THE *FAST FORWORD*® PRODUCTS ALIGNMENT WITH THE FIVE ESSENTIAL COMPONENTS OF READING INSTRUCTION

The *Fast ForWord* products are patented, individually adaptive, CD-ROM/Internet-based products that offer explicit and systematic instruction in phonemic awareness, phonics, vocabulary, fluency, and comprehension.

Explicit Instruction

Among the ways in which the *Fast ForWord* products provide explicit instruction are by providing:

- Big Ideas: The *Fast ForWord* products build the cognitive skills to allow students to develop the Big Ideas of learning.
- Conspicuous Strategies: Through modeling, the *Fast ForWord* products teach comprehension, decoding, and other reading strategies that, after practice with the exercises, enable students to engage in these strategies on their own.
- Mediated Scaffolding: The *Fast ForWord* products adapt to each individual student's skill level, gradually moving him/her through exercises towards successful and independent task completion.
- Strategic Integration: The *Fast ForWord* products help students simultaneously develop several skills at once.
- Judicious Review: *Fast ForWord Progress Tracker* allows teachers to regularly monitor progress of their students throughout the length of *Fast ForWord* activity in order to inform instruction and expose areas that need review.
- Primed Background Knowledge: The *Fast ForWord* products develop and strengthen students' working memory which helps them retain background knowledge and comprehend longer and more complex reading passages.

(For a full definition of "explicit instruction," go to the USA National Center on Accessing the General Curriculum: http://www.cast.org/ncac/ExplicitInstruction2875.cfm).

Systematic Instruction

The *Fast ForWord* products provide systematic instruction by addressing a variety of skill and Class levels in graduated and systematic manner, including Pre-Kindergarten (*Fast ForWord Basics*), Kindergarten – 6th Class (*Fast ForWord Language, Fast ForWord Language to Reading, Fast ForWord to Reading 3 & 4*), 6th – Secondary school (*Fast ForWord Middle & High School, Fast ForWord Language to Reading, Fast ForWord to Reading 3 & 4*).

Independent evaluations have found that the *Fast ForWord* products provide explicit and systematic instruction. In an evaluation of *Fast ForWord Language*, the Florida Center for Reading Research has found that "The *Fast ForWord Language to Reading* and *Fast ForWord Reading* products contain explicit and systematic phonics instruction."

***Fast ForWord* Research and Design**

The *Fast ForWord* products are grounded in over 30 years of scientifically based research into the way the brain learns the skills that create a strong foundation for reading. The applicability of this research was born out by studies conducted by scientists at Rutgers University and the University of California at San Francisco from 1994 to 1995. The results of these controlled randomized clinical trials were published in the peer-reviewed journal *Science*. Scientific Learning also conducted its own Multi-Site Field Study and School-Based Randomized Trial. Independent, company-sponsored, and collaborative studies have been published in numerous peer-reviewed journals. (For a detailed description of the scientifically based reading research behind the *Fast ForWord* products, please see the document, "Scientifically Based Reading Research and the *Fast ForWord* Products: Implications for Effective Language and Reading Intervention," available online at: www.scientificlearning.com/sbrr.)

The *Fast ForWord* products develop the cognitive skills that support reading. Scientific Learning calls these cognitive skills Learning MAPs™.

- **M**emory: Working memory helps students retain information they have read while they are comprehending a passage.
- **A**ttention: Focused and sustained attention allows students to concentrate on reading without being distracted.
- **P**rocessing: Good processing allows students to accurately assimilate information, whether it be the content or sound of words.
- **S**equencing: With good sequencing skills, students can maintain the order of what they read, such as the order of letters in a word, or the appropriate order of words in a sentence.

The *Fast ForWord* products develop these Learning MAPs through the Fast Power Learning Formula™ - research-based techniques of frequency, adaptivity, simultaneous development, and timely motivation - to accelerate learner improvement.

Using the *Fast ForWord* products, students acquire the skills they need in order to be successful readers by the end of third Class. The information in this document demonstrates the many ways in which the *Fast ForWord* products' Learning MAPs help students by means of the five essential components of reading instruction.

A. Phonemic Awareness

The USA Partnership for Reading has stated in its publication, "Put Reading First," that "Children who have phonemic awareness skills are likely to have an easier time learning to read and spell than children who have few or none of these skills." Teaching phonemic awareness is a cornerstone of the *Fast ForWord* products.

