

Day 1
The Science of Reading
Grades 3-6
Participant Handouts



R - I - S - E
ARKANSAS



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DEPARTMENT
OF EDUCATION

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Day 1: Science of Reading Handouts Table of Contents

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The Science of Reading

2

Five Essential Elements of Effective Reading Instruction



WHAT

Phonological Awareness

Phonological awareness is the ability to notice the sound structure of spoken words.

Phonemic awareness is the ability to identify, isolate and manipulate language at the individual sound level. It is a part of phonological awareness.

Basic phonological awareness skills include phoneme blending and segmentation and are generally mastered by most students by the end of the first grade.

Advanced phonological awareness skills involve manipulating phonemes which include deleting, substituting, or reversing phonemes within words.

Phonics

Phonics is a system for approaching reading that focuses on the relationship between letters and sounds.

The teaching has to move from letter/sound correspondences to graphemes, syllables and morphemes.

Orthographic mapping is the ability to quickly and efficiently add words to your sight vocabulary.

Sight vocabulary is all the words you instantly recognize.

Fluency

Fluency is the ability to read a text quickly, accurately, and with proper expression.

Fluency is determined by the size of your sight vocabulary.

If a student is good at orthographic mapping, reading practice is helpful to increase fluency.

If a student is not good at orthographic mapping, reading practice does not help to increase fluency.

Vocabulary

Vocabulary is the knowledge of words and word meanings.

Connecting meaning to spelling patterns of words can be critical to expanding a student's vocabulary.

Morphology is the study of segmenting words into prefixes, suffixes, roots, or bases and the origins of words.

Vocabulary knowledge is knowledge; the knowledge of a word not only implies a definition, but also implies how that word fits into the world.

WHY

Phonological awareness difficulties represent the most common source of word-level reading difficulties.

Phonological awareness is essential for skilled reading.

Phonemic awareness is needed for efficient sight-word learning.

Early, explicit, and systematic instruction in phonics, along with direct instruction in phonological awareness, can prevent and also remediate reading difficulties.

The combination of explicit phonics and phonological training for all students in kindergarten and first grade provides far greater results in word-level reading skills than any other teaching practice that has been studied.

By the end of first grade, students taught by a code-based approach perform, on average, the equivalent of 7 to 8 standard score points higher on tests of reading comprehension than students taught with a meaning-based approach.

Guessing words from context is not as efficient as phonetic decoding. Skilled readers can identify unfamiliar words with a high degree of accuracy by sounding them out, even irregular words. By contrast, researchers have found that even proficient readers are not as skilled at correctly guessing words from context with an accuracy rate of only about 25%.

When we see a word, the areas of the brain responsible for orthography (familiar spelling) and phonology (pronunciation) activate before the areas responsible for the semantic system (meaning).

Students who are fluent readers are better able to devote their attention to comprehending the text.

Fluency is the bridge between decoding words and understanding what has been read.

A student needs to be able to read 130 correct words per minute on a sixth grade level to be successful in content reading.

As children become fluent readers, they are able to interact with text on a higher level.

Children's vocabulary skills are linked to their economic backgrounds. By 3 years of age, there is a 30 million word gap between children from the wealthiest and poorest families.

Vocabulary is the glue that holds stories, ideas, and content together making reading comprehension possible for children.

There is a strong relationship between vocabulary and reading comprehension.

Awareness of morphology is a strong indicator of and a positive influence upon reading comprehension.

