

Louisa Cook Moats  
Bruce L. Rosow

# SPEECH to PRINT

*Language Exercises for Teachers*

WORKBOOK



THIRD EDITION

# Speech to Print Workbook

## Language Exercises for Teachers

### Third Edition

**Louisa Cook Moats, Ed.D.**  
Moats Associates Consulting, Inc.  
Sun Valley, Idaho

and

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# Contents

About the Downloads.....	ix
About the Authors .....	xi
Chapter 1	To the Student ..... 1
	How to Use This Workbook..... 2
	What’s the Big Idea?..... 3
	Preliminary Exercise: Identify Features of a Word’s Linguistic Structure and Meaning ..... 4
	Knowledge and Practice Standards for Teachers of Reading ..... 4
	How to Use the Survey of Language Knowledge ..... 7
	Survey of Language Knowledge ..... 8
	Chapter 1 Answer Key..... 10
Chapter 2	Phonetics..... 11
	Exercise 1, Phoneme Counting ..... 12
	Exercise 2, Why Phonemes Are Elusive ..... 13
	Exercise 3, Identify the Third Phoneme ..... 13
	Exercise 4, Rationale for Phonetic Alphabet and Transcription..... 14
	Exercise 5, Distinctive Features of Phonemes..... 14
	Exercise 6, Discover the Consonant Sounds of English..... 15
	Exercise 7, Exploring the Glides..... 17
	Exercise 8, Partner Fun with Consonant Tiles..... 18
	Exercise 9, Identify First and Last Consonant Phonemes in Words ..... 18
	Exercise 10, Analyze Student Consonant Spelling Errors ..... 19
	Exercise 11, Reproduce the Vowels of American English..... 20
	Exercise 12, Partner Fun with Vowel Tiles..... 22
	Exercise 13, Identify the Vowel Phonemes in Words ..... 23
	Exercise 14, Spelling Error Analysis, Vowel Substitutions ..... 23
	Exercise 15, Word Sorts with Confusable Vowel Phonemes..... 24
	Exercise 16, Minimal Pairs, Contrasting Vowels..... 25
	Exercise 17, Introduction to Schwa (/ə/) ..... 26

	Exercise 18, Simple Transcription.....	27
	Exercise 19, English and Spanish Vowel Sounds .....	28
	Exercise 20, Spelling Error Analysis .....	28
	Chapter 2 Answer Key.....	29
Chapter 3	Phonology .....	37
	Exercise 21, Phoneme Sequences.....	38
	Exercise 22, Syllable Boundaries.....	39
	Exercise 23, Internal Syllable Structure.....	39
	Exercise 24, Detecting Syllable Stress .....	40
	Exercise 25, Analyzing Student Spelling Errors.....	41
	Exercise 26, Speech Production: Pronunciation of Multisyllable Words.....	41
	Exercise 27, Phonological Memory, Retrieval, and Naming .....	42
	Exercise 28, The Progression of Phoneme Awareness Development.....	43
	Exercise 29, Phoneme Awareness Tasks .....	44
	Exercise 30, Minimal Pairs and Construction of Word Chains .....	45
	Exercise 31, Phonetic Variation and Allophones .....	45
	Exercise 32, Identifying Schwa and Syllable Stress .....	46
	Exercise 33, Vowel Nasalization .....	47
	Exercise 34, Aspirated and Deaspirated Voiceless Stops /p/, /t/, /k/.....	48
	Exercise 35, Flapping, Affrication of /t/ and /d/, and Vowel Raising.....	49
	Exercise 36, More Phonetic Transcription, with Marking of Allophonic Variation.....	50
	Exercise 37, Spelling Error Analysis .....	51
	Textbook Supplement: Teaching Phoneme Awareness .....	54
	Chapter 3 Final Quiz.....	58
	Chapter 3 Answer Key.....	60
Chapter 4	The Structure of English Orthography.....	69
	Exercise 38, Meaning and Sound.....	70
	Exercise 39, Sorting Words by Language of Origin .....	70
	Exercise 40, Word Construction by Morpheme .....	71
	Exercise 41, What Is a Grapheme? .....	72
	Exercise 42, Consonant Blends and Digraphs Within Syllables and Morphemes .....	73
	Exercise 43, Hard <i>c</i> (/k/) and Soft <i>c</i> (/s/), Progression of Word Study.....	74
	Exercise 44, Word Sorts with Phoneme /k/ .....	76
	Exercise 45, Spellings for Affricates /tʃ/ and /dʒ/ (/ch/ and /j/)... ..	78
	Exercise 46, Final Complex Consonant Review .....	79
	Exercise 47, Vowel Alternations or “Choice” Spellings, /yu/ and /u/.....	80
	Exercise 48, Six Types of Syllables.....	81
	Exercise 49, VCV Syllable Division.....	83
	Exercise 50, When (and How) Schwa Happens.....	84
	Exercise 51, Rules for Adding Suffixes .....	86
	Exercise 52, Lexical Mapping of “Spell” .....	91

	Chapter 4 Final Quiz.....	92
	Chapter 4 Answer Key.....	94
Chapter 5	Morphology.....	105
	Introductory Self-Assessment.....	106
	Exercise 53, Why Morphology Is Important for Reading and Spelling.....	108
	Exercise 54, Categories of Morphemes.....	110
	Exercise 55, The Meaning of Compounds.....	111
	Exercise 56, Common Anglo-Saxon Prefixes and Suffixes.....	112
	Exercise 57, Latin-Based Prefixes, Roots, and Suffixes.....	114
	Exercise 58, Assimilated Prefixes.....	116
	Exercise 59, Greek Combining Forms.....	119
	Exercise 60, Inflectional and Derivational Suffixes.....	119
	Exercise 61, Past Tense and Other Inflectional Suffixes.....	120
	Exercise 62, Derivational Suffixes and Parts of Speech.....	123
	Exercise 63, Stress Patterns Shift in Longer Words.....	124
	Exercise 64, Suffixes with Soft <i>ti</i> , <i>ci</i> , and <i>si</i> .....	126
	Exercise 65, Derivational Complexity, Part 1.....	128
	Exercise 66, Derivational Complexity, Part 2.....	129
	Exercise 67, Word Building by Morpheme.....	129
	Exercise 68, Morpheme Maps for Assessment and Instruction.....	130
	Informal Assessment of Morphological Knowledge.....	131
	Chapter 5 Final Quiz.....	133
	Chapter 5 Answer Key.....	135
Chapter 6	Syntax.....	147
	Pretest: A Lexical Map for the Word <i>Syntax</i> .....	148
	Exercise 69, Academic Written Language.....	148
	Exercise 70, Syntax and Written Expression: Phrase Structure and Slot Filling.....	149
	Exercise 71, Syntax and Reading Comprehension: Follow the Verb.....	150
	Exercise 72, Descriptive versus Prescriptive Grammar.....	150
	Exercise 73, Evidence for a Mental Grammar.....	151
	Exercise 74, Sentence Frameworks: Slots for Words.....	153
	Exercise 75, Locating Simple Subjects and Main Verbs.....	154
	Exercise 76, Parts of Speech.....	155
	Exercise 77, Participles.....	156
	Exercise 78, The Noun Phrase, Its Roles, and Argument Structure.....	158
	Exercise 79, Phrases.....	160
	Exercise 80, The Behavior of Verbs.....	163
	Exercise 81, Sorting Phrases, Dependent Clauses, and Independent Clauses.....	164
	Exercise 82, Conjunction Junction.....	166
	Exercise 83, Editing and Revising Student Writing.....	167
	Exercise 84, How Sentences Grow.....	170
	Exercise 85, Sentence Combining.....	171
	Exercise 86, Identifying Students' Syntactical Errors.....	172
	Chapter 6 Final Quiz.....	174
	Chapter 6 Answer Key.....	176

