

Science of Reading: Building a Reading Brain

Grades 3–12



Effective Instruction and Practice

Discover *Read 180*, an intensive reading intervention program rooted in the science of reading research. The science of reading explores the cognitive and neurological processes in reading and how to effectively teach them. *Read 180* incorporates key components of this research–phonemic awareness, phonics, fluency, vocabulary, and comprehension. With personalized instruction, adaptive technology, and ongoing assessment, students receive tailored support in learning to read.

Read 180 follows the science of reading principle of explicit and systematic instruction, providing step-by-step guidance in essential reading components while offering diverse practice opportunities. Unlock the *power of reading* with *Read 180* and empower students to excel in their literacy journey.



1M+

Students impacted by *Read 180* daily!



Grounded in Evidence-Based Instruction

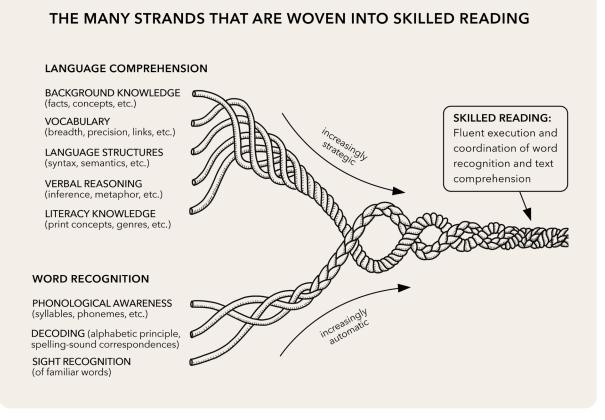
Read 180[®] provides explicit and systematic instruction in key literacy elements as well as personalized and targeted support to meet the unique needs of each student.

What's Inside

- 04 Based on Research
- 06 Five Pillars of Reading
- 08 Phonemic Awareness
- 10 Phonics
- 12 Fluency
- 14 Vocabulary
- 16 Comprehension
- 18 Science of Reading Professional Development

Based on Research

Intensive intervention programs, such as *Read 180*, incorporate both Scarborough's Rope Model and the five pillars of reading into their instructional approach. The program utilizes both teacher-led instruction and student application software to enhance students' reading skills in all strands of the rope model. By focusing on all the essential components of reading, *Read 180* helps struggling readers build a strong reading foundation and improve their reading outcomes.



The image, used with permission from the Publisher, originally appeared in the following publication: Scarborough, H. S. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S. Neuman & D. Dickinson (Eds.), *Handbook of early literacy research* (Vol. 1, pp. 97–110). New York, NY: Guilford Press.

4 | Read 180 Science of Reading



Instruction Guided by Five Pillars of Reading

Read 180 integrates explicit and systematic instruction in phonemic awareness and phonics, laying a strong foundation for reading skills. Students boost fluency through strategies like repeated readings and modeled readings, and enrich vocabulary with a focus on academic words and context clues. To enhance comprehension, students learn effective strategies to understand and analyze text.

By incorporating the five pillars of reading into *Read 180*'s instructional approach, the program equips teachers with the tools they need to support their students' reading growth and guide them to grade-level proficiency.

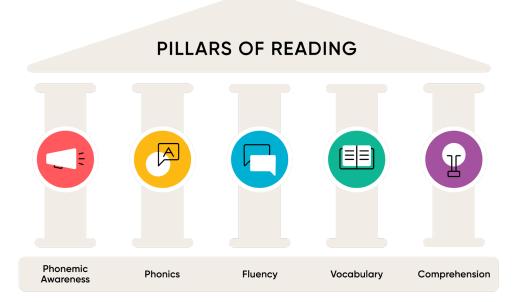
Read 180 reading class has helped me improve not only my reading skills but also my focus, memory, and communication skills.



Emily, Read 180 student

Meaning Behind Each Pillar

First, let's review what each pillar means.



