skills Workbook.

Morphology

Throughout Grade 3, students will study word parts, such as prefixes, suffixes, and root words, during the morphology portion of the lessons. In this unit, students will review suffixes they have learned this year, specifically *-er*, *-or*, *-ist*, *-ian*, *-y*, and *-al*. In addition, students will learn the suffixes *-ous* and *-ly*. Students will learn that words that have the suffix *-ly* are adverbs, which relates to what students are learning about adverbs in Grammar. Students have done sufficient word work to be able to apply what they have learned as they encounter unfamiliar words in text and content.

Extension

During the first and second weeks of the unit, we have included a total of three 30-minute periods for extension activities. Depending on students’ needs, please choose from the following activities:

- Extension activities provided in specific lessons

- Extension activities provided in the Pausing Point
- Unit-specific writing prompts
- Assessment and remediation activities outlined in the *Assessment and Remediation Guide* or remediation activities you deem appropriate
- Reader’s Chair
- Reader’s Journal

In Lesson 6, an extension activity has been provided that includes doing an activity described in Chapter 1 of *Adventures in Light and Sound*. In Lessons 2 and 7, options have been provided for you to choose from during that time.

Additionally, extension activities found in the Pausing Point are highlighted in sidebars found in the lessons. These activities offer additional practice of skills taught.

Writing prompts that are content-related and make use of the unit’s academic vocabulary are found in the Teacher Resources section at the back of this Teacher Guide and at the end of the Skills Workbook. These prompts can be assigned for those students who need more challenging work.

The *Assessment and Remediation Guide* offers targeted, remedial instruction in certain letter-sound correspondences for students you identify as needing more support.

Reader’s Chair is a way for students to practice reading with fluency and expression (prosody). Place a copy of the sign-up sheet, found in the Teacher Resources section of this Teacher Guide, in a designated location in your room. Have students volunteer to read teacher-approved texts by placing their name on the sign-up sheet. Audience guidelines should be established for all students. These are some ideas but you will want to make guidelines that work for your students: Listen respectfully to your classmates; listen without talking; and have students give classmate(s) who read(s) a round of applause and sincere compliments on their reading. Model compliments by saying, “I liked it when you...”

Reader’s Journal asks students to read silently for a designated amount of time and then respond to a writing prompt that you provide from the list found in the Teacher Resources section at the back of this Teacher Guide and at the end of the Skills Workbook. This exercise is an

opportunity for independent reading time beyond the daily selection from the Reader. It is an excellent way to ensure that each student is engaged and responding to text, while allowing you to monitor students' silent reading. Establish Reader's Journal procedures for your class. Here are some suggested procedures you may find useful: Make sure all students have the material to be read and paper and pencil; set a timer for 10 minutes for the reading portion; when the reading is completed, read the chosen writing prompt to students; set a timer again for 12 minutes for the writing portion; and expect students to stay in their seats and work for the duration. You may wish to conference with students during this time as the rest of the class will be engaged in an independent activity. A Reader's Journal conference sheet can be found at the end of the Skills Workbook.

Reader: *Adventures in Light and Sound*

The nonfiction Reader for Unit 5, entitled *Adventures in Light and Sound*, consists of selections describing the science behind light and sound. Students will read about light sources, shadows, mirrors, reflection, refraction, lenses, and color. They will also study the characteristics of sound, as well as the human voice. Later chapters include information about light and photography as well as biographies of two famous inventors who worked with light and sound, Alexander Graham Bell and Thomas Edison. It is important that you discuss the characteristics of the biography genre and stress that biographies are nonfiction since they are factual accounts of people's lives.

Students will take home text copies of the chapters throughout the unit. Encouraging students to read a text directly related to this domain-based unit will provide content and vocabulary reinforcement.

In this unit, students will focus on four academic vocabulary words: *graphic*, *figure*, *instructions*, and *invent*. By academic vocabulary, we mean words that support reading comprehension and may appear across a variety of materials, in language arts and in content areas. These words can be found in textbooks, assignment directions, and assessments. Understanding academic vocabulary may contribute to improved performance on assignments and assessments, as these words often appear in directions to students. These words may appear on end-of-year assessments that third graders may take. Where applicable, we use the words throughout the unit, not just as they might refer to reading selections but also with regard to spelling, grammar,

morphology, and comprehension. They may also appear in directions, assessments, spelling lists, and discussion questions, among other places.

- We define *graphic* to mean pertaining to the use of diagrams, graphs, drawings, or maps.
- A *figure* as an image.
- *Instructions* are directions.
- To *invent* is to create or design something new.

We encourage you to define these words for students and use all four of these words throughout the school day so that students may experience multiple uses of them.

We recommend that teachers study the core content objectives related to light and sound listed in the *Tell It Again! Read-Aloud Anthology* for this domain-based unit. The selections that students will read in *Adventures in Light and Sound* will reinforce and solidify the overall acquisition of knowledge related to this domain. You will find that many materials introduced in the Listening & Learning Strand, such as the individual Image Cards and the classroom T-chart that you will create following each read-aloud, will also be good resources as students read the various chapters of this Reader.

Fluency Packet

A fluency packet consisting of poetry, folklore, and fables is provided online at <http://www.coreknowledge.org/G3-FP>. These additional text selections provide opportunities for students to practice reading with fluency and expression (prosody). The selections can be used in any order. At the beginning of the week, the teacher should make sufficient copies of the week's selection for each student. The teacher should take time to read the selection aloud to all students. Then, students take the selection home to practice reading aloud throughout the week. The expectation for all students should be that they are prepared to read the selection fluently and with prosody by Friday. At the end of the week, the teacher should select a few students to individually read the selection aloud. Teachers may also wish to have a few students choral read the selection. Be sure to provide opportunities for different students to read aloud each week.

You will want to establish audience guidelines for all students. These are some ideas but you will want to make guidelines that work for your students:

- Listen respectfully to your classmates.
- Listen without talking.
- Ask students to give their classmate(s) a round of applause and sincere compliments on their reading. Model compliments by saying, “I liked it when you...”

Vocabulary Cards

Vocabulary Cards will be used again to reinforce the vocabulary listed in the glossary for *Adventures in Light and Sound*. We highly encourage you to display either side of the Vocabulary Cards in your classroom, in addition to hanging the corresponding image from the chapter above the list of Vocabulary Cards.

Skills Workbook

The Skills Workbook contains worksheets that accompany the lessons from the Teacher Guide. 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.

A copy of the glossary is included at the end of the Workbook, so students can take it home to use when reading text copies of the chapters of the Reader.

For the first time in Grade 3, you will help students complete graphic organizers as they read. There are two graphic organizers for this unit, the Light Bulb Organizer and the Bell Organizer. Intermediate keys of each organizer are found on the last page of appropriate lessons in this Teacher Guide. The student version of the Light Bulb Organizer is found at the beginning of the Skills Workbook on Worksheet 1.1. The student version of the Bell Organizer is found on Worksheet 9.1. As students read the chapters in this unit, you will direct and assist them in adding information to these organizers using the Teacher Guide’s Guided Reading Supports in each lesson. These organizers are included as a way to help students understand the overall concepts related to light and sound. Please be sure that students keep the Light Bulb Organizer and

the Bell Organizer in the Skills Workbook to access as they read each chapter about light and sound.

Student Performance Task Assessments

There are many opportunities for informal assessment throughout each Skills unit. Careful analysis of student performance on the weekly spelling assessments may provide insight into specific gaps in student code knowledge. In addition, you may choose to assign a given Workbook page for individual, independent completion to use as an assessment. It may be helpful to use the Tens Conversion Chart and the Tens Recording Chart found in the Teacher Resources section at the back of this Teacher Guide to collect and analyze all assessment data.

A unit assessment of the morphology, grammar, and dictionary skills taught is included in Lesson 13, along with an assessment of silent reading comprehension using “Tuning Forks” and “Hearing Aids,” two nonfiction selections, and “The Bell of Atri,” a fiction selection.

You may also want to take periodic measurements of students’ fluency levels. You may use either “Pupils,” the selection included for fluency assessment, or any of the additional chapters in the Reader for this purpose. Recording and scoring sheets for “Pupils” have been included in the Skills Workbook. Assessing fluency requires that you listen to students read orally one-on-one and can be time consuming. You may want to focus on assessing those students whom you believe may be at highest risk.

Note: Students’ mastery of the domain content, light and sound, is assessed using the Listening & Learning Domain Assessment(s).

Pausing Point

Resources are provided in the Pausing Point for additional practice on the specific grammar, dictionary, and morphology skills taught in this unit. Teachers should select exercises and worksheets based on student performance on the unit assessment.

In addition, directions are also included for introducing and discussing each of the additional chapters in the Reader.

Teacher Resources

At the back of this Teacher Guide, you will find a section titled, “Teacher Resources.” In this section, we have included assorted forms and charts that may be useful.

Assessment and Remediation Guide

A separate publication, the *Assessment and Remediation Guide*, provides further guidance in assessing, analyzing, and remediating specific skills. This guide can be found online at <http://www.coreknowledge.org/AR-G3>. Refer to this URL for additional resources, mini-lessons, and activities to assist students who experience difficulty with the skills presented in this unit.

Lesson 1

Spelling

✓ Objectives

The following language arts objectives are addressed in this lesson. Objectives aligning with the Common Core State Standards are noted with the corresponding standard in parentheses. Refer to the Alignment Chart for additional standards addressed in all lessons in this unit.

- ✓ Ask and answer questions to demonstrate understanding of “What Is Light?,” referring explicitly to the text as the basis for the answers (RI.3.1)
- ✓ Ask and answer questions (e.g., *who, what, where, when, why, how*), orally or in writing, requiring literal recall and understanding of the details of “What Is Light?” by explicitly referring to the text (RI.3.1)
- ✓ Ask and answer oral questions that require making interpretations about what Earth would be like without light (RI.3.1)
- ✓ Determine the main idea of “What Is Light?”; recount the key details and explain how they support the main idea (RI.3.2)
- ✓ Determine the meaning of general academic words and domain-specific words and phrases relevant to light in “What Is Light?” (RI.3.4)
- ✓ Describe images, orally or in writing, and how they contribute to what is conveyed by the words in “What Is Light?” (RI.3.7)
- ✓ Use images (e.g., maps, photographs) accompanying “What Is Light?” to check and support understanding (RI.3.7)
- ✓ Interpret information from a graphic organizer relevant to light (RI.3.7)
- ✓ Independently read grade-appropriate irregularly spelled words (RF.3.3d)
- ✓ Independently read “What Is Light?” with purpose and understanding (RF.3.4a)
- ✓ Make predictions prior to reading *Adventures in Light and Sound* based on title and images (SL.3.1a)
- ✓ Use spelling patterns and generalizations (e.g., word families, position-based spelling) in writing words with /ee/ spelled ‘y’, ‘e’, ‘i’, ‘ea’, ‘ee’, ‘ie’, ‘ey’, and ‘e_e’ (L.3.2f)
- ✓ Use a glossary to determine or clarify the precise meaning of key words and phrases (L.3.4d)

At a Glance	Exercise	Materials	Minutes
Reading Time	Whole Group: “What Is Light?”	<i>Adventures in Light and Sound</i> ; Vocabulary Cards; Worksheet 1.1	45
Spelling	Introduce Spelling Words	board; Individual Code Chart; Worksheet 1.2	35
Take-Home Material	Family Letter; Glossary for <i>Adventures in Light and Sound</i>	Worksheet 1.2, PP19	*

Advance Preparation

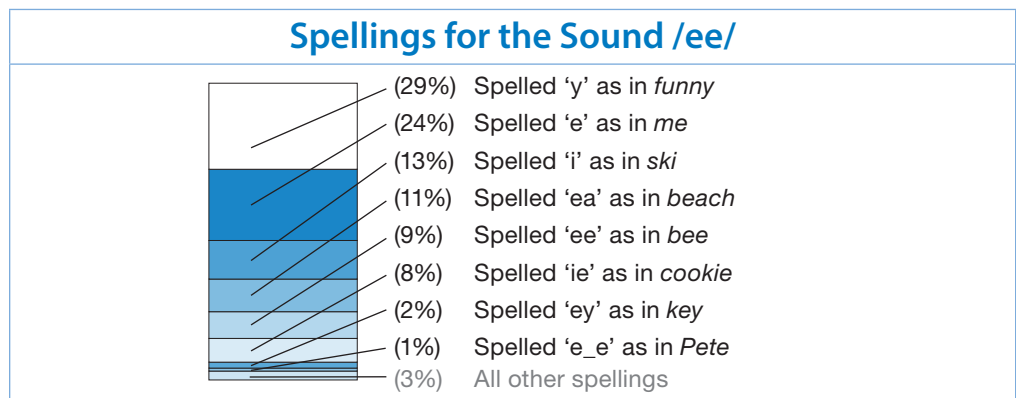
If you wish, you may draw the spelling table on the board or chart paper before you begin to teach this lesson.

'y' > /ee/	'e' > /ee/	'i' > /ee/	'ea' > /ee/	'ee' > /ee/	'ie' > /ee/	'ey' > /ee/	'e_e' > /ee/

Note to Teacher

During this unit, you will review spelling alternatives for the /ee/ and /ae/ sounds. For Lessons 1–5, you will review all eight spelling alternatives for /ee/ that were practiced separately in Unit 4. For Lessons 6–10, you will review some of the spelling alternatives for /ae/: 'ay' as in *day*, 'ai' as in *wait*, and 'ea' as in *great*. For Lessons 11–15, you will review the following spelling alternatives for /ae/: 'a_e' as in *cake* and 'a' as in *paper*. Students should be familiar with most of these spelling alternatives as they were taught in Grade 2.

The following chart is provided for your review:



Here are some patterns for you to be aware of:

- This is one of the hardest sounds to spell.
- 'ee' and 'ea' are used in many one-syllable words, most often followed by a consonant spelling (*jeep, peek, peak, heap*).
- 'e' is typically used as a spelling for /ee/ at the end of a syllable (with the exception of a handful of words: *be, she, we, he, me*).

- ‘**e_e**’ can be seen as a variation of the basic code spelling ‘ee’ in which the two ‘e’s are separated by a consonant spelling.
- ‘**ie**’ can be used as an occasional spelling for /ee/ in some words, such as *movie, chief, field*.
- ‘**ey**’ is found primarily at the end of a word or syllable.
- ‘**y**’ is generally used at the end of words; it is used in suffixes to mark adjectives (*funny, silly*) and adverbs (*slowly, quickly*).
- The ‘**y**’ ending in many words changes to ‘i’ when a suffix that begins with a vowel is added: *funny > funnier, sunny > sunniest*.
- The ‘**y**’ ending in many words changes to ‘ie’ when ‘s’ is added (either to mark a plural or show a change in person): *puppy > puppies, lady > ladies, I carry > he carries*.
- The ‘**y**’ spelling also changes when *-ed* is added: *carry > carried, rally > rallied*.
- There are four spellings for /ee/ that are used either exclusively or almost exclusively in multi-syllable words: ‘**y**’ as in *funny*, ‘**i**’ as in *radio*, ‘**ey**’ as in *monkey*, and ‘**e**’ as in *prefix* (with the exception of a handful of words: *be, she, we, he, me*).
- The spelling ‘**i**’ is the only spelling that regularly appears before another vowel spelling: *accordion, historian, funniest, interior, radio, piano*.
- There are two minor spellings for the /ee/ sound that are not taught in third grade: ‘**ei**’ as in *either* and ‘**i_e**’ as in *machine*.

Note to Teacher

In this unit, students will focus on four academic vocabulary words, two of which are *graphic* and *figure*. By academic vocabulary, we mean words that support reading comprehension and may appear across a variety of materials, in language arts and in content areas. These words can be found in textbooks, assignment directions, and assessments. Understanding academic vocabulary may contribute to improved performance on assignments and assessments, as these words often appear in directions to students. These words may appear on end-of-year assessments that third graders might take. Where applicable, we use the words throughout the unit, not just as they might refer to reading selections but also with regard to spelling, grammar, morphology, and comprehension. They may also appear in directions, assessments,

spelling lists, and discussion questions, among other places.

- We define *graphic* to mean pertaining to the use of diagrams, graphs, drawings, or maps.
- A *figure* is an image.

We encourage you to define these words for students and use both of these words throughout the school day so that students may experience multiple uses of them.

Reading Time

45 minutes

Whole Group: “What Is Light?”

Introducing the Reader

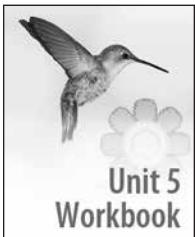
- Make sure that each student has a copy of the Reader, *Adventures in Light and Sound*.
- Have students turn to the Table of Contents.
- Either read several chapter titles from the Table of Contents aloud to students or have students read them.
- Give students a few moments to flip through the Reader and comment on the images they see.
- Ask students if they have any predictions about what the Reader might be about.

Introducing the Light Bulb Organizer

For the first time in Grade 3, you will help students complete a *graphic* organizer as they read. A completed version of this organizer, called the Light Bulb Organizer, is found at the end of Lesson 8 in this Teacher Guide. Intermediate guides are included at the end of Lessons 1, 3, 5, and 6. The student version is found on Worksheet 1.1. As students read Chapters 1–5, you will direct and assist them in adding information to this organizer using the Teacher Guide’s Guided Reading Supports in each lesson. This organizer is included as a way to help students understand the overall concepts related to light. Students will complete a similar organizer during their study of sound later in the unit. Please be sure that students keep the Light Bulb Organizer in their Workbook to access when reading Chapters 1–5.



Chapter 1



Worksheet 1.1
Remember to use
academic vocabulary
when appropriate:
graphic and *figure*.

- Ask students to turn to Worksheet 1.1. Tell students that this is the Light Bulb Organizer and that they will use it to help them understand what they learn about light.
- Ask students to look over the organizer and note its features. (the shape at the top of the page, the questions, and the sections of the organizer)
- Tell students that as they read the chapters about light in this unit, you will help them fill in the organizer. The organizer will help them remember what they learn about light. Tell them that when they have read all the chapters about light, the organizer will be complete and students will have something to keep with the information they learned.

Introducing the Chapter

- Tell students that the title of today’s chapter is “What Is Light?” Tell them that they will learn many interesting facts about light.
- Ask students to turn to the Table of Contents, locate the chapter, and then turn to the first page of the chapter.

Previewing the Vocabulary

- As in previous units, we recommend the use of the provided Vocabulary Cards. Preview specific Vocabulary Cards immediately before students are asked to read the page(s) on which they appear. The page number where the word first appears in “What Is Light?” is listed in bold print after the definition. A word in parentheses after the definition is another form of the vocabulary word that appears in the chapter. An asterisk after a word indicates the word is also taught in Listening & Learning.
- Although students should be decoding independently, the words are divided into syllables for your convenience, with any unusual letter-sound correspondences also noted. If needed, assist students in decoding these words using the established procedures described in detail in the earlier Grade 3 units.

Vocabulary for “What Is Light?”

1. **source***—a starting place, where something comes from (**sources**) (6)
2. **en|er|gy***—a supply of power (6)
3. **wave|length***—how long a wave is, the distance from the top of one wave to the top of the next wave (**wavelengths**) (6)
4. **vac|u|um**—emptiness (8)
5. **speed**—how fast or slow something moves (8)
6. **wave**—an amount of energy that moves in a rippling pattern like a wave (**waves**) (8)
7. **white light***—light that is made up of waves with different wavelengths and includes all the colors we can see (10)
8. **e|lec|tri|ci|ty**—energy carried over wires (**electric**) (12)

Guided Reading Supports and Purpose for Reading

Note: It is important that you stop frequently to ask students questions and check for their understanding of the material, much in the same way you use the Guided Listening Supports in Listening & Learning. It is critical that you clear up any misunderstandings that students may have as you teach each chapter so that the misunderstandings do not compound over time.

- Be sure to call students’ attention to and discuss the images accompanying the text, as they often reinforce understanding of the text. Make sure students also read each caption.

Pages 6–7

- Read the title of the chapter together as a class, “What Is Light?”
- Display the image for this chapter and the Vocabulary Card for *source*.
- Ask students, “Where in the Reader could we find the definition of *source* quickly?” (the glossary)
- Ask students to tell you how to find the word in the glossary. Call on one student to identify where the word is and read the definition. Note for students that *sources* is also used in this chapter.

- Display the Vocabulary Cards to preview *energy* and *wavelength* and discuss the definitions. Note for students that *wavelengths* is also used in this chapter.
- Have students read **page 6** to themselves to find out more about energy.
- When students have finished reading, ask them “What do you think of when you think of something with a lot of energy?” (Answers may vary.)
- Direct students’ attention to the image and caption on **page 7**.

Pages 8–9

- Display the Vocabulary Cards to preview *vacuum*, *speed*, and *wave* and discuss definitions. Note for students that *waves* is also used in this chapter.
- Tell students to read **pages 8–9** to themselves to find the answer to the question: “What do waves have to do with light?”
- When students have finished reading, restate the question and have students answer. (Answers may vary but should include that one of the ways light travels is in waves.)
- Say to students, “Describe light’s speed and how it compares to the speed of other things.” (Light travels at 186,000 miles every second in a vacuum and at that speed, it can go around Earth more than seven times every second. Not even a jet plane or a rocket can go that fast.)
- Then, say to students, “Describe wavelengths.” (Light can be measured in wavelengths. They can be different sizes. Some are visible and some are not, depending on the size.)

Note: Thoroughly discuss the concept of measuring light in waves and wavelengths, referring to the image and caption on **page 9**.

- Ask, “Can we see all kinds of light?” (No, some light waves are visible and some are invisible.)
- Ask, “What determines whether light can be seen?” (wavelengths)
- Guide students in adding the following to the Light Bulb Organizer:
 - To answer the question “**What is it?**”: ENERGY
 - To answer the questions “**How do we get it? What is the source?**”: Draw a picture of the sun. Caution students to draw the sun small enough to leave room for other light sources.

- To answer the question “**How fast does it travel?**”: 186,000 MILES PER SECOND in a vacuum.
- To answer the question “**How does it travel?**” Draw a wavy line to indicate that light can travel in waves.

Pages 10–11

- Display the Vocabulary Card to preview *white light* and discuss its definition.
- Have students read **page 10** to themselves to find the answer to the question: “What is white light?”
- When students have finished reading, restate the question and call on a student to answer. (White light is the type of light that comes from the sun. It includes wavelengths of every visible color.)
- Point out to students that even though the kind of light coming from the sun is white light, the sun itself looks yellow. Ask students to explain why. (There is a little more of the yellow wavelengths than the other wavelengths in the sun’s light so the light looks yellow against a blue sky.)
- Direct students’ attention to the image and caption on **page 11**.

Pages 12–13

- Display the Vocabulary Card to preview *electricity* and discuss its definition. Note for students that *electric* is used in this chapter.
- Direct students’ attention to the image on **page 13**. Have one student read the caption to the class.
- Ask students to read **page 12** to themselves to find the answer to the question: “What other sources of light can you think of, besides the sun?”
- When students have finished reading, restate the question and ask students to answer. (Answers may vary but should include light bulbs, flashlights, candles, stars, or fireflies.)
- Ask students, “What else in the sky, besides the sun, provides light and what in the sky does not provide light?” (Stars in the night sky provide light that is not as bright as the sun. The moon does not give off its own light.)

- Have students add the following to the Light Bulb Organizer:
 - To further answer the questions “**How do we get it? What is the source?**”: Draw a star, a light bulb, a candle, and a flashlight.

Pages 14–15

- Ask students to read **page 14** to themselves to find the answer to the question: “What would Earth be like without the light and heat energy from the sun?”
- When students have finished reading, restate the question and ask students to answer. (Answers may vary but should include that Earth would be freezing cold, plants would not be able to grow, and it would be impossible to see anything.)
- Ask students, “How would our lives be different without light?” (Answers may vary.)

Wrap-Up

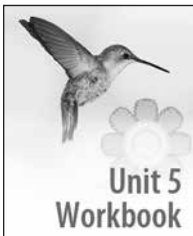
- Review with students what they added to the Light Bulb Organizer while reading this chapter.

Spelling

35 minutes

Introduce Spelling Words

- Tell students that this week, they will review all the spellings of /ee/.
- As you introduce each of the spelling words, write it on the board, pronouncing each word as you write it.



Worksheet 1.2

For additional practice, see worksheets in Sections III-E and V-F of the *Assessment and Remediation Guide*.

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

- Go back through the list of words, having students read the words and tell you what letters to circle for the sound of /ee/.

- | | |
|------------------------|-----------------------------------|
| 1. succe <u>ee</u> ded | 12. de <u>ee</u> gree |
| 2. mo <u>ney</u> | 13. ath <u>le</u> te |
| 3. en <u>emy</u> | 14. ch <u>ief</u> |
| 4. cent <u>ipe</u> de | 15. gre <u>as</u> e |
| 5. ex <u>per</u> ience | 16. sc <u>en</u> ic |
| 6. be <u>lie</u> ve | 17. cha <u>ri</u> ot |
| 7. se <u>cr</u> et | 18. sta <u>di</u> um |
| 8. in <u>cr</u> ease | 19. Challenge Word: almost |
| 9. chi <u>mn</u> ey | 20. Challenge Word: really |
| 10. te <u>di</u> ous | Content Word: electricity |
| 11. fa <u>nc</u> y | |

- Point to the Challenge Words on the board. Explain to students that the Challenge Words, *almost* and *really*, are also part of their spelling list and are words used very often. *Almost* does not follow the spelling patterns for this week but *really* does, as the 'ea' and the 'y' in *really* are pronounced /ee/. Use the Challenge Words in sentences as examples for students: "Bill ate *almost* all of his lunch." "He *really* was not very hungry."

- Remind students that this week, they once again have a Content Word. Review with them that the Content Word is a little harder than the other words. (If students try to spell the Content Word on the assessment and do not get it right, they will not be penalized. Simply correct it as you do the other words and applaud their effort. There should not be a penalty for not trying or misspelling the Content Word. The important thing is that they tried something that was a stretch for them academically.)
- Tell students that the Content Word, *electricity*, does follow the spelling patterns for this week as the first ‘e’ and the ‘y’ are pronounced /ee/. *Electricity* is a content-related word defined as energy carried over wires, which is found in Chapter 1 of *Adventures in Light and Sound*.
- Now, draw the following table on the board:

‘y’ > /ee/	‘e’ > /ee/	‘i’ > /ee/	‘ea’ > /ee/	‘ee’ > /ee/	‘ie’ > /ee/	‘ey’ > /ee/	‘e_e’ > /ee/

- Remind students that this lesson is a review of the /ee/ spelling alternatives from Unit 4. Ask students to refer to the spelling alternatives for /ee/ on the **Individual Code Chart page 3**. Point out that there are eight spellings for /ee/. Note that with so many different spellings for /ee/, this is often a difficult sound to spell correctly.
- Ask students to tell you which words to list under the ‘y’ < /ee/ header. Briefly explain the meaning of each word.
- Continue through the columns until all words have been listed under the appropriate /ee/ header. Note that *tedious*, *really*, and *electricity* go under two headers. Briefly explain the meaning of each word.
- Remind students that they have spelling words that use all eight of the different spelling alternatives for /ee/. Students may need to spend extra time at home practicing these words to be ready for the spelling assessment on Friday.

'y' > /ee/	'e' > /ee/	'i' > /ee/	'ea' > /ee/	'ee' > /ee/	'ie' > /ee/	'ey' > /ee/	'e_e' > /ee/
enemy	secret	experience	increase	succeeded	believe	money	centipede
fancy	tedious	tedious	grease	degree	chief	chimney	athlete
really	scenic	chariot	really				
electricity	electricity	stadium					

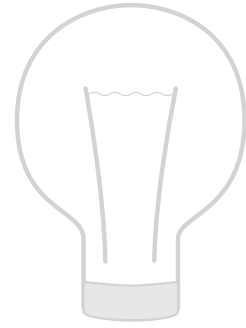
- Practice the words as follows during the remaining time. Call on a student to read any word on the table. Then, have the student orally use the word in a meaningful sentence. After the student says the sentence, have him/her ask the class: “Does that sentence make sense?” If the class says, “Yes,” then the student puts a check mark in front of the word and calls on another student to come to the front and take a turn. If the class says, “No,” have the student try again or call on another student to come to the front and use the word in a meaningful sentence. This continues until all of the words are used or time has run out.
- Tell students that this table will remain on display until the assessment so that they may refer to it during the week.
- Tell students they will take home Worksheet 1.2 with this week’s spelling words to share with a family member.

Take-Home Material

Family Letter; Glossary for Adventures in Light and Sound

- Have students take home Worksheet 1.2 to share with a family member and Worksheet PP19 to use as a reference during this unit.

Light

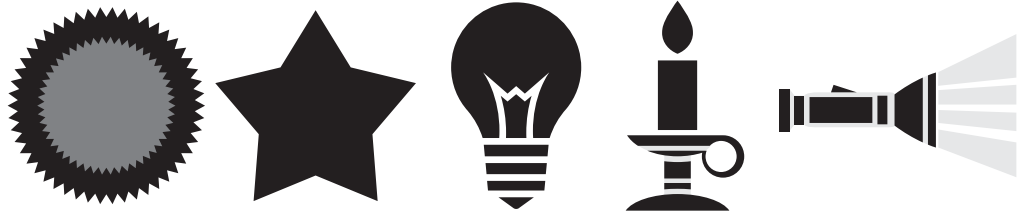


What is it?

