Video 2: Grapheme-Phoneme Correspondences Transcript

Robert Savage:
A warm welcome, colleagues to this second of this series of seven professional development videos focused on Strand B of the revised Ontario Curriculum 2023. This video takes about 35-40 minutes to complete the content. There are then reflection points for you to consider after that. There are also follow-up videos and material you may find useful to help you understand the research and practice of teaching phoneme awareness.

This session will cover 10 key points:

1. **What is alphabet knowledge? What are graphemes?**

2. **Why should I know about alphabet knowledge, and especially letter names and graphemes as a teacher?**

3. **Does letter name and grapheme knowledge develop on its own, or do I have to teach it?**

4. **Practicalities – How do I teach letter names and graphemes?**

5. **Practicalities - When do I teach letter names and graphemes?**

6. **Practicalities - To whom and how much do I teach?**

7. **How do I assess my teaching has been successful?**

8. **How do I use this teaching to prevent difficulties?**

9. **How does teaching letter names and graphemes fit with my teaching of phoneme awareness?**

10. **How does teaching letter names and graphemes fit to my wider (reading) curriculum?**

By the end of this session, you should have all of the essential information you need to be able to plan and deliver a strong letter knowledge reading foundation that will be of enormous impact to young people who will otherwise struggle here.

1. **What is alphabet knowledge? and what are graphemes?**

Alphabet knowledge is a general term that refers to our understanding of all aspects of the alphabet. It includes letter name knowledge (the names we give to the 26 letters of the alphabet) our ability to recognise and name letters in various fonts, knowledge of alphabet order, and most importantly of all, knowledge of graphemes. Graphemes are the individual letters or cluster of letters that correspond to phonemes such as 't' pronounced /t/ or 'igh' pronounced /i/. As we learned in the last section, phonemes are the smallest units of sound in the spoken language.

The consistent connections between graphemes and phonemes are *grapheme-phoneme correspondences* or GPCs for short. I will use the term *grapheme* rather than *letter* and *grapheme-phoneme correspondence* (GPC) throughout rather than *letter-sound* correspondence as it is more precise and describes both the cases of single letters and the very frequent multi-letter representations of individual phonemes such as 'ch', 'sh', 'igh, 'th').

2. **Why should I know about alphabet knowledge and letter names and graphemes as a teacher?**

All aspects of alphabet knowledge are important in reading because a foundational part of being literate in an alphabetic writing system like English is understanding how the alphabet works.

Letter names are particularly important as early knowledge of letter names is one of the strongest predictors of later reading outcomes we have. Knowledge of graphemes is also a strong predictor of later reading success. Students thus need to learn both letter names and GPCs early in their school lives.

Letter names are consistent referents to letters that can otherwise often vary in their pronunciation in different contexts (an 'A' is always an 'A' but A is only an /a/ in some words but not others! /a/ is one of 8 phonemes associated with the letter 'A' e.g. consider cat above stomach).

Graphemes (unlike letter names) are the components of the pronunciation of printed words in alphabets such as English, so to know and be able to manipulate and combine graphemes skillfully is to be able to learn to read words.

3. **Does letter name and grapheme knowledge develop on its own, or do I have to teach it?**

Let's consider each of these two abilities in turn:

Letter names: Some students arrive at school knowing quite a lot about a few letter names as parents and others may have exposed children to them, and some children may even know some GPCs. Other students arrive with few or none. Given the clear research evidence that they are so important, an *equitable* start for all students suggests teaching letter names and GPCs early so that all students can use them to succeed in reading.

The precise role of letter names in literacy acquisition is unclear. In spelling students may use names to stand as syllable sounds as in writing 'YF' for the word 'wife' or 'BN' for 'bean'. We will further consider in a subsequent video how children also use letter names and letter sounds early in reading as a rough approximation of print sounds.

We do know that children need names as a constant they can refer to (as we first noted above, an 'A' letter is always an 'A' whereas an 'a' grapheme varies in the phoneme it can produce and is not therefore always an /a/, or usefully referred to as such).

