



Grapheme/Phoneme Correspondence

Background Information

The first category in our scope and sequence is Grapheme/Phoneme Correspondence. Most scope and sequences are organised based on the introduction of different graphemes and their corresponding phonemes, however, many programs use the phrase “letter/sound correspondence” rather than “grapheme/phoneme correspondence.” We use the terms “grapheme” and “phoneme” from the beginning of instruction because we feel it can help to reduce confusion later in instruction when students learn that multiple letters can work together to make one sound.

Grapheme (written)

A **grapheme** is a unit of a writing system. It can be made of a letter or a combination of letters. Graphemes are often defined as a written unit that represents a phoneme, but they can also do other jobs, such as mark pronunciation or indicate a historical relationship. Here are some examples:

- grapheme <a> can represent phoneme /ă/
- grapheme <ck> represents /k/
- grapheme <-tch> represents /tʃ/ (/ch/)
- grapheme <e> can mark the preceding vowel long as it does in *cake*
- grapheme <l> in *talk* marks an etymological relationship (historical relationship) between *talk* and *tale*

Note: when you see <>, say the letter name(s); when you see //, pronounce the phoneme.

Phoneme (sound)

A **phoneme** is the smallest unit of speech - once a phoneme has changed, the meaning will change. For example:

- *black* → *back* → *bash* → *dash* → *dish* - as you change the phoneme, the meaning of each word changes

Phonemes are coarticulated in words - a phoneme’s articulation may be influenced by the phonemes that come before or after it. To demonstrate this, consider how differently a <t> is articulated in the following words: *tack*, *cat*, and *water*.

Keep in mind that a phoneme’s articulation can also be influenced by the accent or dialect of the person who is speaking.

Where does phonemic awareness fit in?

- **Phonemic Awareness** refers to the ability to isolate and manipulate the individual phonemes in a word. Students with strong phonemic awareness can discriminate between, add to, and manipulate sounds at the phoneme level.
- Although phonemic awareness can be taught without the inclusion of graphemes, studies have shown that phonemic awareness instruction tends to be more effective when linked with associated graphemes.
- Phonemic awareness is a strong predictor of reading success and is directly involved in the process of “orthographic mapping” (see Orthographic Convention Background Information Sheet).



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Grapheme/Phoneme Big Ideas

| Big Idea | Examples |
|--|--|
| <ul style="list-style-type: none"> a grapheme can represent more than one phoneme | <ul style="list-style-type: none"> <ea> can represent /ě/ (e.g., <i>bread</i>) <ea> can represent /ē/ (e.g., <i>eat</i>) <ea> can represent /ā/ (e.g., <i>great</i>) |
| <ul style="list-style-type: none"> a phoneme may be represented by more than one grapheme | <ul style="list-style-type: none"> /ŏ/ can be represented by <o> (e.g., <i>on</i>) /ŏ/ can be represented by <a> (e.g., <i>all</i>) /ŏ/ can be represented by <aw> (e.g., <i>saw</i>) |
| <ul style="list-style-type: none"> the phoneme produced by a grapheme can be influenced by the graphemes surrounding it | <ul style="list-style-type: none"> when a vowel is followed by an <r>, the vowel sound changes (e.g., <i>her</i>) <c> can represent /s/ when followed by <e>, <i>, or <y> <a> can represent /ŏ/ when it follows a <w> (e.g., <i>want</i>) |
| <ul style="list-style-type: none"> not all graphemes in words represent phonemes, rather they may have a job/tell a story | <ul style="list-style-type: none"> <e> in <i>cake</i> <l> in <i>talk</i> <g> in <i>sign</i> (the <g> marks a relationship to <i>signal</i>) |

An important note about the limits of grapheme/phoneme correspondence

English is a **morphophonemic** language (see Morphology Sheet) - it incorporates both morphological and phonemic information. This means that the study of grapheme/phoneme correspondence on its own will not give readers and writers a full understanding of our language. Most English words cannot be “sounded out.” The primary job of spelling is to represent meaning, so it is critical to teach morphology and etymology alongside grapheme/phoneme correspondence. To demonstrate this concept, consider the spelling of the following words: *jumped*, *dogs*, and *heal*.

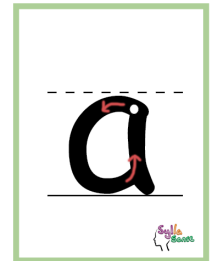
- *jumped*: sounds like /j/, /u/, /m/, /p/, /t/
- *dogs*: sounds like /d/, /o/, /g/, /z/
- *heal*: sounds like /h/, /ē/, /l/ - How do you know which grapheme to use to represent /ē/? (*heal/health* are related in meaning, so they are related in spelling)

The study of morphology and etymology will not only help students learn that spelling is connected to meaning but will also help them build vocabulary.