PHONEMIC AWARENESS

Phonemic awareness is vital for decoding. Use word games, rhymes, and tongue twisters to help children identify individual sounds.

PHONICS

After acquiring phonemic awareness, students progress to phonics. Phonics is crucial for decoding new words as it enables students to break down words into sounds and syllables, fostering strong reading skills.

FLUENCY

Fluency is reading with a pace that ensures comprehension, focusing on the text's meaning rather than individual words. Guided practice helps young readers build a fast, efficient reading brain.

VOCABULARY

Reading success relies on a strong vocabulary. Explicit teaching of vocabulary and word-learning strategies enhances fluency and comprehension. Young readers are eager learners, soaking up new words daily.

COMPREHENSION

Comprehension is the ultimate goal of learning to read. Students achieve it by learning various strategies for understanding different texts and their structures. As they apply and monitor these strategies, their ability to comprehend complex texts improves.

Phonemic Awareness



Phonemic Awareness serves as the foundation of *ReaL Book: Code* lessons. Students are taught to distinguish the sounds of the English language that will serve them as they move toward decoding and encoding written language. The student application contains activities that require students to listen to and identify individual sounds in spoken words, which helps to develop phonemic awareness.



1 INTRODUCE

Phonemic Awareness

I DO Introduce the phoneme. Explain that students are going to learn about words that have the /å/ sound, as in the key word apple. Echo the sound and the key word with students several times. Then explain that students are going to listen for the /å/ sound in words.

Model ISOLATING PHONEMES using words with /ā/. Explain that students are going to listen to words and identify the sounds they hear at the beginning, middle, and end of the word. Model using the word man.

I am going to say a word and break it into its sounds. Then I am going to say the sound I hear at the beginning, in the middle, and at the end of the word. The first word is man, $n/n/\lambda / n/n$. The beginning sound is /m/, the middle sound is /å/, the final sound is /n/.

 WE DO Guide students to isolate phonemes. Say an example word (sot) and have students repeat; then guide students to identify the phonemes in the word. Repeat the word and segment as needed. Let's try it dgether. Repeat ofter me: sat (sad), /s/ /a/ /t/. Whot's the first sound you hear? (s/) Whot's the middle sound? (/a/) Whot's the first sound you hear? (s/) Whot's the word map.
 The letters in mat ha consonant-wowe?-o Repeat using the we pattern. In a vowe?-o VOU DO Have stuthree boxes on the bit three boxes on the bit

YOU DO Have students isolate phonemes. Say pat, mod, pad, nap, and can. Have students repeat each word and tell you its initial, middle, and final sound.

Correct & Redirect "My students are having difficulty isolating sounds." Distribute Elkonin Boxes and have students tap the boxes or use colored chips to track the sounds.

T94 Real Book: Code 1 • Teaching Guide



Letter-Sound Correspondence

I DO Connect the letter *a* to the sound /ā/. Write the letter *a* on the board. Tell students that *a* is a vowel. Explain that vowels can stand for more than one sound. Today we are working on the short a vowel sound: /ā/.

WE DO Identify short a in the CVC pattern. Leave the letter a on the board and add the letters in mat. This is /m//a//t/, mat. Is the first letter a consonant

middle letter a conso about the last letter?

letters s-a-t in the bo

indicate whether th

label the word with

chorally pronounce Repeat this process

words can, fan, man

Multilin Support

"My students are

Describe and mod practice making th

mouth position. Fo the word, having s the mirror to check



Letter-Sound Correspondence

I DO Connect the letter *a* **to the sound** $/ \check{a}$. Write the letter *a* on the board. Tell students that *a* is a vowel. Explain that vowels can stand for more than one sound. Today we are working on the short a vowel sound: $/\check{a}$.

WE DO Identify short *a* in the CVC pattern. Leave the letter *a* on the board and add the letters in *mat*. This is /m//a//t/, mat. Is the first letter *a* consonant or *a* vowel? (consonant) Label it with a C. Is the middle letter *a* consonant or *a* vowel? (vowel) Label it with a V. What about the last letter? (consonant) Label it with a C.

