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# Teachers' Manual

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**READING**  **CLINK**

## Decoding

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SAMPLE

# Background to the Program

Literacy is complex and multifaceted. It requires the coordinated execution of a cascade of complex skills. **Reading LINK** is named to portray the idea that many skills, concepts and understandings need to be interlinked for high levels of literate competence to be achieved.

The decoding component of **Reading LINK** focuses on developing fundamental reading skills. Contrary to many popular beliefs, research on reading shows that the ability to decode text is a core element in sophisticated reading skills. Decoding refers to the ability to turn the letters on the page into language. Research shows that efficient and accurate decoding is a key component in the ability to understand and use text.

The **Decoding Skills** component of **Reading LINK** draws on recent research to provide a carefully sequenced and structured program that teaches students to decode text. It focuses on teaching students to use letter-sounds to read and spell regular words. It begins by introducing five letter-sounds and teaching students to use those sounds to work out four words. The program gradually increases the range and difficulty of letter-sounds that students master so that they learn to read and spell a range of complex, multisyllabic words. It also introduces a number of irregular or sight words.

**Reading LINK – Decoding** provides a sequence of activities that teaches students how to decode (read) and encode (spell) increasingly more complex words. It begins with three letter words that have short vowels (e.g., ‘sat’ ‘man’) and is followed by initial blends (e.g., ‘stop’ ‘plod’) and final blends (e.g., ‘send’ ‘frost’). As students become proficient at reading words with initial and final blends, multisyllabic words with short vowels are introduced (e.g., ‘flippant’ ‘distrust’). In this way, students will develop very sophisticated skills in decoding a range of complex words with a restricted set of symbol-sound relationships. At the same time they will encounter many words that are new to them and so have opportunities to increase their vocabularies.

After students have mastered words with short vowels, they begin to work with long vowels. They commence with words containing silent ‘e’. This is followed by long vowel digraphs (e.g., ‘ai’ ‘ee’) and then they progress to other letter-sound correspondences (e.g., ‘ar’ ‘er’ ‘or’ ‘igh’).

**Workbook 1** contains words with short vowels.

**Workbook 2** covers short vowels with words ending in consonant digraphs (e.g., words ending in ‘ck’ or ‘ll’) and then introduces long vowels with silent ‘e’.

**Workbooks 3 and 4** contain words with long vowel digraphs (e.g., ‘oa’) and other letter-sound correspondences (e.g., ‘er’).

When students have completed the program, they will be able to decode and encode a wide range of words from very simple to extremely complex covering most of the orthographic structures in English.

They will also cover the rules for using apostrophes (e.g., *they’re*), and changing the tense in verbs by adding ‘*ed*’ and ‘*ing*’.

The program aims to foster both the ability to spell and read words as well as encourage motivation to read and a love of literacy. It is founded on an approach whereby every student experiences continual success and feelings of accomplishment in their achievements.

## Essential Prerequisites for Reading

The foundations for success in learning to read are laid long before students encounter formal reading instruction when they begin school. When parents read to their young children, they teach many valuable lessons about the enjoyment of reading, the nature of the reading process, and how books work to convey concepts and ideas.

Research over the last 15 years has provided a clear and detailed analysis of how and why children learn to read well and why they fail in learning to read. This research shows that the knowledge and skills that children develop during the preschool years, are critical in their ability to learn to read when they begin school.

These critical pre-reading skills focus on the ability to detect and manipulate the sound structure of language. The sounds we make when speaking (e.g., ‘*mmm*’ or ‘*eee*’) are called ‘speech sounds’. They are quite different from other sounds, for example, the noise that a train makes going over tracks or a note from a piano.

The ability to detect and manipulate speech sounds is called ‘phonological awareness’. For most students this begins with the awareness of rhyme. The ability to hear rhymes in words emerges from experiences with rhymes such as nursery rhymes. Students who have an awareness of rhyme can answer questions such as:

*Can you tell me a word that rhymes with ‘cat’?*  
or  
*Which word rhymes with ‘cat’: ‘man’ or ‘mat’?*

Students who have awareness of rhyme will tell you that words such as ‘*sat*’ or ‘*bat*’ rhyme with ‘*cat*’. They can also tell you that ‘*mat*’ rhymes with ‘*cat*’ but ‘*man*’ does not.

After students learn to identify rhyme, they begin to identify initial sounds. For example, if you ask:

*What sound does ‘dog’ begin with?*  
or  
*Tell me a word that begins with ‘d’.*

A student with awareness of initial sounds will be able to tell you that ‘*dog*’ begins with ‘*d*’ and that ‘*Dad*’ is a word that begins with ‘*d*’.