Chapter 7	Semantics .....	189
	Exercise 87, The Simple View of Reading.....	190
	Exercise 88, Factors Affecting Language and Reading Comprehension .....	191
	Exercise 89, Lexical Networks in the Brain .....	193
	Exercise 90, Evolving Word Meanings: Difficult for English Learners .....	194
	Exercise 91, Lexical Quality: Shallow or Deep?.....	195
	Exercise 92, Multiple Meaning Headlines.....	196
	Exercise 93, Definitions and Semantic Features .....	196
	Exercise 94, Superordinate and Subordinate Categories with Application to Power Outlining.....	197
	Exercise 95, Synonyms.....	199
	Exercise 96, Formal Marking of Semantic Features .....	200
	Exercise 97, Antonyms.....	201
	Exercise 98, Multiple Meaning Word Map (Polysemy) .....	202
	Exercise 99, Idioms.....	203
	Exercise 100, Metaphor.....	204
	Exercise 101, Simile.....	205
	Exercise 102, Vocabulary Instruction.....	206
	Exercise 103, Paraphrase.....	207
	Exercise 104, Phrasing .....	209
	Exercise 105, Recipe for a Noun Phrase: The Order of Adjectives.....	211
	Exercise 106, How to Satisfy a Verb .....	212
	Exercise 107, Co-referents, Anaphora, and Cohesive Devices .....	214
	Exercise 108, Signal Words: Conjunctions and What They Signal .....	216
	Exercise 109, Integration of Meaning.....	218
	Chapter 7 Final Quiz.....	221
	Chapter 7 Answer Key.....	223
	<i>Speech to Print Workbook</i> Final Exam.....	235
Appendix A	Phoneme Tile Templates .....	239
Appendix B	Developmental Spelling Inventories.....	243

## About the Authors

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Dr. Moats has been a teacher, psychologist, researcher, graduate school faculty member, consultant, and author of many influential scientific journal articles, books, and policy papers on the topics of reading, spelling, language, and teacher preparation. She earned her bachelor of arts degree from Wellesley College, her master's degree at Peabody College of Vanderbilt, and her doctorate in reading and human development from the Harvard Graduate School of Education. She began her professional career as a neuropsychology technician, teacher of students with learning disabilities, curriculum director in a residential school, and education specialist in a hospital learning clinic.

After completing her doctorate, she spent 15 years in private practice as a licensed psychologist in Vermont, specializing in evaluation and consultation with individuals of all ages who experienced learning problems in reading and language. Subsequently, she was employed as the Visiting Scholar in the Sacramento County Office of Education, where she helped obtain a \$1 million grant to write teacher training materials for California's reading initiative.

Dr. Moats spent the next 4 years as site director of the National Institute of Child Health and Human Development (NICHD) Early Interventions Project in Washington, DC. This longitudinal, large-scale project was conducted through a grant to the University of Texas, Houston, under the direction of Barbara Foorman. It investigated the causes and remedies for reading failure in high-poverty urban schools. Evidence from the study strongly supported the value of in-depth training for teachers on the essential components of effective instruction.

During the last two decades, Dr. Moats has focused her efforts on developing courses and workshops for teachers based on her experiences at the Greenwood Institute in Vermont, St. Michael's College in Vermont, the NICHD Early Interventions Project, the California Reading Initiative, and Reading First. Those professional development materials are called *LETRS: Language Essentials for Teachers of Reading and Spelling*, published by Voyager Sopris Learning. Dr. Moats's other publications include, in addition to many journal articles, *Spelling: Development, Disability, and Instruction* (York Press/PRO-ED, 1995); *Straight Talk About Reading: How Parents Can Make a Difference During the Early Years* (with Susan Hall; Contemporary Books, 1999); *Parenting a Struggling Reader: A Guide to Diagnosing and Finding Help for Your Child's Reading Difficulties* (with Susan Hall; Broadway, 2002); and *Basic Facts About Dyslexia and Other Reading Problems* (with Karen Dakin; International Dyslexia Association, 2007). She is also well known for authoring the American Federation of Teachers' "Teaching Reading Is Rocket Science: What Expert Teachers of Reading Should Know and Be Able to Do" (1999).



Dr. Moats's awards include the prestigious Samuel T. and June L. Orton award from the International Dyslexia Association for outstanding contributions to the field, the Eminent Researcher Award from Learning Disabilities Australia, and the Benita Blachman award from the Reading League.

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Dr. Rosow completed his doctoral studies in educational psychology at American International College. He began his career as an intermediate grade classroom teacher at Guilford Elementary School in Southern Vermont before moving into a remedial instruction role teaching word study and math. During this time, Dr. Rosow worked with Dr. Moats to design word study lessons for diverse students based on the principles of structured language instruction. One result was *Spellography* (with Louisa Cook Moats; Sopris West, 2003), a word study curriculum for intermediate and middle school students. After serving as the Academic Dean at the Greenwood School for a decade, working with boys with language-based learning differences, Dr. Rosow returned to public education in the Windham Central Supervisory Union in Southern Vermont. There, he runs The Language Lab to provide remedial instruction to struggling middle and high school readers. For almost two decades, Dr. Rosow also taught in the Language and Literacy Program through the Reading Institute in Williamstown, Massachusetts, Simmons College and Bay Path University, using *Speech to Print: Language Essentials for Teachers*, and developing the material you will find in this workbook.