СVС

mat

The letters in mat have a consonant-vowel-consonant pattern. In a consonant-vowel-consonant pattern the vowel sound is usually short. Repeat using the word *am*. Label the letters in *am* to show the VC pattern. In a vowel-consonant pattern the vowel is also usually short.

YOU DO Have students identify short a in a CVC pattern. Draw three boxes on the board or distribute **Elkonin Boxes**. Write the letters *s-a-t* in the boxes and have students copy. Tell students to indicate whether the letters are consonants or vowels. Have students label the word with the CVC pattern. *This word has a* CVC *pattern. Blend the sounds with me.* Point to each letter and have students chorally pronounce the sounds and then the word: /s//ă//t/, *sat.* Repeat this process, asking students to label the CVC pattern in the words *can, fan, man, mat,* and *tan* and then blend them.

The **Phonemic Awareness** activities help students hear and produce the individual sounds in words and prime them to associate sounds with printed letters.

8 | Read 180 Science of Reading

			Date:
	ological a		
Aware	eness Ass	essmen	t
sure that stud Score line foll	ents understand eac	h task. Record the You may stop testi	ent. Provide practice examples to make number of correct responses on the ng in a section and move on if the student
dentifying F	thymes		
	rd pairs below. Ask th tudent's response in t		fy whether the words rhyme. I.
1. run/won		4. tap/map .	
2. pit/sun _		5.stop/stand	i
3. ten/men		6. pod/ran	
Answer Ke	y: 1. yes 2. no 3.	yes 4.yes 5.n	o 6. no
			Score:
Producing R	hymes		
pair. Write f		e in the space pro	lent to say another word that rhymes with the vided. If the student cannot think of a rhyme th ble.
1. pot	got	4. phone	bone
2. cat	mat	5. rate	fate
3. shock	lock	6. cold	old
A	y: Responses will var	y.	
Answerke			Score:

For students who demonstrate foundational skills gaps, teach the Phonological or Phonemic Awareness Routines aligned to demonstrated gaps.

Phonemic Awareness Routines can be targeted and administered efficiently to close demonstrated gaps in student learning.

	Isolating Phonemes								
I DO Intro	duce the routine.	dentify the spe	cific listening focus,	then explain th	ne activity.				
			ur ears to hear each en I will say the soun		g to say a word				
Model the	Model the skill. Say a word, segment the word into individual sounds, and isolate its target sound.								
	I'm going to listen for and identify the first sound in the word man: $/m//3//n/$. The first sound I bear in man is $/m/$.								
WE DO G	WE DO Guide students to isolate phonemes. Say a word and have students echo. Then say the								
	word again, segmenting the sounds. Finally, ask students to identify the focus sound.								
Let's try it to	Let's try it together. Repeat after me: sat (sat); /s/ /ä/ /t/ (/s/ /å/ /t/). What's the initial sound? (/s/)								
YOU DO I	lave students isol	ate phonemes	. Continue saying w	ords aloud to s	tudents. Have				
students re	students repeat the word, then isolate the target sound.								
Now it's you	r turn. The word is ca	t:/c//å//t/.W	That is the first sound	l you hear in the	cat? (/k/)				
	Initial Phoneme Final Phoneme Medial Phoneme								
	Isolation Isolation Isolation								
Word	Phoneme	Word	Phoneme	Word	Phoneme				
back	/b/	drop	/p/	fact	/a/				
back deep	/b/ /d/	drop skim							
			/p/	fact	/å/				
deep	/d/	skim	/p/ /m/	fact red	/3/				
deep camp	/d/ /k/	skim mad	/p/ /m/ /d/	fact red hill	/\$/ /&/ /1/				
deep camp roast	/d/ /k/ /r/	skim mad spot	/p/ /m/ /d/ /t/	fact red hill rain	/\$/ /¢/ /ï/ /\$/				
deep camp roast good	/d/ /k/ /r/ /g/	skim mad spot cliff	/p/ /m/ /d/ /t/ /f/	fact red hill rain mice	/b/ /b/ /ï/ /b/ /ï/				
deep camp roast good jet	/d/ /k/ /r/ /g/ /J/	skim mad spot cliff sock	/p/ /m/ /d/ /t/ /t/ /k/	fact red hill rain mice joke	/2/ /&/ /1/ /3/ /1/ /0/				
deep camp roast good jet then	/d/ /k/ /r/ /g/ /j/ /th/	skim mad spot cliff sock bean	/p/ /m/ /d/ /t/ /t/ /k/ /n/	fact red hill rain mice joke clean	/2/ /8/ /1/ /2/ /1/ /0/ /8/				
deep camp reast good jet then sharp	/d/ /k/ /r/ /g/ /j/ /th/ /sh/	skim mad spot cliff sock bean class	/p/ /m/ /d/ /t/ /t/ /k/ /k/ /k/ /s/	fact red hill rain mice joke clean dawn	2/ 4/ 1/ 2/ 2/ 2/ 2/ 2/ 2/ 2/ 2/				