Before they begin to learn to read, students should listen to rhymes and play games such as ‘I Spy’ so that they develop an awareness of the sounds that make up words in language.

Phonological awareness has a surprisingly powerful effect on the ability of students to learn to read. For example, in research that we conducted, after their first year of schooling, students who could rhyme and identify initial sounds before they learned to read had reading scores many times greater than those of other students who could not rhyme or identify initial sounds.

## **The Role of Decoding in Making Meaning from Text**

In the past, teaching students to decode was seen as a low-level and unimportant skill. It was thought that the focus in teaching students to read should focus on making meaning from the text. As a consequence, many students were not taught to decode effectively.

However, recent research has shown that far from detracting from a focus on meaning, good decoding skills are essential to understanding text. If students have poor decoding skills, they focus all their attention on trying to translate the letters on a page into language. This is a slow and laborious process and leaves little, or no, intellectual resources for the student to think about the ideas contained in the text.

On the other hand, fast, accurate and efficient decoding allows students to focus all their attention on understanding the information in the text. Thus, good decoding skills enhance students' understanding of text. Time spent on teaching decoding skills will, in the long run, develop stronger comprehension skills.

## **Teaching Decoding – What the Research Says**

The research is clear on the best way to develop students' decoding skills. An effective decoding program enables students to 'crack the code' of how letters represent particular sounds in speech.

Thus, the first element in an effective decoding program must teach students how to use letter-sound correspondences to work out unfamiliar words. For example, students must be able to use the letter-sounds *b – e – s – t* to form the word 'best' or *t – r – a i – n* to make the word 'train'.

The strategy of using letter-sounds to work out words should be employed on 'regular' words. These are words that have a consistent pattern so that individual or groups of letters map onto specific sounds. For example, '-et' words (e.g., 'pet' 'met' 'set' 'get' or '-ain' words ('rain' 'train' 'grain')) are regular words.

The reason that phonological awareness is a powerful predictor of students' ability to learn to read is that it allows students to match specific letters to the sounds that they hear in words when they talk.

The most effective way to teach students skills in cracking the code is to provide them with a carefully structured and sequenced program that teaches them to use letter-sounds to work out unfamiliar, regular words. This kind of skills program should be provided in isolation from other reading activities. Students should not try to work on decoding skills at the same time as they are reading meaningful text. When skills are taught in isolation, students can focus all their attention on developing that particular skill. After they have mastered decoding particular words, they can employ their skills in context by reading meaningful text.

In the past, many decoding skills program taught students to read words based on ‘word families’. These are groups of words that share the same ‘rime’. The rime is the vowel and final consonant or consonants in a word. For example, the rime in ‘*sat*’ is ‘*at*’, the rime in ‘*man*’ is ‘*an*’. The ‘*-at*’ word family has words such as ‘*cat*’ ‘*bat*’ ‘*hat*’ ‘*mat*’ and ‘*sat*’. The ‘*-an*’ word family has words such as ‘*fan*’ ‘*tan*’ ‘*can*’ ‘*pan*’ and ‘*man*’.

Decoding programs based on word families are very successful in enhancing students’ reading skills. However, we have found that in the early stages in learning to read, it is more effective to build a program in which students work with words that do not share a rime. For example, in one study we compared students working on a program based on word families with a program in which students learned to decode words with a variety of rimes (e.g., ‘*sat*’ ‘*man*’ ‘*tap*’ ‘*set*’). We called this program Grapheme-phoneme Correspondence. We also used a program with a third group, in which students learned to decode while reading meaningful text (whole language approach). Although all the groups had the same reading age when they began the program, the differences between the groups at the conclusion of the research were startling.

After only ten weeks, students working on the Grapheme-phoneme Correspondence Program scored an average of 92% accuracy when reading a list of 50 words. This compared with 78% accuracy for the Rime Program and 68% for the Whole Language approach. At the conclusion, the reading age for the Whole Language group was 7.1 years, the Rime Program 7.7 years and the Grapheme-phoneme Correspondence Program 8.4 years. There were similar differences in measures of spelling and reading comprehension. Thus, a structured decoding skills program had a dramatic impact on students’ ability to read and spell, as well as their ability to understand the information in text.

Based on this and other research, **LINK – Decoding** works through lists of words that are similar in structure but include a variety of word families (e.g., ‘*sit*’ ‘*red*’ ‘*did*’ ‘*get*’ or ‘*brand*’ ‘*quest*’ ‘*mist*’ ‘*lost*’).