ENERGY

How do we get it?

What is the source?



How fast does it travel?

**186,000 MILES PER SECOND
in a vacuum**

How does it travel?



Lesson 2

Grammar

✓ Objectives

The following language arts objectives are addressed in this lesson. Objectives aligning with the Common Core State Standards are noted with the corresponding standard in parentheses. Refer to the Alignment Chart for additional standards addressed in all lessons in this unit.

- ✓ Independently reread “What Is Light?” with purpose and understanding (RF.3.4a)
- ✓ Demonstrate preparedness for a discussion, having read “What Is Light?,” explicitly drawing on preparation and other information known about light to explore content under discussion (SL.3.1a)
- ✓ During a discussion, explain ideas and understanding in relation to light (SL.3.1d)
- ✓ Use adverbs and explain their function in sentences (L.3.1h)

<i>At a Glance</i>	Exercise	Materials	Minutes
Reading Time	Small Group: “What Is Light?”	<i>Adventures in Light and Sound</i> ; Vocabulary Cards; Worksheets 1.1, 2.1	25
Grammar	Adverbs That Tell <i>how</i> and End With <i>-ly</i>	board or chart paper; Worksheet 2.2	25
Extension	Extend Student Knowledge	choice of material	30
Take-Home Material	“What Is Light?”; Making Adverbs with the Suffix <i>-ly</i>	Worksheets 2.3, 2.4	*

Advance Preparation

Prepare and display a poster entitled “Adverbs” for use during the Grammar lesson that says:

Adverbs

Adverbs are words that can describe verbs.

- They can tell *how* the action of a verb happens.

Also for the Grammar lesson, write the following sentences on the board or on sentence strips:

1. I _____ tapped my friend on the shoulder to ask him a question.
2. My grandmother _____ offered us cookies when we stopped by to see her.
3. Our teacher _____ told us that we could not go outside for recess since the weather was bad.
4. She divided the pie _____ into slices for everyone.

Reading Time

25 minutes

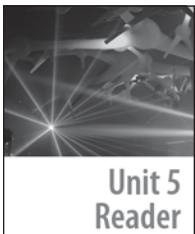
Small Group: “What Is Light?”

Re-introducing the Chapter

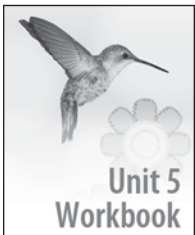
- Tell students that today, they will reread “What Is Light?” independently or in small groups. Have students turn to Worksheet 1.1 to review what they learned in the previous lesson.

Reviewing the Vocabulary

- You may wish to review the vocabulary before rereading this chapter by referring to the displayed Vocabulary Cards.



Chapter 1



Worksheets 1.1, 2.1

Remember to use academic vocabulary when appropriate: *graphic* and *figure*.

Guided Reading Supports and Purpose for Reading

- Remind students that if they are confused or forget a word meaning as they read, they know how to look up a word in the glossary and find the definition.
- ★ **Small Group 1:** Ask these students to come to the reading table and read the chapter with you. Have students complete Worksheet 2.1 as they read. This is an excellent time for you to make notes in your anecdotal records.
- ★ **Small Group 2:** Ask these students to read the chapter independently at their desks and complete Worksheet 2.1 as they read.

Wrap-Up

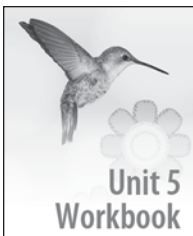
- Use the following questions to promote a discussion:

Discussion Questions on “What Is Light?”

1. *Literal* What aspect of light waves do scientists measure? (*how long light waves are*)
2. *Literal* What are some characteristics or features of light waves? (*They can be different sizes. Some are visible and some are invisible. They can be seen as different colors.*)

Grammar

25 minutes



Worksheet 2.2

For additional practice, see Pausing Point Worksheet PP9.

Adverbs That Tell *how* and End With *-ly*

- Tell students that this week, they will review another part of speech, adverbs, that was introduced in second grade.
- Direct students to the adverbs poster you prepared in advance. Read the poster with students. Display the poster in your room with the other parts of speech posters that you have already displayed.

Adverbs

Adverbs are words that can describe verbs.

- They can tell **how** the action of a verb happens.
- Ask students if they can recall what other part of speech they have studied is also a “describing word.” (Students should respond that adjectives are words that describe nouns.)

- Reiterate that adverbs are words that can describe verbs. Tell students that the word *adverb* has the word *verb* in it, which may help students remember which part of speech adverbs describe.
- Tell students that many adverbs end with *-ly*. Adverbs are often created by adding *-ly* to an adjective.
- Tell students that the suffix *-ly* means “in a _____ way,” with the blank being the adjective that *-ly* is added to. Adverbs with *-ly* describe *how* the action of a verb happens.
- Write the word *quiet* on the board. Tell students that this is an adjective. Ask students to provide several oral examples of phrases with the adjective *quiet* describing different nouns (e.g., the quiet boy, a quiet afternoon, etc.).
- Add *-ly* to *quiet* to make the adverb *quietly*. *Quietly* means “in a quiet way” and describes how an action takes place. Ask students to provide several oral examples of phrases with the adverb *quietly* describing different verbs. (e.g., talk quietly, hum quietly, etc.)
- Read the first sentence you prepared in advance to students. Tell students that an adverb needs to be added to the blank so that it describes *how* the action takes place.

I _____ tapped my friend on the shoulder to ask him a question.

- Write the word *soft* on the board, telling students that it is an adjective (e.g., soft pillow, soft towel, etc.) Tell students that the meaning of the word *soft* makes sense in the above sentence, but *soft* must be changed from an adjective to an adverb so that it describes the verb *tapped*.
- Ask students if they have any idea how to change the adjective *soft* to an adverb. (Students should respond “by adding *-ly*.”)
- Write the word *softly* in the blank. Reread the complete sentence to students.
- Ask students to identify the verb and draw a wiggly line under the word *tapped*.
- Ask students to identify which word describes how I tapped. (*softly*) Draw a triangle around *softly*. Draw an arrow from the adverb to the verb.

- Follow the same procedures for the remaining sentences that you prepared in advance. It is important to note for students that the adverb may not be in the same place in every sentence. Point this out when discussing the other sentences.
- Ask students to turn to Worksheet 2.2. Complete this as a teacher-guided activity. Consider using the following procedures:
 - Select a student to read aloud the first sentence.
 - Ask students to identify the verb in the sentence and underline it with a wiggly line.
 - Ask students to read the adjective that will be changed to an adverb for the sentence. (The adjective is listed under each blank.) Then, ask them to say this word as an adverb and to write the word in the blank.
 - Ask students to explain how the adverb describes the verb, just as they did with the sentences on the board. Tell them to draw a triangle around the adverb and an arrow from the adverb to the verb.
 - Then, ask students to answer the question after the sentence.
 - Continue until students have completed the worksheet.

Extension

30 minutes

Extend Student Knowledge

- Depending on students' needs, please choose from the following activities during this time:
 - Extension activities provided in the Pausing Point
 - Unit-specific writing prompts
 - Assessment and remediation activities outlined in the *Assessment and Remediation Guide* or remediation activities you deem appropriate
 - Reader's Chair, using Readers from previous units
 - Reader's Journal, using Readers from previous units.

Take-Home Material

“What Is Light?”; Making Adverbs with the Suffix *-ly*

Have students take home Worksheet 2.3 to read to a family member and Worksheet 2.4 to complete.

Lesson 3

Morphology

✓ Objectives

The following language arts objectives are addressed in this lesson. Objectives aligning with the Common Core State Standards are noted with the corresponding standard in parentheses. Refer to the Alignment Chart for additional standards addressed in all lessons in this unit.

- ✓ Ask and answer questions to demonstrate understanding of “How Are Shadows Made?,” referring explicitly to the text as the basis for the answers (RI.3.1)
- ✓ Ask and answer questions (e.g., *who, what, where, when, why, how*), orally or in writing, requiring literal recall and understanding of the details of “How Are Shadows Made?” by explicitly referring to the text (RI.3.1)
- ✓ Determine the main idea of “How Are Shadows Made?”; recount the key details and explain how they support the main idea (RI.3.2)
- ✓ Determine the meaning of general academic words and domain-specific words and phrases relevant to shadows in “How Are Shadows Made?” (RI.3.4)
- ✓ Describe images, orally or in writing, and how they contribute to what is conveyed by the words in “How Are Shadows Made?” (RI.3.7)
- ✓ Interpret information from a graphic organizer relevant to shadows (RI.3.7)
- ✓ Decode words with common Latin suffixes *-er, -or, -ist, and -ian* (RF.3.3b)
- ✓ Independently read grade-appropriate irregularly spelled words (RF.3.3d)
- ✓ Independently read “How Are Shadows Made?” with purpose and understanding (RF.3.4a)
- ✓ Prior to independently reading “How Are Shadows Made?,” identify what they know and have learned related to shadows (SL.3.1a)
- ✓ Use adverbs and explain their function in sentences (L.3.1h)
- ✓ Use spelling patterns and generalizations (e.g., word families, position-based spelling) in writing words with /ee/ spelled ‘y’, ‘e’, ‘i’, ‘ea’, ‘ee’, ‘ie’, ‘ey’, and ‘e_e’ (L.3.2f)
- ✓ Determine the meaning of words formed when *-er, -or, -ist, or -ian* is added to a known root word (L.3.4b)
- ✓ Use a glossary to determine or clarify the precise meaning of key words and phrases (L.3.4d)
- ✓ Identify real-life connections between words and their use (e.g., people who are *painters, musicians*) (L.3.5b)

At a Glance	Exercise	Materials	Minutes
Reading Time	Whole Group: “How Are Shadows Made?”	<i>Adventures in Light and Sound</i> ; Vocabulary Cards; Worksheets 1.1, 3.1	25
Morphology	Review Suffixes <i>-er, -or, -ist,</i> and <i>-ian</i>	board; Worksheets 3.2, 3.3	25
Grammar	Use Adverbs	board; Worksheet 3.4	15
Spelling	Blank Busters	Worksheet 3.5	15

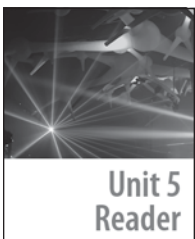
Advance Preparation

Write the following sentences on the board and cover them or write them on sentence strips to be displayed during the Grammar lesson:

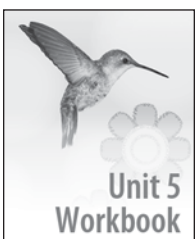
I took a quick shower.
 We ran quickly to the car when the storm started.
 The eager puppy jumped up and down.
 I waited eagerly for my dad to get home.
 I picked the correct choice on the test.
 My teacher said I answered correctly.
 I heard a loud noise!
 “Hello!” my friend shouted loudly.

Reading Time

25 minutes



Chapter 2



Worksheets 1.1, 3.1

Whole Group: “How Are Shadows Made?”

Introducing the Chapter

- Review with students what they learned in the previous chapter by referring to the Light Bulb Organizer on Worksheet 1.1.
- Using the *graphic* organizer, remind students of the following:
 - Light is a form of energy.
 - Sources of light include the sun, stars, light bulbs, candles, and flashlights. (Students may also have included fireflies, fires, and other sources that they learned about during Listening & Learning read-alouds.)
 - One way that light travels is in waves.
 - Light travels 186,000 miles per second in a vacuum.

- Remind students that in an earlier Listening & Learning lesson in this unit, they heard Jack and Samuel talk about shadows.
- Ask students to spend a few moments recalling what Jack and Samuel said about shadows. (A shadow is the area of darkness that is produced by an object or person that is blocking the light. Light cannot bend around the object or person because it travels in straight lines.)
- Tell students that the title of today’s chapter is “How Are Shadows Made?”
- Ask students to turn to the Table of Contents, locate the chapter, and then turn to the first page of the chapter.

Previewing the Vocabulary

- Following your established procedures, preview the vocabulary as well as assist students who need help with decoding.

Remember to use academic vocabulary when appropriate: *graphic* and *figure*.

Vocabulary for “How Are Shadows Made?”

1. **shad|ow***—a dark shape or outline of something that is made when light is blocked (**shadows**) (16)
2. **trans|par|ent***—clear, see-through so light gets through (18)
3. **sky|light**—a window in a ceiling or roof that lets in light (18)
4. **o|paque***—not clear, blocking all light so that none gets through (20)
5. **ab|sorb***—to take in or soak up (**absorbed**) (20)
6. **pro|ject**—to cause light to appear on a surface (**projected, projector**) (26)

Guided Reading Supports and Purpose for Reading

Note: Students will only read **pages 16–25** of “How Are Shadows Made?” during this lesson and the next one. **Pages 26–31** will be read during the Extension in Lesson 6.

Pages 16–17

- Read the title of the chapter together as a class, “How Are Shadows Made?”
- Display the image for the chapter and the Vocabulary Card to preview *shadow* and discuss its definition. Note for students that *shadows* is also used in this chapter.

- Ask students to look at the image on **page 17**.
- Read the caption, “Light travels in straight lines like rays from its source.”
- Remind students that in previous lessons, they learned that light can travel in waves.
- Ask students to read **page 16** to themselves to find the answer to the question: “What new information is there about how light waves travel?”
- When students have finished reading, restate the question and have students answer. (Light waves travel in a straight line.)
- On the *graphic* organizer, to answer the question, “**How does it travel?**”: Draw a straight line with an arrow at one end under the waves they previously drew.

Pages 18–19

- Display the Vocabulary Cards to preview *transparent* and *skylight* and discuss definitions.
- Ask students to look at the image on **page 19** and read the caption together.
- Ask students to read **page 18** to themselves to find the answer to the question in the caption.
- When students have finished reading, reread the question in the caption and have students answer. (We know the glass in the skylight is transparent because light travels through it. We can see the sky and the clouds.) When students answer, have them read the text that supports their answer.
- Students should add the following to the Light Bulb Organizer:
 - To answer the question “**What kind of object?**”: Add the words *Transparent* and *Clear* to the first column.

Pages 20–21

- Display the Vocabulary Cards to preview *opaque* and *absorb* and discuss definitions. Note for students that *absorbed* is used in this chapter.
- Ask students to look at the image on **page 21** and read the caption together.

- Ask students to read **page 20** to themselves to find the answer to question in the caption.
- When students have finished reading, reread the question in the caption and have students answer. (People’s bodies are opaque. Light cannot pass through them so shadows are formed.) Have them read the text that supports their answer.
- Students should add the following to the Light Bulb Organizer:
 - To answer the question, “**What kind of object?**”: Add the words *Opaque* and *Blocks Light* in the second column.
 - To answer the question, “**What happens when it hits...?**”: Add the words *Makes Shadows* under *Opaque* and *Blocks Light*.

Pages 22–23

- Have students read pages **22–23** to themselves to answer the questions posed on those pages.
- When students have finished reading, read the questions aloud and have students answer. (airplane—opaque; palm tree—opaque; person holding ladder—opaque; bicycle—opaque)

Pages 24–25

- Have students read **pages 24–25** to themselves to find the answer to the question: “Why are the shadows different sizes in each image on **page 25?**”
- When students have finished reading, restate the question and have students answer. (The distance of the object from the light source affects shadow size.)
- Ask, “What is the relationship between the distance from the light source and the size of the shadow?” (The closer an object is to the light source, the larger the shadow will be.)
- Have students add the following to the Light Bulb Organizer:
 - To answer the question “**What happens when it hits...?**”: Add the words *Far=little*, and *Close=big* in the second column below the words *Makes Shadows*.

Note to Teacher

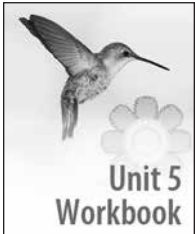
Have students stop reading after **page 25**. **Pages 26–31** will be read during the Extension in Lesson 6.

Wrap-Up

- Have students complete Worksheet 3.1 as a teacher-guided activity.

Morphology

25 minutes



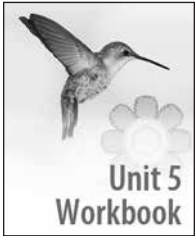
Worksheets 3.2, 3.3

For additional practice, see Pausing Point Worksheets PP14 and PP15.

Review Suffixes *-er*, *-or*, *-ist*, and *-ian*

- Tell students that this week, they will review some of the suffixes learned so far in third grade, specifically *-er*, *-or*, *-ist*, and *-ian*.
- Write the word *teach* on the board.
- Ask students to read the word. Discuss its meaning and ask students to name the part of speech. (to show someone how to do something; verb)
- Ask students what verbs are. (action words)
- Add the suffix *-er* to *teach* and have students read the new word.
- Ask students what *teacher* means and what part of speech it is. (a person who shows someone how to do something; noun)
- Ask students what nouns are. (people, places, or things)
- Follow the same procedures for the following words: *paint*, *play*.
- Write the word *counsel* on the board.
- Ask students to read the word. Discuss its meaning and ask students to name the part of speech. (to give advice to people about their problems; verb)
- Add the suffix *-or* to *counsel* and have students read the new word.
- Ask students what *counselor* means and what part of speech it is. (a person who gives advice to people about their problems; noun)
- Follow the same procedures for the following words: *inspect*, *govern*.
- Write the word *art* on the board.
- Ask students to read the word. Discuss its meaning and ask students to name the part of speech. (something that has been skillfully created for others to enjoy or to express ideas; noun)
- Add the suffix *-ist* to *art* and have students read the new word.

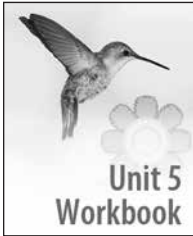
- Ask students what *artist* means and what part of speech it is. (a person who makes something that is skillfully created for others to enjoy or expresses ideas; noun)
- Follow the same procedures for the following words: *cartoon*, *guitar*.
- Write the word *music* on the board.
- Ask students to read the word. Discuss its meaning and ask students to name the part of speech. (sounds made by voices or instruments and arranged in a way that is pleasing to hear; noun)
- Add the suffix *-ian* to *music* and have students read the new word.
- Ask students what *musician* means and what part of speech it is. (a person who makes sounds using voice or instruments and arranges them in a way that is pleasing to hear; noun)
- Follow the same procedures for the following words: *magic*, *mathematics*.
- Tell students that when adding each of these suffixes, *-er*, *-or*, *-ist*, and *-ian*, the word becomes a noun that describes a person.
- Ask students to turn to Worksheets 3.2 and 3.3.
- Divide students into partners.
- Tell students that they will work with their partner, using the list of words with suffixes on Worksheet 3.2 to answer the questions on Worksheet 3.3.
- Circulate around the room, offering assistance as needed while students work to complete the worksheets. If time permits, you may wish to review the correct answers.



Worksheet 3.4

Use Adverbs

- Remind students that adjectives describe nouns and adverbs describe verbs. Adding *-ly* to adjectives changes them to adverbs, which are words that describe how the verb is completed.
- Display the first two sentences you prepared in advance.
- Ask students to read the first sentence (*I took a quick shower.*), identifying the word *quick* as an adjective that describes the word *shower*, which is a noun. Mark the noun and adjective with the established symbols.
- Ask students to read the second sentence (*We ran quickly to the car when the storm started.*), this time identifying the word *quickly* as an adverb that describes the verb *ran*. Mark the verb and adverb with the established symbols.
- Point out to students that it would be grammatically incorrect to say “we ran quick” because the word that is being described is a verb. Ask them to provide the correct form of the word for this sentence. (*quickly*, adverb)
- Likewise, be sure that they understand that it would be grammatically incorrect to say “I took a quickly shower” because the word being described is a noun. Ask them to provide the correct form of the word for this sentence. (*quick*, adjective)
- Use the same procedure for the remaining sentences that you prepared in advance. It is important to note for students that the adverb may not be in the same place in every sentence. Point this out when discussing the other sentences. Here is an answer key for the remaining sentences:
 - *eager*, adjective
 - *correct*, adjective
 - *correctly*, adverb
 - *loud*, adjective
 - *loudly*, adverb
- Ask students to turn to Worksheet 3.4. You may complete this as a teacher-guided or pair activity. Consider using procedures similar to those in the previous lesson.



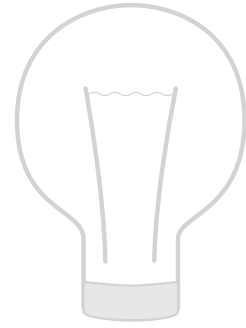
Worksheet 3.5

For additional practice, see worksheets in Sections III-B and V-F of the *Assessment and Remediation Guide*.

Blank Busters

- Tell students that they will practice writing their spelling words for the week.
- Tell students to turn to Worksheet 3.5. Note for students that some sentences have two blanks and one sentence has three.
- Point out to students that the spelling words are listed in the box on the worksheet and on the board. Students may also have to add an appropriate suffix to have the sentence make sense: *-s*, *-ed*, *-ly*, or *-ing*.
- Ask students to read the statement in **number 1** silently and fill in the blank. When students have completed **number 1**, call on one student to read **number 1** aloud with the spelling word in the blank.
- Ask students if anyone had a different answer. Discuss the correct answer to be sure students understand why it is correct.
- Discuss the proper spelling of the word in the blank, referencing the table of this week's spelling words. Have students compare their spelling with the spelling in the table.
- Have students move to **number 2** and fill in the blanks on their own.
- Follow the previous steps to discuss the correct answers for the remaining items on the worksheet.
- Remind students that on the spelling assessment, they will have to write the spelling words and the Challenge Words. Students are encouraged to try spelling the Content Word but if they try and don't get it right, they will not be penalized.

Light

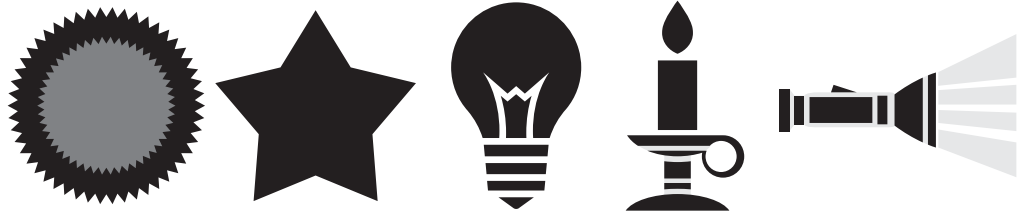


What is it?

ENERGY

How do we get it?

What is the source?



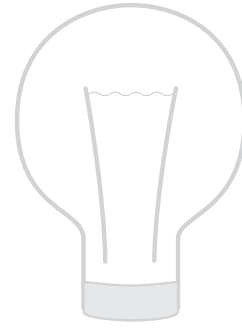
How fast does it travel?

**186,000 MILES PER SECOND
in a vacuum**

How does it travel?



Light



<p>What kind of object?</p>	<p>Transparent</p> <hr/> <p>Clear</p>	<p>Opaque</p> <hr/> <p>Blocks Light</p>		
<p>What happens when it hits...?</p>		<p>Makes Shadows</p> <hr/> <p>Far = little</p> <p>Close = big</p>		
<p>What kinds are there?</p>				

Lesson 4

✓ Objectives

The following language arts objectives are addressed in this lesson. Objectives aligning with the Common Core State Standards are noted with the corresponding standard in parentheses. Refer to the Alignment Chart for additional standards addressed in all lessons in this unit.

- ✓ Decode words with common Latin suffixes *-y* and *-al* (RF.3.3b)
- ✓ Independently read grade-appropriate irregularly spelled words (RF.3.3d)
- ✓ Independently reread “How Are Shadows Made?” with purpose and understanding (RF.3.4a)
- ✓ Demonstrate preparedness for a discussion, having reread “How Are Shadows Made?,” explicitly drawing on preparation and other information known about shadows to explore content under discussion (SL.3.1a)
- ✓ Prior to independently reading “How Are Shadows Made?,” identify what they know and have learned related to shadows (SL.3.1a)
- ✓ During a discussion, explain ideas and understanding in relation to shadows (SL.3.1d)
- ✓ Use adverbs and explain their function in sentences (L.3.1h)
- ✓ Use spelling patterns and generalizations (e.g., word families, position-based spelling) in writing words with /ee/ spelled ‘y’, ‘e’, ‘i’, ‘ea’, ‘ee’, ‘ie’, ‘ey’, and ‘e_e’ (L.3.2f)
- ✓ Determine the meaning of words formed when *-y* or *-al* is added to a known root word (L.3.4b)
- ✓ Identify real-life connections between words and their use (e.g., people who are *lucky*, *musical*) (L.3.5b)

At a Glance	Exercise	Materials	Minutes
Reading Time	Small Group: “How Are Shadows Made?”	<i>Adventures in Light and Sound</i> ; Vocabulary Cards; Worksheets 1.1, 4.1	25
Grammar	Adverbs That Tell <i>when</i> and <i>where</i>	board; Worksheet 4.2	25
Morphology	Review Suffixes <i>-y</i> and <i>-al</i>	board; Worksheet 4.3	15
Spelling	Word Sort	Worksheet 4.4	15
Take-Home Material	“How Are Shadows Made?”; Adverbs that Tell <i>how</i>, <i>when</i>, and <i>where</i>	Worksheets 4.5, 4.6	*

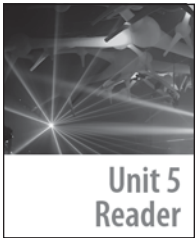
Advance Preparation

Add the following bullet to the **adverbs** poster for display during the Grammar lesson:

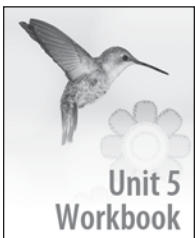
- They can tell *when* the action of a verb happens. (*yesterday, today, tomorrow, always, sometimes, never, early, first, next, last, again, soon, later*)
- They can tell *where* the action of a verb happens. (*here, there, everywhere, anyway, inside, outside, somewhere*)

Write the following sentences on the board and cover them or write them on sentence strips to be displayed during the Grammar lesson:

Adverbs That Tell <i>when</i>:
_____ I will play football with my friends at the park.
_____ I played football with my friends at the park.
I _____ play football with my friends at the park.
He did his hardest homework assignment _____, then he did the easier one.
He made a mistake in his homework, so he did it _____.
Adverbs That Tell <i>where</i>:
Mike cut the grass _____.
Dad works _____ in a building with ten floors.
Flowers are growing _____.
I left my book _____.
Sam put the mail _____.



Chapter 2



Worksheets 1.1, 4.1

Small Group: “How Are Shadows Made?”

Re-introducing the Chapter

- Tell students that today, they will reread “How are Shadows Made?” independently or in small groups.
- Ask students to share what they learned about shadows from reading the chapter during the previous lesson. Students may want to refer to the Light Bulb Organizer to recall what they learned about shadows. You may also prompt students to recall the activities that they have done in Listening & Learning extensions with light and shadows.

Reviewing the Vocabulary

- You may wish to review the vocabulary before rereading this chapter by referring to the displayed Vocabulary Cards.

Guided Reading Supports and Purpose for Reading

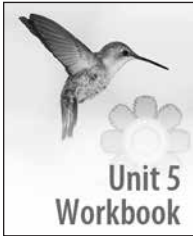
- Remind students that if they are confused or forget a word meaning as they read they know how to look up a word in the glossary and find the definition.
- ★ **Small Group 1:** Ask these students to come to the reading table and read the chapter to you. Have students complete Worksheet 4.1 as they read. This is an excellent time for you to make notes in your anecdotal records.
- ★ **Small Group 2:** Ask these students to read the chapter independently at their desks and complete Worksheet 4.1 as they read.

Wrap-Up

- Use the following question to promote a discussion:

Discussion Question on “How Are Shadows Made?”

1. *Literal* What makes a difference in the size of a shadow? (distance from the light source; The closer an object is to a light source, the larger the shadow will be; the farther away from the light source, the smaller the shadow will be.)



Worksheet 4.2

For additional practice, see Pausing Point Worksheet PP10.

Adverbs That Tell *when* and *where*

When?

- Draw students' attention to the **adverbs** poster you displayed in advance. Point out that the adverbs telling *how* that students have learned thus have all ended in the suffix *-ly*.

Adverbs

Adverbs are words that can describe verbs.

- They can tell *how* the action of a verb happens.
- They can tell *when* the action of a verb happens. (*yesterday, today, tomorrow, always, sometimes, never, early, first, next, last, again, soon, later*)
- They can tell *where* the action of a verb happens. (*here, there, everywhere, anyway, inside, outside, somewhere*)
- Tell students that today, they will continue to work with adverbs. However, the new adverbs do not end in *-ly* and so may be more difficult for students to identify.
- Instead of telling *how* the action of a verb takes place, the adverbs today describe *when* or *where* the action of the verb takes place.
- Read the adverbs that tell *when* listed on the poster with students.
- Use several adverbs that tell *when* from the poster in oral sentences and ask students which word in each sentence tells *when*; emphasize that this word is the adverb. If students have difficulty, repeat each sentence and encourage students to look at the words on the **adverbs** poster. For example:
 - Tom and Bob will play baseball tomorrow. (Which word tells when? *tomorrow*)
 - I never eat chocolate. (*never*)
 - I fell asleep early. (*early*)
- Display the "Adverbs That Tell *when*" sentences you prepared in advance.
- Ask students to look at the list of *when* adverbs on the poster and choose one that would fit in the blank of the first sentence.