# 2

## Phonetics

Exercise 1, Phoneme Counting.....	12
Exercise 2, Why Phonemes Are Elusive .....	13
Exercise 3, Identify the Third Phoneme .....	13
Exercise 4, Rationale for Phonetic Alphabet and Transcription .....	14
Exercise 5, Distinctive Features of Phonemes .....	14
Exercise 6, Discover the Consonant Sounds of English .....	15
Exercise 7, Exploring the Glides.....	17
Exercise 8, Partner Fun with Consonant Tiles .....	18
Exercise 9, Identify First and Last Consonant Phonemes in Words .....	18
Exercise 10, Analyze Student Consonant Spelling Errors .....	19
Exercise 11, Reproduce the Vowels of American English .....	20
Exercise 12, Partner Fun with Vowel Tiles .....	22
Exercise 13, Identify the Vowel Phonemes in Words .....	23
Exercise 14, Spelling Error Analysis, Vowel Substitutions .....	23
Exercise 15, Word Sorts with Confusable Vowel Phonemes.....	24
Exercise 16, Minimal Pairs, Contrasting Vowels .....	25
Exercise 17, Introduction to Schwa (/ə/)... ..	26
Exercise 18, Simple Transcription .....	27
Exercise 19, English and Spanish Vowel Sounds .....	28
Exercise 20, Spelling Error Analysis .....	28
Chapter 2 Answer Key.....	29



## EXERCISE 1

Textbook page 27

# Phoneme Counting

Count the speech sounds in the following words. Draw a short line for each speech sound you can identify (a “parking spot”) and, using conventional symbols as best you can, write the separate sounds in each word. The first three are done for you.

ace /ā/ /s/ \_\_\_\_\_

say /s/ /ā/ \_\_\_\_\_

nose /n/ /ō/ /z/ \_\_\_\_\_

zone \_\_\_\_\_

shoes \_\_\_\_\_

couch \_\_\_\_\_

though \_\_\_\_\_

ought \_\_\_\_\_

chicks \_\_\_\_\_

hoax \_\_\_\_\_

quenched \_\_\_\_\_

ledges \_\_\_\_\_

exit \_\_\_\_\_

hexed \_\_\_\_\_

weigh \_\_\_\_\_

height \_\_\_\_\_

arched \_\_\_\_\_

league \_\_\_\_\_

breath \_\_\_\_\_

earth \_\_\_\_\_

Highlight or underline the sounds or sequences of sounds that you are unsure of. Where do you need clarification?

---



---

## EXERCISE 2

Textbook page 28

## Why Phonemes Are Elusive

- Does the phoneme /t/ sound and feel the same or different in *tag*, *stag*, *water*, and *passed*?  
\_\_\_\_\_
- Does the phoneme /k/ sound and feel the same or different in *cat*, *scat*, *pinky*, and *tack*?  
\_\_\_\_\_
- Does the phoneme /æ/ (ă) sound and feel the same or different in *add*, *and*, and *approve*?  
\_\_\_\_\_
- Look in a mirror or look at a partner and say the word pairs below. Does the mouth look and/or feel the same when the first sound in each word is articulated?
  - see, so \_\_\_\_\_
  - cheese, choose \_\_\_\_\_
  - zebra, zone \_\_\_\_\_
  - me, moo \_\_\_\_\_
  - desk, dress \_\_\_\_\_
  - tap, trap \_\_\_\_\_
- If the mouth is shaped differently for each of these first sounds, what do you think is causing the mouth position to change?  
\_\_\_\_\_
- What is the implication of this phonological reality for teaching and learning about speech sounds?  
\_\_\_\_\_

## EXERCISE 3

Textbook page 30

## Identify the Third Phoneme

Write a line to make a parking spot for each sound you hear. Write a symbol for each of the first three sounds, using conventional symbols. The first three sounds for the first two word pairs are done for you.

music <u>m</u> <u>y</u> <u>ū</u> _ _ _	squeeze <u>s</u> <u>k</u> <u>w</u> _ _ _
exhaust <u>e</u> <u>g</u> <u>z</u> _ _ _	extra <u>e</u> <u>k</u> <u>s</u> _ _ _
patched	things
walked	gnawed
psychic	chosen
legion	fusion

*Note:* This task is usually viewed as quite difficult, even for literate adults. It demonstrates why you need to study the sounds of English!

## EXERCISE 4

Textbook page 31

# Rationale for Phonetic Alphabet and Transcription

English orthography does not have a one-to-one correspondence system among sounds and letters. The following examples show why. What is the principle of letter use illustrated by each set of words?

1. cape, kick, chord, quit, ax, antique

---

2. flew, blue, moo, do, canoe, rumor, rude

---

3. glad, glade, luggage, many, walk, was, watch, ant

---

4. What do these examples show us about the advantages of using the International Phonetic Alphabet (IPA)?

---

## EXERCISE 5

Textbook page 32

# Distinctive Features of Phonemes

1. Circle the speech sounds that you can say continuously until you run out of breath.

/sh/   /j/   /ng/   /k/   /v/   /p/   /r/   /t/   /l/   /ch/

2. Circle the speech sounds that send air through the nose and resonate in the nasal cavity.

/m/   /j/   /ng/   /s/   /th/   /p/   /n/   /d/   /w/

3. Circle the speech sounds that are unvoiced, or made with the vocal cords turned off.

/sh/   /j/   /ng/   /k/   /v/   /p/   /r/   /t/   /l/   /ch/

## EXERCISE 6

Textbook page 34

# Discover the Consonant Sounds of English

1. Try to discover as many of the consonants as you can, using the blank chart that follows. Categorize the consonants by the place in the vocal tract where you think they are articulated.

	lips	lips/teeth	tongue between teeth	tongue behind teeth	roof of mouth	back of mouth	throat
stops							
nasals							
fricatives							
affricates							
liquids							
glides							

2. Now, compare the consonants in this chart with those that follow. Phonic symbols are used in the first chart, and IPA symbols are used in the second chart.

Which consonants were difficult to identify?

Which consonants were previously unknown to (or realized by) you?