Documented Gains in Phonemic Awareness

In a case study using the *Fast ForWord* products, students have made documented gains in phonemic awareness. At several schools, struggling readers were selected as *Fast ForWord* participants. Before and after participation, 99 students who took portions of the Comprehensive Test of Phonological Processing (CTOPP) made significant gains in Phonological Awareness and Phonological Memory. (The Institute for the Development of Educational Achievement in the USA recognizes the CTOPP as an outcomes assessment that accurately measures improvement in the phonological awareness skills of children in early elementary school.)
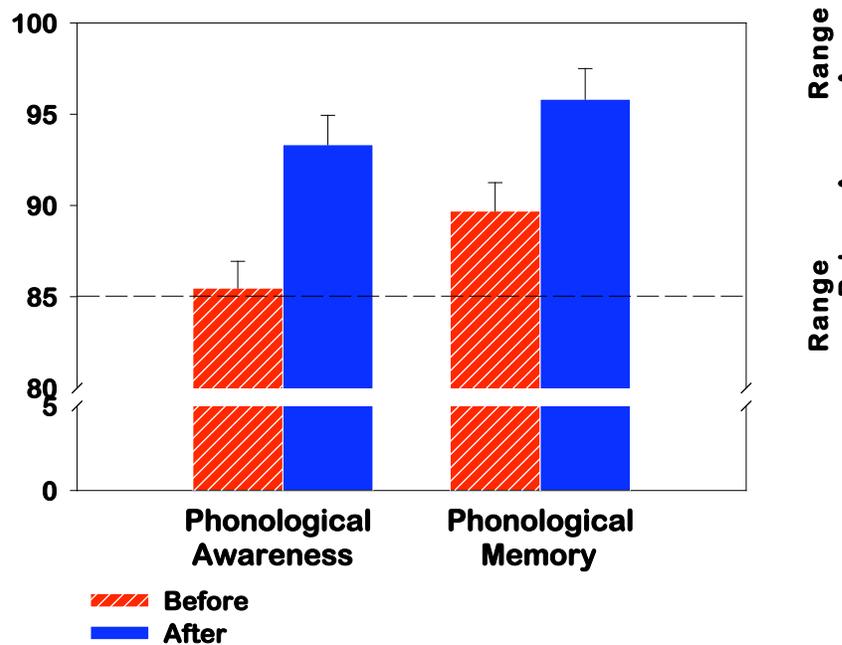
Fast ForWord Language

"Phoneme Identification": An animal character utters a target phoneme, followed by two new animals who utter comparison phonemes. Participants are then asked to identify which of the two phonemes was identical to the target phoneme. This exercise improves **auditory discrimination and recognition skills**, increases rate of processing, improves working memory, and helps students **identify specific phonemes**.

"Phonic Match": Participants choose a square on a grid and hear a sound or word. Each sound or word has a match somewhere within the grid. If matching squares are sequentially chosen, the two squares will be removed. The goal is to find each square's match and clear the grid. This exercise develops auditory word recognition and **phoneme discrimination**, improves working memory, and improves rate of auditory processing.

"Old MacDonald's Flying Farm": Participants use the computer mouse to catch and hold a flying animal. The animal repeats a single syllable several times. Participants must release the mouse

when they hear a change in the syllable. This exercise improves auditory processing, develops **phoneme discrimination**, and increases sustained and focused attention.

Fast ForWord Language to Reading

"Treasure in the Tomb": Participants hear a target Consonant-Vowel-Consonant (CVC) word like *big*, which they must match to one of a pair of comparison words presented both aurally and in print. Each pair of comparison words differs only by their initial or final consonant (e.g., *big/dig*), so close listening is required to make the distinction. This exercise develops auditory word recognition and **phoneme recognition**, while providing practice in sound/letter associations.