- For each adverb suggested by students, ask them to first say the complete sentence using their selected adverb. If the word makes sense within the context of the complete sentence, write it in the blank. (In some instances, more than one adverb may make sense.)
- Ask students which word in the sentence tells *when*. Draw a triangle around the adverb and then draw an arrow from it to the verb it describes.
- Follow these steps with the remaining *when* sentences you prepared in advance. Here is a key:
 - When did I play football with my friends? (*yesterday*)
 - When do I play football with my friends? (*always*)
 - When did he do his hardest homework assignment? (*first/next*)
 - When did he do his homework? (*again/later*)

Where?

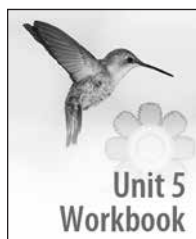
- Tell students that other adverbs can tell *where*.
- Point out the third bullet on the **adverbs** poster you displayed in advance. Read the adverbs listed on the poster with students, emphasizing that all of these words tell *where* something is happening.
- Use several adverbs that tell *where* from the poster in oral sentences and ask students which word in each sentence tells *where*; emphasize that this word is the adverb.
- Display the “Adverbs That Tell *where*” sentences that you prepared in advance.
- Ask students to look at the list of the *where* adverbs on the poster and choose adverbs that would fit in the blank of the first sentence.
- For each adverb suggested by students, ask them to first say the complete sentence using their selected adverb. If the word makes sense within the context of the complete sentence, write it in the blank. (In some instances, more than one adverb may make sense.)
- Ask students which word in the sentence tells *where*. Draw a triangle around the adverb and then draw an arrow from it to the verb it describes.

- Follow these steps with the remaining *where* sentences you prepared in advance. Here is a key:
 - Where does Dad work? (*inside*)
 - Where are flowers growing? (*everywhere/somewhere/there/here*)
 - Where did I leave my book? (*somewhere/there/here/inside/outside*)
 - Where did Sam put the mail? (*here/there/somewhere/inside*)
- Ask students to turn to Worksheet 4.2. Complete this as a teacher-guided or independent activity.

Morphology

15 minutes

Review Suffixes *-y* and *-al*



Worksheet 4.3

For additional practice, see Pausing Point Worksheet PP16.

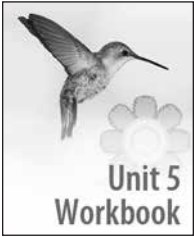
- Tell students that today, they will review two other suffixes they have learned in third grade, specifically *-y* and *-al*.
- Write the word *leak* on the board.
- Ask students to read the word. Discuss its meaning and ask students to name the part of speech. (a hole that lets something in or allows something to escape; noun)
- Add the suffix *-y* to *leak* and have students read the new word.
- Ask students what *leaky* means and what part of speech it is. (full of holes that let something in or allow something to escape; adjective)
- Ask students what adjectives are. (words that describe nouns)
- Follow the same procedures for the following words: *curl*, *salt*.
- Write the word *tradition* on the board.
- Ask students to read the word. Discuss its meaning and ask students to name the part of speech. (a custom or belief handed down from one generation to the next; noun)
- Add the suffix *-al* to *tradition* and have students read the new word.
- Ask students what *traditional* means and what part of speech it is. (related to a custom or belief handed down from one generation to the next; adjective)
- Follow the same procedures for the following words: *nutrition*, *coast*.

- Ask students to turn to Worksheet 4.3 and have them complete it independently.
- If time permits, you may wish to have students share the sentences they wrote using the affixed words.

Spelling

15 minutes

Word Sort



Worksheet 4.4

For additional practice, see worksheets in Sections III-B and V-F of the *Assessment and Remediation Guide*.

- Tell students they will sort words with /ee/ spelled 'y', 'e', 'i', 'ea', 'ee', 'ie', 'ey', and 'e_e'.
- Have students turn to Worksheet 4.4.
- Ask students to identify the vowel patterns. ('y' > /ee/, 'e' > /ee/, 'i' > /ee/, 'ea' > /ee/, 'ee' > /ee/, 'ie' > /ee/, 'ey' > /ee/, and 'e_e' > /ee/)
- Have students independently read the words in the box below the headers and circle the vowels that have the /ee/ sound.
- Then, have students independently write the words that match the various spellings below the appropriate headers.

Note: You may wish to circulate around the room offering assistance where needed.

Take-Home Material

"How Are Shadows Made?"; Adverbs that Tell *how*, *when*, and *where*

Have students take home Worksheet 4.5 to read to a family member and Worksheet 4.6 to complete.

Lesson 5

✓ Objectives

The following language arts objectives are addressed in this lesson. Objectives aligning with the Common Core State Standards are noted with the corresponding standard in parentheses. Refer to the Alignment Chart for additional standards addressed in all lessons in this unit.

- ✓ Ask and answer questions to demonstrate understanding of “Mirrors and Reflections,” referring explicitly to the text as the basis for the answers (RI.3.1)
- ✓ Ask and answer questions (e.g., *who, what, where, when, why, how*), orally or in writing, requiring literal recall and understanding of the details of “Mirrors and Reflections” by explicitly referring to the text (RI.3.1)
- ✓ Determine the meaning of general academic words and domain-specific words and phrases relevant to mirrors and reflections in “Mirrors and Reflections” (RI.3.4)
- ✓ Describe images, orally or in writing, and how they contribute to what is conveyed by the words in “Mirrors and Reflections” (RI.3.7)
- ✓ Interpret information from a graphic organizer relevant to mirrors and reflections (RI.3.7)
- ✓ Independently read “Mirrors and Reflections” with purpose and understanding (RF.3.4a)
- ✓ Prior to independently reading “Mirrors and Reflections,” identify what they know and have learned related to mirrors and reflections (SL.3.1a)
- ✓ Use adverbs and explain their function in sentences (L.3.1h)
- ✓ Use a beginning dictionary to determine or clarify the precise meaning of key words and phrases (L.3.4d)
- ✓ Use a glossary to determine or clarify the precise meaning of key words and phrases (L.3.4d)

At a Glance	Exercise	Materials	Minutes
Spelling	Spelling Assessment	Worksheet 5.1; optional pens	25
Reading Time	Whole Group: “Mirrors and Reflections”	<i>Adventures in Light and Sound</i> ; Vocabulary Cards; Worksheets 1.1, 5.2	25
Grammar	Use Adverbs	board; Worksheet 5.3	15
Spelling	Practice Dictionary Skills	Worksheet 5.4	15

Advance Preparation

Make sure to erase the spelling table from the board and/or turn the table over so that students cannot refer to it during the assessment.

Write the following sentences on the board and cover them or write them on sentence strips to be displayed during the Grammar lesson:

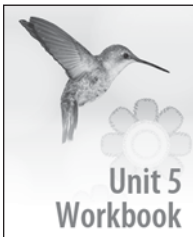
The man spoke _____ when he announced the store would close in fifteen minutes.

I _____ grabbed my backpack before going out the door.

Spelling

25 minutes

10 Spelling Assessment



Worksheet 5.1

For additional practice, see worksheets in Sections III-B and V-F of the *Assessment and Remediation Guide*.

- Have students turn to Worksheet 5.1 for the spelling assessment.
- If you would like for students to have pens, this is the time to pass them out.
- Tell students that for this assessment, they will write their words under the header to which they belong. For example, if you call out the word *each*, they would write that word under the header 'ea' > /ee/.
- Tell students that should a spelling word fit under more than one header, they should only write the word under one.
- Tell students that they may not have to use all the lines under each header.

- Using the list below, call out the word using the following format: say the word, use it in a sentence, and say the word once more.

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

- After you have called out all of the words including the Challenge Words and the Content Word, go back through the list slowly, reading each word just once more.
- Ask students to write the following sentences as you dictate them:

1. The students were eager to learn Chinese.
2. The honey bees fly from flower to flower.

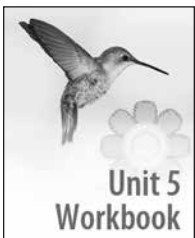
- After students have finished, collect pens, if used.
- Follow your established procedures to correct the spelling words and the dictated sentences.

Note to Teacher

At a later time today, you may find it helpful to use the template provided at the end of this lesson to analyze students' mistakes. This will help you understand any patterns that are beginning to develop, or that are persistent among individual students.



Chapter 3



Worksheets 1.1, 5.2

Whole Group: “Mirrors and Reflections”

Introducing the Chapter

- Review with students what they learned in the previous chapter by referring to the Light Bulb Organizer on Worksheet 1.1.
- Using the *graphic* organizer, remind students of the following:
 - Light travels in straight lines and can travel in waves.
 - Objects that most light can pass through are called transparent.
 - Objects that light cannot pass through are called opaque.
 - Shadows form when the light from a source is blocked by an object.
 - The closer an opaque object is to a light source, the larger the shadow.
- Remind students that in an earlier Listening & Learning lesson in this unit, they heard Jack and Samuel talk about mirrors and reflections.
- Ask students to spend a few moments recalling what Jack and Samuel said about mirrors and reflections. (When the surface of an object is smooth and shiny like that of a mirror, light rays hit all parts of the surface of that object at the same angle. Therefore, light rays reflected by that object bounce back off it at the same angle. Concave and convex mirrors reflect light in such a way that they alter the view we see in them. Concave mirrors curve inward, away from the viewer, and produce a magnified image if the object is close enough to the mirror. Convex mirrors curve outward, toward the viewer, and produce a smaller, wide angle image of an object.)
- Tell students that the title of today’s chapter is “Mirrors and Reflections.”
- Ask students to turn to the Table of Contents, locate the chapter, and then turn to the first page of the chapter.

Previewing the Vocabulary

- Following your established procedures, preview the vocabulary as well as assist students who need help with decoding.

Vocabulary for “Mirrors and Reflections”

1. **mir|ror***—a shiny surface that reflects light (**mirrors**) (32)
2. **sur|face**—the outside layer of something (32)
3. **re|flect***—to throw back light, heat, or sound from a surface (**reflections, reflects, reflected, reflection**) (32)
4. **sil|ver|y**—shiny or silver in color (34)
5. **plane***—a more or less flat surface (34)
6. **ka|lei|do|scope**—a tube with plane mirrors and pieces of colored glass that you hold up to the light and rotate to make colorful patterns (36)
7. **con|cave***—curved inward, like a spoon (38)
8. **con|vex***—curved outward (38)
9. **curve**—to bend (**curved, curves**) (38)
10. **dis|tort**—to twist out of normal shape (**distorted**) (42)

Guided Reading Supports and Purpose for Reading

Pages 32–33

- Read the title of the chapter together as a class, “Mirrors and Reflections.”
- Display the image for this chapter and the Vocabulary Cards to preview *mirror*, *surface*, and *reflect* and discuss definitions. Note for students that *mirrors*, *reflections*, *reflects*, *reflected*, and *reflection* are used in this chapter.
- Point students’ attention to the image on **page 33** and read the caption, “Light reflected from the surface of this mirror allows the dentist to see the back of this person’s teeth.”
- Remind students that in previous lessons, they learned that light travels in straight lines and is stopped by opaque objects, creating shadows.
- Ask students to read **page 32** to themselves to find the answer to the question: “What happens when light hits a smooth, shiny surface?”
- When most students have finished reading, restate the question and have students answer. (Light is reflected when it hits a mirror, which is a smooth, shiny surface.)

- Ask students to add the following to the Light Bulb Organizer:
 - To further answer the question, “**What kind of object?**”: Add the words *Shiny* and *Reflects* in the third column.

Pages 34–35

- Display the Vocabulary Cards to preview *silvery* and *plane* and discuss definitions.
- Draw students’ attention to the image on **page 35**. Say to students, “I wonder what a mirror is made of. Let’s read **page 34** to find out more.”
- Ask students to read **page 34** to themselves to fill in the blank in the following sentence: “A mirror is made of _____.”
- When students have finished reading, reread the sentence and ask students to fill in the blank. (glass coated with hot, silvery metals)
- Have students look back at the image on **page 35** and have them give examples of the mirrors they may have in their homes. (Answers may vary but could include a bathroom mirror, a mirror hanging on a wall, a mirror on the back of a door, etc.)
- Tell students that most mirrors found in homes are called plane mirrors. Ask, “What are plane mirrors?”
- Ask one student to read the sentence(s) that answer(s) the question. (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.)
- Ask students to add the following to the Light Bulb Organizer:
 - To further answer the question, “**What happens when it hits...?**”: Add the words *1. Plane (flat, same)* just below *Reflects* to show that a plane mirror reflects an image in almost the same size as the real object.

Pages 36–37

- Display the Vocabulary Card to preview *kaleidoscope* and discuss its meaning.
- Have students read **pages 36–37** to themselves to find the answer to the question: “What is a kaleidoscope?”

- When most students have finished reading, restate the question and have students answer. (A kaleidoscope is a tube with plane mirrors, tiny bits of colored glass, and beads inside.)
- Ask, “How does a kaleidoscope work?” (You look through a small hole at one end of the kaleidoscope, point it toward the light, and rotate the tube. Beautiful patterns appear, as seen in the image on **page 37**.)

Pages 38–39

- Display the Vocabulary Cards to preview *concave*, *convex*, and *curve* and discuss definitions.
- Ask students to read just the first paragraph on **page 38** to themselves to answer the question: “How are concave and convex mirrors different from plane mirrors?”
- When students have finished reading, restate the question and have students answer. (Plane mirrors are flat while concave and convex mirrors are curved.)
- Ask, “Which way does a concave mirror curve?” (inward like a spoon)
Note: You may wish to tell students that *concave* has the word *cave* in it. A way to remember which kind of mirror curves inward and which curves outward is that concave mirrors curve inward, like walking into a cave.
- Ask, “Which way does a convex mirror curve?” (outward)
- Next, have students read the second paragraph on **page 38** to themselves to answer the question: “How is the reflection of objects in concave and convex mirrors different from the reflection of objects in plane mirrors?”
- When students have finished reading the second paragraph, restate the question and have a student answer. (The reflection of objects in plane mirrors is about the same size as the object, while the reflection of objects in concave and convex mirrors appears larger or smaller than the real object.)
- Direct students’ attention to the images and caption on page 39.

Pages 40–41

- Draw students’ attention to the images on **page 41** and have students read the caption aloud.

- Have students read the first paragraph on **page 40** to themselves to find the answer to the question: “How can concave mirrors be used to provide heat?” You may also wish to have students look carefully at the diagram on **page 41**.
- After students have finished reading and looking carefully at the image and the diagram, restate the question and have them talk about their ideas with a partner before answering out loud. When ready, have several students share their ideas. (Sunlight is a form of light and heat energy. The large concave mirror in the image reflects the sun’s energy so that people can warm their hands or bodies outside.)
- Draw students’ attention to the bottom image on **page 41**. Have them also look carefully at the diagram beside that image.
- Have students read the remainder of **page 40** to themselves to find the answer to the question: “Why would a convex mirror be called a safety mirror?”
- When students have finished reading, restate the question, and call on a student to read the sentences that answer the question. (The convex mirror makes objects look smaller but shows a wider area so you can see more. It helps the driver avoid hitting something he or she might not see in the regular plane mirror.)
- Ask students to add the following to the Light Bulb Organizer:
 - To further answer the question, “**What happens when it hits...?**”: Write the words 2. *Concave (curves inward, heats)* 3. *Convex (curves outward, bigger, closer)* below 1. *Plane (flat, same)* in the third column.

Pages 42–43

- Display the Vocabulary Card to preview *distort* and discuss its definition. Note for students that *distorted* is also used in this chapter.
- Ask students to look at the image on **page 43** and read the caption.
- Have students read **pages 42–43** to themselves to answer the question: “What sorts of mirrors would reflect this kind of image?”
- When students have finished reading, restate the question and have students answer. (They are concave and convex mirrors found in a circus or carnival “funhouse” or “house of mirrors.”)

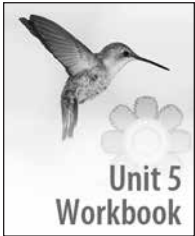
Wrap-Up

- Have students complete Worksheet 5.2 independently.

Grammar

15 minutes

Use Adverbs



Worksheet 5.3

- Review with students what adverbs are. (words that can describe verbs)
- Tell students that they will practice using adverbs during this lesson.
- Display the first sentence you prepared in advance.

The man spoke _____ when he announced the store would close in fifteen minutes.
- Ask students to share ideas about what adverbs would make sense in the blank to describe *spoke*. (Examples could include *loudly*, *clearly*, *sadly*, *quietly*, etc.) Record student ideas on the board that are appropriate for completing the sentence.
- For each idea, point out to students that the adverb describes *how* the man spoke.
- Select one idea and write it in the blank to complete the sentence. Point out to students that each of their ideas would be appropriate.
- Display the second sentence you prepared in advance.

I _____ grabbed my backpack before going out the door.
- Ask students to share ideas about what adverbs would make sense in the blank to describe *grabbed*. Record student ideas on the board that are appropriate for completing the sentence.
- For each idea, point out to students that the adverb describes *how* I grabbed my backpack.
- Select one idea and write it in the blank to complete the sentence. Point out to students that each of their ideas would be appropriate.
- Divide students into small groups.
- Ask students to turn to Worksheet 5.3.

- Tell students that they will work in groups to fill in the blanks with adverbs and then write three sentences with the given adverbs. Tell students to record the answers they decide on as a group on their own worksheets.
- After all groups have finished and if there is time, go through the worksheet as a class. You may want to use the following procedures:
- For the first five questions:
 - Read the first sentence with the blank included.
 - Ask each group to share what adverb they chose for the blank and what the adverb describes.
 - Record all adverb choices on the board.
 - Continue through all sentences until you have finished reviewing the sentences with blanks.
- For the last three questions:
 - Ask groups to share sentence ideas.
 - You may want to record their sentences on the board to show examples of adverbs describing different verbs.

Spelling

15 minutes

Practice Dictionary Skills



Worksheet 5.4

- Remind students that in a previous lesson, they learned about many different parts of a dictionary.
- Review the various components of the dictionary such as entry words, numbers of word meanings, and parts of speech.
- Ask students to complete Worksheet 5.4 independently or as a teacher-guided activity.

Spelling Analysis Chart

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

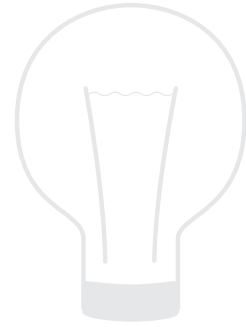
Spelling Analysis Directions

Unit 5, Lesson 5

For additional practice, see worksheets in Sections III-B and V-F of the *Assessment and Remediation Guide*.

- Students are likely to make the following errors
 - For ‘y’, students may write ‘ey’ or ‘i’
 - For ‘e’, students may write ‘ee’, ‘ea’, or ‘ie’
 - For ‘ea’, students may write ‘ee’
 - For ‘ee’, students may write ‘ea’
 - For ‘ey’, students may write ‘y’
 - For ‘e_e’, students may write ‘ee’ or ‘ea’
- While any of the above student-error scenarios may occur, you should still be aware that misspellings may be due to many other factors. You may find it helpful to record the actual spelling errors that the student makes in the analysis chart. For example:
 - Is the student consistently making errors on specific vowels? Which ones?
 - Is the student consistently making errors at the end of the words?
 - Is the student consistently making errors on particular beginning consonants?
- Did the student write words for each feature correctly?
- Also, examine the dictated sentences for errors in capitalization and punctuation.

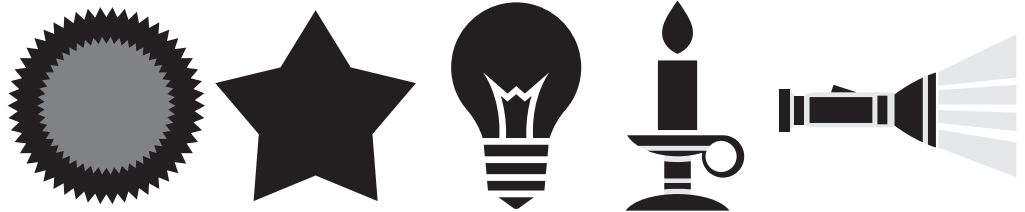
Light



What is it?

ENERGY

How do we get it?



What is the source?

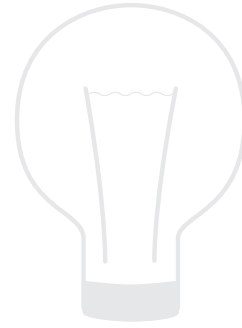
How fast does it travel?

**186,000 MILES PER SECOND
in a vacuum**

How does it travel?



Light



What kind of object?	Transparent	Opaque	Shiny	
	Clear	Blocks Light	Reflects	
What happens when it hits...?		Makes Shadows	1. Plane (flat, same) 2. Concave (curves inward, heats) 3. Convex (curves outward, bigger, closer)	
What kinds are there?		Far = little Close = big		

Lesson 6

Spelling

✓ Objectives

The following language arts objectives are addressed in this lesson. Objectives aligning with the Common Core State Standards are noted with the corresponding standard in parentheses. Refer to the Alignment Chart for additional standards addressed in all lessons in this unit.

- ✓ Ask and answer questions to demonstrate understanding of “Refraction and Lenses,” referring explicitly to the text as the basis for the answers (RI.3.1)
- ✓ Ask and answer questions (e.g., *who, what, where, when, why, how*), orally or in writing, requiring literal recall and understanding of the details of “Refraction and Lenses” by explicitly referring to the text (RI.3.1)
- ✓ Determine the meaning of general academic words and domain-specific words and phrases relevant to refraction and lenses in “Refraction and Lenses” (RI.3.4)
- ✓ Describe images, orally or in writing, and how they contribute to what is conveyed by the words in “Refraction and Lenses” (RI.3.7)
- ✓ Interpret information from a graphic organizer relevant to refraction and lenses (RI.3.7)
- ✓ Independently read grade-appropriate irregularly spelled words (RF.3.3d)
- ✓ Independently read “Refraction and Lenses” with purpose and understanding (RF.3.4a)
- ✓ Prior to independently reading “Refraction and Lenses,” identify what they know and have learned related to refraction and lenses (SL.3.1a)
- ✓ Use spelling patterns and generalizations (e.g., word families, position-based spelling) in writing words with /ae/ spelled ‘ay’, ‘ai’, and ‘ea’ (L.3.2f)
- ✓ Use a glossary to determine or clarify the precise meaning of key words and phrases (L.3.4d)

At a Glance	Exercise	Materials	Minutes
Reading Time	Whole Group: “Refraction and Lenses”	<i>Adventures in Light and Sound</i> ; Vocabulary Cards; Worksheet 1.1	25
Spelling	Introduce Spelling Words	board; Individual Code Chart; Worksheet 6.1	25
Extension	Follow Instructions	<i>Adventures in Light and Sound</i>	30
Take-Home Material	Family Letter; “Mirrors and Reflections”; Shadow Puppets	Worksheets 6.1–6.3	*

Advance Preparation

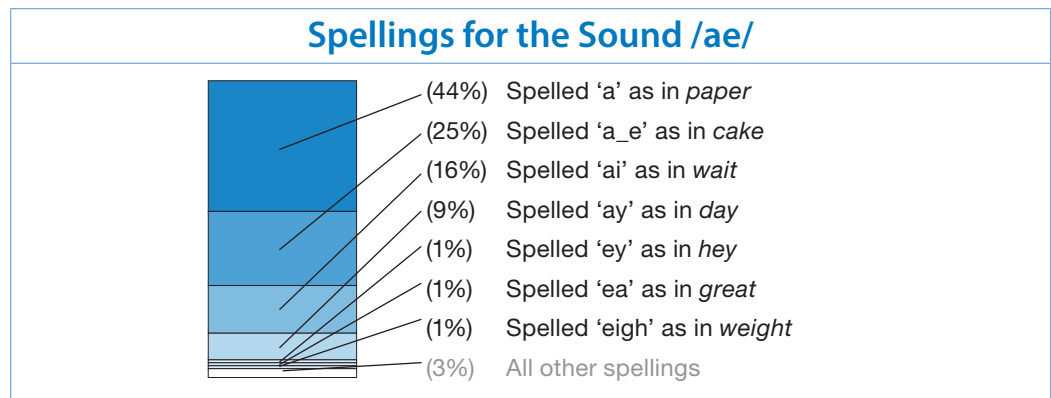
You may wish to draw the table for spelling on the board or on chart paper before beginning to teach this lesson.

'ay' > /ae/	'ai' > /ae/	'ea' > /ae/

Note to Teacher

For Lessons 6–10, you will review some of the spelling alternatives for /ae/: 'ay' as in *day*, 'ai' as in *wait*, and 'ea' as in *great*. For Lessons 11–15, you will review the spelling alternatives for /ae/: 'a_e' as in *cake* and 'a' as in *paper*. Students should be familiar with most of these spelling alternatives as they were taught in Grade 2.

The following chart is provided for your review:



Here are some patterns for you to be aware of:

- 'ai' is generally used in the initial position (*aim, aid*) or the medial position (*pail, paint*) and is almost always followed by a consonant spelling. It is rarely used in the final position.
- 'ay' is generally used in the final position (*say, pay*); It is rarely found in the initial position or the medial position.
- 'ea' is generally found in the medial position and is very rare.

Please have the following materials available for use during the Extension lesson:

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

In this unit, students will focus on four academic vocabulary words, two of which are *instructions* and *invent*. By academic vocabulary, we mean words that support reading comprehension and may appear across a variety of materials, in language arts and in content areas. These words can be found in textbooks, assignment directions, and assessments. Understanding academic vocabulary may contribute to improved performance on assignments and assessments, as these words often appear in directions to students. These words may appear on end-of-year assessments that third graders may take. Where applicable, we use the words throughout the unit, not just as they might refer to reading selections but also with regard to spelling, grammar, morphology, and comprehension. They may also appear in directions, assessments, spelling lists, and discussion questions, among other places.

- *Instructions* are directions.
- To *invent* is to create or design something new.

We encourage you to define these words for students and use both of these words throughout the school day so that students may experience multiple uses of them.

Whole Group: “Refraction and Lenses”

Introducing the Chapter

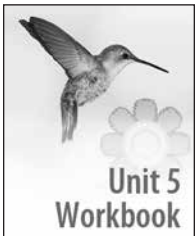
- Review with students what they learned in the previous chapter by referring to the Light Bulb Organizer on Worksheet 1.1.
- Using the *graphic* organizer, remind students of the following:
 - Mirrors are shiny objects that reflect light.
 - A plane mirror is one with a more or less flat surface
 - A concave mirror is one with an inward curve.
 - A convex mirror is one with an outward curve.
- Remind students that in an earlier Listening & Learning lesson in this unit, they heard Jack and Samuel talk about refraction and lenses.
- Ask students to spend a few moments recalling what Jack and Samuel said about refraction and lenses. (When a light wave suddenly changes speed, it changes the direction of the light wave and makes it look like it’s bending. This is called refraction. The refraction of light is how lenses work. A convex lens curves outward and is thicker in the middle than at the edges. Rays of light passing through this kind of lens are forced to change direction and move towards each other, making things look bigger. That’s why convex lenses are used in microscopes, binoculars, and telescopes. On the other hand, a concave lens curves inward and is thinner in the middle than at the edges. Light rays passing through this kind of lens are forced to change direction and move away from each other so a wide-angled image of an object or scene is produced.)
- Tell students that the title of today’s chapter is “Refraction and Lenses.”
- Ask students to turn to the Table of Contents, locate the chapter, and then turn to the first page of the chapter.

Previewing the Vocabulary

- Following your established procedures, preview the vocabulary as well as assist students who need help with decoding.



Chapter 4



Worksheet 1.1

Remember to use academic vocabulary when appropriate: *instructions* and *invent*.

Vocabulary for “Refraction and Lenses”

1. **re|fract***—the appearance of light bending when it moves from one medium to another (**refraction, refracting, refracts**) (44)
2. **lens***—a clear piece of curved glass or plastic that is used to make things look clearer, larger, or smaller (**lenses**) (44)
3. **dense**—thick, heavy (**denser**) (46)
4. **an|gle***—the space formed when two lines or surfaces meet (48)
5. **mag|ni|fy**—to make something look larger or sound louder (**magnified, magnifies**) (52)
6. **mag|ni|fy|ing glass**—a convex lens that makes things look larger when they are held close to the lens (54)
7. **se|cur|i|ty**—protection from danger (58)
8. **cam|er|a**—an instrument for taking photographs (**cameras**) (58)

Guided Reading Supports and Purpose for Reading

Pages 44–45

- Read the title of the chapter together as a class, “Refraction and Lenses.”
- Display the image for this chapter and the Vocabulary Cards to preview *refract* and *lens* and discuss definitions. Note for students that *refraction*, *refracting*, *refracts*, and *lenses* are also used in this chapter.
- Ask students to read **page 44** to themselves to review what happens to light when it encounters different types of objects along its path.
- Next, draw students’ attention to the images on **page 45** and read the captions together.
- When students have finished reading, ask different students to explain what happens when light hits a transparent, opaque, or shiny object. Encourage students to use the domain vocabulary that they have been learning in their response, e.g., *absorb*, *shadow*, *reflect*, etc. (When light hits a transparent object, it passes right through the object. When light hits an opaque object, the light is absorbed and blocked so a shadow is made. When light hits a shiny object, it is reflected.)