## Consonant Phonemes, Phonic Symbols

Manner of articulation	Place of articulation						
	Lips	Lips/ teeth	Tongue between teeth	Tongue behind teeth	Roof of mouth	Back of mouth	Throat
<b>Stops</b> Voiced Unvoiced	/b/ /p/			/d/ /t/		/g/ /k/	
<b>Nasals</b>	/m/			/n/		/ŋ/	
<b>Fricatives</b> Voiced Unvoiced		/v/ /f/	/θ/ /ð/	/z/ /s/	/ʃ/ /ʒ/		/h/
<b>Affricates</b>					/tʃ/ /dʒ/		
<b>Glides</b>	/w/ /wh/				/y/	(/w/ wh/)	
<b>Liquids</b>				/l/	/r/		

(continued)

## EXERCISE 6 (continued)

**Consonant Phonemes, IPA Symbols**

Manner of articulation	Labial	Labiodental	Interdental	Alveolar	Palatal	Velar	Glottal
<b>Stops</b> Voiced Unvoiced	/b/ /p/			/d/ /t/		/g/ /k/	
<b>Nasals</b>	/m/			/n/		/ŋ/	
<b>Fricatives</b> Voiced Unvoiced		/v/ /f/	/ð/ /θ/	/z/ /s/	/ʒ/ /ʃ/		/h/
<b>Affricates</b> Voiced Unvoiced					/dʒ/ /tʃ/		
<b>Glides</b> Voiced Unvoiced	/w/ /ɹ/				/y/	(/w/ /ɹ/)	
<b>Liquids</b>				/l/	/r/		

## EXERCISE 7

Textbook page 38

# Exploring the Glides

1. a. Underline the letters that represent glides /m/, /w/, and /y/ in the words below.

yell, well, whelp

yin, win, whip

yon, won, whoa

yak, wad, what

- b. Generate another 10 words that are examples of words with glides.

---

---

- c. In all these examples, is there ever a consonant between a glide and a vowel that follows?

---

- d. Does a glide ever come after a vowel?

---

2. Read the passage below aloud to yourself and answer the questions that follow.

While we waited,  
a wily whale whirled  
and with a whap, whammed  
against a worn wharf, where  
the watchful wharf master,  
while whistling,  
fed him fish.

- a. Do you make a distinction between /m/ and /w/ in your own speech?

---

- b. Listen to a newscaster or weather reporter on radio or TV. Does the announcer pronounce these sounds in the same way, or can you distinguish the beginning sounds in words such as *weather, whether; when, went; where, wear*?

---



## EXERCISE 8

Textbook page 32

# Partner Fun with Consonant Tiles

Make a set of consonant tiles, using either IPA or phonic tiles. Templates are in Appendix A and are downloadable as well. Try these activities:

1. Re-create the consonant chart from memory.
2. Have one partner say a sound and the other partner locate its symbol.
3. Sort the consonants by manner of articulation: stops, nasals, fricatives, affricates, glides, liquids.
4. Sort the tiles by those representing voiced consonants and those representing unvoiced consonants.
5. Play Concentration with the nine consonant pairs that differ only in voicing. Look for the matched pairs.
6. Play a consonant riddle game. One partner describes a sound by place and manner of articulation; the other person must identify what it is. Examples:
  - a. What nasal consonant is pronounced in the back of the mouth?
  - b. What voiced stop is pronounced with the tongue behind the teeth?
  - c. What voiced glide is pronounced with the lips rounded?

## EXERCISE 9

Textbook page 40

# Identify First and Last Consonant Phonemes in Words

Write the symbol for the first and last phonemes in each word below.

gnarl	limb	wretch
knees	this	quince
yang	physique	unicorn
width	chorus	gist
chime	chagrin	whose
thank	once	writhe
swerve	cent	wax

## EXERCISE 10

Textbook page 32

# Analyze Student Consonant Spelling Errors

To compare spoken words or phrases with a student's spelling attempts, follow this procedure:

- Say each word and create parking spots (short lines) for each phoneme.
- Write the symbol for each phoneme under each parking spot.
- Park the letters the student used.
- Identify which sounds the student has not accurately represented.

The first three are done for you.

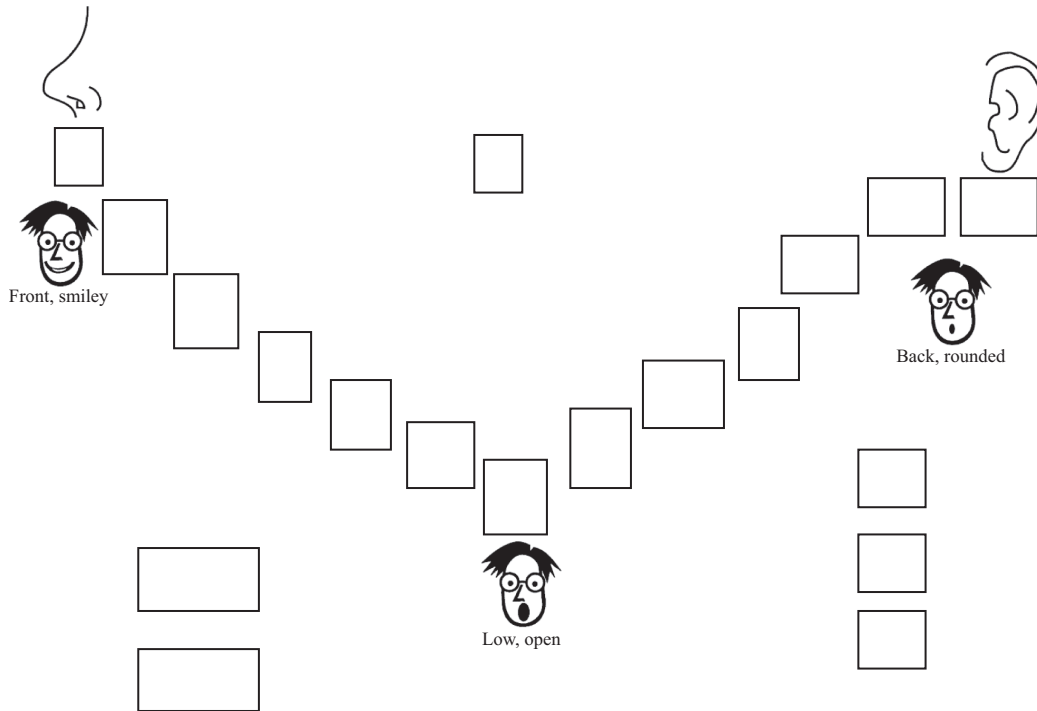
Target word	Student spelling	Parking spots	What's the problem?
path	paf	<u>p</u> <u>a</u> <u>f</u> /p/ /æ/ /θ/	Voiceless fricative in place of voiced fricative
bed	md	<u>m</u> <u>d</u> /b/ /ɛ/ /d/	Nasal in place of voiced bilabial stop
much	mush	m u sh /m/ /ʌ/ /tʃ/	Fricative in place of an affricate
uncle	ungl		
mop	mob		
athlete	aflet		
spinach	spinage		
plan	pran		
link	lick		
yesterday	westerday		
sing	sig		
real	wel		