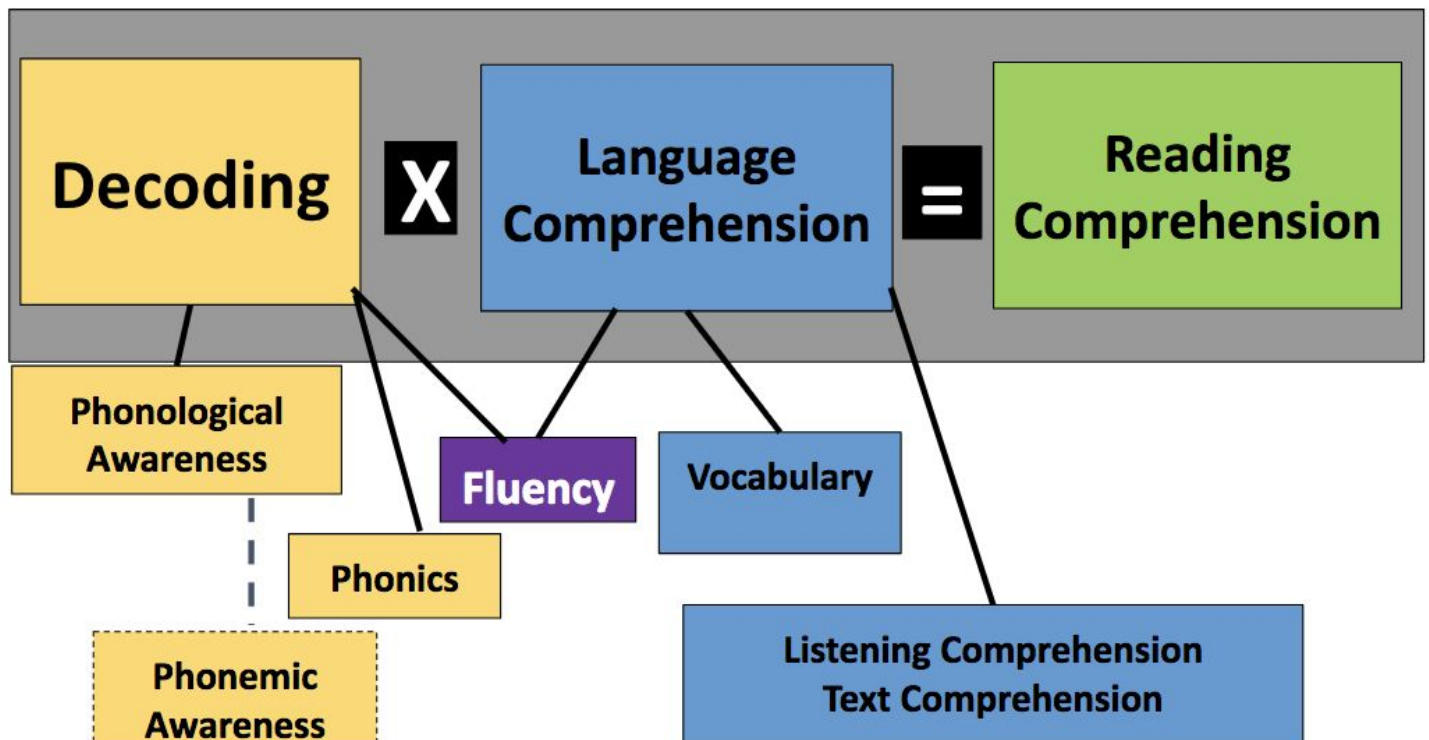
Phonological awareness, phonics, fluency, and vocabulary all lead to

COMPREHENSION

Reading aloud to children builds the foundation of literacy learning. Listening comprehension comes before reading comprehension.

HOW

To meet the goal of helping our students make the maximum possible academic gains in the 5 essential elements of effective reading instruction, students need instruction that is both systematic and explicit as well as direct, engaging, and success oriented. Systematic means that the teacher has a specific scope and sequence for introducing each skill. Explicit means that the teacher provides clear and precise instruction.