Pages 46–47

- Display the Vocabulary Card to preview *dense* and discuss its definition. Note for students that *denser* is used in this chapter.
- Have students read **pages 46–47** to themselves to find the answer to the question: “Does light always travel at the same speed?”
- When students have finished reading, restate the question and have students answer. (No, light slows down when it goes through transparent objects that are dense or heavy.)
- Ask, “Which is denser or heavier, a piece of glass or water?” (glass)
- Ask, “Through which of these two transparent materials, glass or water, will light travel faster?” (water) Ask, “Why?” (Water is a liquid and is less dense than the glass, which is a solid.)
- Ask, “Which is heavier or denser, water or air?” (water)
- Ask, “Through which of these two transparent materials, water or air, will light travel faster?” (air) Ask, “Why?” (Air is a gas and is less dense than water, which is a liquid.)

Pages 48–49

- Display the Vocabulary Card to preview *angle* and discuss its definition.
- Direct students’ attention to the image on **page 49**. Read the caption together as a class or have a student read it to the class.
- Say to students, “I wonder why the straw looks bent. Let’s read **page 48** to find out more.”
- Ask students to read **page 48** to themselves to find out more about why the straw looks bent.
- When students have finished reading, restate the question and have students answer. (When light moves from one thing that is transparent to something different that is transparent, it changes speed. When light changes speed, the angle of the light rays changes and light appears to bend.)
- Ask, “How does the speed of light moving from air to water cause the straw to look bent?” (Light slows down as it moves from air to water. As the light enters the water, it changes angle direction because it slows down.)

- Add the following to the Light Bulb Organizer:
 - To further answer the question, “**What happens when it hits...?**”: In the first column, add the words *Passes but slows* and *Refraction*.

Pages 50–51

- Draw students’ attention to the image on **page 51** and read the caption.
- Ask students to read **page 50** to themselves to find out what eyeglasses have that helps to correct vision problems.
- When students have finished reading, restate the question and have students answer. (Eyeglasses have lenses that refract light in different ways.)
- Add the following to the Light Bulb Organizer:
 - To further answer the question, “**What kind of object?**”: In the fourth column, add the words *Lenses*, *Clear*, and *Curved*.

Pages 52–53

- Display the Vocabulary Card to preview *magnify* and discuss its definition. Note for students that *magnified* and *magnifies* are used in this chapter.
- Ask students to read **pages 52–53** to themselves to find the answer to the question: “How do convex lenses change the way things look?”
- When students have finished reading, restate the question and have students answer. (When you look through a convex lens, an object will look larger and closer. It looks magnified because the light rays are closer together.)
- Add the following to the Light Bulb Organizer:
 - To further answer the question, “**What happens when it hits...?**”: In the fourth column, add the words *Refraction*, *1. Convex (curves outward)*; Caution students to leave space for more words below.
 - Ask, “How does a concave lens change the way things look?” (A concave lens refracts and spreads light rays apart. If you look through a concave lens, an object will look smaller.)

- Add the following to the Light Bulb Organizer:
 - To further answer the question, “**What happens when it hits...?**”: In the fourth column, add the words *2. Concave (curves inward;*. Caution students to leave space for more words below.

Pages 54–55

- Display the Vocabulary Card to preview *magnifying glass* and discuss its definition.
- Ask students to read **page 54** to themselves to find the answer to the question: “How does a magnifying glass make things look different?”
- When students have finished reading, restate the question and have students answer. (It is a convex lens and makes things look larger to see details better.)
- Draw students’ attention to the images on **page 55** and read the caption with them.
- Add the following to the Light Bulb Organizer:
 - To further answer the question, “**What happens when it hits...?**”: In the fourth column, add the words *magnifying glass)* under *curves outward;*.

Pages 56–57

- Have students read **pages 56–57** to themselves to find the answer the question: “How do scientists use convex lenses?”
- When students have finished reading, restate the question and have students answer. (They use microscopes and telescopes, both of which make objects appear larger and/or closer.)
- Draw students’ attention to the images on **page 57** and read the captions with them.

Page 58–59

- Display the Vocabulary Cards to preview the words *security* and *camera* and discuss definitions.
- Have students read **page 58** to themselves to find the answer to the question: “How are concave lenses used for security?”
- When students have finished reading, restate the question and have students answer. (Security cameras provide a wider view of a place and a peephole in a door allows a person to see who is at the door before opening it.)

- Ask, “Why are concave lenses used in peepholes?” (Concave lenses spread out light rays and make items appear smaller so you can see more of the person outside your door.)
- Draw students’ attention to the images on **page 59** and read the caption with them.
- Add the following to the Light Bulb Organizer:
 - To further answer the question, “**What happens when it hits...?**”: Under the fourth column, word *peephole*) under *curves inward*;

Wrap-Up

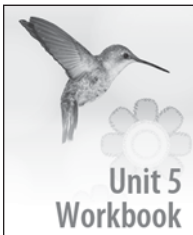
- Have students review and discuss the information they added to the Light Bulb Organizer.

Spelling

25 minutes

Introduce Spelling Words

- Tell students that this week, they will review spellings of /ae/.
- As you introduce each of the spelling words, write it on the board, pronouncing each word as you write it.



Worksheet 6.1

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

- Go back through the list of words, having students read the words and tell you what vowels to circle for the sound of /ae/.

For additional practice, see worksheets in Section IV-B of the *Assessment and Remediation Guide*.

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

- Point to the Challenge Words on the board. Explain to students that the Challenge Words, *family* and *young*, are also part of their spelling list and are words used very often. Neither Challenge Word follows the spelling patterns for this week. Use the Challenge Words in sentences as examples for students: “My *family* is made up of my mom, my dad, and me.” “We have a *young* puppy that is not trained yet.”
- Remind students that this week, they once again have a Content Word. Review with them that the Content Word is a little harder than the other words. (If students try to spell the Content Word on the assessment and don’t get it right, they will not be penalized. Simply correct it as you do the other words and applaud their effort. There should not be a penalty for not trying or misspelling the Content Word. The important thing is that they tried something that was a stretch for them academically.)
- Tell students that the Content Word, *straight*, does not follow the spelling patterns for this week though the ‘aigh’ is pronounced /æ/. *Straight* is a content-related word defined as without a bend or a curve and describes light moving in straight lines.

- Now, draw the following table on the board:

'ay' > /ae/	'ai' > /ae/	'ea' > /ae/

- Ask students to refer to the spelling alternatives for /ae/ on the **Individual Code Chart page 3**. Point out that there are many spellings for /ae/ and ask students to name the different letters used to represent this sound.
- Ask students to tell you which words to list under the 'ay' > /ae/ header, the 'ai' > /ae/ header, and the 'ea' > /ae/ header. Briefly explain the meaning of each word.

'ay' > /ae/	'ai' > /ae/	'ea' > /ae/
subway	awaited	great
payment	explain	breaker
ballplayers	mermaid	beefsteak
yesterday	daisies	
crayons	obtain	
daydreams	dainty	
betrayed	trainees	
giveaway		
Challenge Word: family Challenge Word: young Content Word: straight		

- Ask students to look at the Individual Code Chart for all of the different spellings for /ae/.
- Ask students, "Of the seven spellings, which is used most frequently?" ("a") Remind students to look at the power bar under the spellings and the order in which they are sequenced to determine frequency.
- Tell students that although you are not reviewing the most frequently used spelling this week, they should remember that if ever they are trying to spell a word with the /ae/ sound and really don't know which spelling is used, their best bet is probably to try the spelling 'a' since it is the most frequent.

- Ask students to locate the three spellings for /ae/ in this week’s spelling words and determine whether they are frequently used spellings or not.
- Practice the words as follows during the remaining time. Call on a student to read any word on the chart. Then have the student orally use the word in a meaningful sentence. After the student says the sentence, have him/her ask the class: “Does that sentence make sense?” If the class says, “Yes,” then the student puts a check mark in front of the word and calls on another student to come to the front and take a turn. If the class says, “No,” have the student try again or call on another student to come to the front and use the word in a meaningful sentence. This continues until all the words are used or time has run out.
- Tell students that this table will remain on display until the assessment so that they may refer to it during the week.
- Tell students they will take home Worksheet 6.1 with this week’s spelling words to share with a family member.

Extension

30 minutes

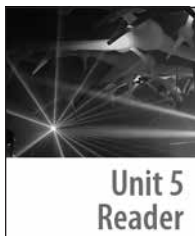
Follow Instructions

- Tell students that during this Extension lesson, they will practice following *instructions*.
- Have students turn to **page 26** in their reader.

Guided Reading Supports and Purpose for Reading

Pages 26–29

- Display the Vocabulary Card to preview *project* and discuss its definition. Note for students that *projected* and *projector* are also used in this chapter.
- Show students the projector you have for the activity.
- Ask students to read through the text of **pages 26–29** to find out what they will be doing shortly.
- Give students enough time to read through the text. If you have not already done so, assemble materials on the blank wall and floor, as students read.



Chapter 2

- Have one or two students read the *instructions* aloud to the rest of the class as you do what the *instructions* tell you to do.

Pages 30–31

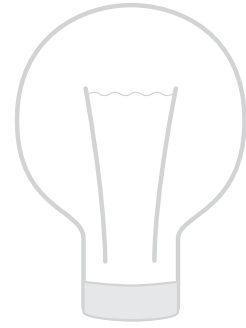
- Ask students to read the *instructions* on the pages to themselves.
- Allow students a few minutes to experiment in front of the projector.

Take-Home Material

Family Letter; “Mirrors and Reflections”; Shadow Puppets

Have students take home Worksheets 6.1 and 6.3 to share with a family member and Worksheet 6.2 to read to a family member.

Light

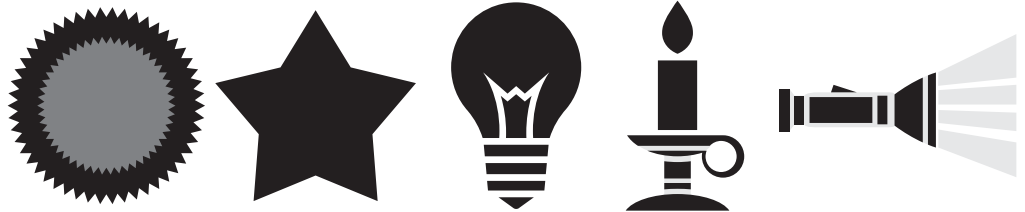


What is it?

ENERGY

How do we get it?

What is the source?



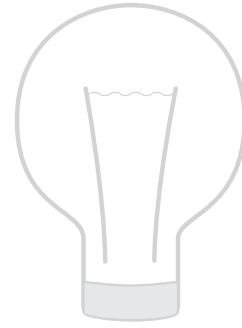
How fast does it travel?

186,000 MILES PER SECOND

How does it travel?



Light



What kind of object?	Transparent	Opaque	Shiny	Lenses
	Clear	Blocks Light	Reflects	Clear
What happens when it hits...?	Passes but slows	Makes Shadows	1. Plane (flat, same) 2. Concave (curves inward, heats) 3. Convex (curves outward, bigger, closer)	Curved
	Refraction	Far = little Close = big		Refraction
What kinds are there?				1. Convex (curves outward; magnifying glass) 2. Concave (curves inward; peephole)

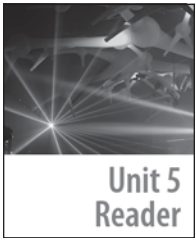
Lesson 7

✓ Objectives

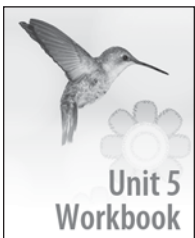
The following language arts objectives are addressed in this lesson. Objectives aligning with the Common Core State Standards are noted with the corresponding standard in parentheses. Refer to the Alignment Chart for additional standards addressed in all lessons in this unit.

- ✓ Independently reread “Refraction and Lenses” with purpose and understanding (RF.3.4a)
- ✓ Demonstrate preparedness for a discussion, having read “Refraction and Lenses,” explicitly drawing on preparation and other information known about refraction and lenses to explore content under discussion (SL.3.1a)
- ✓ During a discussion, explain ideas and understanding in relation to refraction and lenses (SL.3.1d)
- ✓ Use adjectives and explain their function in sentences (L.3.1a)
- ✓ Use adverbs and explain their function in sentences (L.3.1h)
- ✓ Produce compound sentences (L.3.1i)
- ✓ Produce complex sentences (L.3.1i)

<i>At a Glance</i>	Exercise	Materials	Minutes
Reading Time	Small Group: “Refraction and Lenses”	<i>Adventures in Light and Sound</i> ; Vocabulary Cards; Worksheets 1.1, 7.1	25
Grammar	Build Sentences	board or chart paper; Worksheet 7.2	25
Extension	Extend Student Knowledge	choice of material	30
Take-Home Material	“Refraction and Lenses”	Worksheet 7.3	*



Chapter 4



Worksheets 1.1, 7.1

Remember to use academic vocabulary when appropriate: *instructions* and *invent*.

Small Group: “Refraction and Lenses”

Re-introducing the Chapter

- Tell students that today, they will reread “Refraction and Lenses” independently or in small groups. Have students turn to Worksheet 1.1 to review what they learned in the previous lesson.

Reviewing the Vocabulary

- You may wish to review the vocabulary before rereading this chapter by referring to the displayed Vocabulary Cards.

Guided Reading Supports and Purpose for Reading

- Remind students that if they are confused or forget a word meaning as they read, they know how to look up a word in the glossary and find the definition.
- ★ **Small Group 1:** Ask these students to come to the reading table and read the chapter with you. Have students complete Worksheet 7.1 as they read. This is an excellent time for you to make notes in your anecdotal records.
- ★ **Small Group 2:** Ask these students to read the chapter independently at their desks and complete Worksheet 7.1 as they read.

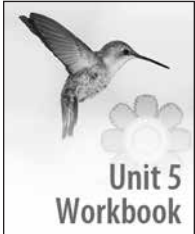
Wrap-Up

- Use the following questions to promote a discussion:

Discussion Questions on “Refraction and Lenses”

1. *Literal* How are concave and convex lenses helpful? (They both correct vision through eyeglasses. Also, scientists use microscopes and telescopes that have convex lenses and security cameras and peepholes that use concave lenses.)
2. *Literal* What is refraction and how does it relate to how dense something is? (the appearance of light bending when it moves from one medium to another; The denser the medium, the slower light travels. As light moves from traveling through a less dense medium to a denser medium, it refracts or bends.)

Build Sentences



Worksheet 7.2

- Tell students that during the past several weeks, they have been learning about adverbs that describe verbs. They have learned that adverbs ending in the suffix *-ly* can describe *how* the action of a verb takes place—*slowly, quickly, sadly*, etc. They have also learned other adverbs that describe *when* or *where* the action of a verb takes place—*today, soon, here, there*, etc.
- Tell students that when describing words are added to sentences, they make the sentences more interesting and informative. Ask students what other part of speech, besides adverbs, are also describing words (*adjectives*) and what they describe (*nouns*).
- Tell students that they are going to practice writing, or building, more interesting sentences by including adjectives, adverbs, and other kinds of words in sentences.
- Write the following sentence on chart paper or the board, asking students to read the sentence aloud and to then identify the subject and predicate of the sentence. Draw a line between the subject and predicate. (The snake | moved.)
- Tell students that while this sentence is a complete sentence, it is not a very interesting sentence and does not provide much information. Continue by saying that you will show them how they can make a more interesting sentence by adding adjectives, adverbs, and other interesting words.
- One way to make the sentence more interesting would be to add an adjective or two to describe the snake. Ask students to brainstorm words that could be used to describe the snake, prompting them to think of words to answer the question, “What did the snake look like?” Write down the suggested adjectives in a list on the board or chart paper.
- Another way to improve this sentence would be to add adverbs to describe the verb. Ask students to brainstorm words that could be used to answer the question, “How did the snake move?” Write these adverbs in a separate list.
- Now, ask students to brainstorm words that could be used to answer the question, “When did the snake move?” Write these adverbs and/or phrases in a separate list.

Note: Be aware that students may brainstorm *when* adverbs, such as *yesterday*, *never*, *again*, etc. that they have been specifically practicing in earlier lessons in this unit. They may, however, also brainstorm phrases such as *in the morning*, *ten minutes ago*, etc. A group of words that tells *when* is technically called an adverbial phrase. It is not necessary that your students know this grammatical term in third grade. If they question whether these words are adverbs, you can tell them that the phrase or group of words acts like an adverb.

- Now, ask students to brainstorm words that could be used to answer the question, “Where did the snake move?” Write these adverbs and/or phrases in a separate list.

Note: As previously noted, students may brainstorm *where* adverbs, such as *here*, *there*, *outside*, etc., that they have been specifically practicing in earlier lessons in this unit. They may also brainstorm other phrases such as *under a rock*, *near the lake*, etc. These phrases are also adverbial phrases, but it is not necessary that your students know this grammatical term in third grade. If they question whether these words are adverbs, you can tell them that the phrase or group of words acts like an adverb.

- Now, encourage students to look at words in the brainstormed lists and use one or more words to make a more interesting sentence. Call on several students and write down the sample sentences provided, so that students see that many different interesting sentences can be created from the brainstormed lists.
- If someone does not think to add more than one adjective to describe the snake and/or more than one adverb or adverbial phrase, model these possibilities. For example, you might write, “The long, slippery snake moved silently under the rock.”
- Finally, point to the word *moved* in each of the sample sentences and tell students that another way to make more interesting sentences is to use more descriptive vocabulary. Ask if students can think of any other words that are synonyms of the word *move*, perhaps words that might be more descriptive of a snake. (*crawled*, *slithered*, *wiggled*, etc.) Ask them to read one of the sample sentences aloud, substituting their new word, for example, “The long slippery snake slithered silently under a rock.”

- Ask students to turn to Worksheet 7.2, explaining that they are to use the same process to make more interesting and informative sentences with adjectives, adverbs, and synonyms on the worksheet.

Extension

30 minutes

Extend Student Knowledge

- Depending on students' needs, please choose from the following activities during this time:
 - Extension activities provided in the Pausing Point
 - Unit-specific writing prompts
 - Assessment and remediation activities outlined in the *Assessment and Remediation Guide* or remediation activities you deem appropriate
 - Reader's Chair, using Readers from previous units
 - Reader's Journal, using Readers from previous units

Take-Home Material

"Refraction and Lenses"

Have students take home Worksheet 7.3 to read to a family member.

Lesson 8

Morphology

✓ Objectives

The following language arts objectives are addressed in this lesson. Objectives aligning with the Common Core State Standards are noted with the corresponding standard in parentheses. Refer to the Alignment Chart for additional standards addressed in all lessons in this unit.

- ✓ Ask and answer questions to demonstrate understanding of “Color and Light,” referring explicitly to the text as the basis for the answers (RI.3.1)
- ✓ Ask and answer questions (e.g., *who, what, where, when, why, how*), orally or in writing, requiring literal recall and understanding of the details of “Color and Light” by explicitly referring to the text (RI.3.1)
- ✓ Determine the meaning of general academic words and domain-specific words and phrases relevant to color and light in “Color and Light” (RI.3.4)
- ✓ Describe images, orally or in writing, and how they contribute to what is conveyed by the words in “Color and Light” (RI.3.7)
- ✓ Interpret information from a graphic organizer relevant to color and light (RI.3.7)
- ✓ Decode words with common Latin suffixes *-ous* and *-ly* (RF.3.3b)
- ✓ Independently read grade-appropriate irregularly spelled words (RF.3.3d)
- ✓ Independently read “Color and Light” with purpose and understanding (RF.3.4a)
- ✓ Prior to independently reading “Color and Light,” identify what they know and have learned related to color and light (SL.3.1a)
- ✓ Use adjectives and explain their function in sentences (L.3.1a)
- ✓ Use adverbs and explain their function in sentences (L.3.1h)
- ✓ Produce compound sentences (L.3.1i)
- ✓ Produce complex sentences (L.3.1i)
- ✓ Use spelling patterns and generalizations (e.g., word families, position-based spelling) in writing words with /ae/ spelled ‘ay’, ‘ai’, and ‘ea’ (L.3.2f)
- ✓ Determine the meaning of words formed when *-ous* or *-ly* is added to a known root word (L.3.4b)
- ✓ Use a glossary to determine or clarify the precise meaning of key words and phrases (L.3.4d)
- ✓ Identify real-life connections between words and their use (e.g., people who are *joyous*, *famous*) (L.3.5b)

<i>At a Glance</i>	Exercise	Materials	Minutes
Reading Time	Whole Group Silent: "Color and Light"	<i>Adventures in Light and Sound</i> ; Vocabulary Cards; Worksheets 1.1, 8.1	25
Morphology	Introduce Suffixes -ous and -ly	board or chart paper; Worksheets 8.2–8.5	25
Grammar	Build Sentences	Worksheet 8.6	15
Spelling	Blank Busters	Worksheet 8.7	15
Take-Home Material		Worksheet 8.8	*

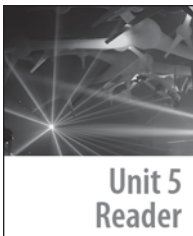
Advance Preparation

Prepare the following sentence strips in advance for the Morphology lesson; alternately you may write the sentences on the board or chart paper and cover them until you are ready to teach them to students.

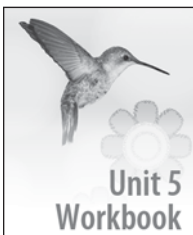
The boy is filled with joy.
 The boy sang with a joyous voice.
 The boy joyously sang the song.
 The large waves in the sea are full of danger.
 The large waves in the sea are dangerous.
 The large waves crashed dangerously on the beach.

Reading Time

25 minutes



Chapter 5



Worksheets 1.1, 8.1

Whole Group Silent: "Color and Light"

Introducing the Chapter

- Tell students that the title of today’s chapter is “Color and Light.”
- Ask students to turn to the Table of Contents, locate the chapter, and then turn to the first page of the chapter.
- Tell students that in preparation for the assessment that they will take next week, today they will read the entire chapter silently. After students read the chapter silently, you will add information to the Light Bulb Organizer as a class.

Remember to use academic vocabulary when appropriate: *instructions* and *invent*.

- Review the information students have added to the Light Bulb Organizer so far.
- Ask students what they learned about color and light from Lesson 4 in Listening & Learning. Topics covered during that lesson include:
 - spectrum
 - reflect and absorb
 - prism
 - colors and wavelengths

Previewing the Vocabulary

- Following your established procedures, preview the vocabulary as well as assist students who need help with decoding. Since students will be reading silently, make sure to display the image for the chapter and preview both the vocabulary words and the alternate forms of the vocabulary words used in the chapter before they begin reading.

Vocabulary for “Color and Light”

1. **pris|m***—a wedge-shaped piece of transparent glass that breaks up light into all the colors of the spectrum (60)
 2. **spec|trum***—the distribution of all the colors that make up the light we see (64)
 3. **in|di|go**—a dark purplish-blue color (64)
 4. **ma|te|ri|al**—cloth or fabric (66)
 5. **ul|tra|vio|let**—short, invisible light waves, beyond violet on the spectrum, that cause sunburn (68)
 6. **in|fra|red**—long light waves, beyond red on the spectrum, that can only be seen with special instruments (70)
 7. **re| mote con| trol**—a device that uses infrared waves to operate equipment, such as a TV, from a distance (70)
- After previewing the Vocabulary Cards, remind students that as they are reading, if they do not recall the meaning of a word, they can always look it up in the glossary.
 - Before students start reading, take a few moments to go through the chapter, looking at the images and reading the captions.

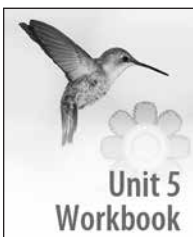
- Tell students that they should read to find out how we can see color from light. Tell them that they will add information to the Light Bulb Organizer as a class after they finish reading.
- Have students complete Worksheet 8.1, taking notes as they read.
- As students read silently, you should circulate throughout the room, lending assistance as needed.
- When students have finished reading, begin a class discussion about the kinds of light to address the question “What kinds are there?” on the Light Bulb Organizer.
- Have students add the following to the Light Bulb Organizer:
 - To answer the question “**What kinds are there?**”: Write *Visible white light* on the left side and *Invisible* on the right side.
 - Below *Visible white light*, write *red, orange, yellow, green, blue, indigo, violet*; You may wish to have students draw a rainbow with the colors in the correct order.
 - Below the list of colors, draw an arrow pointing down and write *reflects one, absorbs all others* to note how we see something as a certain color.
 - Below *Invisible*, write *ultraviolet rays (sunburn), infrared rays (remote control), and x-rays (pictures of bones)*.

Wrap-up

- Have students review and discuss the information they added to the Light Bulb Organizer.

Morphology

25 minutes



Worksheets 8.2–8.5

For additional practice, see Pausing Point Worksheet PP17.

Introduce Suffixes *-ous* and *-ly*

- Remind students that suffixes are added to the end of a root word.
- Tell students that the two suffixes they will study this week are *-ous* and *-ly*.
- Write the suffixes on the board and point out that the suffix *-ous* is pronounced /us/, like the tricky spelling in *cousin* and *-ly* is pronounced /lee/.

Adding Suffix *-ous*

- Explain to students that *-ous* means “full of.”
- Tell students that in this part of the lesson, they will add the suffix *-ous* to root words that are all nouns. When *-ous* is added to a noun, the word becomes an adjective.
- Write the word *joy* on the board. Briefly discuss the meaning of the word and then use it in a sentence. (a feeling of great happiness; At the celebration, everyone was filled with *joy*.)
- Add the suffix *-ous* to *joy* and have students read the suffix, read the new word, and then discuss the meaning of the new word. (full of a feeling of great happiness)
- Ask students to provide sentences using the word *joyous*. (Answers may vary.)
- Ask students for synonyms of *joyous*. (happy, cheerful, merry)
- Continue in this manner for the remaining *-ous* words, using the following chart as a guide.

Note: You will not write the information in the shaded columns on the board as that information is intended for use during oral instruction.

- Point out for students that for the word *fame*, the ‘e’ must first be dropped before adding *-ous*. Also point out that for *mystery* and *fury*, ‘y’ is changed to ‘i’ before adding *-ous*.

Root Word	Meaning	Affixed Word	Meaning and Synonyms	Sentence
danger	(noun) the chance that something bad will happen	dangerous	(adjective) full of the chance that something bad will happen Synonyms: unsafe, risky	The <u>dangerous</u> fire blazed out of control.
mountain	(noun) land that rises very high above its surroundings	mountainous	(adjective) full of land that rises very high above its surroundings Synonyms: steep, high, rocky	The <u>mountainous</u> road was very windy.
poison	(noun) a substance that can hurt or kill people or animals if touched, swallowed, or inhaled	poisonous	(adjective) full of a substance that can hurt or kill people or animals if touched, swallowed, or inhaled Synonyms: toxic, deadly	Watch out for <u>poisonous</u> snakes!
fame	(noun) the state of being well-known	famous	(adjective) full of the state of being well-known Synonyms: well-known, legendary	The Statue of Liberty is a <u>famous</u> statue.
mystery	(noun) something that is hard to understand	mysterious	(adjective) full of something that is hard to understand Synonyms: strange, puzzling	A <u>mysterious</u> letter with no name or address was in my mailbox.
fury	(noun) extreme anger or force	furious	(adjective) full of extreme anger or force Synonyms: mad, upset, violent	The <u>furious</u> preschooler had a temper tantrum.
humor	(noun) a funny or amusing quality	humorous	(adjective) full of a funny or amusing quality Synonyms: hilarious, entertaining, silly	The <u>humorous</u> joke made us all laugh.

Adding Suffix *-ly*

- Explain to students that *-ly* means “in a _____ way” with the blank being the word that *-ly* is added to.
- Tell students that they will now add the suffix *-ly* to the words they previously added *-ous* to. When *-ly* is added to an adjective, the word becomes an adverb.
- Tell students that adverbs with *-ly* describe verbs, specifically *how* a verb happens. Remind students that they learned about these adverbs in Grammar earlier in this unit.
- Write the word *dangerous* on the board. Briefly discuss the meaning of the word and then use it in a sentence. (full of the chance that something bad will happen; The *dangerous* broken glass covered the parking space.)
- Add the suffix *-ly* to *dangerous* and have students read the suffix, read the new word, and then discuss the meaning of the new word. (in a dangerous way)
- Ask students to provide sentences using the word *dangerously*. (Answers may vary.)
- Continue in this manner for the remaining *-ly* words, using the following chart as a guide.

Note: You will not write the information in the shaded columns on the board as that information is intended for use during oral instruction.

- Point out to students that not all of the *-ous* words they learned will have *-ly* added to them.

Root Word	Meaning	Affixed Word	Meaning	Sentence
famous	(adjective) full of the state of being well-known	famously	(adverb) in a famous way	The governor <i>famously</i> spoke about the plans he had to improve the state government.
mysterious	(adjective) full of something that is hard to understand	mysteriously	(adverb) in a mysterious way	My new pen has <i>mysteriously</i> disappeared.
furious	(adjective) full of extreme anger or force	furiously	(adverb) in a furious way	The child <i>furiously</i> threw down his toy when he realized he couldn't have a different one.
humorous	(adjective) full of a funny or amusing quality	humorously	(adverb) in a humorous way	My sister <i>humorously</i> kneaded the dough for bread since it was her first time and quite messy.