Key Concepts about Teaching Graphemes

Letter formation matters! Research shows that adding letter formation practice while learning graphemes is extremely helpful - think of letter formation as having a “pathway” with an entrance and exit point, not as a picture (e.g., lines and circles drawn without a continuous pathway). Teaching letter pathways helps with letter reversals and helps writing efficiency. Some key points are:

- when learning a new grapheme, have students form the letter(s) at the same time
- students can form the letter(s) even if their fine motor skills are not yet developed
- consider drawing in sand, or in the air with a finger, an arm, a paintbrush, etc.
- choosing a “keyword” can help students remember a grapheme and associated phoneme
- when practising grapheme correspondence, have students say the letter name(s), keyword, and then the associated phoneme (e.g., <a>, *apple*, /ă/)



Certain graphemes have placement constraints (e.g., full English words do not end in <v>; we use <ay> to represent /ā/ at the end of a base, etc.).

- it is efficient to teach these placement constraints at the same time as you teach the grapheme and associated phoneme
- these constraints fall into the category of “orthographic conventions” - more can be read about this in our orthographic tip sheet

It is important to work towards mastery. Instruction needs to be explicit, direct, and cumulative.

- consider moving away from “letter of the week” - new concepts need to be taught, consolidated, and cycled back, again and again, to ensure students have mastered each grapheme/phoneme correspondence
- materials used for practice (word reading, phrase reading, sentence reading, connected text) should include concepts taught up to this point in instruction

It is important to introduce students to the correct terms regarding graphemes, such as digraphs and trigraphs. Teaching about digraphs early in instruction can help students understand that it is common for graphemes to consist of more than one letter.

- **digraph:** a grapheme comprised of 2 letters representing one phoneme
 - e.g., <ck> representing /k/, <sh> representing /ʃ/, <oa> representing /ō/
- **trigraph:** a grapheme comprised of 3 letters representing one phoneme
 - e.g., <-dge> representing /j/, <igh> representing /ī/

Key Concepts about Teaching Phonemes

The position of our lips, tongue, and mouth, as well as airflow and vocal cord vibration determine which phoneme is produced. Here are some key teaching considerations:

- it is important to help students recognize what is happening in their mouths when they pronounce certain phonemes
- ask them to consider what they are feeling with their lips, tongue, and throat
- some mouth formations are visible - have students look into a mirror as they pronounce different phonemes



Phonemes can be categorised in different ways. Some of the most common ways are described below:

Stop Phonemes

- consonant phoneme where the airflow is stopped in articulation
- include /b/, /k/, /d/, /g/, /p/, /t/
- should be pronounced in a “clipped” way - if you try to extend them, you are adding a sound that should not be there, usually ends up sounding like a drawn out “uh” at the end of the phoneme

Continuous Phonemes

- phoneme that is made with a continuous flow of air from our mouth or nose
- includes all vowel phonemes, as well as /f/, /h/, /l/, /m/, /n/, /r/, /s/, /v/, /z/
- it is much easier to learn to blend with continuous sounds, as they can be held for a length of time before you blend into the next phoneme - for example, use *map* instead of *tap* as the /t/ has an abrupt stop
- note: not all phonemes fall clearly into either “stop” or “continuous” - for the purpose of early instruction, we have listed the most common and the clearest examples

Voiced Phonemes

- phoneme articulated with vibrating vocal cords
- all vowels phonemes, as well as /b/, /d/, /g/, /j/, /l/, /m/, /n/, /r/, /v/, /y/, /z/
- have students gently place their hand on their throat - when they articulate a voiced phoneme, they will be able to feel a vibration in their vocal cords

Unvoiced Phonemes

- phoneme articulated with no resonance of the vocal cords
- phonemes /k/, /f/, /h/, /p/, /s/, /t/
- have students gently place their hand on their throat - when they articulate an unvoiced phoneme, they should not be able to feel a vibration in their vocal cords

Vowel Phonemes

Vowel phonemes are continuous, voiced, and they have **unobstructed airflow**. Think of /ä/ compared to /v/. Both are continuous, and both are voiced, but when you articulate /v/, your teeth sit on your lower lip and obstruct your airflow. When you articulate /ä/, your jaw drops, your mouth opens, and your tongue does not interfere. Unobstructed airflow is the key defining feature of vowel phonemes. All spoken syllables contain a vowel phoneme, which will be represented by at least one vowel grapheme.