Phonological and Phonemic Awareness

EVIDENCE-BASE

Phonological and Phonemic Awareness

What Is Phonological and Phonemic Awareness?

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What the Research Says

Students experiencing . . . early challenges as readers may not fully grap phonemic awareness and phonological processing. that is, identifying and manipulating phonems, the smallest units of sound in oral language. These early gaps in their understanding may not be evident until the third ar fourth grade and are likely to impede reading billity throughout the grade and are likely to impede reading roughout the student's lifespan without tion (Lipka et al., 2006).

recognize different units of sound in language as words, syllables, onset-rime, and even the unit of a word: a phoneme. Awareness of the in spoken language is required to be

warene... tion in phonen... heneficial for 2002

 Students must have phonological awaren to read written texts. Explicit instruction in awareness skills has been shown to be ben students who struggle with reading (Torg) Explicit instruction gives students conscious analytic mowledge of phonemic awareness (Adams, 1994; Richgels et al., 1996).

24 Real. Book: Code 1 • Teaching Guide

Teachers are supported throughout Read 180 and build confidence and comfort in teaching Phonemic Awareness.

Phonics



Within the Code lessons, Phonics Application activities allow students to learn common English sound-spelling patterns, and then apply those patterns in a variety of contexts. The Apply the Code section of the Code lessons provides step-by-step instructional guidance and teacher modeling that is grounded in a research-based process for teaching foundational literacy skills.

Phonics Application Segment 3 • Lesson 4

Apply the Code

Review Short u

 Review the concepts. Remind students that short u is a vowel and that a CVC word is spelled with a consonant-vowel-consonant

Apply the Code

Review Short u

- Review the concepts. Remind students that short u is a vowel and that a CVC word is spelled with a consonant-vowel-consonant pattern and has a short vowel sound.
- Pronounce the sound /ŭ/. Remind students that the /ŭ/ sound is represented by the letter u.
- Read the Review box. Direct students' attention to the Review box and read it aloud. Segment the Review words into their sounds (/ŭ / /p/; /l / /ŭ / /k/), emphasizing the vowel sound in each word and having students echo. Remember to clip the sounds of the consonants to avoid adding an 'uh' sound.

Word List

- Introduce the activity. Read the directions aloud. Contrast the short u sound with the other short vowel sounds and remind students that they are circling words with the short u sound.
- Model the activity. Model decoding the first word by breaking it into its sounds and listening for the short u vowel sound. This word is /m//ŭ//d/: mud. I hear the /ŭ/ sound, which is the short u sound. I'll circle this word.
- Complete the activity. Continue to guide students until they are confident working independently. Share the correct answers.