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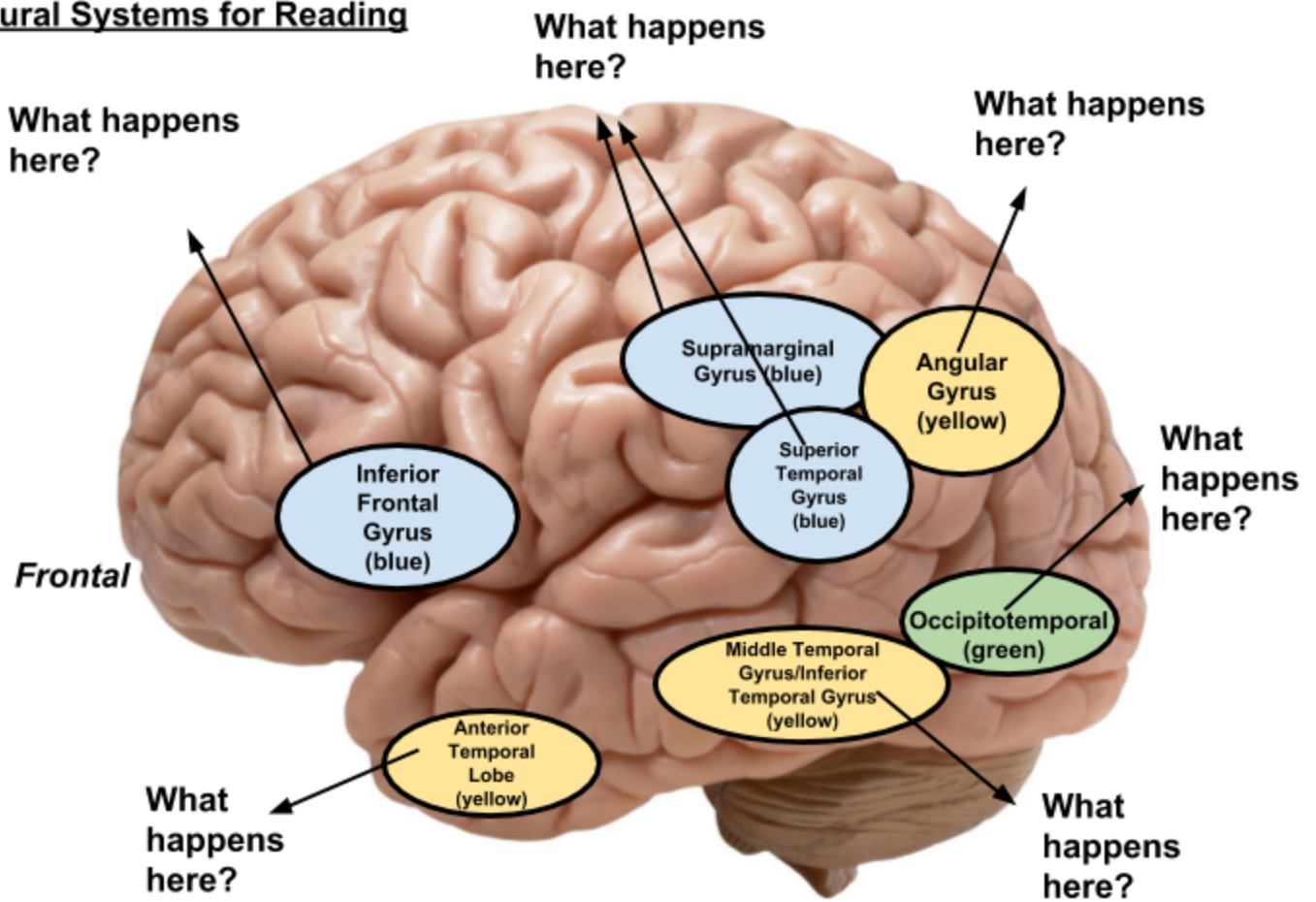
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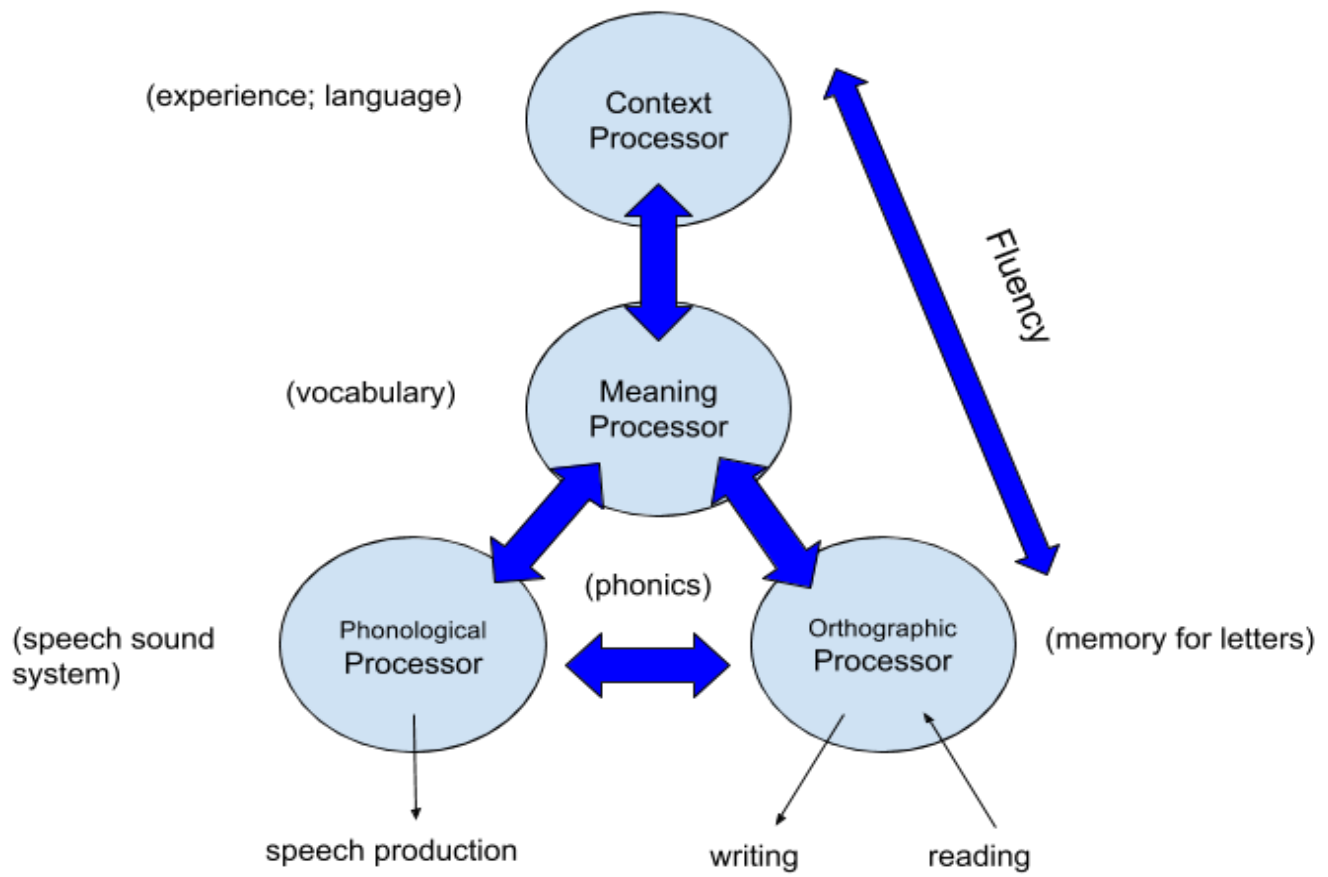
Neural Systems for Reading