"Polar Cop": Participants hear a target CVC word like *big*, and must remember that word to pick it out from a series of similar words presented both aurally and in print. The words in each series differ by initial or final consonant only, and the letter in that position is highlighted to focus attention on this critical segment (e.g., *bi**g**, bi**t**, bi**d***). This exercise builds skills essential to reading, including **phoneme discrimination**, sound/letter associations, word recognition, and left-to-right visual tracking skills.
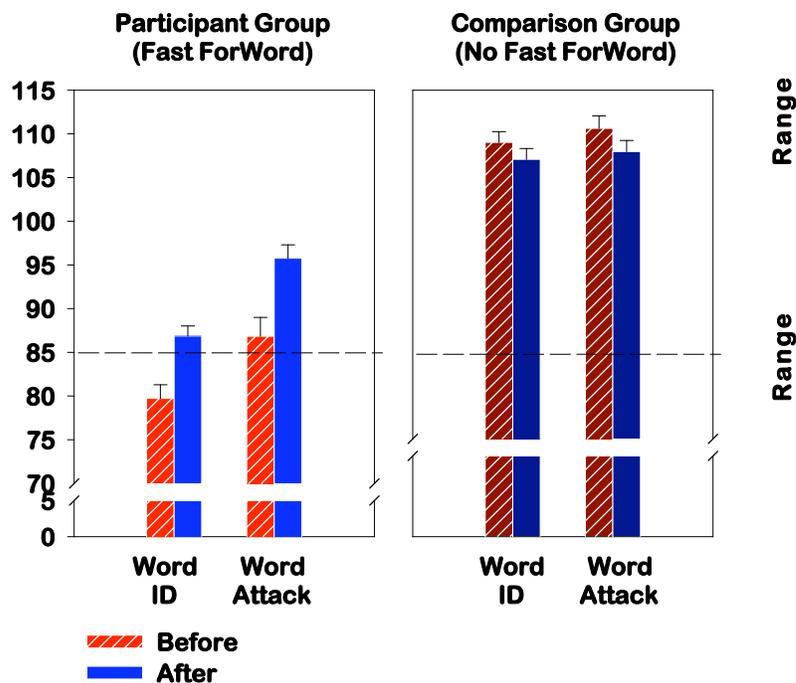

B. Phonics

The *Fast ForWord* products are a comprehensive suite of products that not only develop the requisite oral language skills that students need before they can read effectively, but also help students learn the relationships between the letters of written language and the sounds of spoken language by supplying systematic and explicit phonics instruction.

Documented Gains in Phonics

In a quasi-experimental study, the phonics skills of 30 students with dyslexia improved significantly after *Fast ForWord* participation. Assessed with the Letter-Word Identification and Word Attack subtests of the Woodcock Reading Mastery Test, these 30 students were compared with 27 age-matched students without dyslexia who did not use *Fast ForWord* products.

On average, the *Fast ForWord* participants made significant gains on both subtests, whereas the non-*Fast ForWord* comparison group made no gains. *Fast ForWord* participants improved in both identifying letters and words and sounding out unfamiliar words. (The Institute for the Development of Educational Achievement in the USA recognizes the Word Attack subtest from the Woodcock Reading Mastery Test as an outcomes assessment that accurately measures improvement in the phonics skills of children in early elementary school.)

Participant Group (Fast ForWord) / **Comparison Group (No Fast ForWord)**

Before (red hatched) / After (blue)

Word ID, Word Attack

Fast ForWord Language to Reading

"Treasure in the Tomb": Participants hear a target Consonant-Vowel-Consonant (CVC) word like *big*, which they must match to one of a pair of comparison words presented both aurally and in print. Each pair of comparison words differs only by their initial or final consonant (e.g., *big/dig*), so close listening is required to make the distinction. This exercise develops auditory word recognition and phoneme recognition, while providing practice in **letter-sound associations**.

"Polar Cop": Participants hear a CVC word like *big*, and must remember that word to pick it out from a series of similar words presented both aurally and in print. The words in each series differ only by initial or final consonant, and the letter in that position is highlighted to focus attention on this critical segment (e.g., *bi**g**, bi**t**, bi**d***). This exercise builds skills essential to reading, including phoneme discrimination, **sound/letter associations**, word recognition, and left-to-right visual tracking skills.

"BugOut!": Participants encounter pairs of CVC words as they click on spaces in a grid. The first time a word is encountered, it is presented both aurally and in print, the second time it is only presented aurally. The participant must match the word they just heard to the print form of that word which they encountered earlier. Every time a participant correctly matches a pair of squares, the squares disappear. This exercise helps students increase sound processing speed, build **associations between words and their written representations**, and develop working memory and verbal retention skills.

Fast ForWord to Reading 3

"Chicken Dog": Participants hear a word and see it partially spelled. They must complete the word by filling in the missing letter or letter group. Five options are always provided, including options that represent common visual and phonological errors. This exercise develops basic spelling patterns, **letter-sound correspondences**, and **decoding**.

"Canine Crew": Multiple words are presented together in a grid and participants are asked to find pairs that match on the basis of a specified criterion. As the participant progresses, this match criterion shifts from words that rhyme, to synonyms, to antonyms, to homophones. When a match is made, the tiles representing those words disappear. This exercise develops vocabulary, **decoding**, and automatic word recognition.