Graphemes: can only be learned in one of three ways –

1. Direct high-quality instruction in graphemes and their correspondence to phonemes
2. By inferring them from letter names (e.g. working out that the /b/ phoneme is the first phoneme in the 'B' letter name syllable)
3. By Inferring them from exposure to printed words with consistent patterns of association (e.g. 'b' in 'big', 'bake', 'brown', 'boy', 'ball', etc).

Let's look at pathways 2. and 3. more closely. Much careful research has shown that the ability to infer graphemes either from letter names or from print exposure only works if students start this process:

i) with strong phoneme awareness (which as we have learned already itself has to be directly and explicitly taught), *and*

ii) with very controlled exposure to print that ensure unnaturally high density of patterns e.g. to learn 'ea' in 'beat', to expose children to multiple words in families with 'ea' sounds such as 'peak' 'beak' 'speak' 'bean' 'lead' etc and where children can already decode all the other graphemes (e.g., the 'p' and 'k' in 'peak', *and* the 'b' and ''t' in 'beat).

Without both of these supports in place, students to do not readily infer graphemes from print exposure in the early school years. Thus, all known pathways to learning GPCs well involves direct instruction of one kind or another.

A final set of complications concerns about inferring graphemes from letter names is that graphemes are not always at the beginning of letter name syllables as in the /b/ from 'B' example. Often the grapheme is at the end of the letter name (e.g. /l/ in 'L' where the letter

name syllable is pronounced ‘el’ with an audible /e/ sound in the first position. A further complication is that for some letters there is no simple association between letter names and phonemes (consider ‘W’ and ‘Y’). If a child responds ‘duh’ when you ask for the sound (phoneme) of a printed ‘W’ this is a direct clue to what they are doing accessing the first phoneme of ‘double-U’!

All in all, research and careful analysis show that it is probably safest and most equitable to teach both letter names and GPCs explicitly in (and before) grade 1 and where carefully organised rich print exposure experience can usefully supplement and reinforce this intentional grapheme instruction. The good news is that careful research has shown both that children can learn both quite readily and how best to do it.

4. Practicalities – How do I teach letter names and graphemes?

Foundations of letter name learning: Alphabet books

Many children come to learn about the alphabet via alphabet books. Beware however (some) alphabet books! They are generally designed by artists and publishers not by educators or psychologists. While there are some good ones, they can sometimes be very confusing when they include phrases like ‘ X is Xylophone’, where the word or image gives no clue to the letter name. Quite often the letter name is associated with a picture wherein the letter name is associated with *part* of a grapheme, but not with a phoneme (e.g. ‘S is for sheep’). Alphabet books also often contain elaborated letter images covered in all manner of artistic decorations (An ‘A’ covered in crawling ants, or leaves and branches all over a ‘ T is for ‘tree’, for examples), and where the basic letter shape is then hard to work out. Search out good alphabet books with both clear linguistic examples and clear printed letter forms.

Following the new Ontario curriculum, Strand B guidance (Table B2.2 below), we find there is a clear focus on learning letter names both for letter recognition and for letter writing.

There is an emphasis on acquisition and then on increased fluency in the use of letters, both in reading and in writing.

A focus is made on knowing alphabetic order but also on use of letters outside of them being presented in strict alphabetic order.

As we will consider below, these are all sensible suggestions to ensure children know their way around the alphabet and can use this alphabet knowledge in reading.

Foundations of letter sound learning

Lots of evidence now shows that explicit teaching GPCs is effective whereas other practices such as drawing attention to letter shape not linked to names or phonemes is not effective. We also know from research that teaching of up to 60-70 of the most common GPCs is likely helpful.

Much evidence suggests it is more effective to teach phoneme awareness and GPCs together over teaching GPCs alone or phoneme awareness alone. Phoneme awareness however operates as a foundation for grapheme-phoneme learning, as we noted before in video 1. *Some* phoneme awareness instruction ahead of teaching graphemes is suggested as we learned from video 1.