Comparing Sentences with Affixed Words

- Direct students' attention to the first sentence you prepared in advance:

The boy is filled with joy.

- Ask students, "What is the boy filled with?" They should respond *joy*. Ask them for the part of speech (noun) and draw a circle around the word *joy*.
- Then, display the next sentence:

The boy sang with a joyous voice.

- Ask students what the boy sang with. (*voice*) Draw a circle around *voice*, stating that it is a noun.
- Ask students, "What kind of voice did the boy use?" (*joyous*) Draw a box around *joyous* and then draw an arrow to *voice*, stating that *joyous* is an adjective that describes the noun *voice*.
- Now, display the next sentence:

The boy joyously sang the song.

- Ask students, “What did the boy do?” (*sang*) Draw a wiggly line under *sang* and identify it as a verb.
- Then ask students, “How did the boy sing?” (*joyously*). Draw a triangle around *joyously*, stating that it is an adverb. Remind students that adverbs ending in *-ly* describe verbs, telling *how*. Draw an arrow from *joyously* to *sang*.
- Repeat the same process and demonstration with the second set of sentences.
- Complete Worksheets 8.2–8.5 in the same manner in which you have completed these worksheets in previous lessons.

Grammar

15 minutes

Build Sentences



Worksheet 8.6

- Ask students to turn to Worksheet 8.6 and create more interesting sentences by adding adjectives, adverbs, and synonyms.

Spelling

15 minutes

Blank Busters



Worksheet 8.7

For additional practice, see worksheets in Section IV-B of the *Assessment and Remediation Guide*.

- Tell students that they will practice writing their spelling words for the week.
- Tell students to turn to Worksheet 8.7. Note for students that some sentences have two blanks.
- Point out to students that the spelling words are listed in the box on the worksheet and on the board. Students may also have to add an appropriate suffix to have the sentence make sense: *-s*, *-es*, *-ing*, or *-ier*.
- Ask students to read the statement in **number 1** silently and fill in the blank. When students have completed **number 1**, call on one student to read **number 1** aloud with the spelling word in the blank.

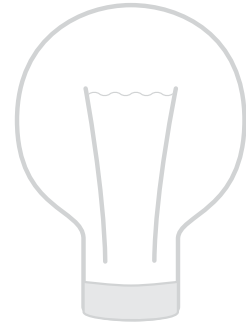
- Ask students if anyone had a different answer. Discuss the correct answer to be sure students understand why it is correct.
- Discuss the proper spelling of the word in the blank, referencing the table of this week's spelling words. Have students compare their spelling with the spelling in the table.
- Have students move to **number 2** and fill in the blank on their own.
- Follow the previous steps to discuss the correct answers for the remaining items on the worksheet.
- Remind students that on the spelling assessment, they will have to write the spelling words and the Challenge Words. Students are encouraged to try spelling the Content Word but if they try and don't get it right, they will not be penalized.

Take-Home Material

"Color and Light"

Have students take home Worksheet 8.8 to read to a family member.

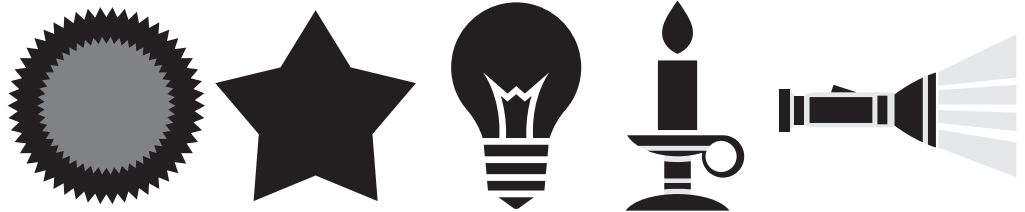
Light



What is it?

ENERGY

How do we get it?



What is the source?

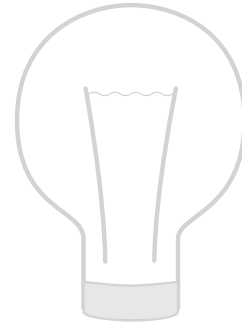
How fast does it travel?

186,000 MILES PER SECOND

How does it travel?



Light



What kind of object?	Transparent	Opaque	Shiny	Lenses
	Clear	Blocks Light	Reflects	Clear
What happens when it hits...?	Passes but slows	Makes Shadows	1. Plane (flat, same) 2. Concave (curves inward, heats) 3. Convex (curves outward, bigger, closer)	Curved
	Refraction	Far = little Close = big		Refraction
What kinds are there?	Visible white light		Invisible	
	<hr/> red, orange, yellow, green, blue, indigo, violet ↓ reflects one, absorbs all others		<hr/> ultraviolet rays (sunburn) <hr/> infrared rays (remote control) <hr/> x-rays (pictures of bones)	

Lesson 9

✓ Objectives

The following language arts objectives are addressed in this lesson. Objectives aligning with the Common Core State Standards are noted with the corresponding standard in parentheses. Refer to the Alignment Chart for additional standards addressed in all lessons in this unit.

- ✓ Ask and answer questions to demonstrate understanding of “What Is Sound?” referring explicitly to the text as the basis for the answers (RI.3.1)
- ✓ Ask and answer questions (e.g., *who, what, where, when, why, how*), orally or in writing, requiring literal recall and understanding of the details of “What Is Sound?” by explicitly referring to the text (RI.3.1)
- ✓ Determine the meaning of general academic words and domain-specific words and phrases relevant to sound in “What Is Sound?” (RI.3.4)
- ✓ Describe images, orally or in writing, and how they contribute to what is conveyed by the words in “What Is Sound?” (RI.3.7)
- ✓ Interpret information from a graphic organizer relevant to sound (RI.3.7)
- ✓ Decode words with common Latin suffixes *-ous*, and *-ly* (RF.3.3b)
- ✓ Independently read grade-appropriate irregularly spelled words (RF.3.3d)
- ✓ Independently read “What Is Sound?” with purpose and understanding (RF.3.4a)
- ✓ Use adjectives and explain their function in sentences (L.3.1a)
- ✓ Use adverbs and explain their function in sentences (L.3.1h)
- ✓ Produce compound sentences (L.3.1i)
- ✓ Produce complex sentences (L.3.1i)
- ✓ Use spelling patterns and generalizations (e.g., word families, position-based spelling) in writing words with /ae/ spelled ‘ay’, ‘ai’, and ‘ea’ (L.3.2f)
- ✓ Determine the meaning of words formed when *-ous* or *-ly* is added to a known root word (L.3.4b)
- ✓ Use a glossary to determine or clarify the precise meaning of key words and phrases (L.3.4d)
- ✓ Identify real-life connections between words and their use (e.g., people who are *dangerous, furious*) (L.3.5b)

<i>At a Glance</i>	Exercise	Materials	Minutes
Reading Time	Whole Group: "What Is Sound?"	<i>Adventures in Light and Sound</i> ; Vocabulary Cards; Worksheets 9.1, 9.2	25
Grammar	Grammar Review	Worksheet 9.3	25
Morphology	Practice Suffixes -ous and -ly	board or chart paper; Worksheet 9.4	15
Spelling	Word Sort	Worksheet 9.5	15
Take-Home Material	"What Is Sound?"	Worksheet 9.6	*

Advance Preparation

It will be helpful to have a copy of the Grammar worksheet ready to display today so that students are able to see you mark the correct answers to each item as they review their completed worksheet with you.

Write the following sentences on the board or chart paper for use during the Morphology lesson:

1. I wear a helmet when I ride my bike because it is _____ to ride without a helmet on the road with cars.
2. Rachel _____ grabbed her coat when she realized she would have to walk to school in the rain after missing the bus.
3. My cousin grew up in a _____ area so he likes to hike, ski, and rock climb.

Write the following example on the board or chart paper to be used during the Spelling lesson:

'ay' > /ae/

'ai' > /ae/

'ea' > /ae/

failed

blazes

statement

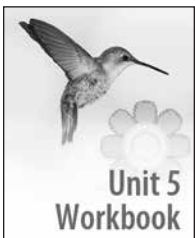
says

greatly

daytime



Chapter 6



Worksheets 9.1, 9.2

Whole Group: “What Is Sound?”

Note to Teacher

The next several chapters introduce the concept of sound and its characteristics. You will help students complete a *graphic* organizer about sound as they read each chapter, just as you did with light. A completed version of this organizer, called the Bell Organizer, is found on the last page of Lesson 11 in this Teacher Guide. The student version is found on Worksheet 9.1. As students read Chapters 6–8, you will guide them through adding information to this organizer using the Guided Reading Supports in each lesson. This organizer is included as a way to help students understand concepts and characteristics related to sound. Please make sure that students keep the Bell Organizer in their Workbook to access during each of Chapters 6–8 about sound.

Introducing the Bell Organizer

- Ask students to turn to Worksheet 9.1. Tell students that this is the Bell Organizer and that they will use it to help them understand what they learn about sound. They will complete this in a similar fashion to the Light Bulb Organizer.
- Ask students to look over the organizer and note its features. (the shape beside the title, the questions, the different sections)
- Tell students that as they read the chapters in this unit about sound, you will help them fill in the organizer. The organizer will help them remember what they learn about sound. Tell them that when they have read all the chapters about sound, the organizer will be complete and students will have something to keep that summarizes the information they learned.

Introducing the Chapter

- Tell students that the title of today’s chapter is “What Is Sound?” Tell them that they will learn many interesting facts about sound.
- Ask students to turn to the Table of Contents, locate the chapter, and then turn to the first page of the chapter.

Previewing the Vocabulary

- Following your established procedures, preview the vocabulary as well as assist students who need help with decoding.

Vocabulary for “What Is Sound?”

1. **vo|cal cords***—muscles that produce sound when air passes over them (72)
2. **sound wave***—a series of vibrations that can be heard (**sound waves**) (74)
3. **me|di|um***—a substance that light or sound can travel through, like a solid, a liquid, or a gas (**mediums**) (74)

Guided Reading Supports and Purpose for Reading

Pages 72–73

- Read the title of the chapter together as a class, “What Is Sound?”
- Display the image for this chapter and the Vocabulary Card to preview *vocal cords* and discuss its definition.
- Draw students’ attention to the picture on **page 73** and read the caption aloud.
- Ask students, “Why do you think there is a image of a person humming in a chapter about sound?” (Answers may vary.)
- Have students read **page 72** to themselves to find the answer to the question: “What causes sound?”
- When students have finished reading, restate the question and call on a student to answer. (Sound is caused by vibrations, when something moves back and forth very quickly.)
- Have students hum while feeling their throats just under the chin. Ask them to pay attention to the “buzzing” feeling in their throats.
- Have students give you a thumbs up if they feel the “buzzing” vibration.
- Ask, “What in your throats is causing the vibration?” (When you hum, the vocal cords in your throat vibrate back and forth.)

- Have students add the following to the Bell Organizer:
 - To answer the question, “**What is it?**”: Write the word *VIBRATION*.

Pages 74–75

- Display the Vocabulary Cards to preview *sound wave* and *medium* and discuss definitions. Note for students that *sound waves* and *mediums* are used in this chapter.
- Direct students’ attention to the top image on **page 75** and read the caption aloud as a class.
- Say to students, “I wonder what sound waves are. Let’s read **page 74** to find out more.”
- When students have finished reading, restate the question and have students answer. (Sound waves move out from a vibrating object, making the air move back and forth in a way that we can’t see.)
- Ask, “What two things are needed to create sound?” (The two things needed to create sound are something to vibrate and create sound waves and something, like air or another medium, to carry the sound waves.)
- Ask, “Why are some sounds easier to hear than others?” (The farther away sound waves spread out from their source, the weaker they get.)
- Direct students’ attention to the bottom images on **page 75** and ask them to read the caption.
- Have students add the following to the Bell Organizer:
 - To answer the question “**How do we get it?**”: Write *VIBRATING WAVES* and draw a wavy line under the words.

Pages 76–77

- Ask students to read **page 76** to themselves to find the answer to the question: “Through what mediums does sound travel?”
- When students have finished reading, restate the question and have students answer. (Answers may vary but should at least include solids, liquids, and/or gases.)
- Direct students’ attention to the images on **page 77**. Have one student read the caption to the class.

- Ask students, “What is one place where sound cannot travel and why is that so?” (Outer space is one place sound cannot travel because outer space is a vacuum. Sound needs a medium to carry it and there is no air in a vacuum.)
- Have students add the following to the Bell Organizer:
 - To further answer the question, “**How do we get it?**”: Under the wavy line, have students write the word *medium* and shade the area behind the word.

Pages 78–79

- Ask students to read **pages 78–79** to themselves to find the answer to the question: “Which travels faster, sound or light?”
- When students have finished reading, restate the question and have students answer. (Light travels much faster.)
- Remind students that light travels at different speeds depending on what it is traveling through. Ask, “Does sound travel at a different speed than light? How do you know?” (Yes, because you can see lightning before you hear thunder.)
- Have students add the following to the Bell Organizer:
 - In the row labeled “**Speed of Sound vs. Speed of Light**”: Write *SOUND, 750 Miles Per Hour* on the left and draw a snail underneath. Write *LIGHT, 186,000 Miles Per Second* on the right and draw a rabbit underneath.

Pages 80–81

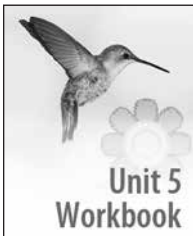
- Have students read **pages 80–81** to themselves to find the answer to the question: “Does sound travel faster through a solid or a gas?”
- When students have finished reading, restate the question and have students answer. (Sound travels faster through a solid.)
- Ask students to tap their desk with their fingers and listen. Then, have students put one ear down on their desks and listen to the tapping again. Ask, “Which is louder, when you have your head up or when your ear is on the desk?” (when your ear is on the desk)
- If there is time, have students try listening through other mediums, such as a piece of paper, the classroom door, or a window, and share their experiences.

- As students add the following to their Bell Organizer, tell them that even though the chapter didn't mention liquids on this page, sound travels faster through liquids than gases but not as fast as through solids. (Refer back to the illustration on **page 77**.)
- Have students add the following to Bell Organizer:
 - To answer the question "**How does it travel?**": Write *FASTEST* and *SOLID (DOOR)* and draw a door.
 - Write *FASTER* and *LIQUID (WATER)* and draw a glass of water.
 - Write *FAST* and *GASES (AIR)* and draw a picture of squiggly lines to show air.
 - Write *CANNOT TRAVEL* and *VACUUM (SPACE)* and draw stars.
 - Have students complete Worksheet 9.2 independently.

Grammar

25 minutes

Grammar Review



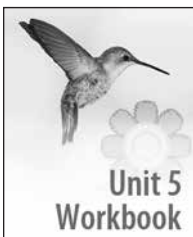
Worksheet 9.3

- Tell students to turn to Worksheet 9.3 and complete the page independently. Allow students 10–15 minutes to complete the worksheet.
- Once students have completed the worksheet, display a copy of Worksheet 9.3 so that it is visible to all students. Work through each item, reviewing the answers with the entire class.

Morphology

15 minutes

Practice Suffixes *-ous* and *-ly*



Worksheet 9.4

- Tell students that today, they will practice how to determine whether words in sentences should have the suffix *-ous* or have both the suffixes *-ous* and *-ly*.
- Direct students' attention to the first sentence you wrote on the board in advance:

I wear a helmet when I ride my bike because it is _____ to ride without a helmet on the road with cars.

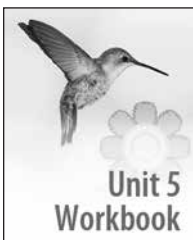
- Call on one student to read the sentence aloud.

- Ask students what word, either with the suffix *-ous* or with both the suffixes *-ous* and *-ly*, goes in the blank. Students should say *dangerous*.
- Ask students what part of speech the word is that correctly fills in the blank. (adjective)
- Discuss with students why *dangerous* fits in the blank and not *dangerously*. (The word that will fill in the blank will describe a noun. Adjectives describe nouns. *Dangerous* is an adjective. *Dangerously* is an adverb, which is a part of speech that describes verbs. That is not the part of speech that will correctly fit in this blank.)
- Follow the same procedures for the other two sentences you prepared in advance. (For sentence #2, the word that will fit in the blank will describe a verb. Adverbs are words that describe verbs. *Furiously* is the adverb that fits in this sentence. For sentence #3, the word that will fit in the blank will describe a noun. Adjectives describe nouns. *Mountainous* is the adjective that fits in this sentence.)
- Have students turn to Worksheet 9.4. Ask students to work with a partner to complete the worksheet. If time permits, you may wish to review the correct answers as a class.

Spelling

15 minutes

Word Sort



Worksheet 9.5

For additional practice, see worksheets in Section IV-B of the *Assessment and Remediation Guide*.

- Tell students they will sort words with /ae/ spelled ‘ay’, ‘ai’, and ‘ea’.
- Direct students’ attention to the example on the board.
- Ask students to identify the vowel patterns. (‘ay’ > /ae/, ‘ai’ > /ae/, ‘ea’ > /ae/)
- Tell students to read the words below the headers with you. (*failed*, *blazes*, *statement*, *says*, *greatly*, *daytime*)
- Ask students which vowel(s) in the word *failed* have the same sound as /ae/. Circle the ‘ai’ in *failed*. Ask students under which header to put *failed*. (‘ai’ > /ae/) Write the word under the correct header.
- Repeat with the remaining words.

- Note for students that *blazes*, *statement*, and *says* do not belong under any header as they do not follow any of the patterns listed. Ask students what vowels make the /ae/ sound in *blazes* and *statement*. ('a_e') Note for students that *says* is pronounced /sez/.
- Have students turn to Worksheet 9.5 and complete it independently.

Take-Home Material

“What Is Sound?”

Have students take home Worksheet 9.6 to read to a family member.

Sound



What is it?

VIBRATION

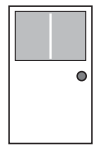
How do we get it?

VIBRATING WAVES



MEDIUM

How does it travel?



FASTEST
SOLID (DOOR)



FASTER
LIQUID (WATER)



FAST
GASES (AIR)



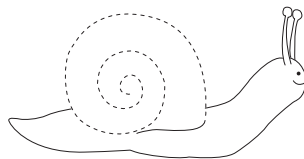
CANNOT TRAVEL
VACUUM (SPACE)

Speed of Sound

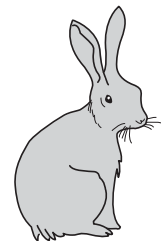
vs

Speed of Light

SOUND
750 Miles Per Hour



LIGHT
186,000 Miles Per Second



Lesson 10

✓ Objectives

The following language arts objectives are addressed in this lesson. Objectives aligning with the Common Core State Standards are noted with the corresponding standard in parentheses. Refer to the Alignment Chart for additional standards addressed in all lessons in this unit.

- ✓ Ask and answer questions to demonstrate understanding of “Characteristics of Sound,” referring explicitly to the text as the basis for the answers (RI.3.1)
- ✓ Ask and answer questions (e.g., *who, what, where, when, why, how*), orally or in writing, requiring literal recall and understanding of the details of “Characteristics of Sound” by explicitly referring to the text (RI.3.1)
- ✓ Ask and answer questions that require giving opinions about what the world would be like if all sounds were the same pitch and volume (RI.3.1)
- ✓ Determine the meaning of general academic words and domain-specific words and phrases relevant to sound in “Characteristics of Sound” (RI.3.4)
- ✓ Describe images, orally or in writing, and how they contribute to what is conveyed by the words in “Characteristics of Sound” (RI.3.7)
- ✓ Interpret information from a graphic organizer relevant to sound (RI.3.7)
- ✓ Independently read “Characteristics of Sound” with purpose and understanding (RF.3.4a)
- ✓ Prior to independently reading “Characteristics of Sound,” identify what they know and have learned related to sound (SL.3.1a)
- ✓ Use adjectives and explain their function in sentences (L.3.1a)
- ✓ Use adverbs and explain their function in sentences (L.3.1h)
- ✓ Produce compound sentences (L.3.1i)
- ✓ Produce complex sentences (L.3.1i)
- ✓ Use a glossary to determine or clarify the precise meaning of key words and phrases (L.3.4d)
- ✓ Use a beginning dictionary, both print and digital, to determine or clarify the precise meaning of key words and phrases (L.3.4d)

At a Glance	Exercise	Materials	Minutes
Spelling	Spelling Assessment	Worksheet 10.1; optional pens	25
Reading Time	Whole Group: “Characteristics of Sound”	<i>Adventures in Light and Sound</i> ; Worksheets 9.1, 10.2	25
Grammar	Build Sentences	Worksheet 10.3	15
Spelling	Practice Dictionary Skills	Worksheet 10.4	15

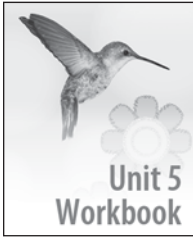
Advance Preparation

Make sure to erase the spelling table from the board and/or turn the table over so that students cannot refer to it during the assessment.

Spelling

25 minutes

10 Spelling Assessment



Worksheet 10.1

For additional practice, see worksheets in Section IV-B of the *Assessment and Remediation Guide*.

- Have students turn to Worksheet 10.1 for the spelling assessment.
- If you would like for students to have pens, this is the time to pass them out.
- Tell students that for this assessment, they will write their words under the header to which they belong. For example, if you call out the word *hay*, they would write that word under the header 'ay' > /ae/.
- Tell students that should a spelling word fit under more than one header, they should only write the word under one.
- Tell students that they may not have to use all the lines under each header.
- Using the list below, call out the word using the following format: say the word, use it in a sentence, and say the word once more.

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

- After you have called out all of the words including the Challenge Words and the Content Word, go back through the list slowly, reading each word just once more.
- Ask students to write the following sentences as you dictate them:

1. Gail is the greatest ballplayer on the team.
2. Our art teacher asked us to add color to the sailboat with crayons.

- After students have finished, collect pens, if used.
- Follow your established procedures to correct the spelling words and the dictated sentences.

Note to Teacher

At a later time today, you may find it helpful to use the template provided at the end of this lesson to analyze students' mistakes. This will help you understand any patterns that are beginning to develop, or that are persistent among individual students.

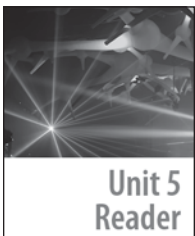
Reading Time

25 minutes

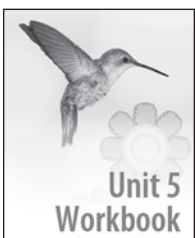
Whole Group: "Characteristics of Sound"

Introducing the Chapter

- Review with students what they learned about sound in the previous chapter by referring to the Bell Organizer on Worksheet 9.1.
- Using the *graphic* organizer, remind students of the following:
 - Sound is caused by vibrations.
 - Sound travels through mediums.
 - Sound travels fast through gases, faster through liquids, and fastest through solids. Sound cannot travel through space because it is a vacuum and sound needs a medium in order to travel.
 - Sound travels slower than light.
- Remind students that in an earlier Listening & Learning lesson in this unit, they heard Jack and Samuel talking about pitch, intensity, and frequency.



Chapter 7



Worksheets 9.1, 10.2

- Ask students to spend a few moments recalling what Jack and Samuel said about pitch, intensity, and frequency. (Pitch describes how high or low a sound is. The greater the intensity, or power, of a sound wave, the louder the sound. Frequency is the rate at which sound waves are produced and a long wavelength means the sound has a low frequency.)
- Tell students that the title of today’s chapter is “Characteristics of Sound.”
- Ask students to turn to the Table of Contents, locate the chapter, and then turn to the first page of the chapter.

Previewing the Vocabulary

- Following your established procedures, preview the vocabulary as well as assist students who need help with decoding.

Vocabulary for “Characteristics of Sound”

1. **pitch***—how high or low a sound is (**pitched**) (84)
2. **volume**—the loudness or intensity of a sound (88)
3. **intense***—strong (**intensity**) (88)
4. **damage**—hurt, harm (90)

Guided Reading Supports and Purpose for Reading

Pages 82–83

- Draw students’ attention to the images on **page 83** and read the caption.
- Ask students to read **page 82** to themselves to find ways in which sound and light are the same and different.
- When students have finished reading, restate the question and ask one student to answer. (similarities: both are forms of energy that travel in waves; differences: sound needs a medium, light does not; light travels faster than sound)

Pages 84–85

- Display the image for this chapter and the Vocabulary Card to preview *pitch* and discuss its definition. Note for students that *pitched* is used in this chapter.

- Ask students to look at the images on **page 85**.
- Read the caption, “Both of these sounds travel through air. How are they different?”
- Ask students to read **page 84** to themselves to find out how these sounds are different.
- When students have finished reading, restate the question and call on a student to answer. (The baby makes a high-pitched “screeching” sound and an adult yelling makes a low-pitched, deep sound.)
- Have students add the following to the Bell Organizer:
 - In the row marked **Pitch**: On the left side, draw a picture of a baby crying, write *HIGH PITCH* near it, and draw a sound wave with many wavelengths that are close together.
 - In the row marked **Pitch**: On the right side, draw a picture of an owl hooting, write *LOW PITCH* near it, and draw a sound wave with few wavelengths that are far apart.

Pages 86–87

- Ask students to read **page 86** to themselves to find the answer to the question: “What creates changes in pitch? Why is one sound high-pitched and another low-pitched?”
- When students have finished reading, restate the questions and have students answer. (Faster vibrations produce shorter sound waves, which make sounds with a higher pitch. Slower vibrations produce sounds with longer sound waves, which make sounds with a lower pitch.)
- Then, ask students, “What kind of vibrations produce the sound waves of a baby crying?” (faster vibrations)
- Finally, ask students, “What kind of vibrations produce the sound waves of an adult yelling?” (slower vibrations)

Pages 88–89

- Display the Vocabulary Cards to preview *volume* and *intense* and discuss definitions. Note for students that *intensity* is also used in this chapter.
- Draw students’ attention to the images on **page 89**. Have one student read the caption to the class.

- Ask students to read **page 88** to themselves to find the answer(s) to the question: “What are features of loud sounds?”
- When students have finished reading, restate the question and ask them to read the answer(s) from the page. (Loud sounds have more intensity. A loud sound travels far, much farther than a quiet sound.)
- Have students add the following to the Bell Organizer:
 - In the row marked **Volume**: Write *LOUD* in large capital letters.
 - In the row marked **Volume**: Write *soft* in much smaller, lowercase letters.

Pages 90–91

- Display the Vocabulary Card to preview *damage* and discuss its definition.
- Have students read **pages 90–91** to themselves, noting why the word *damage* would be a vocabulary word in this chapter.
- Ask students, “What should you do to protect your hearing from loud sounds? (Answers may vary but could include use ear plugs, turn the volume down, etc.)

Wrap-Up

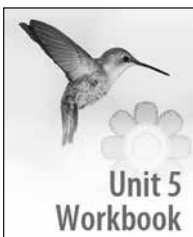
- Review with students the information they added to the Bell Organizer from this chapter.
- Have students complete Worksheet 10.2 independently.

Grammar

15 minutes

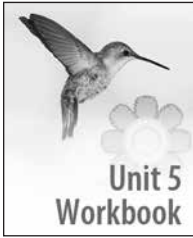
Build Sentences

- Tell students to take out Worksheet 10.3 and add adjectives, adverbs, and synonyms to the starter sentences to make more interesting sentences.



Worksheet 10.3

Practice Dictionary Skills



Worksheet 10.4

- Remind students that in a previous lesson, they learned about many different parts of a dictionary.
- Review the various components of the dictionary such as entry words, numbers of word meanings, and parts of speech.
- Ask students to complete Worksheet 10.4 independently or as a teacher-guided activity.

Spelling Analysis Chart

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

Spelling Analysis Directions

Unit 5, Lesson 10

For additional practice, see worksheets in Section IV-B of the *Assessment and Remediation Guide*.

- Students are likely to make the following errors:
 - For ‘ay’, students may write ‘ai’ or ‘ea’
 - For ‘ai’, students may write ‘ay’ or ‘ea’
 - For ‘ea’, students may write ‘ay’ or ‘ai’
- While the above student-error scenarios may occur, you should be aware that misspellings may be due to many other factors. You may find it helpful to record the actual spelling errors that the student makes in the analysis chart. For example:
 - Is the student consistently making errors on specific vowels? Which ones?
 - Is the student consistently making errors at the end of the words?
 - Is the student consistently making errors on particular beginning consonants?
- Did the student write words for each feature correctly?
- Also, examine the dictated sentences for errors in capitalization and punctuation.

Sound



What is it?

VIBRATION

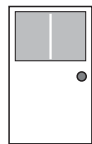
How do we get it?

VIBRATING WAVES



MEDIUM

How does it travel?