Blue: Phonological

Yellow: Semantic

Green: Orthographic



Syllable Patterns	Example
Closed Syllable VC	bed jump
Open Syllable V	so my
Vowel Consonant Silent “e” VCe	bake ice
Vowel Team VV	paint shout right
R Controlled Vowel Vr	sort tar
Consonant le Cle	apple pickle

Lessons from Words by Marcia Henry

Lesson: Syllable Types Adapted from Lesson 2.2 and 2.10 (Open and Closed Syllables)

Prior to Lesson, Think About	
Materials: Do any materials need to be prepared?	Create a word list to give to students. (See below.)
Grouping: Which learners will need this content?	Assess learner knowledge of syllable types and pull a small group of learners who may need this, or the lesson can be taught whole group if it is new learning for the majority of the class.
Timing: How long will it take to cover this content?	Depending on how familiar your students are with syllable types, this lesson could easily be divided into individual lessons or chunked into three sessions. Also, if your students are unfamiliar with syllable types, you could also split them into groups: <ul style="list-style-type: none"> ● closed and open ● silent e and vowel pairs ● r controlled vowels and final -le
Lesson	
Opening <ul style="list-style-type: none"> ● Objective: (Standards) What should students know and be able to do at the end of this lesson? ● Review: What background knowledge is imperative for learners to know? Procedure: <ul style="list-style-type: none"> ● What will students be doing? 	<p><i>The following script shows a possible teacher (T) and student (S) interaction. It has been provided to give guidance.</i></p> <p>(T): Today we will be reviewing two of the syllable types. Before we begin, let's think about the word <i>syllable</i>. What is a syllable?</p> <p>(S): A syllable is a part of speech that has one vowel sound.</p> <p>(T): Yes, that's right. We have learned about six types of syllables. If a syllable is a part of speech with one vowel sound, what do you think multisyllabic means?</p> <p>(S): More than one syllable.</p> <p>(T): That's right! Multi means many or more than one, so multisyllabic is more than one syllable. Today we will review closed and open syllable types and read and spell words containing these syllable types. We know that learning the different syllable types helps a reader understand how to pronounce the vowel phoneme in each syllable as well as how to spell the word.</p> <p>Closed Syllables</p> <p>(T): What do we mean when we say a word has a closed syllable?</p> <p>(S): A closed syllable ends in one or more consonants with a vowel preceding the consonant(s).</p> <p>(T): Right. The vowel in a closed syllable is usually short. It can be represented by VC. This pattern is represented by the words <i>as</i>, <i>in</i>, <i>at</i>, and <i>up</i>. It can also be seen as CVC as in <i>map</i> and <i>pop</i>, CVCC as in <i>lamp</i> and</p>

past, and CCVC as in *trap*. Examples of two-syllable words with this pattern are *rabbit* and *admit*.