Write It

- Introduce the activity. Read the directions aloud.
- Model the activity. Model thinking by completing the first one. I see a pen in this picture. I hear the sounds /p/ /ĕ/ /n/ in the word pen. The /p/ sound is spelled with a p. Write it on the line. The /ĕ/ sound is spelled with an e. Write it on the line. The /n/ sound is spelled with an n. Write it on the line. The letters p-e-n spell pen.
- **Complete the activity.** Have students complete the activity in pairs or independently. Share the correct answers.

Differentiated Instruction

Support

 If students are struggling to contrast the vowel sounds of printed words, then create a five-column chart on the board labeled /ā/, /ē/, /ī/, /ŏ/, and /ū/. Have students read each word in the Word List activity and sort it into the correct column.

Reinforce

 If students are still learning to spell CVC words, then write the letters of each word in the Write It activity on the board in mixed order (write ck together). Segment each word into its sounds and have students select the letters that apply to the sounds they hear and write them on the line.

Extend

If students have mastered blending sounds to read short u
words and have successfully completed each activity, then
challenge them to create new words with short u using the
digital Blending Board.

ide students until they are e the correct answers.

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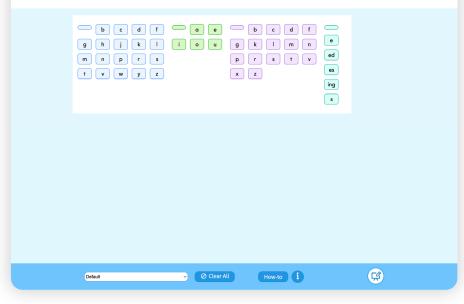
th the short *u* sound.

tions aloud. completing the first one. s /p/ /ë/ /n/ in the word rite it on the line. The /ĕ/ line. The /n/ sound is a letters p-e-n spell pen.

complete the activity in ct answers. The student application provides support and engaging activities that introduce new **phonics concepts**, like s-Blends.

WORD ZONE	×		• •	
ٹ Reset	b c f i o s	s a p k m r t		
entence				Submit v

Start Building...



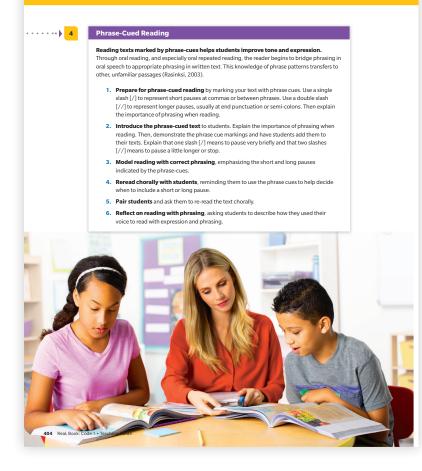
Students practice lettersound correspondence, and then apply that knowledge to read words. Students encode the new phonics patterns by **building words**.

Fluency

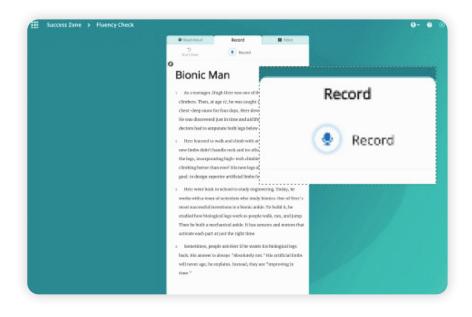


Fluency instruction grows with student readers—beginning with fluent reading of individual words and building toward fluent, accurate reading of grade-level passages. Each fluency lesson employs systematic fluency routines, adapted to each lesson, that engage students in the process of repeated readings.

Fluency and the Bridge to Comprehension



Predictable and structured **fluency routines** are incorporated into each *ReaL Book: Code* fluency lesson. These routines follow a gradual release model, starting with explicit instruction in a fluency skill, followed by a teacher-led fluency routine. Students then practice applying the fluency skill through partner and independent fluency routines. This approach provides a systematic and effective way for students to develop their fluency skills and gain confidence in their reading abilities. In the Comprehension Segments of the student application, students practice orally reading their reading passages multiple times. This **builds automaticity and accuracy**. At the end of the Segment, students record themselves reading the passage aloud. Teachers can then assess their students by using a fluency rubric.