As we also learned in the section on phoneme awareness:

1. English is typically described as having 44 phonemes that are tied in quite complex ways to 26 letters of the modern English alphabet.

2. Phonemes are the smallest units of speech sound in a language. Phoneme awareness has been shown in years of careful research around the world to be crucial in word reading development.

3. In English while individual letters can represent phonemes, phonemes can be and often are represented in print by **groups of letters**. For example, the letter clusters ‘dge’ (as in ‘bridge’ or ‘edge’; ’ng’ in ‘ring’ and ‘king’; and even the 4-letter ‘eigh’ as in ‘eight’ represent individual phonemes.

4. Not all letters represent the same sounds either (e.g. phoneme /f/ can be represented as f ff ph gh etc in words). Letters do help the ‘mapping’ (a term we will come back to in later sessions on letters and in word reading) between printed and oral word pronunciations.

5. To know your way around letter clusters and how they represent phonemes to teach this clearly to children you do need to be familiar with the 44 or so phonemes of English.

6. Individual phonemes can be represented in words by many varied letters. The same sound in ‘dge’ (bridge) can also be a single phoneme (e.g. ‘g’ in giraffe).

7. Your understanding of phonemes underpins that of your childrens. To know your way around letter clusters and how they represent phonemes to teach this clearly to children you do need to be familiar with the 44 phonemes of English.

Consider revisiting the section on phoneme awareness if unsure on any of these 7 points above.

Before we consider how to best teach GPCs, let's first look at the task faced by children.

The components of grapheme-phoneme learning

While we as adults might see learning of the association between for example the letter T and the phoneme /t/ trivially easy (many) children do not requiring much teaching time, and some children really find such learning hard.

As teachers, when we think about planning any learning for children, we might think to break a challenging task into its components. So, what does such a task analysis suggest about **visual -> verbal paired associate learning such as that** T -> /t/?

A child has to learn at least 3 things to learn that T > /*t*/:

1) The input – a visual 'stimulus': T

2) The output – a verbal 'response': /*t*/

3) The cross-modality association (i.e. the visual-verbal link *and* its strength)

Let's stop and think - when is such learning made easier or harder for each of these 3 elements?

1. **The input -a visual (stimulus):**

    a. Learning will be harder when distracted by lots of variations and other features (e.g. elaborated letters with 'serifs' – decorative features of some fonts such as the circle not a tail in the g here among other non-iconic features). Students need to learn a primary or iconic 'T' then generalise (across fonts serifs, etc) later. It is the abstracted form not a 'photo image' we store for reading each version of a letter in different fonts – for that reason reading researchers call them 'abstract letter units'. The visual centres of the brain (the areas of our brains devoted to visual perception) have 'feature detectors' - cells in the area of the brain cortex (the brain surface) devoted to visual perception) that 'fire' when they detect edges lines and boundaries of shapes in the visual field. The combined work of brain cells in these visual centres likely allow us to readily separate a 'T' from this, or this, or this [ON SCREEN: a T rotates in 90 degree increments], for example if a child has typical or corrected to typical vision.

b. Learning will however be harder when the role of *orientation* is not clear or not understood. While our brains do a good job of signalling both the presence of a 'T' and then the difference between a 'T' from this or this or this [ON SCREEN: a T rotates in 90 degree increments], or a 'b' 'd' 'p' 'q', young students may not be aware of the *significance* of these differences. Outside of reading, a shape has the same name whatever its orientation. A chair is still a chair even if it is upside down! A dog is a dog if viewed from the side, front, back, or top! For letters this key difference between say a 'b' or a 'd' (and thus between letters and other objects) may therefore need to be explained very carefully and then reinforced through rich learning. One good way to do this might be to sort letters into piles of similar and different letters repeatedly, thus ending up with very similar ones such as 'b' 'd' 'p' 'q' on the one hand in one pile and 'o' 'e' 'u' 'c' 'n' in another pile. At the last stage of sorting attention can then be drawn by teachers to the small but crucial differences between highly similar letters and how to remember them as names and GPCs.