DECODING (Provide students with word cards for open and closed syllables.)

(T): Let's look for words that contain two closed syllables. Do you see any?

(S): **napkin, picnic, goblin (for older students) athletic, consensus**

(T): Yes. Let's underline the two closed syllables in each word. (Pause to give students time to underline.) What are the two closed syllables in napkin?

(S): nap kin

(T): Yes. What about in the word picnic?

(S): Right! pic nic

(T): One more – goblin.

(S): gob lin

(T): That is correct.

(T): What are the closed syllables in athletic?

(S): ath let ic

(T): con sen sus

ENCODING

(T) The words that you need to use in your writing will contain these syllable types, so let's practice encoding some of these words. It may help to tap out the parts of the words that you hear, and spell each part in the word. Think about the type of syllable pattern that you are hearing. (Call out the words for students to record.) basket, admit, conduct, abstract

Open-Syllables

(T): What do we mean when we say a word has an open syllable?

(S): It has a syllable that usually ends with a long vowel sound, spelled with a single vowel letter is an open syllable. This pattern is represented by CV.

(T): Yes. For example: go, me, hi are one syllable words which are open; One example of a two-syllable word with both syllables being open is *photo*.

DECODING (Provide students with word cards for open and closed syllables.)

(T): Now let's look at words and identify some that have an open syllable. Do you see some words that contain open syllables? Let's say them together.

(S): **menu, music, vacation, temptation** (Students can echo the teacher or partners can read the words together.)

(T): Excellent! How many syllables are in menu?

(S): Two

(T): Yes. What are the two syllables?

(S): men u

(T): Right! Which of these syllables are open?

(S): The second one (u)

(T): Correct! The second syllable, u is an open syllable. Let's look at the

next word: music. How many syllables in music?

(S): Two

(T): That's right. What are the two syllables?

(S): Mu sic

(T): Very good! Which syllable is open?

(S): The first syllable.

(T): Yes. How do you know?

(S): The syllable division rule tells us to find the vowels in multisyllabic words and look at the consonants between the vowels. Then try dividing before the first consonant and say the word. For example: *ca/ble*. If the word doesn't sound correct, try dividing after the first consonant and say the word. For example: *mel/on*

(T): Correct. Let's look at vacation. How many syllables?

(S): Three.

(T): Say the syllables.

(S): va ca tion

(T): Good. Which syllable is open?

(S): (The first two) va and ca

(T): Good job! Let's try one more – temptation. How many syllables?

(S): Three.

(T): Which are open?

(S): (the second one) -

(T): That's right. The -ta- in temptation is an open-syllable.

ENCODING

(T) The words that you need to use in your writing will contain these syllable types, so let's practice encoding some of these words. It may help to tap out the parts of the words that you hear, and spell each part in the word. Think about the type of syllable pattern that you are hearing. (Call out the words for students to record.)

Combining Syllable Types

(T): Now let's combine what we know about closed and open syllables to decode and encode words. An example of a two-syllable word with one open and one closed syllable is *moment*.

DECODING

Look at the words from your words list and find three words that have both types of syllables – closed and open.

(Give students time to find three words.)

(T): Think about what you know about closed and open syllables. Think about how to pronounce these words. Then share some of the words with the whole group.

(S): Possible responses: **robot, basin, matrix, vacant, opulent**

(T): Excellent! How did knowing about closed and open syllables help you to pronounce the word?

	<p>(S): If the syllable was closed, the vowel was short, if the syllable was open, the vowel was long. Once I know the type of each syllable, I could blend them together to pronounce the word.</p> <p>(T): Very good! Now let's see how knowing these syllable types can help with spelling.</p> <p>ENCODING</p> <p>(T): Number your paper from 1-5. Write the following words on your paper: begin cabin demented detective vagrant</p> <p>(T): Now let's compare your answers. How did you do?</p> <p>(S): Thinking about each syllable and whether it is closed or open helped to spell each part of the word.</p> <p>(T): Absolutely! Knowing syllable types helps us with reading and writing!</p>
Assessment: How will you know if learning occurs?	<p>(T): Choose three words from the list that you spelled. Turn to a partner and explain why you spelled it the way you did.</p> <p>(Check to see if students can use their knowledge of syllable types to validate the spelling of their words.)</p>
Closing: How will readers reflect on their learning?	<p>(T): Turn and talk to a partner and tell them what you have learned about syllable types. (Give a moment to discuss. Ask a couple of students to share their learning for the day and give appropriate feedback.)</p>
Follow-Up: What will students do to apply the learning?	<p>If students struggle to apply the concepts about syllable types in reading and writing tasks throughout the day, remind them of the work during the lesson and ask students to apply the concepts learned in the new setting.</p>