EXERCISE 11

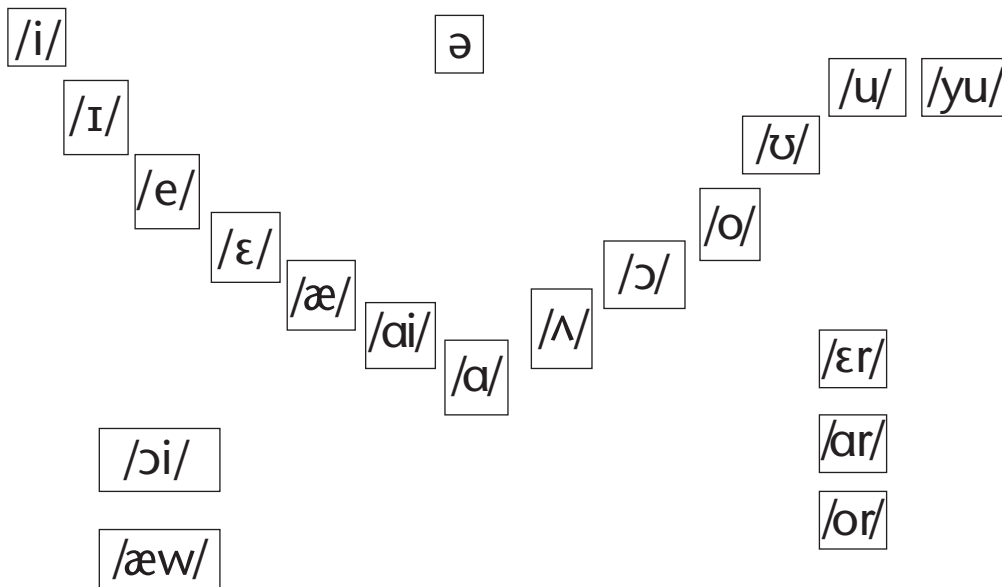
Textbook page 42

# Reproduce the Vowels of American English

Using the blank vowel chart below, list as many vowels as you can recall, grouping them by mouth position. Say them aloud, looking in a mirror, as you go. Then, check what you remember against the charts provided in the text.



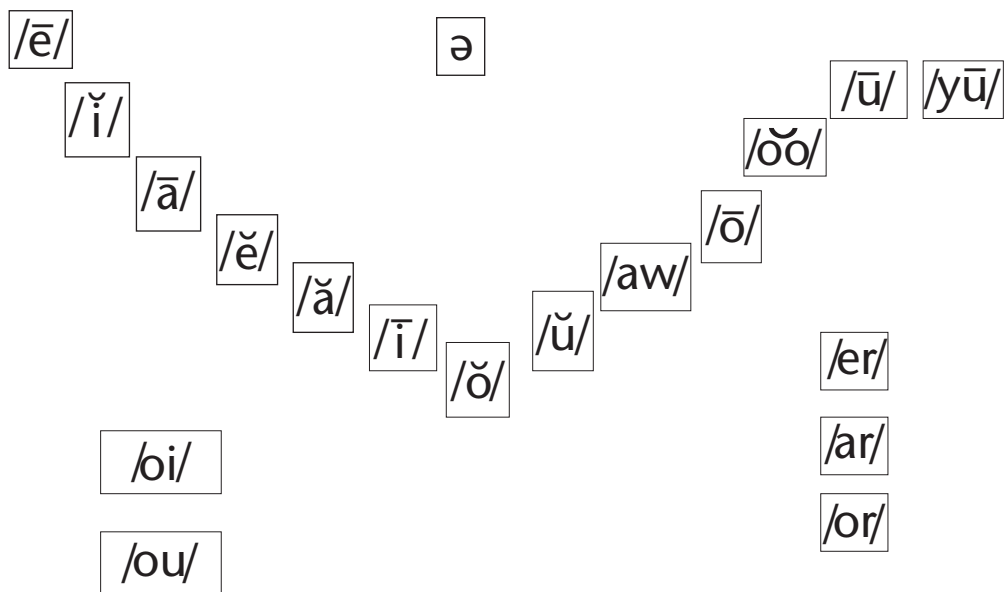
**Vowels by Order of Articulation, Front to Back and High to Low, IPA Symbols**



(continued)

EXERCISE 11 (continued)

**Vowels by Order of Articulation, Front to Back and High to Low, Phonic Symbols**



## EXERCISE 12

Textbook page 41

# Partner Fun with Vowel Tiles

Make a set of vowel tiles, using either IPA or phonic tiles. Templates are in Appendix A and are downloadable as well. Try these activities:

- a. Re-create the vowel chart from memory, saying the vowels aloud as you go. Watch your partner's mouth position change as the vowels move from high to low, front to back.
- b. One partner says a sound at random; the other partner locates its symbol and describes its pronunciation as it is placed on the vowel chart. Regional dialects and speech variations should be identified and discussed.
- c. Sort the vowels by these categories:
  - Tense, lax, and diphthong (long, short, and slider vowels)
  - High (closed), middle, and low (open) tongue and jaw position
  - With and without lip rounding
- d. Vowel riddle game: The questioner provides his or her partner with three descriptive characteristics of a vowel. The partner must identify which vowel sound it is. For example,
  - What vowel is high, front, and tense? (/i/ or long e)
  - What vowel is unrounded, low, and lax or short? (/ʌ/ or short u)
  - What vowel-*r* combination is totally unitized? (/er/)
  - What voiced glide is pronounced with the lips rounded?

## EXERCISE 13

Textbook page 41

# Identify the Vowel Phonemes in Words

Say each word on the list. Identify the vowel phoneme. Write the word in the box below where it belongs.

rule	boy	type	steak	his	friend
push	boat	gym	heart	laugh	know
up	bought	odd	threat	piece	void
use	bounce	weigh	search	latch	burn
boot	prow	view	poor	foot	car
love	walk	cease	palm	high	scorch

/i/	/ɪ/	/e/	/ɛ/	/æ/	/ai/
/ɑ/	/ʌ/	/ɔ/	/o/	/ʊ/	/u/
/yu/	/ɔi/	/æw/	/ɛr/	/ar/	/or/

## EXERCISE 14

Textbook page 41

# Spelling Error Analysis, Vowel Substitutions

Use the parking lot method of Exercise 10 to compare a misspelling to the actual spoken word. The first one is done for you.

Target word	Student spelling	Parking spots	What's the problem?
foot	fote	<u>f</u> <u>o</u> <u>t</u> (e) /f/ /ʊ/ /t/	Confusion of back, rounded vowels
hug	hog		
leg	lag		
smart	smort		
caught	cot		
pin	pen		

## EXERCISE 15

Textbook page 41

# Word Sorts with Confusable Vowel Phonemes

Sort the words by the vowel sounds.

