



Orthographic Conventions

Background Information

The second category in our scope and sequence is orthographic conventions. In this section, we outline the spelling patterns and conventions found in English. Research has shown that there is a strong connection between decoding and encoding. It is not enough for a student to be able to decode a word. We strengthen a student's understanding of language when we combine both reading and spelling instruction. Students who are able to decode can still struggle with spelling if they are not explicitly taught when and where to use specific graphemes. If a concept is in our scope and sequence for reading, it is important to teach it in writing as well. This is why we include an orthography category in our scope and sequence.

Orthography

The word **orthography** refers to the standardised/conventional spelling system of a language. If we look at the word orthography, we will see that it is derived from two parts:

orthos (Greek - straight, true, correct, regular) + **graph** (Greek - write, express by written characters)

When we talk about English Orthography, it is important to remember it is a complex system. The English that we speak today came through, and therefore was influenced by, many different languages, including (but not limited to) Anglo-Saxon (Old English), French, Latin, and Greek. The orthography of some languages is simpler, with most words being built by direct phoneme/grapheme correspondences (e.g., Spanish). English, on the other hand, is a **morphophonemic language** - it incorporates both morphological information as well as phonemic information. As such, the study of orthography must include both grapheme/phoneme correspondence and a study of morphology.

Big Ideas about Orthographic Conventions

English Orthography is influenced by many factors, including:

Word Origins (Etymology):

- the <l> in *talk* is an etymological marker, marking a historical connection to the word *tale*
- the grapheme <ph> representing /f/ is found in words with Greek origin

Grapheme/Phoneme Correspondence, such as:

- /t/ is the first phoneme in *tap*, and is represented by the grapheme <t>
- /ā/ is the middle phoneme in *rain*, and is represented by the grapheme <ai>

Morphology:

- the spelling of a base may change when a suffix is added (e.g., *space* + *ing* → *spacing*)
- spelling consistencies are found in words from the same morphological family (e.g., *twin*, *twice*, *two*)

When teaching orthographic conventions, we need to teach students about all these factors.



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Big Ideas about Orthographic Conventions Continued

Students are often told that English is random and that there are many exceptions - not only is this untrue, but it is overwhelming for students who struggle. Every word has a story. Understanding the reasons for graphemes is a more powerful teaching tool than asking them to memorize. For example, the spelling of *two* makes sense when related to the spelling of *tw**in*. This understanding also builds vocabulary as students can see the meaningful connections between words (e.g., *health* and *heal*). Here are some considerations:

- If you find an “exception” to a convention, dig deeper. Try to work with your students to find a reason for the unexpected grapheme in a word.
- Avoid referring to conventions as “rules,” as this implies that a word is a “rule breaker,” when rather there will always be a meaningful reason for its spelling.

Orthographic Mapping

Orthographic mapping is the mental process we use to store words in our memory for instant and effortless retrieval. Words that have been orthographically mapped and are recognized automatically can be referred to as “sight words.” This process happens easily for some students, but others require explicit instruction and multiple, repeated exposures to “map” a word.

Students who have poor phonological awareness can struggle to anchor words into their permanent memory because they cannot complete this grapheme-to-phoneme association. Without this anchor, the grapheme order is like a random letter string that needs to be memorised.

Phonemic awareness, grapheme/phoneme correspondence, and an understanding of morphemes and how they bring meaning to words are all important for orthographic mapping.

Note: Do not forget the importance of having students write the words they are studying. Kinesthetic input in the form of motor pathways used to write a word can strengthen a student’s orthographic mapping.



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Key Orthographic Concepts to Teach

Markers

Graphemes do not always represent phonemes. A grapheme that does not represent a phoneme can be called a **marker**. A marker will have a job, or tell a story about the word.

Markers can do a job, such as helping us understand the structure of words or predict pronunciation. Here are some examples:

- *cake* - marker <e> marks the preceding vowel as long
- *fence* - marker <e> marks the grapheme <c> as /s/
- *cheese* - marker <e> cancels the plural <s> (without the <e>, the word could be interpreted as “one chee, two chees”)

Markers can tell a story. A marker can indicate a historical relation or a connection between words. Here are some examples:

- *two* - the <w> in *two* marks a relationship with *between*, *twenty*, etc. (both *between* and *twenty* carry a sense of “twoness”)
- *people* - the <o> in *people* marks a relationship to the words *population* and *popular*

An understanding of markers can help students with orthographic mapping. Exploring the jobs and stories of markers in a word can be a powerful and meaningful way for students to link the graphemes in words with the meaning of the word, particularly when there are unexpected graphemes present. This is especially important for students who struggle with decoding and spelling.

For example, students may find it easier to spell the word *answer* if they understand that the grapheme <w> in *answer* marks a historical relationship to the words *swear* and *sworn*, which both include a <w>.