Lessons from Words by Marcia Henry

Lesson: Syllable Types Adapted from Lesson 2.2 and 2.10 (VCE and Vowel Teams Syllables)

Prior to Lesson, Think About	
Materials: Do any materials need to be prepared?	Create a word list to give to students. (See below.)
Grouping: Which learners will need this content?	Assess learner knowledge of syllable types and pull a small group of learners who may need this, or the lesson can be taught whole group if it is new learning for the majority of the class.
Timing: How long will it take to cover this content?	Depending on how familiar your students are with syllable types, this lesson could easily be divided into individual lessons or chunked into three sessions. Also, if your students are unfamiliar with syllable types, you could also split them into groups: <ul style="list-style-type: none"> • closed and open • silent e and vowel pairs • r controlled vowels and final -le
Lesson	
Opening <ul style="list-style-type: none"> • Objective: (Standards) What should students know and be able to do at the end of this lesson? • Review: What background knowledge is imperative for learners to know? Procedure: What will students be doing?	<p><i>The following script shows a possible teacher (T) and student (S) interaction. It has been provided to give guidance.</i></p> <p>(T): Today we will be reviewing two of the syllable types. What is a syllable? (S): A syllable is a part of speech that has one vowel sound. (T): Yes, that's right. We have learned about six types of syllables. If a syllable is a part of speech with one vowel sound, multi-syllabic means more than one syllable.</p> <p>Silent e Syllables (T): The silent e pattern is seen in single and multisyllabic words. A final silent e in a word makes the vowel long. This pattern is represented by VCe For example: lake, grime, cute, sprite, and plume.</p> <p>DECODING (T): Now, let's look at the word cards and find some words with the VCe pattern. (Give students time to look at the words.) Which words did you find that fit this pattern? (S): strive, unite, migrate (T): Yes! All three of those words have a VCe pattern. In which syllable do you see this pattern in unite and migrate? (S): It is in the final syllable in both words. (T): That is correct. The VCe pattern comes at the end of the word in a single syllable word, but it is seen at the end of the syllable in multisyllabic words. For example: <i>likely</i> and <i>pavement</i></p>

ENCODING

(T) The words that you need to use in your writing will contain these syllable types, so let's practice encoding some of these words. It may help to tap out the parts of the words that you hear, and spell each part in the word. Think about the type of syllable pattern that you are hearing. (Call out the words for students to record.) Keeping this syllable rule in mind, spell the following words as I say them aloud: wrote, crude, mistake, reptile, spectate. What letter did you put at the end of each word?

(S): The letter "e".

(T): Yes, that's correct. What does the silent "e" do to the sound of the vowel?

(S): It makes it long.

(T): That's right! Underline the VCe pattern in each word.

Vowel Teams

(T): Sometimes a syllable contains two letters together that make one vowel sound. This is called a vowel team. This type of syllable is shown in one-syllable words such as deed, rain, coil, day and paw. Sometimes these vowel teams will make the long vowel sound as deed and rain; however, notice that the y in day and the w in saw are also considered vowels in the words day and paw. What is the vowel team in beef?

(S): ee

(T): Yes! What is the vowel team in spoil?

(S): oi

(T): Correct! What about in the word may?

(S): ay

(T): Very good! The letter "y" is one of those tricky letters. The "y" can be a consonant or a vowel. The consonant sound of "y" is /y/ as in the word "yellow". Usually the "y" makes the consonant /y/ sound at the beginning of a syllable; however, the "y" also has two vowel sounds. Typically, in a one syllable word the "y" at the end of the word makes the long "i" sound as in the following words: cry, fry, try. In a two-syllable word, the "y" at the end of the word usually makes a long "e" sound as in baby and city. What is the vowel team in turkey?

(S): ey

(T): Yes, the ey makes the vowel team in turkey.

DECODING

(T): Now, let's look at the word cards and find some words with the vowel team pattern. (Give students time to look at the words.) Which words did you find that fit this pattern?

(S): **raid, peanut, broiler, monkey**

(T): Right! What is the vowel team in raid?

(S): ai

(T): Yes! What is the vowel team in peanut?

(S): ea

(T): What is the vowel team in broiler?