C. Vocabulary Development

The *Fast ForWord* products instruct students through both indirect and direct vocabulary learning. Students indirectly increase vocabulary by listening to, reading, and answering questions about increasingly difficult sentences and passages. Students receive direct vocabulary instruction by being asked to discriminate between words that sound similar, like "bid" and "bit," which subsequently enables them to identify and recognize other words. The ability to differentiate between and identify words is the first step in the ability to gather a working vocabulary.

Documented Gains in Oral Vocabulary

In a *Fast ForWord* case study, 92 students showed improved oral vocabulary knowledge. Before and after *Fast ForWord* participation, these students were assessed with the Concepts and Directions, Recalling Sentences, and Word Classes subtests of the Clinical Evaluation of Language Fundamentals (CELF-3). After participation, on average, *Fast ForWord* participants made significant gains on all three subtests. This indicates that these students better understood linguistic concepts and the associations between words, as well as improved verbal memory. (The Institute for the Development of Educational Achievement in the USA recognizes these CELF-3 subtests as outcomes assessments that accurately measure improvement in the vocabulary skills of children in early elementary school.)

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Concepts & Directions **Recalling Sentences** **Word Classes**

Before
After
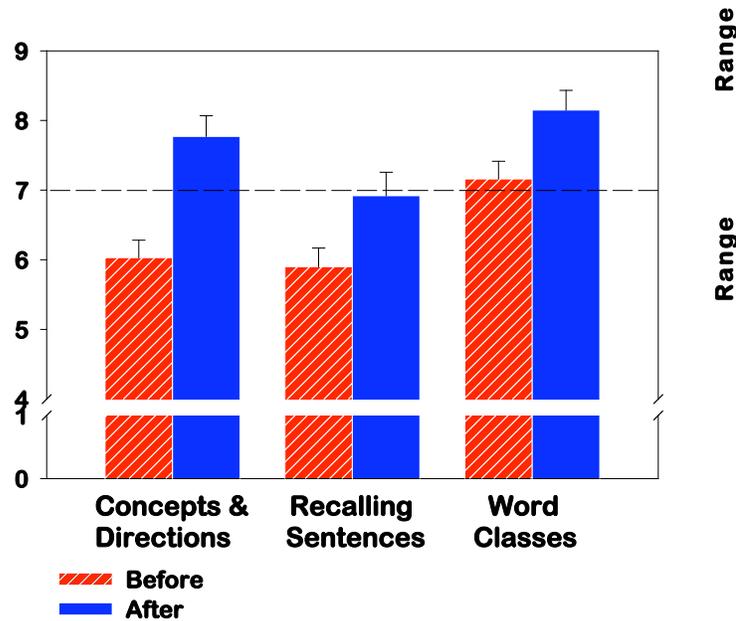
Fast ForWord Language

"Phonic Words": Participants see two pictures representing two similar words that differ only by initial or final consonant ("tack" versus "tag"). When participants hear the word representing one of the pictures, they must click the picture that matches the word. This exercise improves **vocabulary** by helping participants differentiate between similar sounding words and gain an understanding of word meaning.

"Language Comprehension Builder": Participants listen to a sentence depicting action and complex relational themes. Participants must match a picture representation with the sentence they just heard. This exercise develops **vocabulary** by improving oral language and listening comprehension and morphology skills.

"Block Commander": A three-dimensional board game is filled with familiar shapes that participants select and manipulate. The participants are asked to follow increasingly complex commands which build students' directional **vocabulary**. This exercise increases listening comprehension and the ability to follow directions, improves syntax, develops working memory, and improves sound processing speed.

Fast ForWord Language to Reading

"Start-Up Stories": Participants listen to variations on familiar tales, illustrated with labeled pictures and animations. After hearing a passage from a story they respond to several questions that require listening comprehension, language comprehension, and the ability to follow directions. This exercise develops basic language skills such as auditory word recognition, auditory memory, and basic **vocabulary**.

Fast ForWord to Reading 3

"Scrap Cat": A series of words are visually presented and participants are asked to sort each word into the correct semantic, phonological, syntactic, or morphological category. For this exercise only, the participant can click a button to hear any word and see it defined. This exercise develops **vocabulary** as well as decoding and word recognition skills.

"Canine Crew": Multiple words are presented together in a grid and participants are asked to find pairs that match on the basis of a specified criterion. As the participant progresses, this match criterion shifts from words that rhyme, to synonyms, to antonyms, to homophones. When a match is made, the tiles representing those words disappear. This exercise develops **vocabulary**, decoding, and automatic word recognition.