Patterns and Generalizations

There are many spelling patterns and generalisations that can be taught to students, both in reading and writing. Here are some examples of the types of patterns and generalisations you will see in our scope and sequence:

Doubling Patterns:

- some graphemes in English never double (e.g., <j>, <k>, <sh>)
- double the <z>, <f>, <s>, and <l> final to a base after a single short vowel (e.g., *class*, *tell*, *buzz*)

Vowel Sounds:

- <a> is often pronounced as /ɔ̃/ if an <l> follows (e.g., *tall*, *fall*), or if the <a> follows a <w> (e.g., *wasp*, *water*)
- <y> is pronounced as /ē/ at the end of an unstressed syllable (e.g., *happy*)

Grapheme choice:

- use <ck> to represent /k/ final to base after a single short vowel
- use <dge> to represent /j/ final to base after a single short vowel



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Key Orthographic Concepts to Teach - Continued

Positional Constraints and Relationships

Certain graphemes in English have positional constraints. A grapheme's corresponding phoneme can change in relation to the proximity of other graphemes. Students who can decode can still struggle with spelling if they are not explicitly taught when and where to use specific graphemes. Here are a few examples of graphemes that have positional constraints:

- complete English words do not end in <v>, <u>, <i>, or <j> (note - the word *ski* is used in the English language, but it is a Norwegian word)
- <c> softens to /s/ when followed by <e>, <i> or <y>
- use <ay> for /ā/ final to a base
- if a <r> follows a vowel, the <r> often controls the vowel sound (e.g., *her*, *star*)

Suffixing Conventions

When morphemes are combined, suffixing conventions apply. These suffixing conventions are very consistent and predictable and help students with both decoding (we want students to read *hopping* instead of *hoping* when reading "hop + ing") and spelling.

Doubling Convention:

If you have a one-syllable word (or a stressed syllable), with one vowel, followed by one consonant, and you are adding a suffix that starts with a vowel, double the final consonant. Here are some examples:

- runⁿ + ing → running
- skip^p + ed → skipping
- beginⁿ + ing → beginning (the stress is on the second syllable, so the doubling convention is applied)

Note: see **Orthographic Conventions for more information on stress.**

Replace <e>:

Replace a final "marker <e>" when attaching a vowel suffix, for example:

- dance + er → dancer
- give + ing → giving

unless the <e> is still needed, for example:

- notice + able → noticeable (the <e> is still needed to soften the <c>, so it is not replaced)

Change <y> to <i>:

When attaching a suffix to an element ending with the single grapheme <y>, replace the <y> with an <i> unless the suffix starts with an <i>. Here are some examples:

- try + ed → tried
- try + ing → trying (not "triing" - complete English words do not have double <i>)
- happy + ness → happiness
- play + ing → playing (don't replace the <y> because it is part of the grapheme <ay>)

Key Orthographic Concepts to Teach - Continued

Syllables:

A syllable is a unit of pronunciation with one vowel phoneme. A syllable can be a word, or part of a word. Can Do Kids Academy has created this excellent infographic:

SYLLABLE
©CAN DO KIDS ACADEMY

A unit of pronunciation having one vowel phoneme.

DON'T FORGET

For every syllable we perceive in a word, we should **EXPECT** to find at least one letter representing a vowel.

BUT...
some words **do not** contain a letter representing a vowel within a syllable!

please (1)
pleasure (2)
pleasingly (3)
unpleasantly (4)

prism (2)
rhythm (2)

** both of these words have two syllables, and only one letter representing a vowel

Source: Pete Bowers

<https://www.candokidsacademy.com/>

Understanding that all syllables have a vowel phoneme is very helpful for students. Due to the nature of the articulation of vowel phonemes (unobstructed airflow), our mouth opens every time we pronounce one. Asking students to articulate a word with their lips closed will force a “hum” for every syllable as their mouth will want to open.

- bike (1 syllable, 1 vowel phoneme, 1 hum)
- monkey (2 syllables, 2 vowel phonemes, 2 hums)
- computer (3 syllables, 3 vowel phonemes, 3 hums)



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Key Orthographic Concepts to Teach - Continued

Syllable Types

We always need to keep in mind that English has a morphological structure. The concept of syllable types came into being with Noah Webster in 1806 in an attempt to regularise the pronunciation and spelling of words in his dictionary through syllable division. It is important to understand that English is not structured by syllable types. Because we are a stress-timed language, individual syllables, words, and phrases can have a reduced vowel (schwa), complicating syllable division. Therefore, a study of morphology and etymology will go further in helping students read and spell unknown words.

Here is a list of the syllable types for reference, as you will often see them listed as part of scope and sequences.