FASTEST
SOLID (DOOR)



FASTER
LIQUID (WATER)



FAST
GASES (AIR)



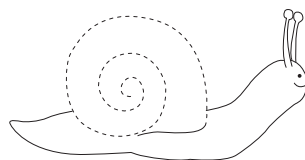
CANNOT TRAVEL
VACUUM (SPACE)

Speed of Sound

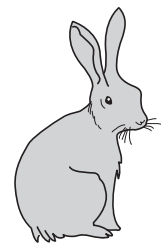
vs

Speed of Light

SOUND
750 Miles Per Hour



LIGHT
186,000 Miles Per Second



Sound



Pitch

HIGH PITCH



LOW PITCH



Volume

LOUD

soft

**Human
Voices**

Lesson 11

Spelling

✓ Objectives

The following language arts objectives are addressed in this lesson. Objectives aligning with the Common Core State Standards are noted with the corresponding standard in parentheses. Refer to the Alignment Chart for additional standards addressed in all lessons in this unit.

- ✓ Ask and answer questions to demonstrate understanding of “The Human Voice,” referring explicitly to the text as the basis for the answers (RI.3.1)
- ✓ Ask and answer questions (e.g., *who, what, where, when, why, how*), orally or in writing, requiring literal recall and understanding of the details of “The Human Voice” by explicitly referring to the text (RI.3.1)
- ✓ Determine the meaning of general academic words and domain-specific words and phrases relevant to the human voice in “The Human Voice” (RI.3.4)
- ✓ Describe images, orally or in writing, and how they contribute to what is conveyed by the words in “The Human Voice” (RI.3.7)
- ✓ Interpret information from a graphic organizer relevant to sound (RI.3.7)
- ✓ Independently read grade-appropriate irregularly spelled words (RF.3.3d)
- ✓ Independently read “The Human Voice” with purpose and understanding (RF.3.4a)
- ✓ Prior to independently reading “The Human Voice,” identify what they know and have learned related to the human voice (SL.3.1a)
- ✓ Use spelling patterns and generalizations (e.g., word families, position-based spelling) in writing words with /ae/ spelled ‘a_e’ and ‘a’ (L.3.2f)
- ✓ Use a glossary to determine or clarify the precise meaning of key words and phrases (L.3.4d)

<i>At a Glance</i>	Exercise	Materials	Minutes
Reading Time	Whole Group: “The Human Voice”	<i>Adventures in Light and Sound</i> ; Vocabulary Cards; Worksheet 9.1	25
Spelling	Introduce Spelling Words	board; Individual Code Chart; Worksheet 11.1	25
Take-Home Material	Family Letter; “Characteristics of Sound”	Worksheets 11.1, 11.2	*

Advance Preparation

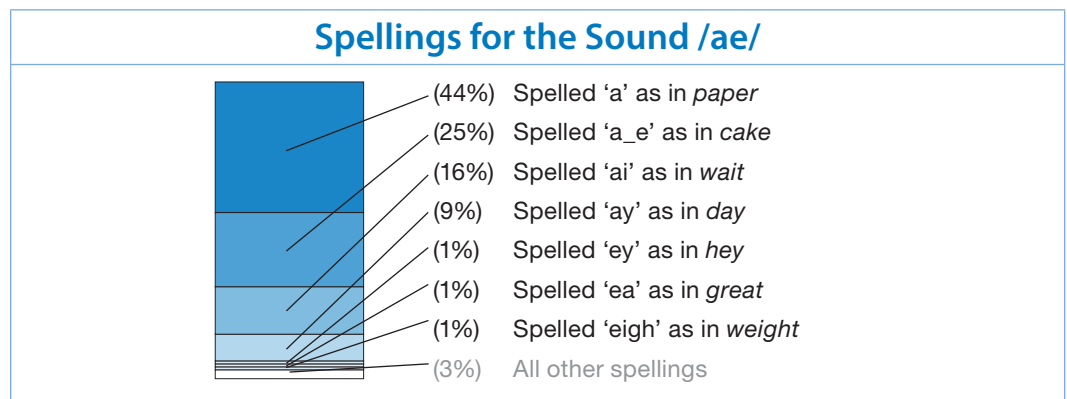
If you wish, you may draw the spelling table on a chart or board before you begin to teach this lesson.

'a_e' > /ae/	'a' > /ae/

Note to Teacher

For Lessons 11–15, you will teach the spelling alternatives for /ae/: 'a_e' as in *cake* and 'a' as in *paper*. Students should be familiar with these spelling alternatives as they were taught in Grade 2.

The following chart is provided for your review:



Here are some patterns for you to be aware of:

- The 'a_e' separated digraph spelling always has a consonant sound that follows /ae/, and the spelling for that consonant sound is inserted between the 'a' and the 'e' (*ape, rate, make*).
- Many 'a_e' words change to words spelled with only 'a' when a suffix is added, e.g., *name > naming* and *bake > baker*. The 'e' is dropped when a suffix beginning with a vowel sound is added.

- The ‘a’ spelling is actually more common than the basic code spelling ‘a_e’. However, it was not chosen as the basic code spelling for two reasons: 1. ‘a’ is the basic code spelling for /a/ as in *cat*, and 2. ‘a’ > /ae/ is rare in one-syllable words of the sort used in beginning reading materials (*strange, waste*). It is primarily found in multi-syllable words (*naming, paper, April*).

Reading Time

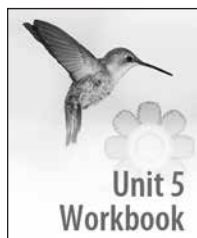
25 minutes

Whole Group: “The Human Voice”

Introducing the Chapter



Chapter 8



Worksheet 9.1

- Review with students what they learned in the previous chapter by referring to the Bell Organizer on Worksheet 9.1.
- Using the *graphic* organizer, remind students of the following:
 - The greater the intensity or power of a sound wave, the louder the volume of the sound.
 - High-pitched sounds are created when an object or surface vibrates back and forth quickly, creating shorter and more sound waves.
 - Low-pitched sounds are caused when an object or surface vibrates back and forth slowly, creating longer and fewer sound waves.
- Remind students that in an earlier Listening & Learning lesson in this unit, they heard Jack and Samuel talking about the human voice and the parts of your body that are used for speech.
- Ask students to spend a few moments recalling what Jack and Samuel said about the trachea, larynx, and vocal cords. (If you could see inside your body, you would discover that inside your throat, at the top of your windpipe, or trachea, is your voice box. The voice box is also known as the larynx. Within your larynx are two bands of muscle called vocal cords. These vocal cords enable humans to make a wide range of sounds.)
- Ask students to turn to the Table of Contents, locate the chapter, and then turn to the first page of the chapter.

Previewing the Vocabulary

- Following your established procedures, preview the vocabulary as well as assist students who need help with decoding.

Vocabulary for “The Human Voice”

1. **lung**—one of a pair of organs that allows animals to breathe by filling with air (**lungs**) (94)
2. **tra|che|a***—a tube that air passes through going to and from the lungs; windpipe (94)
3. **lar|ynx***—the organ in your throat that holds the vocal cords and makes it possible to speak; voice box (94)
4. **au|to|mat|i|cal|ly**—operating on its own without direct control (98)

Guided Reading Supports and Purpose for Reading

Pages 92–93

- Ask students to look at the image on **page 93**.
- Read the caption, “Do you recognize the voices of friends and people in your family?”.
- Ask students, “If you had your eyes shut, would you know who was talking to you?”
- Give students a moment to think and then ask them to give you a thumbs up if their answer is *yes* or a thumbs down if their answer is *no*.
- Tell students they will conduct an experiment today. Have students read **page 92** silently. Then, call three students to the front of the room and have them bring their Readers. Have the rest of the class close their eyes (no peeking). The three students will take turns reading a sentence each from **page 92**. You will read the last two sentences on the page. After each sentence is read, the class should call out the student’s name who read and name you last.

Pages 94–95

- Display the image for the chapter and the Vocabulary Cards to preview *lung*, *trachea*, and *larynx* and discuss definitions. Note for students that *lungs* is used in this chapter.
- Ask students to look at the image on **page 95** and read the caption together.
- Say to students, “I wonder how these parts of my body work to make sound. Let’s read **page 94** to find out more.”
- When students have finished reading, restate the question and have students answer. (Answers may vary.)
- Ask, “What is another name for the trachea?” (windpipe)
- Ask, “What is another name for the larynx?” (voice box)
- Restate the first question about how these body parts work to make sound and have students think about the other names for trachea and larynx.
- Let students pair up and share ideas with each other.
- Then, have students share with the class.

Pages 96–97

- Have students read **pages 96–97** to themselves to find the answer to the question: “Which part vibrates in order to make sound: the lungs, the vocal cords, or the trachea?”
- When students have finished reading, restate the question and ask a student to read the sentence that answers the question. (The vocal cords vibrate and make waves in the air that continue up your throat and out of your mouth.)

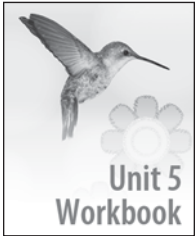
Pages 98–99

- Display the Vocabulary Card to preview *automatically* and discuss its meaning.
- Draw students’ attention to the images on **page 99** and ask them to predict how they learned to speak.
- Have several students share their predictions.
- If you have students who speak languages other than English, have them share some words in their native language with the class.

- Ask students to read **page 98** to themselves to find out how people learn to speak.
- When students have finished reading, restate the question and ask a student to answer. (Babies practice what they hear and learn to speak whatever language they are hearing.)
- Have students add to the Bell Organizer:
 - In the row marked **Human Voices**: Have students draw the vocal cords, the larynx, the trachea, and the lungs.

Pages 100–101

- Draw students' attention to the image on **page 101**, read the caption, and have students share how they think a little child's voice and an adult's voice might be different. (Answers may vary.)
- Ask students to read **page 100** to themselves to find the answer to the question: "Why do children have higher-pitched voices than adults?"
- When students have finished reading, restate the question and ask a student to answer. (Children have shorter vocal cords that make their voices higher-pitched.)
- Ask, "What makes voices louder?" (The more air you push out of your mouth, the louder your voice.)



Worksheet 11.1

For additional practice, see worksheets in Section IV-B of the *Assessment and Remediation Guide*.

Introduce Spelling Words

- Tell students that this week, they will review the spellings of /ae/.
- As you introduce each of the spelling words, write them on the board, pronouncing each word as you write it.

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

- Go back through the list of words, having students read the words and tell you the spelling of the /ae/ sound to circle.

- | | |
|-----------------------------|--------------------------------------|
| 1. translat <u>e</u> | 12. basic |
| 2. maj <u>o</u> r | 13. refrigerat <u>e</u> |
| 3. nati <u>o</u> n | 14. elevat <u>o</u> r |
| 4. fam <u>o</u> s | 15. spaci <u>o</u> s |
| 5. pancak <u>e</u> | 16. earthquak <u>e</u> |
| 6. dang <u>e</u> r | 17. hurrican <u>e</u> |
| 7. casc <u>a</u> d <u>e</u> | 18. fragrant |
| 8. escap <u>e</u> | 19. Challenge Word: another |
| 9. invad <u>e</u> | 20. Challenge Word: finally |
| 10. inh <u>a</u> l <u>e</u> | Content Word: concav <u>e</u> |
| 11. chang <u>e</u> s | |

- Point to the Challenge Words on the board. Explain to students that the Challenge Words, *another* and *finally*, are also part of their spelling list and are words used very often. Neither Challenge Word follows the spelling patterns for this week. Use the Challenge Words in sentences as examples for students: “May I have *another* piece of pie, please?” “I am so happy that it is *finally* Saturday!”
- Remind students that this week, they once again have a Content Word. Review with them that the Content Word is a little harder than the other words. (If students try to spell the Content Word on the assessment and don’t get it right, they will not be penalized. Simply correct it as you do the other words and applaud their effort. There should not be a penalty for not trying or misspelling the Content Word. The important thing is that they tried something that was a stretch for them academically.)
- Tell students that the Content Word, *concave*, does follow the spelling patterns for this week as the ‘a_e’ is pronounced /ae/. *Concave* is a content-related word defined as *curved inward, like a spoon* and describes a mirror or a lens.
- Now, draw the following table on the board:

'a_e' > /ae/	'a' > /ae/

- Ask students to refer to the /ae/ spellings on **page 3** of the **Individual Code Chart**. Point out that there are many spellings for /ae/ and ask students to name the different letters used to represent this sound. Ask students to tell you which words to list under the ‘a_e’ > /ae/ header. Briefly explain the meaning of each word.

- Ask students to identify any spelling words that include the ‘a’ > /ae/ sound. Write the words under the correct header. Briefly explain the meaning of each word.

‘a_e’ > /ae/	‘a’ > /ae/
translate	major
pancake	nation
cascade	famous
escape	danger
invade	changes
inhale	basic
refrigerate	elevator
earthquake	spacious
hurricane	fragrant
concave	

- Ask students to look at **page 3** of the **Individual Code Chart** for all of the different spellings for /ae/. Of the seven spellings, which is used most frequently? (‘a’) Remind students to look at the power bar under the spellings and the order in which they are sequenced to determine frequency.
- Ask students to locate the two spellings for /ae/ in this week’s spelling words and determine whether they are frequently used spellings or not. (‘a_e’ is second to ‘a’ to spell the /ae/ sound.)
- Tell students if ever they are trying to spell a multi-syllable word with the /ae/ sound in the middle and really don’t know which spelling is used, their best bet is to try the spelling ‘a’ since it is the most frequent. However, if they are trying to spell a one-syllable word, their best try is the ‘a_e’ spelling.
- Practice the words as follows during the remaining time. Call on a student to read any word on the chart. Then have the student orally use the word in a meaningful sentence. After the student says the sentence, have him/her ask the class: “Does that sentence make sense?” If the class says, “Yes,” then the student puts a check mark in front of the word and calls on another student to come to the front and take a turn. If the class says, “No,” have the student try again or call on another student to come to the front and use the word in a meaningful sentence. This continues until all the words are used or time has run out.
- Tell students that this table will remain on display until the assessment so that they may refer to it during the week.

- Tell students they will take home Worksheet 11.1 with this week's spelling words to share with a family member.

Take Home Material

Family Letter; "Characteristics of Sound"

Have students take home Worksheet 11.1 to share with a family member and 11.2 to read to a family member.

Sound



What is it?

VIBRATION

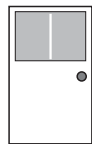
How do we get it?

VIBRATING WAVES



MEDIUM

How does it travel?



FASTEST
SOLID (DOOR)



FASTER
LIQUID (WATER)



FAST
GASES (AIR)



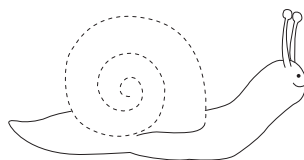
CANNOT TRAVEL
VACUUM (SPACE)

Speed of Sound

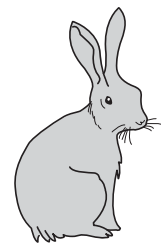
vs

Speed of Light

SOUND
750 Miles Per Hour



LIGHT
186,000 Miles Per Second



Sound



Pitch

HIGH PITCH



LOW PITCH



Volume

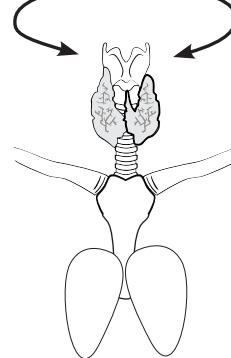
LOUD

soft

**Human
Voices**

VOCAL CORDS

LARYNX



Lesson 12

Grammar

✓ Objectives

The following language arts objectives are addressed in this lesson. Objectives aligning with the Common Core State Standards are noted with the corresponding standard in parentheses. Refer to the Alignment Chart for additional standards addressed in all lessons in this unit.

- ✓ Independently reread “The Human Voice” with purpose and understanding (RF.3.4a)
- ✓ Use conjunctions (e.g., *and*) to connect ideas within categories of information (W.3.2c)
- ✓ Demonstrate preparedness for a discussion, having read “The Human Voice,” explicitly drawing on preparation and other information known about sound and the human voice to explore content under discussion (SL.3.1a)
- ✓ During a discussion, explain ideas and understanding in relation to sound and the human voice (SL.3.1d)
- ✓ Use coordinating and subordinating conjunctions (e.g., *and*) (L.3.1h)
- ✓ Produce compound sentences (L.3.1i)

At a Glance	Exercise	Materials	Minutes
Reading Time	Small Group: “The Human Voice”	<i>Adventures in Light and Sound</i> ; Worksheets 9.1, 12.1	25
Grammar	Introduce the Conjunction <i>and</i>	board or chart paper; Worksheet 12.2	25
Take-Home Material	“The Human Voice”; Practice the Conjunction <i>and</i>	Worksheets 12.3, 12.4	*

Advance Preparation

Create and display a poster entitled “Conjunctions” for use during the Grammar lesson.

Conjunctions

Conjunctions are words that **connect** other words or groups of words.

- The conjunction ***and*** connects words or groups of words. It means plus, along with, or also.

Write the following sentences on the board or chart paper to be used during the Grammar lesson:

My grandmother loves ice cream.

My grandfather loves pie.

Sandy eats hotdogs.

Tyler eats hamburgers.

Jack finally learned to tie his shoes.

His parents were thrilled.

Challenge Sentences:

Jose and Sam went to the baseball game yesterday.

The mother bird dug up worms and then fed them to its babies.

Reading Time

25 minutes

Small Group: "The Human Voice"

Re-introducing the Chapter

- Tell students that today they will reread "The Human Voice" (Chapter 8) independently or in small groups. Have students turn to Workbook 9.1 to review what they learned in the previous lesson.

Reviewing the Vocabulary

- You may wish to review the vocabulary before rereading this chapter by referring to the displayed Vocabulary Cards.

Guided Reading Supports and Purpose for Reading

- Remind students that if they are confused or forget a word meaning as they read, they know how to look up a word in the glossary and find the definition.
- ★ **Small Group 1:** Ask these students to come to the reading table and read the chapter with you. Have students complete Worksheet 12.1, taking notes as they read. This is an excellent time for you to make notes in your anecdotal records.
- ★ **Small Group 2:** Ask these students to read the chapter independently at their desks and complete Worksheet 12.1, taking notes as they read.

Wrap-Up

- Use the following questions to promote a discussion:

Discussion Questions on “The Human Voice”

1. *Literal* What makes higher pitched voices? (shorter vocal cords)
2. *Evaluative* Describe how you know who is speaking when you can’t see the person. (Answers may vary.)

Grammar

25 minutes

Introduce the Conjunction *and*

- Tell students they will learn more today about the part of speech called a conjunction; conjunctions will help them build and write more interesting sentences.
- Point to the conjunctions poster you prepared and displayed earlier.

Conjunctions

Conjunctions are words that **connect** other words or groups of words.

- The conjunction **and** connects words or groups of words. It means plus, along with, or also.
- Read the poster to students, emphasizing that the conjunction *and* joins words or groups of words together.

- Read the first two sentences you prepared in advance to students:

My grandmother loves ice cream.
My grandfather loves pie.

- Look at the first simple sentence and ask, “Who or what is the sentence about?” (*my grandmother*)
- Write the letter *S* above grandmother to show that this is the subject.
- Ask, “What does my grandmother do?” (*loves ice cream*)
- Write the letter *P* above those words to show that this is the predicate. Draw a line between the subject and the predicate.

S **P**
My grandmother | loves ice cream.

- Look at the second simple sentence and ask, “Who or what is the sentence about?” (*my grandfather*)
- Write the letter *S* above those words to show that this is the subject.
- Ask, “What is my grandfather doing?” (*loves pie*)
- Write the letter *P* above these words to show that it is the predicate. Draw a line between the subject and predicate.

S **P**
My grandmother | loves ice cream.

S **P**
My grandfather | loves pie.

- Point out that there are two complete sentences, each with its own subject and predicate.
- Ask the students if anyone can think of a way to connect the two sentences using the conjunction *and*; call on one student to say the new sentence aloud. If students seem unsure

of where to place the *and*, tell them that they should keep all of subjects and predicates in exactly the same order they are and just connect the two sentences.

- Write the new sentence on the board using appropriate capitalization and punctuation.

My grandmother loves ice cream, and my grandfather loves pie.

- Ask, “How many subjects are there in this sentence now?” (two) Label both subjects with the letter *S*. (*grandmother* and *grandfather*)
- Ask, “How many predicates are there in this sentence now?” (two) Label both predicates with the letter *P*. (*loves ice cream* and *loves pie*)
- Ask, “What word did you add to make this new sentence?” (*and*)
- Point out that the word *and* is the part of speech called a conjunction. Label the conjunction by drawing two lines underneath it.
- Ask, “What does the conjunction *and* connect or join?” (the original two sentences, which are now called independent clauses since they are combined into one compound sentence)

S **P** **S** **P**

My grandmother loves ice cream, and my grandfather loves pie.

- **Note to Teacher:** A sentence that combines two independent clauses with the conjunction *and* is called a compound sentence. In unit 2, students learned to recognize compound sentences with the conjunction *and*; they learned to distinguish this type of compound sentence from other simple sentences in which *and* might be used as a conjunction, but in which there were not two independent clauses.
- Remind students that the sentence that they just created is called a compound sentence because it has two independent clauses, each with its own subject and predicate, joined by the conjunction *and*.
- Read the next two sentences to students:

Sandy eats hotdogs.

Tyler eats hamburgers.

- Point out that each sentence has one subject (*Sandy, Tyler*). Label each subject with the letter *S*.
- Ask students to locate the verbs. (*eats, eats*) Point out that each sentence also has one predicate. (*eats hotdogs, eats hamburgers*) Label each predicate with the letter *P*.

S P

Sandy | eats hotdogs.

S P

Tyler | eats hamburgers.

- Ask students to orally build a more interesting sentence by joining two clauses together, making a compound sentence; write the response on the board. Label the conjunction by underlining it twice.

Sandy eats hotdogs and Tyler eats hamburgers.

- Ask, “What word did you add to make a compound sentence?” (*and*)
- Ask, “What does the conjunction *and* connect or join?” (two independent clauses, *Sandy eats hotdogs* and *Tyler eats hamburgers*)
- Read the next two sentences to students.

Jack finally learned to tie his shoes.

His parents were thrilled.

- Proceed in the same manner as above in identifying the subject and predicate in each sentence.

S P

Jack | finally learned to tie his shoes.

S P

His parents | were thrilled.

- Point out that there are two complete sentences, each with its own subject and predicate.
- Ask the students if anyone can think of a way to connect the two sentences using the conjunction *and*; call on one student to say the new sentence aloud. If students seem unsure of where to place the *and*, tell them that they should keep all of subjects and predicates in exactly the same order they are and just connect the two sentences.
- Write the new sentence on the board using appropriate capitalization and punctuation. Draw two lines under the word *and* to show that it is a conjunction.

S **P** **S** **P**

Jack | finally learned to tie his shoes, and his parents | were thrilled.

- Point out that the two simple sentences are joined with the conjunction *and*, making a compound sentence.
- Point out that the actual words in the two simple sentences didn't change, but were merely joined together as independent clauses to make a longer, more interesting sentence.
- **Challenge:** Ask students to identify the subject(s), predicate(s) and conjunction *and* in each of the Challenge Sentences and to then indicate whether the Challenge Sentence is or is not a compound sentence.

S **S** **P**

Jose and Sam | went to the baseball game yesterday.

S **P** **P**

The mother bird | dug up worms and then fed them to its babies.

- (Neither Challenge Sentence is a compound sentence because it does not have two independent clauses, each with its own subject and predicate, that can stand alone.)
- Turn to Worksheet 12.2 and have students complete it as a teacher-guided activity, following the above guidelines to help students add parts (subjects and predicates) to sentences and join simple sentences to make compound sentences.
- For additional practice, see Pausing Point Worksheets PP11 and P12.

Take-Home Material

“The Human Voice”; Practice the Conjunction *and*

Have students take home Worksheet 12.3 to read to a family member and Worksheet 12.4 to complete.

Lesson 13

Unit
Assessment

At a Glance	Exercise	Materials	Minutes
Assessment	Student Skills Assessment	Worksheet 13.1	50
Optional Assessment of Fluency	"Pupils"	Worksheet 13.2	*

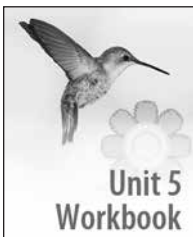
Note to Teacher

Students will complete an assessment by reading three selections during one sitting and answering comprehension, grammar, morphology, and dictionary skills questions that follow each selection. Students will not read out of their Reader but rather from Worksheet 13.1, where the selections have been printed.

Assessment

50 minutes

10 Student Skills Assessment



Worksheet 13.1

- Have students tear out Worksheet 13.1.
- Tell students they will read three selections printed on Worksheet 13.1 and answer comprehension, morphology, grammar, and dictionary skills questions that follow each selection.
- Tell students that should they feel tired, it's a good idea to take a short, personal break. Explain to students that they need to respect the others in the classroom and stay seated, while quietly looking up to the ceiling, stretching their shoulders, and taking a deep breath or two.
- Tell students they should go right on to the second selection once they have finished the first and right on to the third selection once they have finished the second.
- Encourage students to do their best.
- Once students finish all three selections, encourage them to review their papers, rereading and looking over their answers carefully.
- Again, explain the necessity of respecting that not all classmates will finish at the same time, and, if they finish and have checked their papers, they should remain quiet and allow others to finish.

Note to Teacher

When time permits, score these assessments using the guidelines at the end of this lesson to evaluate each student's mastery of the skills taught in this unit.

If additional practice is needed to remediate skills students have not mastered, materials are available in the Pausing Point.

Unit Assessment Analysis Chart

Unit 5 Assessment Analysis Chart		
Skill	Question Number	Benchmarks (number correct out of number given)
Author's Purpose	6	2 of 2
Author's Purpose	21	2 of 2
Dictionary Skills	18	2 of 2
Dictionary Skills	28	2 of 2
Grammar	8	5 of 6
Grammar	10	5 of 6
Grammar	17	5 of 6
Grammar	19	5 of 6
Grammar	27	5 of 6
Grammar	30	5 of 6
Inference	13	3 of 3
Inference	24	3 of 3
Inference	25	3 of 3
Literal	3	7 of 8
Literal	4	7 of 8
Literal	12	7 of 8
Literal	14	7 of 8
Literal	15	7 of 8
Literal	16	7 of 8
Literal	23	7 of 8
Literal	26	7 of 8
Main Idea	1	1 of 1
Morphology	7	4 of 4
Morphology	9	4 of 4
Morphology	20	4 of 4
Morphology	29	4 of 4
Words in Context	2	4 of 4
Words in Context	5	4 of 4
Words in Context	11	4 of 4
Words in Context	22	4 of 4
		Overall Benchmark mark 80%

Scoring Guidelines

After you have entered all student scores into the Unit 5 Assessment Analysis Chart, use the following to assist you in determining students who may need additional instruction.

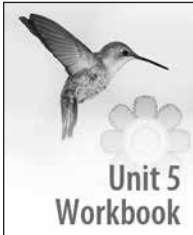
Write the names of students who did not meet the Benchmark for each subtest on the lines.

Author's purpose (#6, 21)	Dictionary Skills (#18, 28)
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
Grammar (#8, 10, 17, 19, 27, 30)	Inference (#13, 24, 25)
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
Literal (#3, 4, 12, 14, 15, 16, 23, 26)	Main Idea (#1)
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
Morphology (#7, 9, 20, 29)	Words in Context (#2, 5, 11, 22)
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____

Optional Assessment of Fluency

You may wish to assess students' fluency in reading using any of the supplemental chapters that they have not yet read. Recording and Scoring Sheets have been specifically included for "Pupils."

10 "Pupils"



Worksheet 13.2

- Turn to the text copy of "Pupils" at the end of this lesson. This is the text copy students will read aloud.
- Ask the student to remove Worksheet 13.2 from his/her Workbook. You will use this worksheet to mark as a running record as you listen to the student read orally.
- Tell the student that you are going to ask him or her to read the selection aloud. Explain that you are going to keep a record of the amount of time it takes him or her to read the selection. Please also explain to the student that he/she should not rush but rather read to his/her own regular pace.
- Begin timing when the student reads the first word of the selection. If you are using a watch, write the exact Start Time, in minutes and seconds, on your record page. If you are using a stopwatch, you do not need to write down the start time since the stopwatch will calculate Elapsed Time. As the student reads the selection, make a running record on the copy with the student's name using the following guidelines:

Words read correctly	No mark is required.
Omissions	Draw a long dash above the word omitted.
Insertions	Write a caret (^) at the point where the insertion was made. If you have time, write down the word that was inserted.
Words read incorrectly	Write an "X" above the word.
Substitutions	Write the substitution above the word.
Self-corrected errors	Replace original error mark with an "SC."
Teacher-supplied words	Write a "T" above the word (counts as an error).

- When the student finishes reading the selection, write the exact Finish Time in minutes and seconds on your record sheet. Alternatively, if you are using a stopwatch, simply write down the Elapsed Time in minutes and seconds. In the interest of time, ask students to read only the first three pages of text in either chapter. (Five minutes should be enough time to get a measurement on most students.) If the student does not read to the end, draw a vertical line on the record sheet to indicate how far he or she read. Also write down either the Finish Time or the Elapsed Time. After the student finishes reading orally, you may direct him to finish reading the remainder of the selection silently; you may also assess comprehension by having students answer the following comprehension questions orally.