1. *Use and ooze.*

moo, cue, loop, fuel, fool, few, group, mute, suit, use, new, soothe, blue, sue, rude, fume, cute, ooze

/u/	[yu]

2. *Odd ducks.*

pop, aught, swat, talk, put, Pa, took, paw, love, could, trouble, off, of, walk, frog, wok, putt, thought, laundry, tock, father, flood

/ɑ/	/ɒ/	/ɔ/	/ʊ/

3. *Foul vowels.*

calm, fool, hawk, bomb, foul, suit, would, mutt, talk, use, vowel, hush, butte, from, bush, flood, balm, caulk

/æw/	/u/	/ɔ/	/ɑ/	/ʊ/	/ɒ/	/yu/

4. *Are you.*

Sort these words by the vowel –r sound:

skirt, orbit, blurb, art, solar, corn, fir, worst, star, churn, court, infer, wart, scarred, earn, snore, parsnip, slimmer

/ɛr/	/ar/	/or/

## EXERCISE 16

Textbook page 45

# Minimal Pairs, Contrasting Vowels

Minimal pairs can be used to help students perceive the distinction between similar-sounding vowels. In the minimal pair sets below, identify the contrasting vowel phonemes in each set. Add the terms used to describe common or similar features and what makes them distinct. Then, give another set of minimal pair words that use the same vowel contrasts.

Minimal pair	Contrasting vowels	Description	Another pair?
Pa, paw	/ɑ/, /ɔ/	Both mid, low; /ɔ/ is rounded	(tock, talk)
putt, put	/ʌ, /ʊ/		
slid, sled			
soot, suit			
food, feud			
shot, shut			



## EXERCISE 17

Textbook page 45

# Introduction to Schwa (/ə/)

## Schwash Your Mouth (from Moats & Rosow, 2003)

One of the annoying things in life is dealing with the problem of schwa. In a word with more than one syllable, we say one of the syllables with more accent or stress. Other syllables are unaccented and ripe for the tricky schwa. *Schwa* is a Yiddish word that means “empty.” The schwa empties the sound out of a vowel so that vowel doesn’t sound the way we expect it to. Here is a reading activity to show you the schwa at work.

Read the single syllable before each of the words below. Then notice how the vowel sound in that syllable gets muffled and emptied when you read it again in the two-syllable word.

pen	sharpen	pet	carpet	ton	button
den	burden	ban	urban	gus	fungus
ket	casket	tom	bottom	fort	effort
rent	current	cust	locust	ten	mitten
dor	odor	val	oval	son	lesson
ven	even	fa	sofa	ard	coward

Now, create whole words by drawing a line between syllables from each column.

Next, write the two-syllable word on the line. Circle the syllables that have schwas.

The first three are done for you.

fal	den	falcon	les	som	_____
cac	pen	cactus	blos	mock	_____
sud	pet	sudden	tun	mest	_____
bot	tus	_____	ham	dest	_____
hap	ment	_____	writ	nel	_____
trum	con	_____	slim	ten	_____
frag	tom	_____	glad	son	_____

## EXERCISE 18

Textbook page 31

# Simple Transcription

1. Write a phonetic transcription for these words. For now, we are interested in only the basic phoneme sequence.

Word	Transcription	Word	Transcription
soot	[s ʊ t]	jinx	[dʒ ɪ ŋ k s]
hoist		poised	
could		weld	
caption		fetch	
smooth		hearth	
ethics		pigeon	
blouse		bruise	
warn		worse	
wither		whorl	
leisure		promise	
anchor		often	

2. Translate these words into standard English spelling:

m a i	b e s t	f r e n d	i z
ə	p e r s ə n	h u	w i l
g ɪ v	m i	ə	b ʊ k
ɑ i	h æ v	n ɑ t	r ɛ d

—Abraham Lincoln

3. **Bonus Transcription.** Write this quote in phonetic transcription:

There is no frigate like a book,  
 To take us lands away,  
 Nor any coursers like a page  
 Of prancing poetry.  
 This traverse may the poorest take  
 Without oppress of toll;  
 How frugal is the chariot  
 That bears a human soul.

—Emily Dickinson

## EXERCISE 19

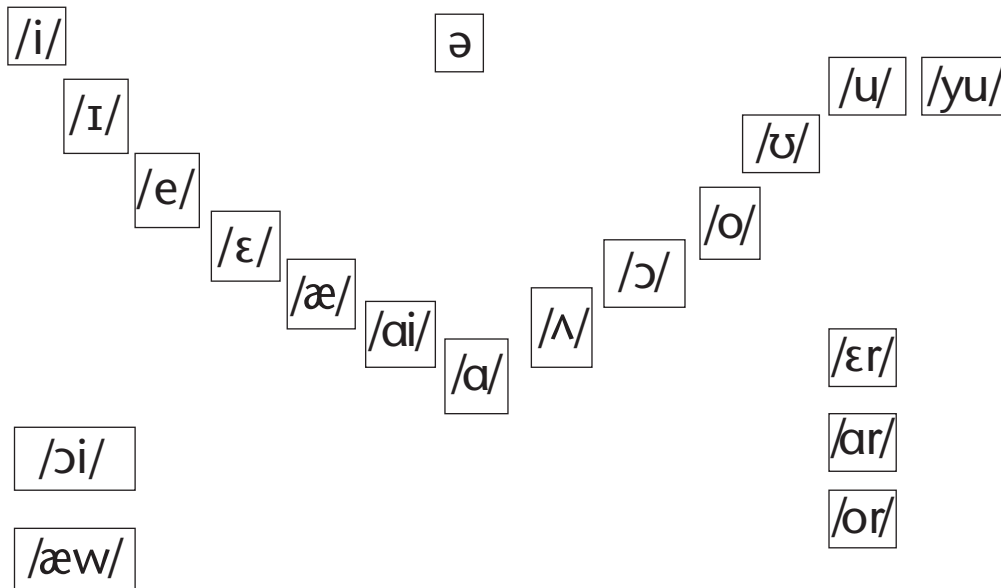
Textbook page 46

# English and Spanish Vowel Sounds

Each language system has its own set of vowels and consonants. Some languages have fewer phonemes than English, and some have many more. Spanish has five vowels:

/i/—primo, fajita, si    /e/—tres, mesa    /a/—casa, llama    /o/—solo    /u/—uno

1. In the vowel chart below, circle all of the vowels that do not exist in Spanish.



2. What are the implications of this difference in language systems?

## EXERCISE 20

Textbook page 48

# Spelling Error Analysis

Here are some of the results of a second-grade student's spelling test. Examine the error patterns. If you were the student's teacher, what phonemes, phoneme features, and aspects of phoneme awareness should you teach her directly? Write your answers in the space provided.

sbring (spring)	had (hardly)	sgon (signal)
tode (tardy)	secing (section)	mog (much)
mysef (myself)	ues (yes)	efre (every)

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## REFERENCE

Moats, L. C., & Rosow, B. (2003). *Spellography*. Longmont, CO: Sopris West Educational Services.