Closed Syllable

- a syllable where a single vowel is followed by 1 or more consonant(s), the vowel will make its short sound
e.g., *cat, flip, hush, stop, stuck, patch*

Open Syllable

- a syllable with a single vowel at the end, the vowel will make its long sound
e.g., *go, he, my* (the <y> in *my* represents long /ī/), or polysyllabic words like *ta-ble* (<ta> is an open syllable)

Vowel -Consonant-<e> (marker <e>)

- the vowel marks the preceding vowel as long (remember this is only one of the many jobs of marker <e>)
e.g., *cake, these, smile, home, cube*

Vowel Teams

- two or more letters work together in a syllable to make one vowel phoneme
- e.g., *eat, boat, day, snow* (<y> and <w> combine with the previous vowel to represent a vowel phoneme)

R-controlled vowels

- when an <r> follows one or more vowels, the <r> controls the vowel sound
e.g., <ar> in *far*, <er> in *her*, <ir> in *first*, <our> in *pour*

Consonant-le

- the “consonant-le” becomes its own syllable - found at the end of polysyllabic words
e.g., *table* (<ble> is its own syllable), *little* (<tle> is its own syllable), *gurgle* (<gle> is its own syllable), etc.

Final Stable Syllables

Some resources include a 7th syllable type - “final stable syllables.” These syllables are found at the end of words, and have a fairly consistent **pronunciation**. These are **NOT** suffixes, rather they are “spoken units” that combine the suffix with part of the preceding base. Here are some examples:

- **-ture** (e.g., “rupture”) - the actual written structure of the word is rupt + ure → rupture, but when you focus on spoken syllables (pronunciation units), there are 2 (/rup/ and /ture/)
- **-tion** (e.g., “action”) - written structure is act + ion → action, pronunciation units /ac/ and /tion/

Note - exploring the morphemes in words is the most powerful way to help students understand both the meaning and the spelling of words.

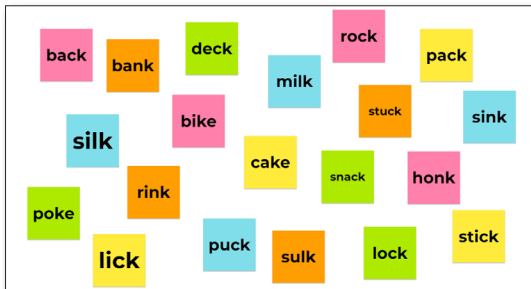
Lesson Ideas for Developing Foundational Skills with Orthographic Conventions

Inquiry Method:

Although direct instruction is critically important for structured literacy, many aspects of orthography make excellent inquiry topics. Carefully chosen word lists can be provided for students to analyse. The ideal provocation will have students investigating and making a hypothesis regarding the patterns in words.

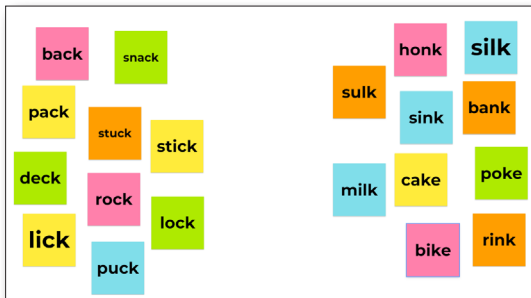
Concept Attainment:

Sorting activities are powerful in helping students see similarities and differences in word patterns. Consider the following word sort:



If students were to sort this list, what sorts of hypotheses might they come up with about when to use the grapheme <ck>?

- use <ck> if there is a short vowel? But what about *silk*?
- use <ck> immediately after a vowel? But what about *cake*?



Once sorted, students will find it easier to develop a hypothesis. Word sorts need to be carefully crafted in order to show students all concepts they may need to consider when forming a hypothesis. Once students have a hypothesis, they will need to test it.

Games and Activities:

- **Word Sorts:** Start with words provided by the teacher and have the students sort the cards, then have students make their own word sorts, and trade with classmates to sort.
- **Word Building:** Have students build their own words with magnetic letters, letter tiles, or matrices.
- **Board Games:** You can turn any basic board game into a literacy game. Rather than rolling the dice and moving a game player, have students pick up a word card and either sort, spell or read independently before moving. Cards can initially be provided by the teacher, but eventually, students can make their own word cards to play with based on a pattern of their choice.
- **Bingo games:** Have students play bingo with words that follow the concept you are studying. Students can take turns being the bingo caller.