Researchers have found that students who develop reading difficulties often do not analyse all the letters in a word when reading. For example, they might look at the first letter, or the middle letters or perhaps, the final letter. These students frequently make errors and, as a result, often have difficulty in comprehension.

Our research indicated that when students practise decoding words that have a number of different letter combinations, they learn to analyse every letter in the word when decoding. This results in higher levels of decoding skills as well as increased comprehension.

### **The role of attention to task**

**Reading LINK – Decoding** is underpinned by research on thinking and learning. One of the keys to learning is the ability to focus attention on the most important aspects of intellectual tasks. Basically, people can focus attention only on one thing at a time. This has a number of implications for how we should teach students to read.

Firstly, if students are reading text, they should focus all their attention on the meaning of the text. If their decoding skills are poor, students focus attention on trying to figure out what the words say. In this case, there is little attention

available to think about what the text means; thus, quick, accurate and effortless decoding skills are essential to being able to read text in a meaningful way. Decoding skills and reading for meaning are complementary processes. They do not conflict with each other, as some traditional approaches suggest. A comprehensive literacy program must focus on both development of decoding skills as well as meaningful analysis of the text.

Secondly, research on learning has implications for how best to teach decoding skills. When learning to become an effective decoder, students must focus their attention on learning to decode. Therefore, skills must be developed in isolation, not embedded in other more complex tasks. In this way, students can focus attention on one task at a time – first, to build competent decoding skills and, second, to use those skills to read and understand text.

This is not to suggest that when learning to read students should only be given a decoding program. There are many other literacy activities that are critical to learning. Adults should read books to students and discuss the meaning of what is being read. Students should participate in a range of oral language activities and should play games with words and sounds. However, within a comprehensive literacy program, students should spend a small amount of time (10-20 minutes) every day in learning to decode.

## **The Role of Memory in Learning to Read**

### **Expertise and networks of knowledge**

Experts in any field have a large and detailed knowledge base. Information is stored in memory in rich, interconnected networks of concepts and ideas. Thus, when building students' knowledge about a content area, teachers should aim to assist students to create interconnected networks of ideas. Building networks of knowledge provides the foundation for students' understanding of the world around them.

When knowledge is stored in complex interconnected networks, recall of one concept or idea often triggers recollection of closely related ideas. For example, if you are asked to say any other word when I say a word '*black*', most people will say something like '*white*'. This is because, for most people, the concepts '*black*' and '*white*' are stored closely together in memory; when they retrieve one, they automatically recall the other.

You can see how your own networks of knowledge function. For people who can remember the 1960s, if I asked you what you were doing on November 22, 1963, or July 20, 1969, you would probably suggest that I'm asking a ridiculous question. How could anyone remember what they were doing on a particular day 30 years ago? However, if I asked what you were doing when President Kennedy was shot or when people first walked on the moon, you could probably give me a detailed account of where you were and what you were doing.

The same applies to more recent events such as when Princess Diana was killed or your last birthday. Certain key events provide a trigger for remembering quite detailed information about specific days in our lives because information about the event is stored in a network of knowledge which includes where you were and what you were doing.

## Impact of memory and remembering on learning to read

When learning to read, students learn a great deal about how language is structured and how language works. For example, when they develop phonological awareness, they store knowledge in memory about the nature of the sound structure of words. They build a network of knowledge about what kinds of sounds relate to specific words.

Because of the way memory works, whenever students learn information that is similar, or is learned in the same time and place, then the information is likely to be stored in closely connected networks in memory.

Thus, young students often confuse ‘b’ and ‘d’, not because they cannot tell the difference between how ‘b’ and ‘d’ look, but because these two letters have been stored close together in memory. When students try to retrieve one they are likely to retrieve the other at the same time. This leads to confusion as the student struggled to recall which of these similar letters is associated with the sound /b/ and which one is associated with /d/.

The way memory works has important implications for how a program that teaches decoding skills should be structured and how teachers should deal with potentially complex and confusing information. For example, in the case of the letters ‘b’ and ‘d’ to avoid confusion:

- Firstly, potentially confusing letters should never be taught at the same time. Thus, ‘d’ might be introduced first without any reference to ‘b’.
- Secondly, students should be encouraged to build separate memory networks around potentially confusing letters or words. For example, students can be encouraged to remember ‘d’ because /d/ is the sound that begins the word ‘dog’. Then, they can be taught to associate the sound /d/, the word ‘dog’ and the shape of the letter. For example, they can be shown that ‘dogs’ have a tail on the end and the letter ‘d’ can be given a tail on the end. Thus, the student builds a complex network in memory that contains the sound of the letter, the shape of the letter and meaningful words that contain the letter.
- Finally, some time later, the second potentially confusing letter can be introduced. To this point only the letter ‘d’ has been introduced to the students. Once ‘d’ has been firmly embedded in memory, then the letter ‘b’ can be introduced and an entirely different memory network constructed to support students’ recollection of the letter.