"Twisted Pictures": Participants are presented with a variety of pictures and asked to select the sentence that most accurately describes each picture from among four alternatives. The descriptive sentences incorporate a wide range of syntactic structures. As the participant progresses, the sentences get longer and more difficult vocabulary is included. This exercise builds sentence comprehension by developing syntax, working memory, logical reasoning, and **vocabulary**.

"Book Monkeys": Participants read narrative and expository passages and answer comprehension questions about each passage. The multiple-choice questions demand that the participant remember specific details, generate inferences, or grasp causal relationships to select the best answer from among four alternatives. This task develops paragraph comprehension, cause-and-effect reasoning, working memory, flexible reading, and **vocabulary**.

"Hog Hat Zone": Short passages from classic children's literature are presented, with occasional gaps in the text where words are missing. Participants are asked to fill in each gap with the correct word from among four alternatives. The missing words are grammatically important items such as pronouns, auxiliary verbs, and words with suffixes and prefixes. This task develops paragraph comprehension, complex morphology, flexible reading, and **vocabulary**.

D. Fluency

The _Fast ForWord_ products build students' oral language and reading skills so that they will become fluent and proficient readers. Once students have mastered the prerequisite oral language skills they need in order to read, such as phonological awareness, sequencing, and auditory processing, as well as the ability to make letter-sound correspondences and decode words, students need to build the more advanced skills for reading fluency. The _Fast ForWord_ products provide instruction in guided, independent reading that develops students' reading fluency.

Documented Gains in Fluency Acquisition

In a case study using the *Fast ForWord* products, 56 students improved their fluency skills as documented by their results from the Test of Word Reading Efficiency (TOWRE). The students were tested on both the Sight Word Reading and Phonemic Decoding subtests of the TOWRE before and after *Fast ForWord* participation. These tests document students' fluency in reading familiar and unfamiliar words. (The Institute for the Development of Educational Achievement in the USA recognizes the TOWRE as an outcomes assessment that accurately measures improvement in the reading fluency of children in early elementary school.)
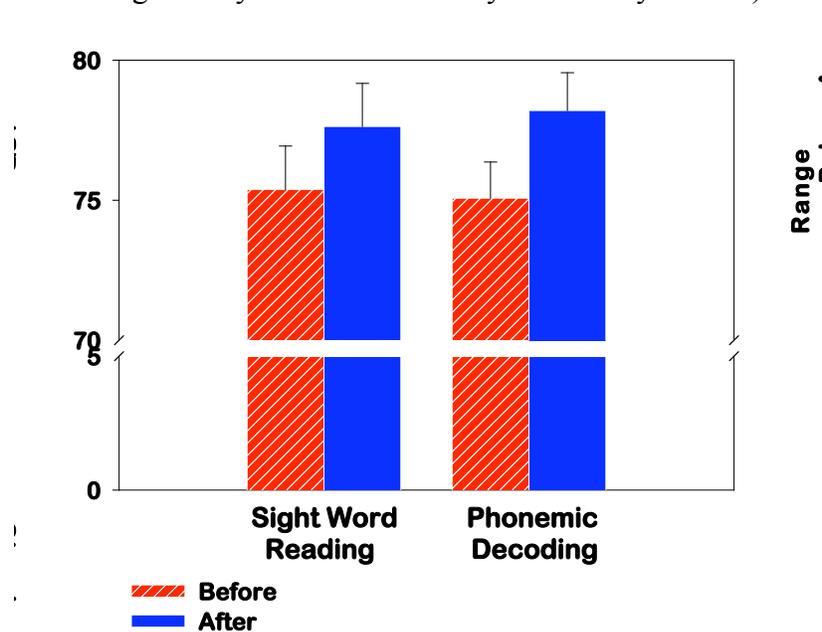
Fast ForWord Language

In combination, *Fast ForWord Language* exercises significantly improve students' fluency skills, as was demonstrated in a recent Stanford University study in which researchers measured naming **fluency** with the Rapid Automatized Naming (RAN) test. For information on this study, go to the Stanford University site at:
http://news-service.stanford.edu/news/2003/february26/dyslexia-226.html.

Fast ForWord Language to Reading

Polar Cop: Participants hear a target word like *big*, and must remember that word to pick it out from a series of similar words presented both aurally and in print. The words in each series differ only by initial or final consonant, and the differentiating letter is highlighted to focus attention on this critical segment (e.g., *bi**g**, bi**t**, bi**d***). This exercise builds skills essential to reading, including phonological **fluency**, sound/letter associations, word recognition, and left-to-right visual tracking skills.