The independent reading library offers age-appropriate texts at students' independent reading levels, covering **diverse genres** and **topics** and allowing students to engage with varied texts. Students who are reading foundational skills texts engage in a multiple reading process designed to support accuracy and fluency development.

Vocabulary

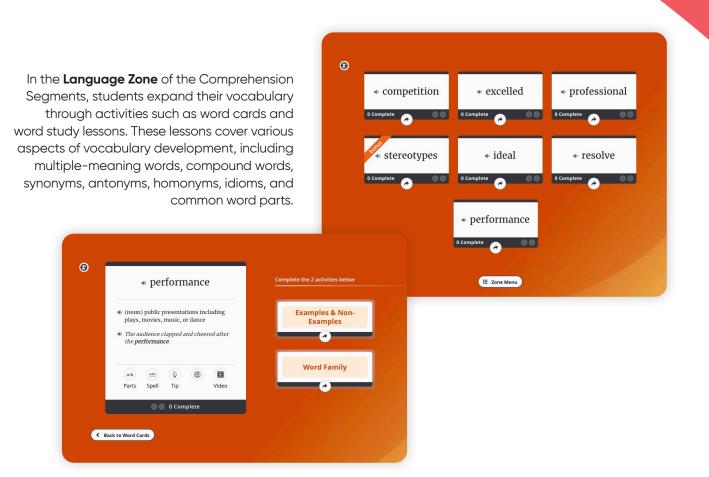


Vocabulary skills are integrated and spiraled throughout the *ReaL Book: Workshops. Read 180* Workshops front load high-utility, portable, academic vocabulary words students are likely to encounter across content areas. Teachers use the **vocabulary routine** to systematically teach the lesson's target words.



sentences.

10 Workshop 3 • Part 1





Smart Words included in foundational skills independent reading texts are essential to understanding the text and correspond to the phonics and word study skills taught in the Student Application. These vocabulary words develop academic and domainspecific vocabulary.

Comprehension

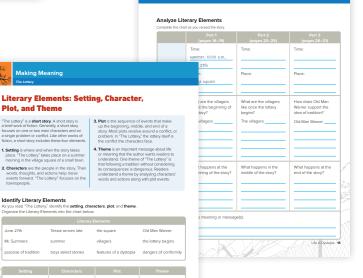


Within each *Read 180* Workshop, comprehension skills are developed through Making Meaning lessons. These lessons feature texts that are carefully selected and sequenced to build upon one another, allowing students to make connections and develop knowledge networks. **Close Reading** tasks and **Comprehension** builders guide students through deep textual analysis, rereading of texts, and the development of high-utility comprehension strategies.



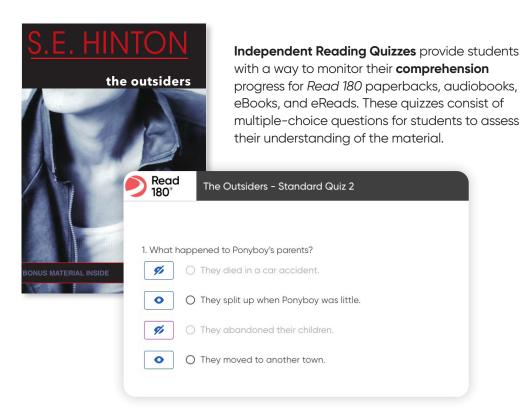
ReaL Book: Workshops provide a comprehensive literacy approach where texts build on one another, allowing students to make connections and build knowledge networks. This approach develops reading and critical thinking skills, enabling students to apply their knowledge to new contexts and situations.

Comprehension lessons guide focused rereading as students activate comprehension strategies they can apply and transfer across texts.