(S): oi

	<p>(T): Correct! What is the vowel team in monkey?</p> <p>(S): ey</p> <p>(T): Great job!</p> <p>ENCODING:</p> <p>(T): The words that you need to use in your writing will contain these syllable types, so let's practice encoding some of these words. It may help to tap out the parts of the words that you hear, and spell each part in the word. Think about the type of syllable pattern that you are hearing. (Call out the words for students to record.) Keeping this syllable rule in mind, spell the following words as I say them aloud: void, faint, peace, chimney, screenplay</p> <p>What letters did you write for the vowel team in void?</p> <p>(S): The letters oi</p> <p>(T): Yes, that's correct. What sound do those letters make?</p> <p>(S): /oi/</p> <p>(T): What letters did you write for the vowel pattern in faint?</p> <p>(S): ai</p> <p>(T): That's right! What sound does that vowel team make?</p> <p>(S): /ā/</p> <p>(T): What letters did you write for the vowel team in peace?</p> <p>(S): ea</p> <p>(T): Good. What sound does that vowel team make?</p> <p>(S): /ē/</p> <p>(T): Yes! What letters did you write for the vowel team in monkey?</p> <p>(S): ey</p> <p>(T): Very good! What sound does that vowel team make?</p> <p>(S): /e/</p> <p>(T): Right! And what letters did you write for the vowel team in screenplay?</p> <p>(S): ee and ay</p> <p>(T): Excellent! What sounds do the vowel teams make?</p> <p>(S): /ē/ and /ā/</p> <p>(T): Great job! Now circle the vowel team in each word.</p>
<p>Assessment: How will you know if learning occurs?</p>	<p>(T): Choose three words from the list that you spelled. Explain why you spelled it the way you did.</p> <p>(Check to see if students can use their knowledge of syllable types to validate the spelling of their words.)</p>
<p>Closing: How will readers reflect on their learning?</p>	<p>(T): Turn and talk to a partner and tell them what you have learned about syllable types. (Give a moment to discuss. Ask a couple of students to share their learning for the day and give appropriate feedback.)</p>
<p>Follow-Up: What will students do to apply the learning?</p>	<p>If students struggle to apply the concepts about syllable types in reading and writing tasks throughout the day, remind them of the work during the lesson and ask students to apply the concepts learned in the new setting.</p>

Lessons from Words by Marcia Henry

Lesson: Syllable Types Adapted from Lesson 2.2 and 2.10 (r-controlled and consonant –le Syllables)

Prior to Lesson, Think About	
Materials: Do any materials need to be prepared?	Create a word list to give to students. (See below.)
Grouping: Which learners will need this content?	Assess learner knowledge of syllable types and pull a small group of learners who may need this, or the lesson can be taught whole group if it is new learning for the majority of the class.
Timing: How long will it take to cover this content?	Depending on how familiar your students are with syllable types, this lesson could easily be divided into individual lessons or chunked into three sessions. Also, if your students are unfamiliar with syllable types, you could also split them into groups: <ul style="list-style-type: none"> ● closed and open ● silent e and vowel pairs ● r-controlled and final -le
Lesson	
Opening <ul style="list-style-type: none"> ● Objective: (Standards) What should students know and be able to do at the end of this lesson? ● Review: What background knowledge is imperative for learners to know? Procedure: What will students be doing?	<p><i>The following script shows a possible teacher (T) and student (S) interaction. It has been provided to give guidance.</i></p> <p>(T): Today we will be reviewing two of the syllable types. What is a syllable? (S): A syllable is a part of speech that has one vowel sound. (T): Yes, that's right. We have learned about six types of syllables. If a syllable is a part of speech with one vowel sound, multi-syllabic means more than one syllable.</p> <p>r-controlled vowels</p> <p>(T): The r-controlled pattern is seen in single and multi-syllabic words. An r-controlled syllable is a syllable in which the r "controls" the vowel sound. In closed syllables, or syllables where a consonant "closes" in the vowel, the vowel makes its short sound. However, if the vowel is followed by the letter r, the vowel does not make its expected sound. The r-controlled vowel may appear in single-syllable words and in multisyllabic words. Examples of a one syllable word with this pattern are: park, birch, short. Examples of multisyllabic words are surprise, concert, pillar, murky</p> <p>DECODING</p> <p>(T): Now, let's look at the word cards and find some words with the</p>

r-controlled pattern. (Give students time to look at the words.) Which words did you find that fit this pattern?

(S): **marble, termite, doctor**

(T): Yes! All three of those words have a r-controlled vowel pattern. In which syllable do you see this pattern?

(S): It is in the first syllable in marble and termite, and the second syllable in doctor.