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Lesson Ideas for Developing Foundational Skills with Orthographic Conventions

Wonder Wall:

Always have a Wonder Wall posted somewhere in your room. Once students start exploring spelling patterns, they will naturally begin to seek out and wonder about patterns they encounter. They will ask whether two words are in the same family. They will ask why a specific grapheme is in a word. They will ask if there are other words with similar patterns. It is good for students to see that we do not always have the answers! Encourage students to add words to the Wonder Wall as they explore, and take time each week to delve into these words. Here are some useful resources for this exploration:

Word Searcher:

Neil Ramsden created an online word searcher that allows you to look for words that contain specific letter strings in specific positions. For instance, you can search for words that end with <ee>, and it will generate a list. You can search for letter strings at the beginning or end of words and more.

<http://www.neilramdsen.co.uk/spelling/searcher/>

Phoneme/Grapheme Searcher:

With this tool, you can specify not only the grapheme, but its corresponding phoneme. For instance, you can search for a word list where the grapheme <ea> in each word represents the long /ē/ phoneme.

https://devinkearns.com/phinder/?fbclid=IwAR2a4ASeDS57d7Yj0AvXDY9hpbWolcvZrbNL_HPM-TA-LTO5wGscTozR3e4g

Dictionaries:

There are many available online dictionaries that are user friendly for students (Merriam-Webster, Oxford, Collins, etc.). It is a good idea to look at several different sources of information when looking to define a word. Sometimes there may be slight nuances from one definition to another that can lead to some interesting discussions. Remember, there are spelling variations (American vs British/Canadian) in many words, so consider your location when searching for words.

Etymonline:

Etymonline is an online etymological dictionary. It does not give definitions, but rather “explanations of what our words meant and how they sounded 600 or 2,000 years ago”. It is a great resource for digging deeper into the history of words.

<https://www.etymonline.com/>





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References and a Final Note

The goal of these background information sheets is to help teachers better understand our language system. Each background sheet (Grapheme/Phoneme Correspondence, Orthographic Conventions, and Morphology) provides definitions of key terms and concepts contained within our scope and sequence and ideas for teaching these concepts. These sheets are being offered for free download because the more we understand about our language, the more powerful decodable books can be for our students.

The information for these sheets has been compiled from a wide variety of sources. Many thanks to those in the field who have researched, practised, and shared their knowledge with educators. Please note - these sheets are based on my current understanding, both from my studies and from my personal experience. As I continue to learn, my understanding will evolve. If I reach a point where I feel these sheets need to be adjusted, I will do so and provide updated versions for free download.

Here is a list of the resources I have used and courses/workshops I have completed.

Source	Details
https://funlearning.ca/ <ul style="list-style-type: none"> O-G Fundamentals/O-G Associate Practitioner O-G practicum SWI Workshop Grammar Workshop 	Liisa is an OG Fellow and teacher trainer based in Toronto. I highly recommend her courses, and cannot thank her enough for getting me started on this journey! Liisa provides OG training with supervised practicums, as well as a range of general workshops.
https://rebeccaloveless.com/ <ul style="list-style-type: none"> Teaching Real Script SWI for Early Readers 	Rebecca is a Structured Word Inquiry Coach based in California. Her courses are practical, informative, and inspirational - a great way to see how morphology can be explored with young learners!
<i>Beneath the Surface of Words</i> - Sue Hegland <ul style="list-style-type: none"> https://learningaboutspelling.com/ https://www.youtube.com/watch?v=7DEuT-WaOg5E&t=4s (Morphology, Important From the Beginning) 	Sue Hegland is the author of “Beneath the Surface of Words”, which is a fantastic resource that has significantly broadened my understanding of morphology. Her attached youtube video is also very informative.
<i>Speech to Print</i> - Dr. Louisa Moats	This book covers many fundamentals of the English Language - it is a great resource to build a solid background and understanding across a range of literacy topics. It’s a heavy read, but worth it!
<i>Uncovering the Logic of English</i> - Denise Eide	This book is my go-to reference book for spelling and spelling conventions. It’s great to have on standby when developing lesson materials!
<i>UFLI Foundations</i> - Holly Lane and Valentina Contesse <ul style="list-style-type: none"> https://ufl.edu/education/ufl.edu/resources/ 	This is a program from the University of Florida Literacy Institute. The background section at the beginning of the manual is very informative, and there are many, many free resources available on their website. This resource is definitely worth checking out!
Wordtorque <ul style="list-style-type: none"> https://wordtorque.com/ https://www.thehfwproject.com/ https://wordtorque.com/category/engagewthepage/ 	The Wordtorque site by Fiona Hamilton has a wealth of resources for teachers. Links can be found to the High Frequency Word Project (created in partnership with Rebecca Loveless) and Engage with the Page (word inquiry through picture books). Their conference last year was amazing!
Etymonline <ul style="list-style-type: none"> https://www.etymonline.com/ 	Etymonline is an online etymology dictionary. It does not give definitions, rather “explanations of what our words meant and how they sounded 600 or 2,000 years ago”. It is a great resource to use if you are trying to determine the history of words and/or if words share a common root in history.