2. **The output – a verbal** (response). Typically, the 'output' is to name a grapheme (i.e. provide its corresponding˜ phoneme), a task that clearly demonstrates GPC learning has occurred. Naming of the phoneme is made harder when this task is made complex with lots of other distracting language around this primary task. Simplify your use of language wherever possible here! Be sure to be clear in modelling what the precise response required is, very clearly. Do not accept letter names for phonemes, for example. In such cases, just correct and request the phoneme (sound), modelling as necessary.

   Alternative modes of response to verbal ones may be needed when students cannot clearly articulate some phonemes. For example, articulation of the distinct phonemes associated with 'voiced' and 'unvoiced' 'th' e.g., in 'this' versus 'thin' respectively, emerge later than many other phonemes in typical *speech* development, and may be further delayed where students have speech articulation delays.

   Differences in articulation of English phonemes across student's home languages and cultures exist too and should be respected, encouraged, never discouraged. Phoneme articulation is good evidence of learning GPCs, but carefully conducted research has shown that the key learning for GPCs is in fact the construction of a precise 'output representation' (a form of pre-articulation speech plan in the brain). We thus do not have to make students conform to any ideal notion of phoneme articulation here to ensure strong learning.

3. **The visual -> verbal association:** (the grapheme – phoneme link and its strength).

   Children like adults learn new *associations* when they learn anything new. In its simplest form that is what learning is. Print – sound associations needed to learn GPCs are however quite specific and distinct from many other learning of

associations. We know from carefully conducted research studies that it is this learning of the print-to-sound link needed to name graphemes that seems to be central to reading. Learning *within modality* print-to-print and sound-to-sound links are nowhere near as strong predictors of reading as *cross-modal* print-sound learning. We also know that both this specific print sound learning ability of GPCs *and* phoneme awareness *together* predict early word reading success.

I turn now to the strength of association between stimulus grapheme and phoneme response. In one study, researchers Roberts et al. (2018) observed variation in regular teacher's practice and how it predicted children's learning. The strongest learning of GPCs was associated with rich teaching experiences – here a short session of only 10 minutes can lead in the most effective classes to as many as 10 clear and distinct learning opportunities where a printed letter and it's phoneme become associated. This learning of GPC associations across visual and verbal modes, along with engagement, attention, intrinsic reward, and group and individual responses are all important to learning, the researchers found.

Roberts and colleagues note the most effective approaches involved:

- Teaching practices intentionally designed to promote both cognitive learning and positive engagement – including extensive activation of PAL [paired associate learning] processes,

- simplified and clear language, choral and individual responding,

- alphabet-oriented games, manipulatives, and opportunity for self-regulation

A range of ways are suggested that support learning, all of which enhanced but did not cloud the key print-sound association learning needed.

Roberts and colleagues also highlighted the role of direct instruction via modelling then careful teacher guidance of student response:

> "*effective instruction included multiple teacher models of the visual–verbal correspondences during teacher-guided participation of the entire small group, assistance when needed by the teacher providing correct responses, and self-regulated opportunities for children to individually enact diverse and engaging letter label and letter form pairing activities. The teacher-guided activities ensured correct responses and quick pairing of the letter label and letter form with the contiguity of the labels and forms believed to promote initial correct learning.*"

Finally, we can predict that *visually* similar graphemes will be confused, as will *phonologically* similar graphemes. It should be noted that graphemes 'b' 'd' 'p' 'q', are *both* visually and phonologically confusing! Difficulty here in learning these GPCs and confusion among these GPCs is thus not automatically a sign of dyslexia. Many children may initially struggle with distinguishing these items. Sustained problems in learning such GPCs over time despite quality teaching do of course suggest a closer investigation of learner needs.