(T): That is correct. The r-controlled vowel pattern can be seen in multiple places in a word. For example: in the word *admiral*, the r-controlled vowel is in the second syllable of the word.

ENCODING

(T) The words that you need to use in your writing will contain these syllable types, so let's practice encoding some of these words. It may help to tap out the parts of the words that you hear, and spell each part in the word. Think about the type of syllable pattern that you are hearing. (Call out the words for students to record.) Keeping this syllable rule in mind, spell the following words as I say them aloud: **thirst, permit, current, artist, corral**

Underline the r-controlled vowel in each word. What are the r-controlled vowels in each word?

(S): ir, er, ur, ar, or

Consonant –le syllables

(T): What do we mean when we say a word has a consonant -le syllable?

(S): It has a syllable that ends with a consonant followed by –le, like –ble or –dle

(T): Yes. This pattern is seen in two-syllable words. For example: bubble, couple, or bundle.

DECODING

(T): Now, let's look at the word cards and find some words with the consonant –le pattern. (Give students time to look at the words.) Which words did you find that fit this pattern?

(S): **handle, principle, gamble**

(T): Right! What letters make up this pattern in handle?

(S): dle

(T): Yes! What letters make up the pattern in principle?

(S): ple

(T): What is the vowel team in gamble?

(S): ble

(T): Great job!

ENCODING:

(T): The words that you need to use in your writing will contain these syllable types, so let's practice encoding some of these words. It may help to tap out the parts of the words that you hear, and spell each part in the word. Think about the type of syllable pattern that you are hearing. (Call out the

words for students to record.) Keeping this syllable rule in mind, spell the following words as I say them aloud: **hobble, rumble, scruple, jiggle, dawdle**

What letters did you write for the consonant –le pattern in hobble and rumble?

(S): The letters -ble

(T): Yes, that's correct. What letters did you write for the consonant –le pattern in scruple?

(S): -ple

(T): That's right! What letters did you write for the consonant –le pattern in jiggle?

(S): -gle

(T): Correct! What letters did you write for the consonant –le pattern in dawdle?

(S): -dle

(T): Good.

(T): Great job! Now circle the r-controlled vowel or consonant -le in each word.

Combining Syllable Types

(T): Now let's combine what we know about vowel –r syllables and consonant –le syllables to decode and encode words. An example of a two-syllable word with an r-controlled vowel and consonant –le is marble.

DECODING

(T): Look at the words from your words list and find three words that have both types of syllables – r-controlled vowel and consonant -le

(Give students time to find three words.)

(T): Think about what you know about r-controlled vowel syllables and consonant –le syllables. Think about how to pronounce these words. Then share some of the words with the whole group.

(S): Possible responses: **purple, sparkle, burgle, gargle, girdle**

(T): Excellent! How did knowing about r-controlled vowels and consonant –le syllables help you to pronounce the word?

(S): If the syllable has a vowel followed by an r the r changes the sound of the vowel. The consonant –le pattern occurs at the end of a multisyllabic word. Once I know the type of each syllable, I can blend them together to pronounce the word.

(T): Very good! Now let's see how knowing these syllable types can help with spelling.

ENCODING

(T): Number your paper from 1-5. Write the following words on your paper:

circle

curdle

warble

snorkle

	<p>carbuncle</p> <p>(T): Now let's compare your answers. How did you do?</p> <p>(S): I spelled them all correctly.</p> <p>(T): Wonderful! Knowing syllable types helps us with reading and writing!</p>
<p>Assessment: How will you know if learning occurs?</p>	<p>(T): Choose three words from the list that you spelled. Explain why you spelled it the way you did.</p> <p>(Check to see if students can use their knowledge of syllable types to validate the spelling of their words.)</p>
<p>Closing: How will readers reflect on their learning?</p>	<p>(T): Turn and talk to a partner and tell them what you have learned about syllable types. (Give a moment to discuss. Ask a couple of students to share their learning for the day and give appropriate feedback.)</p>
<p>Follow-Up: What will students do to apply the learning?</p>	<p>If students struggle to apply the concepts about syllable types in reading and writing tasks throughout the day, remind them of the work during the lesson and ask students to apply the concepts learned in the new setting.</p>

napkin	picnic	goblin	athletic
consensus	menu	music	vacation
temptation	strive	unite	migrate
raid	peanut	broiler	monkey

marble	termite	doctor	handle
principle	gamble	purple	sparkle
burgle	gargle	girdle	robot
basin	matrix	vacant	opulent