## Chapter 2 Answer Key

### EXERCISE 1, Phoneme Counting

(Answers are shown using phonic symbols.)

ace	/ā/ /s/	say	/s/ /ā/
nose	/n/ /ō/ /z/	zone	/z/ /ō/ /n/
shoes	/sh/ /ū/ /z/	couch	/k/ /ou/ /ch/
though	/th/ /ō/	ought	/aw/ /t/
chicks	/ch/ /ī/ /k/ /s/	hoax	/h/ /ō/ /k/ /s/
quenched	/k/ /w/ /ě/ /n/ /ch/ /t/	ledges	/l/ /ě/ /j/ /ī/ /z/
exit	/ě/ /k/ /s/ /ī/ /t/	hexed	/h/ /ě/ /k/ /s/ /t/
weigh	/w/ /ā/	height	/h/ /ī/ /t/
arched	/ar/ /ch/ /t/	league	/l/ /ē/ /g/
breath	/b/ /r/ /ě/ /th/	earth	/er/ /th/

### EXERCISE 2, Why Phonemes Are Elusive

- 1–4. Mouth position varies noticeably for each variation of these sounds.
5. Mouth position changes for phoneme pronunciation because we anticipate the sequence of sounds in the whole word. For example, the /d/ in *dress* is shaped to anticipate the mouth's formation of /r/.
6. The implication of this reality is that all example words are not of equal transparency; phonemes as they exist in isolation (or in the abstract) may not be realized the same way when they are strung together or coarticulated; students' perceptions of the sounds in words are influenced by these changes of mouth position; and the place of a phoneme in the word influences how easy or difficult it is to isolate. Choice of key words and examples during instruction should take these subtleties into account.

### EXERCISE 3, Identify the Third Phoneme

(Answers are shown using phonic symbols.)

music <u>m</u> <u>y</u> <u>ū</u> _ _ _	squeeze <u>s</u> <u>k</u> <u>w</u> _ _ _
exhaust <u>e</u> <u>g</u> <u>z</u> _ _ _	extra <u>e</u> <u>k</u> <u>s</u> _ _ _
patched <u>p</u> <u>a</u> <u>ch</u> _	things <u>th</u> <u>i</u> <u>ng</u> _
walked <u>w</u> <u>aw</u> <u>k</u> _	gnawed <u>n</u> <u>aw</u> <u>d</u>
psychic <u>s</u> <u>i</u> <u>k</u> _ _	chosen <u>ch</u> <u>o</u> <u>z</u> _ _
legion <u>l</u> <u>e</u> <u>j</u> _ _	fusion <u>f</u> <u>u</u> <u>zh</u> _ _

**EXERCISE 4, Rationale for Phonetic Alphabet and Transcription**

- 1, 2. There are many ways to spell the same sound.
3. A single letter can be used in many different spelling patterns or correspondences.
4. We can use one symbol (grapheme) for each phoneme.

**EXERCISE 5, Distinctive Features of Phonemes**

1. (sh) j (ng) k (v) p (r) t (l) ch
2. (m) j (ng) s th p (n) d w
3. (sh) j ng (k) v (p) r (t) l (ch)

**EXERCISE 6, Discover the Consonant Sounds of English**

1. Answers will vary.
2. Answers will vary.

**EXERCISE 7, Exploring the Glides**

1. a. Underline the letters that represent glides /m/, /w/, and /y/ in the words below.
 

yell, well, whelp  
yin, win, whip  
yon, won, whoa  
yak, wad, what
- b. Answers will vary.
- c. There is never a consonant between a glide and a vowel that follows.
- d. A glide never comes after a vowel.
2. a. Most Americans do not notice a distinction between /m/ and /w/ in their own speech.
- b. Answers will vary.

**EXERCISE 8, Partner Fun with Consonant Tiles**

- 1–5. Practice exercise; results will vary.

**EXERCISE 9, Identify First and Last Consonant Phonemes in Words**

Write the symbol for the first and last phonemes in each word below.

gnarl	/n/ /l/	limb	/l/ /m/	wretch	/r/ /tʃ/
knees	/n/ /z/	this	/ð/ /s/	quince	/k/ /s/
yang	/y/ /ŋ/	physique	/f/ /k/	unicorn	/y/ /n/
width	/w/ /θ/	chorus	/k/ /s/	gist	/dʒ/ /t/
chime	/tʃ/ /m/	chagrin	/ʃ/ /n/	whose	/h/ /z/
thank	/θ/ /k/	once	/w/ /s/	writhe	/r/ /ð/
swerve	/s/ /v/	cent	/s/ /t/	wax	/w/ /s/

**EXERCISE 10, Analyze Student Consonant Spelling Errors**

Target word	Student spelling	Parking spots	What's the problem?
path	paf	<u>p</u> <u>a</u> <u>f</u> /p/ /æ/ /θ/	Fricative substitution
bed	md	<u>m</u> <u>  </u> <u>d</u> /b/ /ɛ/ /d/	Nasal in place of voiced bilabial stop
much	mush	m u sh /m/ /ʌ/ /tʃ/	Fricative in place of an affricate
uncle	ungl	u n g l e /ʌ/ /ŋ/ /k/ /ə/ /l/	Voiced stop in place of voiceless
mop	mob	m o b /m/ /ɑ/ /p/	Voiced stop in place of voiceless
athlete	aflet	a f l e t /æ/ /θ/ /l/ /i/ /t/	Fricative substitution
spinach	spinage	s p i n a g e /s/ /p/ /ɪ/ /n/ /ə/ /tʃ/	Voiced affricate replacing a voiceless affricate
plan	pran	p r a n /p/ /l/ /æ/ /n/	Liquid substitution
link	lick	l i c k /l/ /i/ /ŋ/ /k/	Nasal deletion
yesterday	westerday	w e s t e r d a y /y/ /ɛ/ /s/ /t/ /ɛr/ /d/ /e/	Glide substitution
sing	sig	s i g /s/ /ɪ/ /ŋ/	Velar nasal replaced by a velar stop
real	wel	w a ll /r/ /i/ /l/	Glide for a liquid; front vowel confusion

**EXERCISE 11, Reproduce the Vowels of American English**

Answers will vary.

**EXERCISE 12, Partner Fun with Vowel Tiles**

Answers will vary.