A focus on research evidence: The optimal teaching of letter-sounds

Theresa Roberts and colleagues (2019) – compared groups of pre-school children learning GPCs in different ways. In this study, research assistants provided 10 weeks of instruction for 12–15 minutes per day, four days a week.

One group were taught with a clear focus on a) only paired-associate learning (PAL). Other students were taught some PAL but were also taught either b) writing or c) to focus on the mouth shapes made when articulating letters with pictures of mouths saying phonemes. The results showed that overall, neither writing nor articulatory mouth gestures added value beyond the power of a clear focus on paired associate print letter-> phoneme learning, for the majority of students.

Another interesting finding was that there was no overall effect (i.e. neither advantage or disadvantage) of introducing GPCs before letter names or vice versa.

While this study explored pre-school children, comparable patterns have been found for older children with modest reading delays, so it is likely that the age of students alone does not affect the pattern of findings here.

Some complications to this story…..

Finally, in this section, I will identify 3 issues that should be considered:

1) **Variation**: it should be note that even given all of this above about excellent teaching, there are individual differences across children in this sort of learning – students will vary in their rate of GPC learning, so naturally some students will need more time and more opportunities to master GPCs, so plan for this.

2) **Inconsistencies**: Many GPCs are inconsistent. Given this it may be a sensible course not to insist that GPCs are iron 'rules' that always make certain sounds, but rather that they often do. Even if children are shielded from this GPC complexity initially, some of this inconsistency may be in children's own names (as in the 'ch' for Charlotte example from video 1). Later children need to know that there is

significant variation in pronunciation of graphemes. The Ontario curriculum Table B2.3 (below) this speaks of 'the most common GPCs'.

3) **Spelling**: A very important point to consider is that so far, we have considered only GPCs that are used by students in reading printed word in front of them, where GPCs allow students to assemble a pronunciation. The revised Ontario curriculum references Grapheme-Phoneme Correspondences as a title but speaks in its detail to the use of GPCs in reading *and spelling* (see e.g. Table B2.4 below). In effect both Grapheme-Phoneme Correspondences and *Phoneme-Grapheme* Correspondences are needed because to spell a word involves starting with a word pronunciation and then working back from the constituent phonemes of that word to the graphemes that represent them. Teachers should note here that while many GPCs are reversible and function as PGCs (e.g. T > /*t*/ and /*t*/ -> 'T') practice in reversing them will be important. Furthermore, there is some asymmetry in grapheme-phoneme patterns in English. The grapheme 'F' is quite consistently pronounced /f/ but the phoneme /f/ can be represented variously by 'f' (e.g. 'farm') 'ff' (e.g. 'effort') 'ph' (e.g. 'phone) and 'gh' (e.g. 'cough). Furthermore, spelling as described in the Ontario Curriculum B2.4 below [ON SCREEN: Word-Level Reading and Spelling: Applying Phonics, Orthographic, and Morphological Knowledge table appears on screen. It can be accessed through the Ontario Curriculum and Resources website] also involves phoneme segmentation, which we learned in video 1 is one of the harder phonemic tasks, that typically needs to be taught. Accurate spelling thus requires careful and sustained planning and teaching. The use of GPCs and PGCs in reading and spelling will be explored by me in detail in subsequent videos on reading and spelling.

5. Practicalities - When do I teach letter names and graphemes?

As we have noted already, several studies have shown that prior phoneme awareness is important, so should likely be taught first.

There is little evidence for the order of GPCs and letter name teaching, either is effective. It might be noted though that letter names are more distinctive and less fleeting than phonemes, so may 'anchor' some student's attention more in the first instance.

Table B2.3 of the Ontario curriculum [ON SCREEN: Phonics: Grapheme-Phoneme Correspondences – Grade 1: B2.3 table appears on screen. It can be accessed through the Ontario Curriculum and Resources website] suggests that the primary single letter GPCs are learned first (and start in kindergarten), and vowels and more complex GPCs and other patterns, including '-VCe' patterns should be taught in Grade 1.