Fast ForWord to Reading 3

"Twisted Pictures": Participants are presented with a variety of pictures and asked to select the sentence that most accurately describes each picture from among four alternatives. The descriptive sentences incorporate a wide range of syntactic structures. As the participant progresses, the sentences get longer and more difficult vocabulary is included. This exercise builds sentence comprehension and **fluency** by developing syntax, working memory, logical reasoning, and vocabulary.

E. Comprehension Strategies

The *Fast ForWord* products provide students with the reading comprehension skills they need to become purposeful and active readers, including: working memory, semantics, syntax, morphology, predictive reading, background knowledge, links between words, experience with sentences of varying difficulty, and relationships between sentences.

Documented Gains in Text Comprehension

In a *Fast ForWord* case study, the text comprehension skills of 32 students were assessed with the Passage Comprehension subtest of the Woodcock-Johnson Psycho Educational Battery – Revised (WJ-R). After participation, on average, student performance improved by over 12 months, moving the participants from a low average level to solidly within the average range. (The Institute for the Development of Educational Achievement in the USA recognizes this WJ-R subtest as an outcomes assessment that accurately measures improvement in the text comprehension skills of children in early elementary school.)
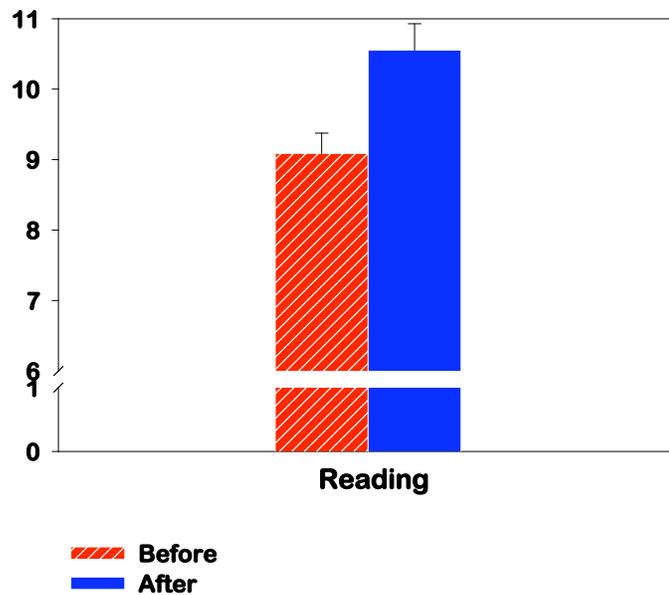
Fast ForWord Language
"Block Commander": A three-dimensional board game is filled with familiar shapes that participants select and manipulate. The participants are asked to follow increasingly complex commands. This exercise develops listening **comprehension** and the ability to follow directions, and develops **working memory** to store **background knowledge**.

Fast ForWord Language to Reading
"Start-Up Stories": Students' **working memory** is developed when they are asked to answer questions that relate to the story presented and to identify the picture that has the most accurate representation of the scene.

Fast ForWord to Reading 3
"Twisted Pictures": Students must choose the sentence that most accurately describes the painting in the exercise. The multiple-choice format presents sentences that are syntactically similar, incorporate reversible nouns, and share vocabulary, thus forcing students to focus on syntax and use logic to complete each trial, rather than relying only on common sense. Developing students' skill to think logically about a sentence in order to decode its meaning helps them practice **syntax** and **working memory** skills, which are crucial for proficient reading. "Twisted Pictures" includes both **simple** and **complex sentences**, thereby giving students experience with a **range of the structures** used in written English.

"Book Monkeys": Students read the displayed paragraph and choose the response that answers the presented question. The question-and-answer format used in "Book Monkeys" directly develops the student's ability to read for **literal meaning** and **causal connection,** and develops his or her ability to use **working memory** effectively not only to **remember facts** and **connections** but also to **compare information** and **make predictions**. These skills are crucial for proficient reading of longer passages.

"Hog Hat Zone": Students complete a paragraph by choosing the missing words from the presented possibilities. Developing an **understanding of morphological changes** – the smallest change that affects meaning (for example, adding "ed" when changing a verb to past tense) – is crucial for **understanding the links between words,** the **meanings of sentences,** and the **relationships between sentences**, all of which are important for understanding longer passages and developing reading comprehension.

The Fast ForWord products use the five essential components of reading instruction to help students acquire the basic skills they need to be successful readers by the end of Fourth Class.