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An Important note about phonemes in isolation

When we produce phonemes in isolation, we can explore their articulation. We can feel our lip, tongue, mouth position, and vocal cord vibration. As soon as phonemes are combined into words, things become more complex. Phonemes are coarticulated, which means that their pronunciation is influenced by what phonemes come before and after. Here are some examples to show the concept of coarticulation:

- say /ă/, now say the word *an* - listen to the difference in the sound of the phoneme /a/ in both examples
- say /t/, now say the word *water*, now say the word *cat*, now say the word *tap* - notice the differences in your mouth as you pronounce the phoneme /t/ in all three words

English is a **stress-timed language**. This means that we automatically stress certain words or syllables when we speak. These stressed syllables are perceived to occur at regular intervals, creating a natural “rhythm” to our speech. Unstressed syllables are often said faster to help maintain this rhythm.

Polysyllabic words often have a syllable that holds the primary stress. A vowel sound in an unstressed syllable/word is called a schwa. A **schwa** is a non-distinct vowel sound that does not sound like any of the main vowels in isolation. Often, schwa is taught as the sound of a short /ǘ/. Not only is this untrue, but it creates confusion for students. Your mouth is in a different position for these two phonemes (schwa and short /ǘ/) and therefore produces a different sound (think of *up* vs *balloon* - put your hand under your jaw and feel the difference in your jaw drop with these words). Here are some additional words and phrases to show the concept of schwa and stress:

- say *banana* - listen to how the <a> sounds different in each spoken syllable (*ba/na/na*) - the stress is on the middle syllable, so that <a> sounds the most like /ă/ in isolation - the other two <a> are pronounced as a schwa /ə/
- say *family* - listen to how the <i> is unstressed to the point where it “disappears”
- say the phrase, *to the park* - notice the difference between how we would say the word *the* in the phrase *the end*, where *the* is stressed, vs in the sentence, *The dog is going to the park*. Notice how we naturally speed up *to the park*, therefore sounding like *tu-thu park*

Be careful when students ask for support with spelling words that contain a schwa - make sure you do not change how you would naturally articulate the word, as students are not able to do this and it is not a strategy that will help them gain independence with spelling. On top of that, it might give them the false message that they should be able to hear a phoneme that is not actually articulated in a word. For example, pronouncing every syllable in *ev-er-y* is not as effective a strategy as teaching the word’s structure: *ever + y*.

Important Note:

Our brains are “hard-wired” to learn oral language - most humans do so at a young age without much conscious intent. When learning to read and write, however, we need to be explicitly taught how to bring conscious attention to the phonemes within words and the graphemes that represent them.





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Ideas for Developing Foundational Skills with Grapheme/Phoneme Correspondence

Phonemic Awareness

Students need regular practice identifying, segmenting, blending, and manipulating phonemes in words. Provide opportunities for students to listen for a target phoneme in words - for example, have students put a thumb up if they hear the target phoneme at the beginning, in the middle, or at the end of a word. Students also need to practice blending and segmenting phonemes in words. Here are a few activities to try:

Tap it out (segmenting):

- students stand in a circle, educator says a word (e.g., *mat*)
- students and educator tap out the phonemes on their bodies (/m/ tap head; /ă/ tap waist; /t/ tap toes)

Toss it (blending):

- students stand in a circle, educator mimes throwing three balls to a student saying a phoneme with each toss (e.g., /b/ /ī/ /k/)
- the student mimes catching the balls, repeating the phonemes after the teacher, then once they have all three balls, blending the phonemes together to say the word (e.g., *bike*)

Elkonin Boxes (segmenting):

- draw a box for each phoneme in a given base (e.g., *stand* would be represented as)
- tell students the number of phonemes they will hear in a word - ask them to point/slide a counter into each box as they isolate each phoneme
- Elkonin boxes are important when introducing consonant clusters, which can be difficult to isolate
- Note: Elkonin boxes provide a high level of support, consider the following gradual release of support: Elkonin boxes → counters → finger taps → without finger taps (in head)

Grapheme Deck

A grapheme deck is an essential tool to use with students. Grapheme decks should include graphemes previously taught, as well as the target grapheme for the lesson, with variations depending on the group you are working with (e.g., whole group, small group, individual).