6. Practicalities - to whom and how much do I teach?

Some students arrive in Grade 1 with many GPCs and letter names secure. Other students arrive with few or none. This suggests the need both to assess GPC and letter name knowledge and use this assessment to carefully differentiate teaching accordingly. It is NOT optimal to assume one size teaching of curricular content fits all student's needs. Those students yet to secure letter names and GPCs need more time to attend to these, whereas as those who have reliably shown their understanding can be engaged in the next step of more challenging reading and writing tasks.

Jones & Reutzel (2012) identify what they call two key insights from their review of all of the relevant research then available on early letter and GPC learning:

> **Insight 1**: Instruction should aim to increase the frequency of exposure students have to GPCs through brief lessons using a distributed instruction and review cycle
>
> Several studies report data consistent with the view that shorter frequent lessons sometimes distributed over a school day, over one or two longer lessons is more effective.
>
> Jones & Reutzel (2012) note that the pace of the curriculum could usefully be improved beyond a very slow 'letter per week' approach they saw. The opportunity to repeat and practice letters and GPCs more often during the first year of school was seen as a particular benefit of introducing them at a faster curricular pace. Jones & Reutzel argued that this benefit may well be greatest for students with lowest reading-related abilities. Research then showed that this was in fact the case – a faster pace of GPC delivery (with high exposure and carefully planned review lessons), actually increased the performance of the weakest readers most compared to the slower paced curriculum.
>
> **Insight 2**. Instruction should aim to increase instructional time and focus on those letter names and GPCs students are more likely to find difficult to learn.
>
> **So, which letter names and GPCs are more likely for a child to find difficult to learn?**
>
> a. Those GPCs and letter names not in a student's name – this is because there is an 'own-name advantage' – a positive effect for knowing GPCs and letter names in a students' own name. One study found students were some 11 x more likely to know the first letter of their own name than any other letter when they first went to school!

b. Those GPCs and letter names that occur in the middle of the alphabet – the letters LMNOP in particular, can get blurred together (and noticeably so in some chants of the alphabet song) and are also just harder to remember in the middle as our brains favor the learning of items at the beginnings and endings of any lists. This is one reason why the Ontario curriculum suggests a focus on knowing letter names both in and out of alphabet order.

c. Where the letter name and its GPC differ substantially in pronunciation (e.g. 'w' is very different in the 'double -U' letter name and /w/ (as is in 'wet) phoneme versus letter 'b' which is more similar in letter name 'b' and phoneme /b/ as in 'bag').

d. Less frequent letters. Letters that occur less often in print may give less opportunities for students to learn them. Here is one list of GPCs from most to least frequent [ON SCREEN: graphic reads – Consonant letters from most to least frequent: r, t, n, s, l, c, d, p, m, b, f, v, g, h, k, w, x, z, j, q, y. Vowel letters from most to least frequent: i, a, e, o, u].

e. Less consistent GPCs – Graphemes that have inconsistent or multiple patterns of phonemes such as 'g' (consider pronunciation of 'goat' versus 'giraffe') versus more consistently pronounced graphemes such as 'f' ('fish', 'frog', 'face').

A grade 1 teacher also inherits with a new class of students the sum of the letter knowledge foci of all prior teachers (sometime including a family's focus on particular letters). This may lead to school- or classroom-specific and child-specific patterns of letter and GPC knowledge. Given some letter and GPC knowledge may be highly idiosyncratic this is further reason to be prudent to check what all children know of GPCs and names and teach them explicitly as needed.

1. **How do I assess my teaching has been successful?**

Assessment-teaching-assessment loops with review lessons to consolidate learning of teaching are likely effective practice here. Create and use a list of GPCs drawn from the Ontario curriculum guidance to assess all children against and focus teaching against identified alphabet knowledge learning needs using the principles described above and then re-assess students before setting the next letter name and GPC target until all letter names and GPCs in the curriculum are known.