Oral Comprehension Questions on “Pupils”

1. *Literal* What did Mr. Brown ask his students to do? (to look into their partner’s eyes)
 2. *Literal* How did the students’ eyes respond when the room became dark? (Their pupils opened wider.)
 3. *Literal* How did the students’ eyes respond when the light was turned on? (Their pupils shrunk.)
 4. *Literal* What is the job of the pupil in an eye? (The pupil is the gatekeeper that allows more or less light to enter the eye.)
 5. *Literal* What about the job of the pupil in an eye makes it a reflex? (The widening and shrinking of the pupil is done involuntarily.)
 6. *Literal* Did all of the students’ pupils behave in the same manner? (yes)
- Repeat this process for additional students. Scoring can be done later, provided you have kept running records and jotted down either the Elapsed Time or the Start Time and the Finish Time.

Guidelines for Calculating W.C.P.M. Scores

If the reading was fairly accurate (< 10 uncorrected errors), you can get a rough (and easy) estimate of a student's W.C.P.M. score simply by noting the time and looking at the chart on Worksheet 13.2.

To calculate a student's exact W.C.P.M. score, use the information you wrote down on the record sheet and follow the steps described below. The steps are also shown in graphic form on Worksheet 13.2. You will probably find it helpful to have a calculator available.

1. First, complete the Words section of Worksheet 13.2.
2. Count Words Read. This is the total number of words that the student read or attempted to read, up to the point where he or she stopped. It includes words that the student read correctly as well as words that the student read incorrectly or skipped over. If the student attempted to read the whole selection, use 400 words total. If the student did not finish the selection, you will need to count the number of words that the student actually attempted to read. Write the count for Words Read in the matching box on Worksheet 13.2.
3. Count the Uncorrected Mistakes noted in your running record. This includes words read incorrectly, omissions, substitutions, and words that you had to supply. Write the total in the box labeled Uncorrected Mistakes on Worksheet 13.2. (A mistake that is corrected by the student is not counted as a mistake; the student is penalized for the time he or she lost making the correction, but not for the initial mistake.)
4. Subtract Uncorrected Mistakes from Words Read to get Words Correct.
5. Next, complete the Time section of the worksheet.

6. Calculate Elapsed Time in minutes and seconds. (If you used a stopwatch, this should already be done for you. Skip to the next step.) If you used a watch and recorded start and stop times, you will need to subtract the Start Time from the Finish Time to calculate the Elapsed Time. Subtract seconds from seconds and then minutes from minutes. Calculate Time in Seconds. Multiply the number of minutes by 60 to convert minutes to seconds, and then add the number of seconds.
7. Next, complete the W.C.P.M. section of the worksheet.
8. Divide Words Correct by Time in Seconds. Then multiply by 60 to get Words Correct Per Minute (W.C.P.M.).

As you evaluate W.C.P.M. scores, here are some factors to consider.

It is normal for students to show a wide range in fluency and in W.C.P.M. scores. However, a major goal for Grade 3 students is to read with sufficient fluency to ensure comprehension and independent reading of school assignments in subsequent grades. Exact fluency targets vary from state to state; the national mean calculated by Hasbrouck and Tindal in 2006 for Winter of Grade 3 is 92 W.C.P.M.

A student's W.C.P.M. score can be compared with the score of other students in the classroom (or grade level) and also with the national fluency norms for Winter of Grade 3 obtained by Hasbrouck and Tindal. Students whose scores are below the 25th percentile (62 W.C.P.M) are experiencing serious problems in reading fluently.

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?”

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.

“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.”

Mr. Brown walked over to the door. “Can you all see your partner’s pupils?”

“Yes!” said the students.

“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.

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

“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.

Lesson 14

Grammar

✓ Objectives

The following language arts objectives are addressed in this lesson. Objectives aligning with the Common Core State Standards are noted with the corresponding standard in parentheses. Refer to the Alignment Chart for additional standards addressed in all lessons in this unit.

- ✓ Use conjunctions (e.g., *and*) to connect ideas within categories of information (W.3.2c)
- ✓ Use coordinating and subordinating conjunctions (e.g., *and*) (L.3.1h)
- ✓ Produce compound sentences (L.3.1i)

At a Glance	Exercise	Materials	Minutes
Reading Time	Small Group: Remediation and Enrichment	<i>Adventures in Light and Sound; More Classic Tales</i>	25
Grammar	Introduce the Conjunction <i>but</i>	board or chart paper; Worksheet 14.1	25

Advance Preparation

Add the following to the **conjunction** poster on display:

Conjunctions

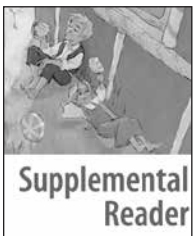
Conjunctions are words that connect other words or groups of words.

- The conjunction ***and*** connects words or groups of words. It means plus, along with, or also.
- The conjunction ***but*** is used to connect groups of words. It signals that “something different,” such as a different idea, will come after the *but*.

Write the following sentences on the board or chart paper side-by-side to be used in the Grammar lesson:

1. Sarah plays soccer very well. Paul enjoys golf.
2. Second grade was fun. I like third grade better.

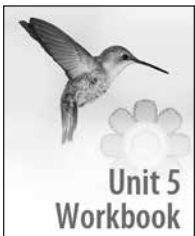
Small Group: Remediation and Enrichment



- While working with students in small groups, please remember to choose activities that fit students’ needs at the time.
- ★ **Small Group 1:** Work with these students on any weak areas that were exhibited on the assessment. You may wish to use the *Assessment and Remediation Guide* with these students.
- ★ **Small Group 2:** Ask these students to read additional chapters at the end of *Adventures in Light and Sound* or chapters in *More Classic Tales*. Alternately, you may wish to ask students to complete any appropriate activities listed in the Pausing Point.

Grammar

Introduce the Conjunction *but*



Worksheet 14.1

For additional practice, see Pausing Point Worksheet PP13.

- Draw students’ attention to the **conjunction** poster. Remind them that all conjunctions connect words or groups of words.
- Conjunctions**
- Conjunctions** are words that connect other words or groups of words.
- The conjunction **and** connects words or groups of words. It means plus, along with, or also.
 - The conjunction **but** is used to connect groups of words. It signals that “something different,” such as a different idea, will come after the *but*.
- Remind students that the conjunction *and* means “plus, along with, or also.”
 - Tell students the conjunction *but* has just the opposite meaning. It signals that things are different rather than similar. Like the conjunction *and*, however, it also joins together simple sentences to make a longer, more interesting sentence.
 - Ask two students what kind of ice cream they like. (One might say chocolate and one might say strawberry.)

- Write a sentence using the information, such as: *John likes chocolate ice cream but Jim likes strawberry.*
- Cover all of the words that follow *Jim*, reading just the first part of the sentence aloud. Point out to students that without even reading the remainder of the sentence, as soon as they read the word *but*, they can already figure out that Jim does not like the same flavor as John. Uncover the remainder of the sentence to confirm that this is the case. Re-emphasize that the conjunction *but* acts as a signal, like a yellow traffic light, telling students to pay attention because something different is coming.
- Ask two other students what color they like the best. (One might say red and another might say blue.)
- Make a sentence using this information, such as: *Alice likes red but Jane likes blue.*
- Again, point out that the word *but* shows that the two ideas are different.
- Read the following sentence that you placed on the board:

Sarah plays soccer very well. Paul enjoys golf.

- Show students how to join the two sentences together by removing the period after the word *well* and simply inserting the word *but*.
- Draw two lines under *but* to show that it is a conjunction.

Sarah plays soccer very well but Paul enjoys golf.

- Have students look at the words before the word *but* and determine the subject and predicate, drawing a line between the subject and predicate, and adding an 'S' over the subject and a 'P' over the predicate.

S **P**
 Sarah | plays soccer very well.

- Have students look at the second part of the sentence after the word *but*. Have them determine the subject and predicate, draw a line between them and add an ‘S’ over the subject and a ‘P’ over the predicate.

S **P** **S** **P**

Sarah | plays soccer very well but Paul | enjoys golf.

- Point out to students that because these two parts of the sentence are simple sentences (because they each have subjects and predicates) and are joined by the conjunction *but*, the sentence is a compound sentence.
- Point out that you didn’t change any of the words in the two simple sentences, but merely inserted the conjunction *but* to make a longer, more interesting sentence and to show that the second simple sentence is different from the first.
- Read the following sentences to students that you placed on the board:

Second grade was fun. I like third grade better.

- Ask students to guide you through removing the period after fun and inserting the conjunction *but*.
- Ask students to read the sentence together:

Second grade was fun but I like third grade better.

- Turn to Worksheet 14.1 and have students complete it as a teacher-guided activity, following the guidelines listed previously.

Lesson 15

Spelling Assessment

At a Glance	Exercise	Materials	Minutes
Spelling	Spelling Assessment	Worksheet 15.1; board	25
Reading Time	Small Group: Remediation and Enrichment	<i>Adventures in Light and Sound; More Classic Tales</i>	25

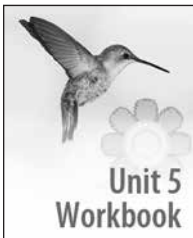
Advance Preparation

Make sure to erase the spelling table from the board and/or turn the table over so that students cannot refer to it during the assessment.

Spelling

25 minutes

10 Spelling Assessment



Worksheet 15.1

For additional practice, see worksheets in Section IV-B of the *Assessment and Remediation Guide*.

- Have students turn to Worksheet 15.1 for the spelling assessment.
- If you would like for students to have pens, this is the time to pass them out.
- Tell students that for this assessment, they will write their words under the header to which they belong. For example, if you call out the word *cake*, they would write that word under the header 'a_e' > /ae/.
- Tell students that should a spelling word fit under more than one header, they should only write the word under one.
- Tell students that they may not have to use all the lines under each header.

- Using the list below, call out the word using the following format: say the word, use it in a sentence, and say the word once more.

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

- After you have called out all of the words, go back through the list slowly, reading each word just once more.
- Ask students to write the following sentences as you dictate them:

1. Our teacher said, “A decade is a period of time that is ten years.”
2. “We are all capable of spelling our list of words,” said Mrs. Smith’s class.

- Follow your established procedures to correct the spelling words.

Note to Teacher

At a later time today, you may find it helpful to use the template provided at the end of this lesson to analyze students’ mistakes. This will help you to understand any patterns that are beginning to develop or that are persistent among individual students.

Small Group: Remediation and Enrichment



Unit 5
Reader



Supplemental
Reader

- While working with students in small groups, please remember to choose activities that fit students' needs at the time.
- ★ **Small Group 1:** Work with these students on any weak areas that were exhibited on the assessment. You may wish to use the *Assessment and Remediation Guide* with these students.
- ★ **Small Group 2:** Ask these students to read any of the additional chapters at the end of *Adventures in Light and Sound* or chapters in *More Classic Tales*. Alternately, you may ask students to complete any appropriate activities listed in the Pausing Point.

Spelling Analysis Chart

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

Spelling Analysis Directions

Unit 5, Lesson 15

For additional practice, see worksheets in Section IV-B of the *Assessment and Remediation Guide*.

- Students are likely to make the following errors:
 - For ‘a_e’, students may write ‘a’
 - For ‘a’, students may write ‘a_e’
- While either of the above student-error scenarios may occur, you should still be aware that misspellings may be due to many other factors. You may find it helpful to record the actual spelling errors that the student makes in the analysis chart. For example:
 - Is the student consistently making errors on specific vowels? Which ones?
 - Is the student consistently making errors on double consonants?
 - Is the student consistently making errors at the end of the words?
 - Is the student consistently making errors on particular beginning consonants?
- Did the student write word for each feature correctly?
- Also examine the dictated sentences for errors in capitalization, and punctuation.

Pausing Point

Note to Teacher

We recommend that you select specific Pausing Point activities for individual and/or groups of students on the basis of their performance on the assessment in Lesson 13.

Reading Time

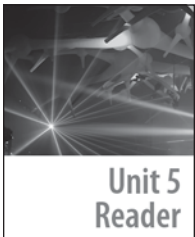
Small Group: “Light and Photography”

Introducing the Chapter

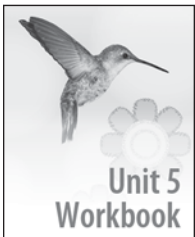
- Tell students that the title of today’s chapter is “Light and Photography.”
- Ask students to turn to the Table of Contents, locate the chapter, and then turn to the first page of the chapter.

Previewing the Vocabulary

- Following your established procedures, preview the vocabulary as well as assist students who need help with decoding.



Chapter 9



Worksheet PP1

Vocabulary for “Light and Photography”

1. **pho|to|graph**—a picture made with a camera (**photography, photographs, photos, photo**) (102)
2. **Ar|i|sto|tle**—a Greek philosopher who made notes about how light acts; His notes later helped inventors make cameras. (102)
3. **he|li|o|graph**—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 then disappeared. (**heliographs**) (104)
4. **in|vent***—to make something new that no one else has ever made (**invented, inventor, inventors, invention**) (104)
5. **da|guerre|o|type**—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**) (106)

Note to Teacher

The Guided Reading Supports that follow are intended for use while you work with students in **Small Group 1**.

- ★ **Small Group 1:** Ask these students to come to the reading table and read the chapter with you. This is an excellent time for you to make notes in your anecdotal records. Follow the Guided Reading Supports below as you guide students through the chapter.
- ★ **Small Group 2:** Ask these students to read the chapter independently to find out what light has to do with photography. Remind them that the bolded words in the chapter are found in the glossary and match the words you previewed. Some words may appear in different forms in the chapter. Then, tell them to complete Worksheet PP1.

Guided Reading Supports

Pages 102–103

- Read the title of the chapter together as a group, “Light and Photography.”
- Display the image for this chapter and the Vocabulary Cards to preview *photograph* and *Aristotle* and discuss definitions. Note for students that *photography*, *photographs*, *photos*, and *photo* are used in this chapter.
- Ask students to read **pages 102–103** to themselves to find the answer to the question: “What is a pinhole camera?”
- When students have finished reading, restate the question and have students answer. (A pinhole camera is a box with a hole in one side. Light comes from the outside through this little hole and projects an image on the opposite side of the box.)

Pages 104–105

- Display the Vocabulary Cards to preview *heliograph* and *invent* discuss definitions. Note for students that *heliographs*, *invented*, *inventor*, *inventors*, and *invention* are used in this chapter.
- Ask students to read **pages 104–105** to themselves to find the answer to the question: “What is a heliograph?”
- When students have finished reading, restate the question and have students answer. (A heliograph is a type of photograph where sunlight mixes with a form of coal and other chemicals on a square, glass plate to make an image.)

Pages 106–107

- Display the Vocabulary Card to preview *daguerreotype* and discuss its definition. Note for students that *daguerreotypes* is used in this chapter.
- Ask students to read **pages 106–107** to themselves to find the answer to the question: “What is a daguerreotype?”
- When students have finished reading, restate the question and have students answer. (A daguerreotype is a type of photography that uses light-sensitive chemicals like silver and iodine to make an image on a metal plate.)

Pages 108–109

- Ask students to read **pages 108–109** to themselves to find the answer to the question: “What did George Eastman invent?”
- When students have finished reading, restate the question and have students answer. (He invented flexible, rolled film that could replace the glass plates that were used in earlier cameras.)

Pages 110–111

- Ask students to read **pages 110–111** to themselves to find the answer to the question: “What is a box camera?”
- When students have finished reading, restate the question and have students answer. (A box camera had film that could take as many as 100 photos. People took their photos and mailed the camera back to George Eastman’s company to develop the film. The company then sent back the camera and the photos.)

Pages 112–113

- Ask students to read **pages 112–113** to themselves to find the answer to the question: “What is different about an instant film camera?”
- When students have finished reading, restate the question and have students answer. (It developed the photos.)

Pages 114–115

- Ask students to read **pages 114–115** to themselves to find the answer to the question: “How is a digital camera different from the other cameras described in this chapter?”
- When students have finished reading, restate the question and have students answer. (It does not use film but rather a computer chip.)

- Have students in **Small Group 1** complete Worksheet PP1 as a group.

Take-Home Material

“Light and Photography”

Have students take home Worksheet PP2 to read to a family member.

Reading Time

Small Group: “Alexander Graham Bell, Part I”

Introducing the Chapter

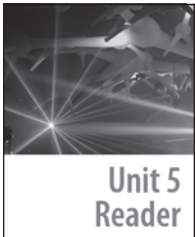
- Tell students that the title of today’s chapter is “Alexander Graham Bell, Part I.”
- Ask students to turn to the Table of Contents, locate the chapter, and then turn to the first page of the chapter.

Previewing the Vocabulary

- Following your established procedures, preview the vocabulary as well as assist students who need help with decoding.

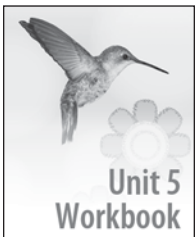
Vocabulary for “Alexander Graham Bell, Part I”

1. **hear|ing trum|pet**—a cone-shaped tool that helps a person hear better by placing the small end in one ear (120)
2. **pro|fes|sor**—a college teacher (120)
3. **Vis|i|ble Speech**—a system of communication used by deaf people in which symbols represent sounds (120)
4. **sym|bol**—an object or picture that stands for something (symbols) (120)
5. **in|spi|ra|tion**—something that gives a person an idea about what to do or create (122)



Unit 5
Reader

Chapter 10



Unit 5
Workbook

Worksheet PP3

Note to Teacher

The Guided Reading Supports that follow are intended for use while you work with students in **Small Group 1**.

- ★ **Small Group 1:** Ask these students to come to the reading table and read the chapter with you. This is an excellent time for you to make notes in your anecdotal records. Follow the Guided Reading Supports below as you guide students through the chapter.
- ★ **Small Group 2:** Ask these students to read the chapter independently to find out about Alexander Graham Bell. Remind them that the bolded words in the chapter are found in the glossary and match the words you previewed. Some words may appear in different forms in the chapter. Then, tell them to complete Worksheet PP3.

Guided Reading Supports

Pages 116–117

- Read the title of the chapter together as a group, “Alexander Graham Bell, Part I.”
- Ask students to read **pages 116–117** to themselves to find the answer to the question: “Who would you name as someone who is famous?”
- When students have finished reading, restate the question and have students answer. (Answers may vary.)

Pages 118–119

- Ask students to read **pages 118–119** to themselves to find the answer to the question: “What was Aleck’s favorite thing to do?”
- When students have finished reading, restate the question and have students answer. (learn new things)

Pages 120–121

- Display the image for this chapter and the Vocabulary Cards to preview *hearing trumpet*, *professor*, *Visible Speech*, and *symbol* and discuss definitions. Note for students that *symbols* is used in this chapter.
- Ask students to read **pages 120–121** to themselves to find the answer to the question: “How does a hearing trumpet work?”
- When students have finished reading, restate the question and have students answer. (The trumpet magnifies the sound.)
- Ask, “What is Visible Speech?” (It is a sound alphabet using symbols to stand for any sound the human voice makes.)

Pages 122–123

- Display the Vocabulary Card to preview *inspiration* and discuss its definition.
- Ask students to read **pages 122–123** to themselves to find the answer to the question: “How did Aleck’s speaking machine work?”
- When students have finished reading, restate the question and have students answer. (Using the voice box of a dead sheep, it acted like a mouth and throat and could say the word *mama*.)
- Have students in **Small Group 1** complete Worksheet PP3 as a group.

Take-Home Material

“Alexander Graham Bell, Part I”

Have students take home Worksheet PP4 to read to a family member.

Reading Time

Small Group: “Alexander Graham Bell, Part II”

Introducing the Chapter

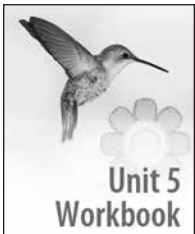
- Tell students that the title of today’s chapter is “Alexander Graham Bell, Part II.” Ask students to share what they learned about Alexander Graham Bell from the previous chapter.
- Ask students to turn to the Table of Contents, locate the chapter, and then turn to the first page of the chapter.

Previewing the Vocabulary

- Following your established procedures, preview the vocabulary as well as assist students who need help with decoding.



Chapter 11



Worksheet PP5

Vocabulary for “Alexander Graham Bell, Part II”

1. **tele|graph***—a tool for communicating by sending electrical signals by wire or radio (124)
2. **trans|mit***—to move or send something from one place to another (**transmission**) (124)
3. **Morse Code**—a way of communicating with dots and dashes using the telegraph (125)
4. **e|lec|tric cur|rent**—the flow of electricity (126)
5. **dis|cov|er|y**—an event in which someone finds or learns something for the first time (128)

Note to Teacher

The Guided Reading Supports that follow are intended for use while you work with students in **Small Group 1**.

- ★ **Small Group 1:** Ask these students to come to the reading table and read the chapter with you. This is an excellent time for you to make notes in your anecdotal records. Follow the Guided Reading Supports below as you guide students through the chapter.
- ★ **Small Group 2:** Ask these students to read the chapter independently to find out more information about Alexander Graham Bell. Remind them that the bolded words in the chapter are found in the glossary and match the words you previewed. Some words may appear in different forms in the chapter. Then, tell them to complete Worksheet PP5.

Guided Reading Supports

Pages 124–125

- Read the title of the chapter together as a group, “Alexander Graham Bell, Part II.”
- Display the image for the chapter and the Vocabulary Cards to preview *telegraph*, *transmit*, and *Morse Code* and discuss definitions. Note for students that *transmission* is also used in this chapter.
- Ask students to read **pages 124–125** to themselves to find the answer to the question: “How did Alexander Graham Bell want to change Samuel Morse’s telegraph machine?”
- When students have finished reading, restate the question and have students answer. (He wanted for people to be able to speak over it.)

Pages 126–127

- Display the Vocabulary Card to preview *electric current* and discuss its definition.
- Ask students to read **pages 126–127** to themselves to find the answer to the question: “Why did Bell keep most of his ideas and experiments secret?”
- When students have finished reading, restate the question and have students answer. (He was sure that others would think him “crazy.”)
- Ask, “Why did Bell hire Thomas Watson?” (He hired him to serve as a mechanic because he knew how electricity worked.)

Pages 128–129

- Display the Vocabulary Card to preview *discovery* and discuss its definition.
- Ask students to read **pages 128–129** to themselves to find the answer to the question: “What happened to allow Bell to invent the telephone?”
- When students have finished reading, restate the question and have students answer. (With the electricity turned off, Watson sent a message to Bell that Bell could hear. That mistake allowed Bell to invent the telephone.)
- Ask, “What was the first sentence ever said over a telephone?” (“Mr. Watson, come here, I want to see you.”)

Pages 130–131

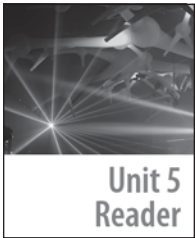
- Ask students to read **pages 130–131** to themselves to find the answer to the question: “What did Bell say about failed experiments?”
- When students have finished reading, restate the question and have students answer. (He said, “There is no failed experiment.”)
- Have students in **Small Group 1** complete Worksheet PP5.

Take-Home Material

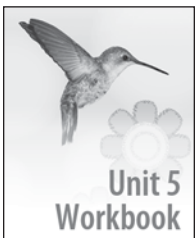
“Alexander Graham Bell, Part II”

Have students take home Worksheet PP6 to read to a family member.

Reading Time



Chapter 12



Worksheet PP7

Small Group: “Thomas Edison: The Wizard of Menlo Park”

Introducing the Chapter

- Tell students that the title of today’s chapter is “Thomas Edison: The Wizard of Menlo Park.”
- Ask students to turn to the Table of Contents, locate the chapter, and then turn to the first page of the chapter.

Previewing the Vocabulary

- Following your established procedures, preview the vocabulary as well as assist students who need help with decoding.

Vocabulary for “Thomas Edison: The Wizard of Menlo Park”

1. **scar|let fe|ver**—a disease that causes a fever, sore throat, and a red rash (132)
2. **pat|ent**—the rights to make and sell something (**patents**) (136)
3. **pho|no|graph**—an instrument that reproduces sounds that have been recorded on a grooved disk (136)
4. **in|can|desc|ent**—glowing (138)
5. **ki|net|o|scope**—an early machine for showing movies (138)
6. **mi|cro|phone**—an instrument for recording sound or making sound louder (138)

Note to Teacher

The Guided Reading Supports that follow are intended for use while you work with students in **Small Group 1**.

- ★ **Small Group 1:** Ask these students to come to the reading table and read the chapter with you. This is an excellent time for you to make notes in your anecdotal records. Follow the Guided Reading Supports that follow as you guide students through the chapter.
- ★ **Small Group 2:** Ask these students to read the chapter independently to find out more information about Alexander Graham Bell. Remind them that the bolded words in the chapter are found in the glossary and match the words you previewed. Some words may appear in different forms in the chapter. Then, tell them to complete Worksheet PP7.

Guided Reading Supports

Pages 132–133

- Read the title of the chapter together as a group, “Thomas Edison: The Wizard of Menlo Park.”
- Display the image for the chapter and the Vocabulary Card to preview *scarlet fever* and discuss its definition.
- Ask students to read **pages 132–133** to themselves to fill in the blank in the sentence: “Thomas Edison’s interest in _____ never stopped, even after a bout with scarlet fever.”
- When students have finished reading, reread the sentence and have students fill in the blank. (nature)

Pages 134–135

- Ask students to read **pages 134–135** to themselves to find the answer to the question: “What did Thomas Edison invent to earn the money to set up his first lab?”
- When students have finished reading, restate the question and have students answer. (He found a way to make the telegraph work faster and sold it for \$40,000.)
- Ask, “Why was Thomas Edison called the Wizard of Menlo Park?” (Menlo Park was where his second lab was located. There, many people called him the Wizard of Menlo Park because some of his inventions seemed magical.)

Pages 136–137

- Display the Vocabulary Cards to preview *patent* and *phonograph* and discuss definitions. Note for students that *patents* is also used in this chapter.
- Ask students to read **pages 136–137** to themselves to find the answer to the question: “What did Edison invent that earned \$100,000 for the patent?”
- When students have finished reading, restate the question and have students answer. (He discovered a way to make Bell’s new telephone louder.)
- Ask, “What is a phonograph?” (A phonograph is a device that records sound on a cylinder wrapped in tinfoil.)

- Ask, “Why was this an important discovery?” (It was the first time anyone was able to listen to recorded music.)

Pages 138–139

- Display the Vocabulary Cards for *incandescent*, *kinetoscope*, and *microphone* and discuss definitions.
- Ask students to read **pages 138–139** to themselves to find the answer to the question: “What else did Edison invent and what were those inventions used for?”
- When students have finished reading, restate the question and have students answer. (He invented the incandescent light bulb, which began the age of electric light; the kinetoscope, which shows movies; and the microphone, which amplifies sound.)
- Ask, “Did Edison ever fail?” (He failed many times but with his positive attitude, kept moving forward knowing he was closer to his next success.)
- Have students in **Small Group 1** complete Worksheet PP7.

Take-Home Material

“Thomas Edison: The Wizard of Menlo Park”

Have students take home Worksheet PP8 to read to a family member.

Grammar

Adverbs that Tell *how*

- Worksheet PP9
- Identify adverbs that fit in sentences, change adjectives to adverbs that end with *-ly*

Adverbs that Tell *when* and *where*

- Worksheet PP10
- Apply adverbs in context, write sentences using adverbs

Conjunction *and*

- Worksheet PP11
- Write compound subjects/predicates and compound sentences using *and*; join and write simple sentences as compound sentences

Practice Conjunction *and*

- Worksheet PP12
- Identify subject/predicate, compound subjects/predicates, and compound sentences

Conjunction *but*

- Worksheet PP13
- Create compound sentences with conjunction *but*

Morphology

Review Suffixes *-er, -or, -ist, and -ian*

- Worksheets PP14 and PP15
- Answer questions using words with suffixes

Suffixes *-y* and *-al*

- Worksheet PP16
- Add the correct suffix to root words and write the meaning of the affixed word; determine the correct word using word meaning

Suffixes *-ous* and *-ly*

- Worksheet PP17
- Select suffixed word to complete sentence, identify part of speech; apply knowledge of suffixes to determine correct word using word meaning

Spelling

Practice Dictionary Skills

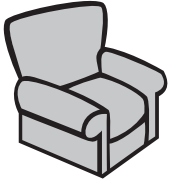
- Worksheet PP18
- Identify guide words, alphabetize words, identify definitions of entry words that match the usages in sentences, and create sentences

Reading Resource

Glossary for *Adventures in Light and Sound*

- Worksheet PP19
- Use this as a reference during this unit

Teacher Resources



Reader's Chair

Reader's Chair Sign-Up Sheet

Write your name on the line when you are ready to read to the class.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

This template is for recording anecdotal notes about students' reading abilities. You can record things such as: (1) repeated trouble with specific sound-spelling correspondences; (2) difficulty with certain digraphs/letter teams; (3) inability to segment isolated words; and (4) progress with specific skills.