Several methods are employed throughout **Reading LINK – Decoding** to encourage students to build networks of interconnected knowledge about how to read and spell words. This is done in a way that will reduce confusion and errors. For example, words that can be worked out using letter-sound relationships (regular words, e.g., ‘cat’ ‘gate’ ‘train’) are presented using large letter cards that can be sounded out to make the word. Irregular or sight words (e.g., ‘the’ ‘said’ ‘they’) are presented as whole words on flashcards. In the workbooks, regular words are read across the page; in contrast, irregular words are read down the column.

Interconnected networks of knowledge can contain a range of different types of information. For example, when students construct a memory of a word, part of the memory is the oral representation of the word (i.e., how you say the word). Another part of memory is the meaning of the word. When learning to read, students add a written representation of the word (i.e., what the word looks like).



Students can often associate the situation in which they first encountered the written word with the memory. Thus, if they were particularly happy, excited or upset on a day they first encountered a word, their feelings may become associated with their memory of the word.

The richer and more detailed these memory representations are, the better and deeper the learning of the word. Teachers can help students build richer and more detailed memory structures about words by encouraging them to associate learning new letters, sounds and words with events in their lives. Visualising and creating images can be a particularly powerful way of enhancing memory. Students can be encouraged to visualise the letters that make up a word or the object which a word represents.

**One caveat should be given in relation to LINK – Decoding: because each step in the program is based on an understanding of how the human mind works, it is critical that the program is followed closely. Each step should be implemented as it is described. Omitting or modifying the program could undermine the effectiveness of the materials.**

## Effective Decoding Programs

The aim of an effective decoding program should be to enable students to translate the letters they see on the page into words and sentences quickly, effortlessly and accurately. Quick, effortless and accurate execution of tasks is called **automaticity**. Students must be able to decode with automaticity in order to read for meaning or to critically analyse text. Thus, the aim of a decoding skills program is to develop automaticity in decoding so that students will have higher levels of comprehension when they come to read text.

It should be kept in mind that automatic recall means 100% accuracy. Readers who have automaticity in decoding are totally accurate, very quick and exert almost no effort in reading the text. This is the aim of a decoding program: to develop the ability to translate the letters on the page into spoken language in a way that is effortless, absolutely accurate and very rapid.

There are three components to a comprehensive decoding program. Firstly, students must learn to use letter-sounds to work out unfamiliar words. This is often called ‘cracking the code’. Secondly, students need to learn irregular or sight words (e.g., ‘said’ ‘they’). Thirdly, students must use their decoding skills to read extended text.

### 1. Cracking the code

Learning to crack the code is one of the most challenging aspects of learning to read. Most students who are identified as having learning disabilities, dyslexia or learning difficulties have a specific problem in decoding. Research also shows that competent readers, even adults, decode the majority of text by using letter-sounds to work out what the words say.

To become competent readers, there are thousands of words students must learn to recognise. Drawing on our understanding of how the mind works, we know that the cognitive demands of trying to recall every word as a unique association between the written text and spoken words, far exceeds human

memory capacity. In order to become an efficient reader, students must reduce the demands of the task of remembering what each word says. They can only do this by using their knowledge of the sounds associated with letters so that they can work out the words. In this way, a relatively small amount of information can be used to read a large number of words. For example:

If students know four letters –

‘s’ ‘t’ ‘p’ ‘a’ – they can read four words: ‘sat’ ‘sap’ ‘pat’ and ‘tap’.

If they know one more letter, ‘e’, they can read an additional two words: ‘set’ and ‘pet’.

With another letter, ‘m’, they can read four more words:

‘mat’ ‘map’ ‘met’ and ‘mess’.

With every additional letter that students learn, the number of words they can read increases dramatically. Thus, students (and adults) can read a large number of words but they only have to remember a relatively small amount of information in the form of letter-sounds correspondences (26 letters and 44 sounds).

Research clearly shows that effective readers must learn to use their letter-sound correspondences to work out (or decode) words. However, simply knowing the sounds that various letters make is not sufficient to ensure that all students will develop good decoding skills. In addition to knowing the sounds that letters make, students must also know how to **use these sounds** to work out words.