However, it is important to note that, children do not need to know all letter names and GPCs to start using them to decode words – indeed if they do know only a few highly-frequent consonants and only one or two vowel GPCs they can (and should) start using them to create common VC CV and CVC words in reading and spelling. Our study we described in the first video on phoneme awareness made sure to teach GPCs and on the very same day also encourage students to use then to read words in shared text.

Children's USE of GPCs (and PGCs) in reading and writing is the ultimate measure of their understanding of their role. This is after all, why we teach them! Here, even if children are not reading words correctly their increased GPC knowledge (and through their associated phonemic awareness abilities) means they are gradually approximating closer to the accurate reading or spelling of words. This is why teaching GPCs alongside corresponding phoneme awareness abiliy and closely linked to word reading and book exposure is the most effective practice.

7. **How do I use this teaching to prevent difficulties?**

Accumulated evidence above shows how important GPCs are as a basic tool for reading and many ways teaching here can be shaped to have maximal impact for individual children. Beyond this, documenting and monitoring when and for how long learning takes place will help identify when additional teaching time and energy is needed to ensure students reach attainment benchmarks. It might also usefully signal the need for deeper assessment and problem solving where progress Is not being made.

Note: Some published reading screening tests use letter naming *fluency* as an indicator of learning over time. If your jurisdiction uses such a screener, this may help guide teaching needs, but such screeners are typically used twice or 3 times a year, only, so while they can be informative, you cannot rely on them for detail of learner progress to formatively guide your teaching. Instead, consider teaching and assessing small clusters of GPCs over much shorter time frames to ensure student progress and record progress made here, especially for the children who make smallest steps in progress.

8. **How does teaching graphemes fit with my teaching of phoneme awareness?**

We have already considered evidence that GPC knowledge and phoneme awareness together help early reading. Phoneme awareness can be closely aligned with GPC teaching in a more specific way – for example making sure that for a taught GPC (e.g. /a/ students know and are also able to manipulate that same phoneme in a range of positions in a syllable (e.g. in 'ant' and 'man'). For writing PGCs, children will benefit from segmenting syllables using that specific PGC.

9. **How does teaching graphemes fit to my wider (reading) curriculum?**

As we will learn more fully in the next video, GPCs and phoneme awareness together directly aid word decoding (the reading and the retention of new unfamiliar words) which drives reading fluency and fluent word reading is (alongside strong linguistic comprehension) in turn one key driver of reading comprehension.

Finally, a note on motivation is warranted here – sometimes we hear of claims that the 'drill' of learning and practising the use of GPCs takes the love out of reading. There are several ways to respond to this. First, we should be wary of unevidenced claims. Second while careful teaching for strong learning is needed, strong teaching here should not be all about drill as there are many ways to liven the task through personalised teaching, group work, active learning and discovery. A focus on letter knowledge does not preclude also building a love of books and reading with adjacent activities. Finally, there is nothing more motivating than success itself. One study we ran found that teaching a range of the 64 most common GPCs, and carefully tied to real book reading opportunities was in fact **highly motivating** compared to alternative approaches, as rated by the students themselves – as the students felt empowered and felt they understood the spelling system better after being taught GPCs. They were thus more motivated to continue learning to read. Early success thus bred further success.

Some research-led suggestions on what will and will not be effective

Not effective	**Effective**
Teaching letter names and GPCs through varied complex 'interesting' decorated letter representations	Provide clear 'clean' unadorned letters, clear articulation of phonemes and with lots of explicitly taught opportunities to learn the print-sound connection between the grapheme-phoneme or letter-name
Teach all letter names and GPCs equally and Teach all letter names GPCs thoroughly to all students before moving on to teaching reading	Use the known evidence of likely GPC difficulty considered earlier as basis for planning of teaching them. Use assessment and GPC difficulty to build a progression of GPCs and learning opportunities relevant to the needs and variation you see in your class through assessing letter knowledge and GPCs. As soon as children know a few consonant and vowel GPCs make sure they are taught to use them to read and write words
Teach GPCs and letter names in isolation from words reading and without an explanation of why it is being taught and what these letters are for.	Make sure to link GPC and letter name learning to phoneme awareness (especially after 10 hrs of instructional time in phonemes alone), and link to reading.