Anecdotal Reading Record

Week of: _____

Name:	Name:	Name:	Name:
Name:	Name:	Name:	Name:
Name:	Name:	Name:	Name:
Name:	Name:	Name:	Name:
Name:	Name:	Name:	Name:
Name:	Name:	Name:	Name:
Name:	Name:	Name:	Name:

Tens Conversion Chart

Number Correct

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	0	10																			
2	0	5	10																		
3	0	3	7	10																	
4	0	3	5	8	10																
5	0	2	4	6	8	10															
6	0	2	3	5	7	8	10														
7	0	1	3	4	6	7	9	10													
8	0	1	3	4	5	6	8	9	10												
9	0	1	2	3	4	6	7	8	9	10											
10	0	1	2	3	4	5	6	7	8	9	10										
11	0	1	2	3	4	5	5	6	7	8	9	10									
12	0	1	2	3	3	4	5	6	7	8	8	9	10								
13	0	1	2	2	3	4	5	5	6	7	8	8	9	10							
14	0	1	1	2	3	4	4	5	6	6	7	8	9	9	10						
15	0	1	1	2	3	3	4	5	5	6	7	7	8	9	9	10					
16	0	1	1	2	3	3	4	4	5	6	6	7	8	8	9	9	10				
17	0	1	1	2	2	3	4	4	5	6	6	7	7	8	8	9	9	10			
18	0	1	1	2	2	3	3	4	4	5	6	6	7	7	8	8	9	9	10		
19	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	
20	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10

Simply find the number of correct answers the student produced along the top of the chart and the number of total questions on the worksheet or activity along the left side. Then find the cell where the column and the row converge. This indicates the Tens score. By using the Tens Conversion Chart, you can easily convert any raw score, from 0 to 20, into a Tens score.

Please note that the Tens Conversion Chart was created to be used with assessments that have a defined number of items (such as written assessments). However, teachers are encouraged to use the Tens system to record informal observations as well. Observational Tens scores are based on your observations during class. It is suggested that you use the following basic rubric for recording observational Tens scores.

9–10	Student appears to have excellent understanding
7–8	Student appears to have good understanding
5–6	Student appears to have basic understanding
3–4	Student appears to be having difficulty understanding
1–2	Student appears to be having great difficulty understanding
0	Student appears to have no understanding/does not participate

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.

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

Name: _____

2.1

What Is Light?

- How fast does light travel?
 - 106,000 miles a second in a vacuum
 - 156,000 miles a second in a vacuum
 - 186,000 miles a second in a vacuum
 - 126,000 miles a second in a vacuum
 Page 8
- How does all light travel?
 - All light travels in the form of sources.
 - All light travels in the form of waves.
 - All light travels in the form of groups.
 - All light travels in the form of gases.
 Page 8
- What determines whether you can see light waves or not?
 - the speed of the source
 - the length of the source
 - the speed of the wave
 - the length of the wave
 Page 8

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

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

- send back
 - make
 - absorb
 - create
- Describe white light.

White light includes light of different wavelengths, including all the colors we can see.

 Page 10
 - List three sources of light.

flashlights

candles

stars

 Page 12
 - What is the main idea of this chapter?

Light travels in waves. Wavelengths differ in length. There are many light sources.

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 **patiently** for our turn to look through the telescope.

How did we wait? patiently

2. People were riding in the car illegally because they weren't wearing their seatbelts.

How were the people riding? illegally

3. Our teacher drew lines **vertically** on the paper so we would know where to write each separate part.

How did our teacher draw lines? vertically

4. I arranged my books on the shelves when I cleaned my room.

How did I arrange my books? neatly

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

How did the woman ask? politely

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

How did the medicine go down? smoothly

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

- slowly*
Answers may vary.
- loudly*
Answers may vary.

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 that he did not know how the vase got broken.

Tom answered how? honestly

1. The man on the subway kindly offered his seat to the older woman.

How did the man offer his seat? kindly

2. The little boy quickly walked down the stairs.

How did the little boy walk? quickly

3. The mayor officially announced that he would retire.

How did the mayor announce he would retire? officially

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4. Our teacher clearly explained what we were to do for homework.

How did our teacher explain the homework? clearly

5. My sister carelessly dropped her jacket on the floor.

How did my sister drop her jacket? carelessly

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

1. *softly*

Answers may vary.

2. *tightly*

Answers may vary.

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Name: _____

3.1

How Are Shadows Made?

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

1. desk opaque

2. fish tank transparent

3. human body opaque

4. plastic wrap transparent

5. car window transparent

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

6. Light source X = Big shadow

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

7. Light source X = Small shadow

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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

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Name: _____

3.3

Suffixes: -er, -or, -ist, and -ian

Answer the following questions using the words on Worksheet 3.2.

- Which word on the chart names a doctor who specializes in taking care of babies and children?
pediatrician
- Which word on the chart names someone who can help you find good books to read at the library?
librarian
- You might be one of these if you like to play on sports teams. player
- If you don't eat any meat, you are a vegetarian.
- If you like to tell jokes and make people laugh, you are a comedian.
- If you have done extensive research on ancient Rome, you are probably a historian.
- If your job is to study animals and their habitats, you are probably a zoologist.
- List the words that name people who play musical instruments.
guitarist organist violinist
- If you like to draw, you could be either one of these. artist
cartoonist

- If you want to be a person who makes or writes fictional books, you want to be a novelist.
- If you go to a new city to explore for a few days, you may be either one of these. visitor tourist
- If you understand how to put wires for electricity in a new house, you might be an electrician.

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

- The turtle walked slowly across the sidewalk towards the pond.
- The tight belt pinched my waist.
- The loud sound hurt my ears.
- Our teacher asked us to read silently instead of with a partner.
- The father tightly buckled his seat belt.
- She carefully put the baby down in his crib so she would not wake him up.
- My brother carefully fastened his shoelaces so he would not trip.
- People cheered loudly 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.

- The hiker trudged along tediously up the mountain.
- She enjoyed watching the sprinters and other talented athletes race around the enormous stadium.
- It seemed that the chimney on the rooftop was almost as tall as a skyscraper.
- The scenic overlook on the mountain road was breathtaking!
- Can you believe that the amount of homework will be increased in January?
- It was a secret that the many legged centipede in the story had pockets full of money.

- The chief of police has a scenic office with a beautiful view of the city.
- The fire on the stove was caused by grease that spilled from the pan.
- You have succeeded in making me laugh for hours!
- Do you understand how electricity 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.

- Answers may vary.

- Answers may vary.

- Answers may vary.

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.

- The sunlight is streaming through a window hitting a rocking chair.
shadow
- It is a rainy, cloudy day and you are standing outside under an umbrella.
no shadow
- It is midnight and there are no lights on anywhere.
no shadow
- It is a bright, sunny day at the beach and you are sitting under a beach umbrella.
shadow
- You are swinging outside on a sunny, but cold day.
shadow
- What is the main idea of this chapter?

Shadows are made when a light source hits an opaque object. The closer an object is to a light source, the bigger the shadow.

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*.

- I am going to a birthday party tomorrow. when
- The dog slept outside. where
- I always ride the bus to school. when
- John has never taken the train. when
- Mary left her coat here. where
- Dad clapped loudly. how
- It snowed everywhere. where
- He picked up the baby carefully. how
- I ate my peas last because I don't like them. when
- The squirrel quickly gathered some acorns. how
- Please stack the books there. where
- I read my book silently. how

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.

- Root word: *mess*
Add *-y* or *-al* to make: messy
Answers may vary.
- Root word: *magic*
Add *-y* or *-al* to make: magical
Answers may vary.
- Root word: *culture*
Add *-y* or *-al* to make: cultural
Answers may vary.

4. Root word: *dirt*
Add *-y* or *-al* to make: dirty

Answers may vary.

5. Root word: *rust*
Add *-y* or *-al* to make: rusty

Answers may vary.

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

Name: _____

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/

funny recess radiant wheat

handy recipe piano seaside

'ee' > /ee/ 'ie' > /ee/ 'ey' > /ee/ 'e-e' > /ee/

greeting skied valley Chinese

sweet _____ honey _____

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: _____

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 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. where

2. I will wash the dishes later. when

3. The people folded the laundry there. where

4. Sam ripped his pants today. when

5. The boys whispered quietly. how

6. Beth has never met her aunt. when

7. The boy pounded his fists madly. how

8. My dog always wags his tail. when

9. Sometimes I walk home from school. when

Name: _____

5.2

Mirrors and Lenses

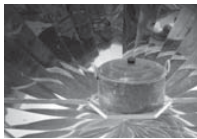
Write *plane*, *convex*, or *concave* on the line for each mirror. Then, look back in the reader to find the page numbers where the information can be found.



kaleidoscope
(mirrors)

plane

Page 36



solar hot dog cooker
(mirror)

concave

Page 40



corner mirror
(mirror)

convex

Page 40

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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.

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Name: _____

5.4

Dictionary Skills

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

chest	chisel
chief 1. <i>noun</i> A leader of a group. 2. <i>adjective</i> Most important or main.	
chimney <i>noun</i> A pipe that carries smoke out of a building, usually through the roof.	

- What are the two guide words on the page?
chest chisel
- What are the two entry words on the page?
chief chimney
- How many definitions are there for *chief*?
2
- Would the word *choir* be on this page?
no
- Circle the word(s) that would come before **chest** from the following list:
choke, (cherry) chestnut.

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- Which definition of *chief* matches the use of the word in the sentence:
The *chief* of police is a friend of mine. 1
What part of speech is *chief* in this sentence? noun
- 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. 2
What part of speech is *chief* in this sentence? adjective

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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.

- Light travels in curvy lines. false
 Light travels in straight lines.
Page 44
- Shadows are formed because light is absorbed by a transparent object. false
 Shadows are formed because light is absorbed by an opaque object.
Page 45
- The denser an object is the more quickly light travels through it. false
 The denser an object is the slower light travels through it.
Page 46

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- Light rays change and appear to bend when light travels through just one transparent object. false
 Light rays change and appear to bend when light travels through one thing that is transparent to something different that is transparent.
Page 48
- A magnifying glass is a good example of a concave lens. false
 A magnifying glass is a good example of a convex lens.
Page 54
- Peepholes make objects look larger. false
 Peepholes make things look smaller.
Page 58

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Name: _____

8.1

Color and Light

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

- What is a prism and what is it used for?
 A prism is a wedge-shaped piece of transparent glass. When light shines through it, it makes a rainbow-like band of colors.
- Why does the sun look yellow?
 The sun gives off more yellow light than the other colors so it looks yellow.
- What creates a rainbow after it rains? How can we see it?
 Raindrops in the sky refract the light, just like a prism, which creates a rainbow.
- What are the colors of a spectrum?
 red, orange, yellow, green, blue, indigo, and violet

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- Why does clothing appear to be certain colors?
 Different objects absorb light wavelengths of some colors, but reflect others. This creates color in clothing.
- What is ultraviolet light and what can happen as a result of it?
 On the shorter wavelength end of the light spectrum, there is invisible ultraviolet light waves that cause sunburn.
- What are x-rays and how would they be used?
 X-rays are short wavelengths of light that can travel through the body, creating black and white photos of what's inside the body.
- What makes your remote control for the TV work?
 A remote control for the TV works because it has invisible infrared waves that cause a TV to change channels.

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Name: _____

8.3

-ous: Suffix meaning "full of"

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

Write the correct word to complete each sentence.

famous poisonous mysterious furious dangerous humorous

- The humorous ending to the movie had everyone in the theater laughing
- When I got to school, there was a mysterious smell in our classroom and I couldn't figure out what it was coming from.
- My furious brother could not believe our little sister has scribbled all over his history paper with crayons.
- A famous basketball player is said to be coming to our community fair next week but nobody knows who it is.

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- Some farmers put poisonous 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.

- Answers may vary but should include the word dangerous.

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Name: _____

8.5

-ous: Suffix Meaning "full of"

furiously—(adverb) in a furious way	Answers may vary.
mysteriously—(adverb) in a mysterious way	Answers may vary.
dangerously—(adverb) in a dangerous way	Answers may vary.
famously—(adverb) in a famous way	Answers may vary.

Write the correct word to complete each sentence.

dangerously furiously mysteriously famously humorously

- My cell phone mysteriously turned itself off when I put it down on the table.
- My uncle famously asked his girlfriend to marry him at the family reunion in a way that nobody will forget.
- My sister humorously wore a small hat for a baby as part of her costume for the party.
- A little boy in the subway station walked dangerously near the edge of the passenger platform above the tracks.

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

- Answers may vary but should include the word furiously.

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Name: _____

8.7

Blank Busters

subway	payment	awaited	ballplayers
yesterday	great	crayons	explain
mermaid	obtain	breaker	daydreams
daisies	dainty	trainees	betrayor
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.*

- At the end of their meal, the waitress obtained change from the cashier for her customers.
- The butcher offered many giveaways of free beefsteak.
- The talented artist puts her crayons aside and uses oil paint on these portraits.
- Our beautiful, yellow daisies finally bloomed yesterday.
- The smallest mermaid was the only one who could wear the dainty seashell necklace.
- The ride on the subway car was very scary because the lights went out.

- Our family is made up of two adults and five young children.
- The ballplayers were lost in their daydreams and didn't pay attention to the game, so they lost.
- My teacher is explaining multiplication so I better pay attention!
- Our long awaited 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.

- Answers may vary.
- Answers may vary.
- Answers may vary.

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

- Sound is a form of energy that moves in waves.
Page 74
- Sound waves move out from a vibrating object.
Page 74
- The farther away you get, the weaker sounds become.
Page 74
- Sound waves need a medium to carry them.
Page 74
- Sound travels faster through a solid than a gas.
Page 80

- Sound travels at this speed: 186,000 mps.
Page 78
- 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 substance that creates color
 - a substance that sound is unable to travel through
 - a substance that sound travels through
 - 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. where

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

3. My brother slowly ate his spicy chili. how

4. Andy leaves soon for winter vacation. when

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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 joyous party to celebrate Michael's graduation.
Word: joyous Part of Speech: adjective

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

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

4. The furious troll shouted at the Billy Goats Gruff.
Word: furious Part of Speech: adjective

5. The crane at the construction site sways dangerously when there is a thunderstorm with lots of wind.
Word: dangerously Part of Speech: adverb

6. The actor in the play humorously sang while dressed in a ridiculous costume.
Word: humorously Part of Speech: adverb

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7. Our neighbor joyously announced that his son was admitted to the college he likes the most.

Word: joyously Part of Speech: adverb

8. The governor had a humorous response to a serious question during the interview.

Word: humorous Part of Speech: adjective

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: adjective

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

curiously curious

Part of Speech: adverb

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

fabulously fabulous

Part of Speech: adjective

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Name: _____

9.5

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.

<u>'ay' > /ae/</u>	<u>'ai' > /ae/</u>	<u>'ea' > /ae/</u>
<u>bluejay</u>	<u>paid</u>	<u>breakneck</u>
<u>waylay</u>	<u>maids</u>	<u>greatest</u>
<u>bricklaying</u>	<u>raisins</u>	
<u>maybe</u>	<u>waiter</u>	
<u>always</u>	<u>sailing</u>	
	<u>mailman</u>	
	<u>prepaid</u>	

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

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Name: _____

10.2

Characteristics of Sound

- What is pitch?
 - Pitch is how loud or soft a sound is.
 - Pitch is how high or low a sound is.
 - Pitch is how fast sound travels through a medium.
 - Pitch is the intensity of a sound.
- What is volume?
 - Volume is how high or low a sound is.
 - Volume is the intensity of a sound.
 - Volume is how long or short a sound wave is.
 - Volume is how fast sound travels through a medium.

- Describe how the length of sound waves affects pitch.

Longer wavelengths make lower pitches.

- List three sources of a low-pitched sound.

tuba

cow mooing

adult voice

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

- Adventures in Light*
- Can You Hear Me Now?*
- All About Animals*
- Experiments with Food*

- 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.

- They can make you hear well.
- They can hurt your hearing.
- They can make you able to hear from great distances.
- They can make you able to hear a whisper better.

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

Answers may vary.

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Name: _____

10.4

Dictionary Skills

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

<p>part</p> <p>pay 1. <i>verb</i> To give money to buy something. 2. <i>verb</i> To be worthwhile. 3. <i>noun</i> Money earned from working at a job.</p> <p>peck 1. <i>verb</i> To pick up something with a beak. 2. <i>verb</i> To eat something in small bites with no enjoyment 3. <i>noun</i> A light kiss.</p>	<p>pickle</p>
---	----------------------

- What are the two guide words on the page?
part pickle
- What are the two entry words on the page?
pay peck
- Would the word *pill* be on this page?
no
- Circle the word(s) that would come before *part* in the following list: pattern, peace, pack
pack
- Which definition of *pay* matches the use of the word in the sentence:
It *pays* to be an honest person. 2
What part of speech is *pay* in this sentence? verb

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

My mother receives her *pay* on Fridays. 3

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

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

Answers may vary.

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

The child *pecked* at her food without eating much. 2

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

- 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. 3

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

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

Answers may vary.

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Name: _____

12.2

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.

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

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

The sports car roared down the street and 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.

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

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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.

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

Alan entertained all of us, and Eli served snacks.

1. Alan sings wacky songs. Eli juggles apples.

Alan sings wacky songs and Eli juggles apples.

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

Alan throws lots of parties and the neighbors always come.

3. Eli makes brownies. The neighbors enjoy them.

Eli makes brownies and the neighbors enjoy them.

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

Alan likes to entertain and 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. No

S P P
6. Derek read a book and watched TV last night. No

- S P S P
7. My mother cooked dinner and my sister made dessert. Yes

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13.1
continued

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. false

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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*? **guitarist**

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, **where** _____

Name: _____

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. **when** _____

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?

A judge would come to the town square to investigate.

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

The horse might never have been given justice.

Name: _____

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?
The crowd cheered.

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. **how** _____

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
Answers may vary	Answers may vary	Answers may vary	Answers may vary
Synonyms for spoke			

New Sentence: Answers may vary.

Name: _____

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: farmer

Meaning: a person who farms

Word: hunter

Meaning: a person who hunts

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.

Name: _____

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. true

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 Answers may vary.	Adverbs to describe how the puppy slept Answers may vary.	Adverbs to describe when the puppy slept Answers may vary.	Adverbs to describe where the puppy slept Answers may vary.
Synonyms for slept			

New Sentence: Answers may vary.

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?

acting in a humorous way

Name: _____

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.

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

The motorcycle sped down the street and other motorcycles followed close behind.

Name: _____

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'.

- Brownies are fun to make. They are sometimes hard to get out of the pan.
^S Brownies are fun to make ^P but ^S they sometimes ^P are hard to get out of the pan.
- The day is rainy and dreary. The sky is brightening off in the distance.
^S The day is rainy and dreary ^P but ^S the sky is ^P brightening off in the distance.
- My new puppy is very naughty. I love her so much.
^S My new puppy is very naughty ^P but ^S I love her so ^P much.
- This math homework seems very hard. I'm going to keep trying.
^S This math homework seems very hard ^P but ^S I'm ^P going to keep trying.

5. We knocked on the door. No one was at home.
^S We knocked on the door ^P but ^S no one was at home.

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

- Denise likes pepperoni pizza, but
Answers may vary.
(Hint: think about a family member who likes a different topping better)
- Linda loved the movie she just saw, but
Answers may vary.
(Hint: think about a friend who went to the movie with her who had a different idea about the movie)

Name: _____

PP1

Light and Photography

1. What does the word *photography* mean?

Photography means "to draw with light."

Page 102

2. Describe a pinhole camera.

A pinhole camera is a box with a small hole. Light enters the hole and projects an image inside the box

3. Louis Daguerre developed daguerreotypes that used light-sensitive chemicals to make an image on a glass plate.

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4. George Eastman invented flexible rolled film that replaced the glass plates used in earlier cameras.

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

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

You would send the camera to Eastman's company to print the photos. They would send both the camera and the photos back to you.

Page 110

7. Why were instant film cameras so popular?

Instant film cameras were so popular because they were instant — one minute after you took the picture, you had a fully-developed photograph in your hand.

Page 112

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

computer chip.

Page 114

9. Write the main idea of this chapter.

Photography has changed and developed over time because of new inventions.

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Name: _____

PP3

Alexander Graham Bell, Part I

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

Aleck explored nature (plants and animals) as a boy in Edinburgh.

Page 118

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

Aleck's mother used an ear trumpet to hear her music.

Page 120

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

Visible speech was a sound alphabet that used symbols that looked the way a person's mouth looked when making certain sounds.

Page 120

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

Aleck's father wanted to help his wife and other deaf people.

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

His mother was mostly deaf and his father was always looking for ways to help the deaf.

6. Write the main idea of this chapter.

Alexander Graham Bell followed in his parents' footsteps to invent things to help the deaf.

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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 124

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

The Massachusetts Institute of Technology made space in one of its labs for Aleck to do his experiments.

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

Answers may vary.

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

The electricity was turned off but Aleck could hear the message Watson sent him.

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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?

Answers may vary.

Page _____

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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.

worker

- A. someone who works
- B. full of work
- C. without work
- D. someone who sells things

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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.

Thomas Edison was an inventor who never gave up. He invented a way to make a telegraph faster, make the telephone louder, the phonograph, the electric light bulb, the kinetoscope, and the microphone.

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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

- The referee blew his whistle **Answers may vary.** after the play.
Adverb: _____ **Verb described by adverb:** _____
- Our dog **Answers may vary.** sits in the doorway at night.
Adverb: _____ **Verb described by adverb:** _____
- He searched **Answers may vary.** for his math homework.
Adverb: _____ **Verb described by adverb:** _____
- We walked **Answers may vary.** into the kitchen for dinner.
Adverb: _____ **Verb described by adverb:** _____
- The posters on the wall were placed **Answers may vary.**
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.

- The storm **badly** damaged the car.
(bad)
How was the car damaged? **badly**
- The big baseball uniform hung **loosely** on Devon.
(loose)
How did the baseball uniform hang? **loosely**
- Dad **proudly** clapped when I scored a goal.
(proud)
How did Dad clap? **proudly**
- The music played **loudly** through the speakers.
(loud)
How did the music play? **loudly**
- She **shyly** walked into her new classroom.
(shy)
How did she walk? **shyly**

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

Write a sentence using each adverb.

- recently*
Answers may vary. _____
- tomorrow*
Answers may vary. _____

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

here already home outside

My brother and I ran **outside** to look for our friends. We did not see anyone so we walked **home**. When we got **here** 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 **already** gone to the park. We found him at the park and played until it got dark!

Write a sentence using each adverb.

- never*
Answers may vary. _____
- inside*
Answers may vary. _____

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.

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

Carla sings a song, and Connie dances a jig.

1. ^S Matthew | ^P loves basketball. ^S Tina | ^P enjoys tennis.

Matthew loves basketball and Tina enjoys tennis.

2. ^S The bucket | ^P is rusty. ^S It | ^P leaks on my foot.

The bucket is rusty and it leaks on my foot.

3. ^S The silly kitten | ^P paws at the string. ^S He | ^P plays joyfully!

The silly kitten paws at the string and he plays joyfully!

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

The dentist uses a mirror to check my teeth and 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.

Example: ^S Tom | ^P fixed breakfast and ^S dinner for his family. No

1. ^S Lindsay and ^S Tony | ^P walked to the library. No

2. ^S Linda | ^P jumped rope and ^P played soccer yesterday. No

3. ^S Tina | ^P chose the movie and ^S Jeff | ^P picked out the candy. Yes

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

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

1. ^S The beavers | ^P are playful. ^S Their babies | ^P splash around in the lake.

The beavers are playful and their babies splash around in the lake.

2. ^S We | ^P watched the beavers. ^S We | ^P took pictures of them.

We watched the beavers and we took pictures of them.

3. ^S The white clouds | ^P float across the sky. ^S They | ^P make me feel good.

The white clouds float across the sky and they make me feel good.

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4. ^S Clouds | ^P are beautiful. ^S The whole class | ^P loves to watch them.

Clouds are beautiful and 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.

Example: ^S Steve | ^P wore a coat and ^P gloves. No

1. ^S Emma and Ryan | ^P visited the zoo. No

2. ^S Amy | ^P painted a picture and ^P read a book on Saturday. No

3. ^S Kate | ^P washed the dishes and ^S Sam | ^P cleaned the sink. Yes

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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'.

- Marshmallows are fun to melt. They can make a mess.
Marshmallows are fun to melt but they can make a mess.
- The day is sunny and beautiful. The sky is getting dark off in the distance.
The day is sunny and beautiful but the sky is getting dark off in the distance.
- My new kitten is very naughty. I laugh at her so often.
My new kitten is very naughty but I laugh at her so often.
- This grammar homework seems very easy tonight. I'm going to do my best and not hurry.
This grammar homework seems very easy tonight, but I'm going to do my best and not hurry.

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- The salesman knocked on our door. We were out of town.
The salesman knocked on our door but we were out of town.

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

- David likes peanut butter and jelly sandwiches, but
Answers may vary.
(Hint: Think about a family member who likes a different kind of sandwich.)
- Lulu loved the book she just read, but
Answers may vary.
(Hint: Think about a friend who read the same book but who had a different idea about it.)

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PP15

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

- Which words on the chart are people who play musical instruments?
cellist organist
guitarist pianist
- Which word on the chart is what Julius Caesar had himself appointed for life?
dictator
- Which word on the chart names someone who can help you pick out books at the library?
librarian
- Which words on the chart name people that might work together while they are on a boat?
sailor navigator
- Which word on the chart names someone who writes lyrics, or words to songs, for a vocalist to sing?
lyricist
- Which words on the chart name people who might work together to build a house?
builder designer electrician
- Which word on the chart names someone that every team needs as someone to guide, or lead them?
leader

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- Which words on the chart name people who might work at a school?
teacher counselor librarian
- Which words on the chart name people who do things outside?
builder farmer sailor
climber hunter player
- Which words on the chart name people who might work together to help someone look his or her best?
stylist cosmetician optician

BONUS:

- Alphabetize the words that begin with 'c'.
cellist
climber
cosmetician
counselor
- 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: 10 -or: 9 -ist: 9 -ian: 8

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Name: _____

PP16

Words with Suffixes *-y* and *-al*

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

- Root word: *nutrition*
Add *-y* or *-al* to make: nutritional
Answers may vary.
- Root word: *leak*
Add *-y* or *-al* to make: leaky
Answers may vary.
- Root word: *curl*
Add *-y* or *-al* to make: curly
Answers may vary.
- Root word: *tradition*
Add *-y* or *-al* to make: traditional
Answers may vary.
- Root word: *music*
Add *-y* or *-al* to make: musical
Answers may vary.

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Circle the word that matches the meaning.

- Meaning: full of soil
Word: dirty dirt
- Meaning: the traditions, beliefs, and arts of a group of people
Word: culture cultural
- Meaning: something that is untidy and dirty
Word: mess messy
- Meaning: a power that allows people to do impossible things by saying special words or performing special actions
Word: magical magic
- Meaning: full of a reddish brown substance that forms on certain metals when they are exposed to moisture
Word: rusty rust
- Meaning: related to the land near the sea or ocean
Word: coast coastal

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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.

- The mayor famously denied he did anything wrong but an investigation proved otherwise.
(famous, famously)
Word: famously Part of Speech: adverb
- Marcus drew a humorous representation of the animal he wrote about for his report.
(humorous, humorously)
Word: humorous Part of Speech: adjective
- The road curved dangerously when you got near the top of the mountain.
(dangerous, dangerously)
Word: dangerously Part of Speech: adverb
- I heard a mysterious sound coming from the somewhere by the window but I couldn't figure out what it was.
(mysteriously, mysterious)
Word: mysterious Part of Speech: adjective
- The crew who worked to clean up hazardous materials kept the poisonous items in a special container when they collected them.
(poisonous, mountainous)
Word: poisonous Part of Speech: adjective
- The passenger furiously ran through the terminal, upset that the security line had been so long and worried he would miss his flight.
(furious, furiously)
Word: furiously Part of Speech: adverb

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- The class responded joyously when they found out they had won the attendance prize for the month.
(joyous, joyously)
Word: joyously Part of Speech: adverb
- If you are outside and have no shelter when a thunderstorm hits, you are in a dangerous situation.
(dangerous, humorous)
Word: dangerous Part of Speech: adjective

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

- Which of the following words means "full of danger and excitement"?
adventurously adventure
Part of Speech: adverb
- Which of the following words means "in a courteous way"?
courteously courteous
Part of Speech: adverb
- Which of the following words means "full of the feeling of wanting what someone else has"?
enviously enviously
Part of Speech: adjective

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Name: _____

PP18

Practice Dictionary Skills

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

preschool	prod
present 1. <i>verb</i> To give a gift. 2. <i>verb</i> To introduce a person. 3. <i>adjective</i> To be in a place.	
private 1. <i>noun</i> A soldier of a low rank. 2. <i>adjective</i> Not for sharing. 3. <i>adjective</i> Belonging to one person and no one else.	

1. What are the two guide words on the page?
_____ **preschool** _____ **prod** _____
2. What are the two entry words on the page?
_____ **present** _____ **private** _____
3. Would the word *presentation* be on this page?
_____ **yes** _____
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? _____ **2** _____
What part of speech is *present* in this sentence? _____ **verb** _____

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6. Which definition of *present* matches the use of the word in the sentence:
Every student is *present* today. _____ **3** _____
What part of speech is *present* in this sentence? _____ **adjective** _____

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

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.
_____ **2** _____
What part of speech is *private* in this sentence? _____ **adjective** _____

9. Which definition of *private* matches the use of the word in the sentence:
The *private* saluted the general when he walked by. _____ **1** _____
What part of speech is *private* in this sentence? _____ **noun** _____

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

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