Using a Grapheme Deck:

- introduce the new grapheme and help choose/assign an associated keyword to help students remember phonemes
- review each grapheme by saying the letter name, keyword, and letter sound (e.g., , bear, /b/), and having students repeat after you while they form the letter using correct letter formation pathways
- with the vowel grapheme cards, include a gesture or action when introducing the sound (e.g. <a>, apple, /a/ and gesture eating an apple; for <i>, itch, /i/ demonstrate itching your arm as the gesture)

Blending/Word Chains:

- place grapheme cards in front of students
- start with simple CVC blends using the graphemes you have taught - change one grapheme at a time to form new words
- have students blend the phonemes together without pausing between phonemes as they swipe underneath to read the word. Here is an example:

cat → mat → map → mop → top → tap → tad → dad → sad → sat → pat → pot → hot → got



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Ideas for Developing Foundational Skills with Grapheme/Phoneme Correspondence (cont.)

Word Reading/Phrase Reading/Sentence Reading:

Prepare words, phrases, and sentences for students to read using previously taught graphemes to begin with, then with words including the target grapheme (new concept).

- if students get stuck on a word, have them pronounce each phoneme, then have them blend the phonemes to read the word - as soon as possible, have students move to continuous blending of sounds rather than pronouncing the phonemes individually
- in each lesson, move from words, to phrases, to sentences
- if reading of phrases or sentences is disfluent, have student read the phrase/sentence again
- if an error is made, prompt the student to analyze the word and reread - direct their attention to the error by having them name the graphemes in the word - once the error has been corrected, review grapheme/phoneme correspondences using multisensory techniques: forming the letter, saying letter name, keyword, and associated phoneme (use this procedure in connected text as well) - **be sure to note the error for consolidation in next lesson**

Encoding:

In order to spell words, students first need to encode. Encoding involves segmenting words into phonemes and recording the corresponding graphemes. This works for words that have one-to-one grapheme/phoneme correspondence. Morphology, etymology, and orthographic conventions also play a significant role in encoding - these will be addressed in corresponding background sheets. Research shows that practising encoding reinforces a student's ability to decode (read), while practising decoding reinforces a student's ability to encode (spell).

When students are first learning to encode, it helps to provide graphemes in the form of cards, tiles, magnetic letters, etc. These visuals lighten students' cognitive load and allow them to focus on spelling rather than letter formation. Students can progress to writing once their letter formation begins to develop. Here is a progression of activities to try:

1. **Spell the sound:** say phonemes one at a time to students, and have them point to the corresponding grapheme from their set (e.g., /b/, /m/, /a/, /p/, /o/)
2. **Spell the word:** say a word - have student segment the phonemes, then identify the graphemes they would use to spell the word
3. **Write it:** give each student a piece of paper and pencil (or whiteboard and marker), dictate several phonemes, words, phrases, and then sentences that you have worked on this lesson - students will listen, repeat, complete sound analysis, then identify and write down the corresponding graphemes to represent what was dictated



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Ideas for Developing Foundational Skills with Grapheme/Phoneme Correspondence (cont.)

Connected Text:

For the final step, students will read a controlled (decodable) text, consolidating all of the skills they have worked on through the lesson. Key things to consider when reading decodable texts:

- students should be familiar with all (or almost all) concepts found in a decodable book
- unexpected words should be reviewed ahead of time
- if stuck, students can identify the graphemes, corresponding phonemes, then blend each phoneme to read the word

Comprehension Matters

The goal of reading IS comprehension! Here are some ideas to get you started with decodable books.

Inferencing

Decodable books often present many opportunities for making inferences. Because authors have limited vocabulary available to use due to the nature of controlled texts, there are many times when the reader needs to do some inferencing to determine what is happening in the story. Watch for these instances and bring them to your students' attention.

Vocabulary Development

Due to the nature of the controlled vocabulary in decodable texts, authors need to choose words that vary from what a student might typically use. An author might use *cross* instead of *angry*, *glad* instead of *happy*, or *pals* instead of *friends*. For this reason, decodable books lend themselves to discussions about synonyms. Take time to explore atypical words to expand students' vocabulary. This helps them develop an understanding of the nuances of our language.

Retelling/Summarizing

It is very important to do a check after reading a decodable book to make sure your students have come away with an understanding of the book. Decodable books provide opportunities for students to read using their understanding of taught graphemes/phoneme correspondence, orthographic patterns, and morphological elements. Students also, however, need to be thinking about the story as they read. By practicing and rereading texts, students develop automaticity, fluency, and prosody, which allow the brain to focus on comprehension.





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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-Wa0g5E&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/engagewiththepage/ | 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. |