**EXERCISE 13, Identify the Vowel Phonemes in Words**

Identify the Vowel Phonemes

/i/ cease piece	/ɪ/ gym his	/e/ weigh steak	/ɛ/ threat friend	/æ/ laugh latch	/ɑi/ type high
/ɑ/ odd palm	/ʌ/ up love	/ɔ/ bought walk	/o/ boat know	/ʊ/ push foot	/u/ rule boot
[yu] use view	/ɔi/ boy void	/æw/ bounce prow	/ɛr/ search burn	/ɑr/ heart car	/or/ poor scorch

**EXERCISE 14, Spelling Error Analysis, Vowel Substitutions**

Target word	Student spelling	Parking spots	What's the problem?
foot	fote	f o t(e) /f/ /ɔ/ /t/	Confusion of back, rounded vowels
hug	hog	h o g /h/ /ʌ/ /g/	Confusion of low, mid vowels
leg	lag	l a g /l/ /ɛ/ /g/	Confusion of mid, front, lax vowels
smart	smort	s m o r t /s/ /m/ /ɑr/ /t/	Confusion of vowel-r combination
caught	cot	c o t /k/ /ɔ/ /t/	Confusion of low, mid vowels
pin	pen	p e n /p/ /ɪ/ /n/	Confusion of lax, front vowels

**EXERCISE 15, Word Sorts with Confusable Vowel Phonemes**

- | /u/   | /yu/                                  |
|---|---------------------------------------|
| moo, loop, fool, group, suit, new, soothe,<br>blue, sue, rude, ooze | cue, fuel, few, mute, use, fume, cute |
- | /ɑ/ (odd)                                 | /ʌ/ (up)                          | /ɔ/ (awful)                                      | /ʊ/ (foot)       |
|---|-----------------------------------|--|------------------|
| pop, swat, Pa, frog,<br>wok, tock, father | love, trouble, of,<br>putt, flood | ought, talk, paw, off,<br>walk, thought, laundry | put, took, could |

3.

/æw/ (ouch)	/u/ (dude)	/ɔ/ (awful)	/ɑ/ (odd)	/ʊ/ (foot)	/ʌ/ (up)	/yu/ (you)
foul vowel	fool suit	hawk, talk	calm, bomb	would, bush	mutt, hush	use, butte

4.

/ɛr/	/ar/	/or/
skirt, blurb, solar, fir, worst, churn, infer, earn, slimmer	art, star, scarred, parsnip	orbit, corn, court, wart, snore

### EXERCISE 16, Minimal Pairs, Contrasting Vowels

Minimal pair	Contrasting vowels	Description	Another pair?
Pa, paw	/ɑ/, /ɔ/	Both mid, low; /ɔ/ is rounded	tock, talk
putt, put	/ʌ/, /ʊ/	Both mid, back; /ʊ/ is rounded	buck, book
slid, sled	/ɪ/, /ɛ/	Both front, lax; /ɛ/ is lower	mint, meant
soot, suit	/ʊ/, /u/	Both back, rounded; /u/ is higher and tense	pull, pool
food, feud	/u/, /yu/	Both high, back, tense; /yu/ is glided	coot, cute
shot, shut	/ɑ/, /ʌ/	Both mid, low, lax; /ʌ/ is a step less open	doll, dull

### EXERCISE 17, Introduction to Schwa (/ə/)

fal	den	falcon	les	som	lesson
cac	pen	cactus	blos	mock	blossom
sud	pet	sudder	tun	mest	tunnel
bot	tus	bottom	ham	dest	hammock
hap	ment	happen	writ	nel	written
trum	con	trumpet	slim	ten	slimmest
frag	tom	fragment	glad	son	gladdest



**EXERCISE 18, Simple Transcription**

1. Phonetic transcription. Some variation may occur because of dialect and individual pronunciation.

Word	Transcription	Word	Transcription
soot	[s u t]	jinx	[dʒ i ŋ k s]
hoist	[h oɪ s t]	poised	[p oɪ z d]
could	[k u d]	weld	[w ɛ l d]
caption	[k æ p ʃ ə n]	fetch	[f ɛ tʃ]
smooth	[s m u ð]	hearth	[h ɑ r θ]
ethics	[ɛ θ ɪ k s]	pigeon	[p ɪ dʒ ə n]
blouse	[b l ə w s]	bruise	[b r u z]
warn	[w ɔ r n]	worse	[w ɜ r s]
wither	[w ɪ ð ər]	whorl	[w ɔ r l]
leisure	[l i z ər]	promise	[p r ə m ɪ s]
anchor	[æ ŋ k ər]	often	[ɔ f ə n]

2. My best friend is a person who will give me a book I have not read. (A. Lincoln)
3. ðer ɪz nɔ frɪgət laɪk ə bʊk  
 tu tek ʌs lændz əwe  
 nɔr ɛni kɔrsərz laɪk ə pedʒ  
 vʌ prænsɪŋ pɔətri  
 ðɪs trævərs me ðə pɔrəst tek  
 wɪθæwt ɔpɪs vʌ tol  
 hæw frugəl ɪz ðə tʃæriət  
 ðæt berz ə hyumən sol

**EXERCISE 19, English and Spanish Vowel Sounds**

1. /i/

/ɪ/

/e/

/ɛ/

/æ/

/aɪ/

/ɑ/

/ʌ/

/ɔ/

/ʊ/

/u/

/yu/

/ɜr/

/ar/

/or/

/ɔi/

/æw/

2. Students whose first language is Spanish will benefit from direct teaching of the vowel system of English and the articulation of vowel phonemes that are not in the Spanish phonological system.

**EXERCISE 20, Spelling Error Analysis**

Priorities for instruction at the phonological level are 1) awareness of the feature of consonant voicing and contrast between voiced and voiceless consonant pairs (sbring, efre, mog); 2) auditory identification of the confusable vowels /ǔ/, /ǔ/, and /ar/; 3) identity of nasal phonemes /ng/ and /n/, and liquids /l/ and /r/; and 4) segmentation of blends with liquids (mysef).

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**ABOUT THE AUTHORS:** **Louisa Cook Moats, Ed.D.**, is President of Moats Associates Consulting, Inc., located in Sun Valley, Idaho. Dr. Moats has been a teacher, psychologist, researcher, graduate school faculty member, consultant, and author of many influential scientific journal articles, books, and policy papers on the topics of reading, spelling, language, and teacher preparation. **Bruce L. Rosow, Ed.D.**, has been a teacher, a coauthor of *Spellography* with Dr. Moats, and a former Academic Dean of the Greenwood School. Currently he runs The Language Lab, providing remedial instruction to struggling adolescent readers in his local public school. For almost two decades Dr. Rosow also taught teacher preparation courses, using *Speech to Print: Language Essentials for Teachers*, and developing the material that you will find in this workbook.