In many cases, it is relatively easy to teach the letter-sound correspondences. A teacher merely needs to show the student the written letter (for example ‘a’) and tell the student that this says ‘aaa’. With a little practice, the student can usually remember this.

It is the ability to use letter-sound correspondences to work out words that proves to be a challenge for many students. They need a carefully structured program that teaches them how to use their knowledge of sounds to read and spell words.

Thus, **LINK – Decoding** is a structured and carefully sequenced program that teaches students the letter-sound correspondences as well as how to use their knowledge of the letter-sounds to work out words. The focus of the program is on the process of using letter-knowledge to work out what words say.

## **Reading and spelling**

**Reading LINK – Decoding** teaches students to read and spell words. In many ways, reading and spelling are opposite processes. Reading requires the student to **decode** the text. Spelling requires the student to **encode** the text. Words are written in a kind of code. Decoding involves identifying the sounds that map onto the letters in the written word. These sounds are blended (or synthesised) together to form language.

On the other hand, spelling involves encoding the written text – that is turning language into the written code. This is done by breaking each spoken word into its constituent sounds. This is referred to as **segmenting** words into phonemes. The student then writes the letters that represent each sound

(phoneme) in the word. Thus, **LINK – Decoding** gives a carefully structured program which teaches students how to read and spell a sequence of increasingly complex words.

## 2. Recognition of sight words

While decoding using letter-sound correspondences is the core component in learning to read, it is not sufficient to read all text. There are a number of words that do not obey the regular rules. These words are referred to as **irregular** words.

Students need to learn to recognise these words automatically. This requires repeated practice in identifying whole words. Flash card drills are an excellent way to do this.

**Reading LINK – Decoding** classifies irregular words into three distinct groups:

- Firstly are words that follow a rule that is different from the systematic letter-sound correspondences found in regular words. These are referred to as **Unusual Words**. These words look as if they can be sounded out in the same manner as regular words, but they have unusual letter-sound correspondences. For example, the ‘-all’ family (e.g., ‘ball’ ‘wall’ ‘small’ ‘fall’) are classified as unusual words.
- Secondly, some words are grouped as **Exceptional Words**. Similar to Unusual Words, Exceptional Words look as if they can be sounded out but they do not follow the regular rules. However, unlike Unusual Words, they do not form a word family. For example, in some words ‘a’ makes a sound like ‘o’ (e.g., ‘wash’ ‘what’ ‘wander’).
- Thirdly, there are words labelled **Sight Words**. These words do not follow the regular rules but they do not cluster into word families for similar groupings. Examples of Sight Words include ‘the’ and ‘said’.

**Reading LINK – Decoding** uses a number of mechanisms to help students remember that sight words are distinct from regular words that can be worked out using letter-sound correspondences; for example, irregular words are read down the page. Teachers can build on this by reminding students that some words are ‘tricky’ and we just have to remember to look out for them. When reading text, teachers could say something like:

*“Oh oh, this is one of those tricky words that we have on our flashcards. We have to watch out, this is one that might have a trap for us. Can you tell me what the trap is?”*

Irregular words are far more difficult for students to learn to read than regular words. **LINK – Decoding** provides the maximum amount of structure possible to help students make sense of the patterns in English orthography including exceptions to the rules.

## 3. Reading Extended Text

The final element in a comprehensive decoding program is to provide students with opportunities to practise their skills by reading extended text. Students require books that have a carefully controlled and sequenced vocabulary that

matches the skills that they are developing. Basically, students should be able to decode all the words within the text before they attempt to read it independently. This allows them to focus all their attention on the meaning of the text. If they have to struggle to decode the text, they cannot focus on the meaning.

We have found a number of students who resolved some early decoding problems only to develop difficulties in comprehension. As early readers, these students were confronted with text that was too difficult for them to decode; consequently they developed the habit of guessing words that they could not decode. Thus, the text rarely made any sense and they learned to read without worrying about the meaning of the text. As a result, they had failed to develop the awareness that reading is about understanding the text.

It is essential that students read books every day. They should be able to decode these books fluently. The experience of reading books should be easy and fun. If possible, students should read to an adult for a short time every day. This provides an opportunity to teachers or parents to monitor the accuracy of students’ reading.

Provision of a sequence of readers does not mean that students should not be exposed to text that is too difficult for them to decode. They should listen to stories read to them by adults and they can co-participate in sessions at which an expert reader reads difficult text with them. To become a proficient reader, students need a balanced and comprehensive program – learning skills in isolation, reading texts that they decode easily and sharing difficult texts with an adult or more capable reader.