Comprehension is supported by offering students a toolkit of strategies to actively engage with texts, analyze their content, and develop a deeper understanding of the material. These strategies encourage **critical thinking, self-monitoring, and metacognitive awareness,** empowering students to become proficient and confident readers.



Science of Reading Professional Development

With an evidence-based framework like *science of reading*, teachers need to have the right tools to ensure effective literacy instruction that aligns with research-based principles. These supports are designed to equip teachers with the knowledge, skills, and resources they need to foster strong reading and writing development in their students.

HMH's best-in-class professional learning offers high-quality, ongoing professional development that is essential for teachers to stay informed about the latest research and best practices in the science of reading. This support is offered live online, in person, and asynchronously. Our goal is to help teachers understand the components of effective reading instruction through Getting Started, guided learning pathways, on-demand resources, courses, and coaching.

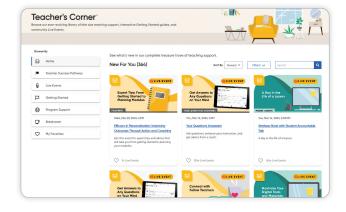
Guided Implementation Support

Getting Started with Read 180

In these engaging sessions teachers will get to know the program organization, lesson structure, and digital resources available to them on *Ed*, the HMH learning platform. With the support of an HMH instructional coach, teachers will leave the session with an understanding of the program and how it aligns to the science of reading as well as a digital program how-to guide.

Personalized Teacher Success Pathways on *HMH Ed*™

This pathway ensures personalized and on-demand support on *Read 180*–specific topics, such as planning, assessing, and differentiating learning to build teacher confidence in the first 30 days.



Explore Teacher's Corner®

Teachers are provided ongoing support with evidence-based instructional methods, approaches, and interventions that have been shown to be effective in teaching reading.

Practical, Actionable PD for the Science of Reading

Putting the science of reading framework into practice can feel like a challenge, but with HMH coaching and courses teachers can get the support they need to take the science of reading from concept to classroom.

Our blended course "Fostering Reading Success for All Students with *Read 180*" provides three days of in-person sessions and live, online study groups that guide teachers through research-backed strategies for implementing the science of reading in the *Read 180* classroom.

Teachers can also get year-round support for their professional learning community with our customized PLC Journey for Reading Intervention. This curated, yearlong PD experience provides teachers with six live, online sessions and synchronous coaching that specifically focuses on utilizing the science of reading for striving readers.

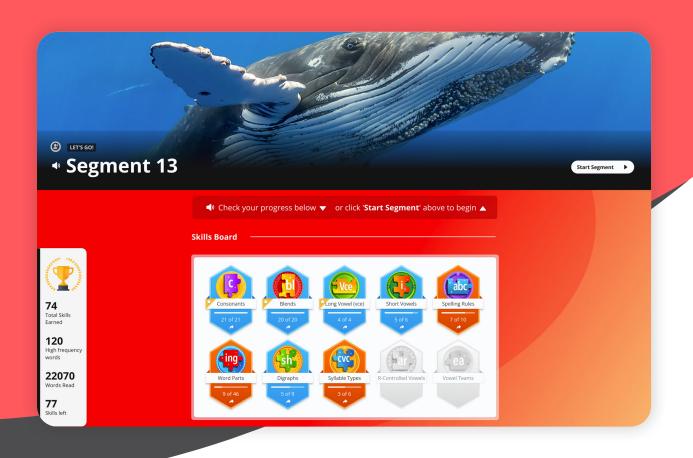
Reading Intervention Journey Course includes:

- The Reading Brain and Dyslexia
- Phonology Instruction for Striving Readers
- Orthographic Instruction for Striving Readers
- Syllable and Morphology Instruction for Striving Readers
- Syntax and Semantics Instruction for Striving Readers
- Assessing Foundational Skills Support for Striving Readers





Built on a Science of Reading Foundation



Learn more about how *Read 180* will help improve student outcomes through prevention of and intervention for reading difficulties. hmhco.com/Read180

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