	There is a role for invented spelling and name writing in developing GPCs. Always explain how and why GPCs work to help reading to students. Link GPCs to reading tasks often (more on how this can be done is considered in the next video)
Focus heavily on articulation and mouth shapes made when forming GPCs and have a heavy focus on letter writing when teaching letter names and GPCs.	Focus on providing multiple clear learning opportunities for print-to-sound learning of letter names and GPCs within each lesson.
Use rich context of spoken language to teach GPCs Stress children with known articulation difficulties to say GPCs involving 'l' 'r' 'th' and phoneme /dz/ (the 's' phoneme in 'measure') especially in public spaces. Ignore that some phonemes are harder for all young children than others to articulate.	Use clear and simple uncluttered language when teaching GPCs Consider the assessment needs of children with speech and language difficulties carefully and consider non-verbal responses where appropriate Be aware that some phonemes especially l' 'r' 'th' variants and phoneme /dz/ (the 's' phoneme in 'measure') are all harder for some students to articulate.
Assume one articulation or 'accent' is better than another - children's backgrounds and other languages may impact articulation.	Phoneme awareness is a conceptual ability of understanding not an articulatory one, it is understanding they need. **Consider diversity and inclusion needs here very carefully.**
Don't assess letter name or GPC knowledge	Use formative assessment systems that directly inform teaching
Teach without consulting colleagues	Think of school-wide structures here especially others who might help. Close kindergarten – grade 1 collaborative links, in particular, are suggested. Consider a whole school approach - ask consultants speech and language and educational psychology specialists for example for advice).

Teach GPCs and latter names as desk-based skill and drill with worksheets	Reading is problem solving that is built on secure GPC knowledge. Effective GPC teaching involves direct instruction and manipulable items, games, discovery, and self-regulation. Motivation and success are key parts of all effective teaching too.

Finally, just like for phonemes, remember this 'technical complexity' in knowing graphemes and later their range of associated letters is perhaps the small price to pay for the otherwise super-efficient alphabet system where children learn 1000s of new words for themselves – this is the alphabetic principle).

Summary and conclusion

We have considered	We have learned
1. What is alphabet knowledge? What are graphemes?	Alphabet knowledge refers to all our understanding of the alphabet Graphemes are letters or letter clusters that represent phonemes, the smallest units of sound in a spoken language
2. Why should I know about letter names and graphemes as a teacher?	They are key to reading English
3. Does grapheme knowledge develop on its own, or do I have to teach it?	Needs to be taught
4. Practicalities – How do I teach letter names and graphemes?	With a focus on maximising 'paired associate' learning
5. Practicalities - When do I teach letter names and graphemes?	Early on but after some phoneme awareness has first been established
6. Practicalities - To whom and how much do I teach?	Assess, and differentiate among all. Teach GPCs and connect to text
7. How do I assess my teaching has been successful?	Consider assessment -teach-assess loops
8. How do I use this teaching to prevent difficulties?	Consider documenting and monitoring

9. How does teaching graphemes fit with my wider (reading) curriculum and my teaching of phoneme awareness?	Graphemes and phoneme awareness work together to drive decoding that is one key part of comprehension
10. How does teaching graphemes fit to my wider (reading) curriculum?	It is connected to real books and directly enables reading fluency

Reflection points

- How can I use this information and what I know about phoneme awareness to shape my practice?
- How can we as a whole school (or early years group) work together on a really robust approach to early grapheme knowledge development?
- How might we develop a community of practice here to develop together?
- You should now have all you need to plan and deliver a strong and highly impactful grapheme-phoneme correspondence teaching experience for diverse learners.