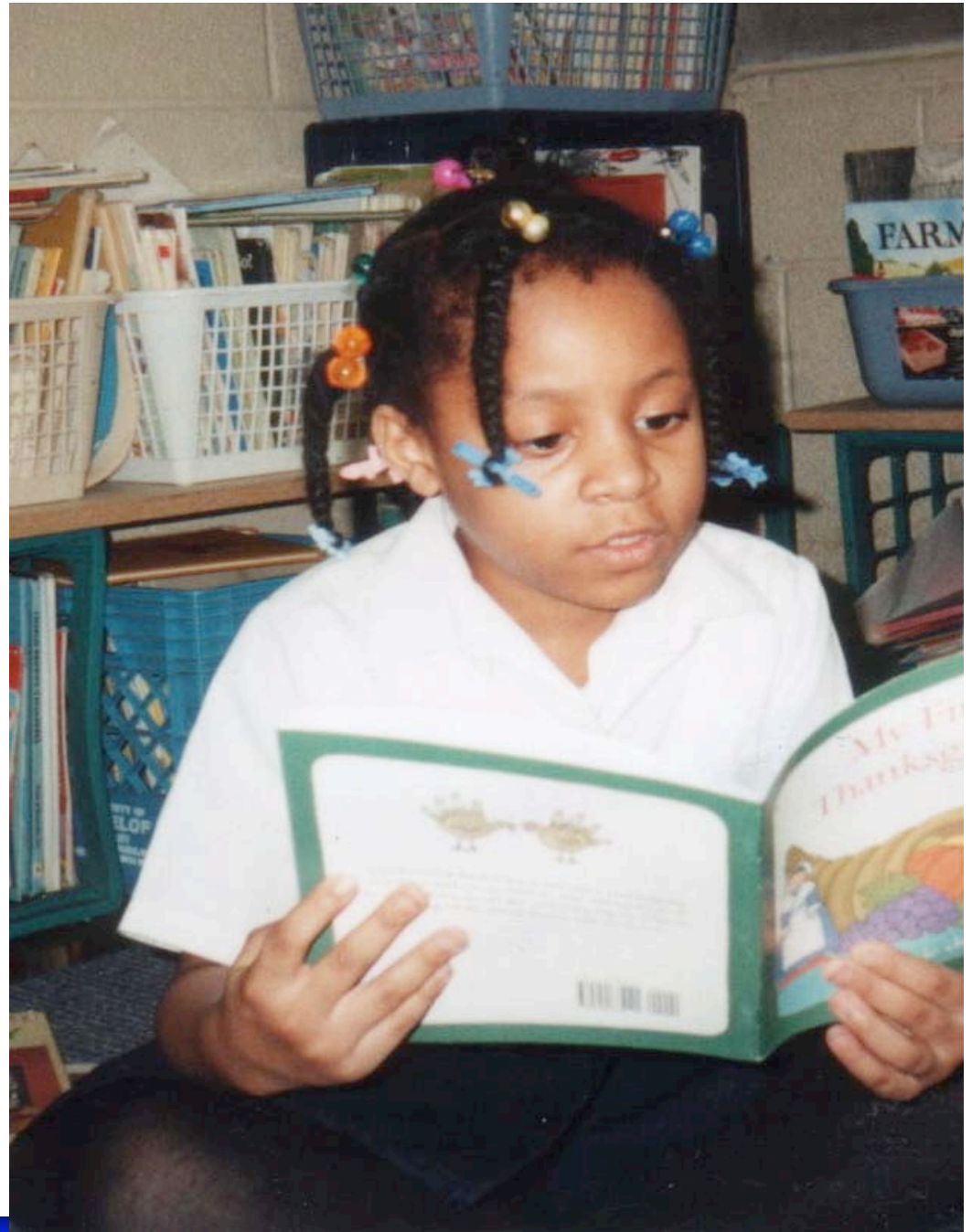


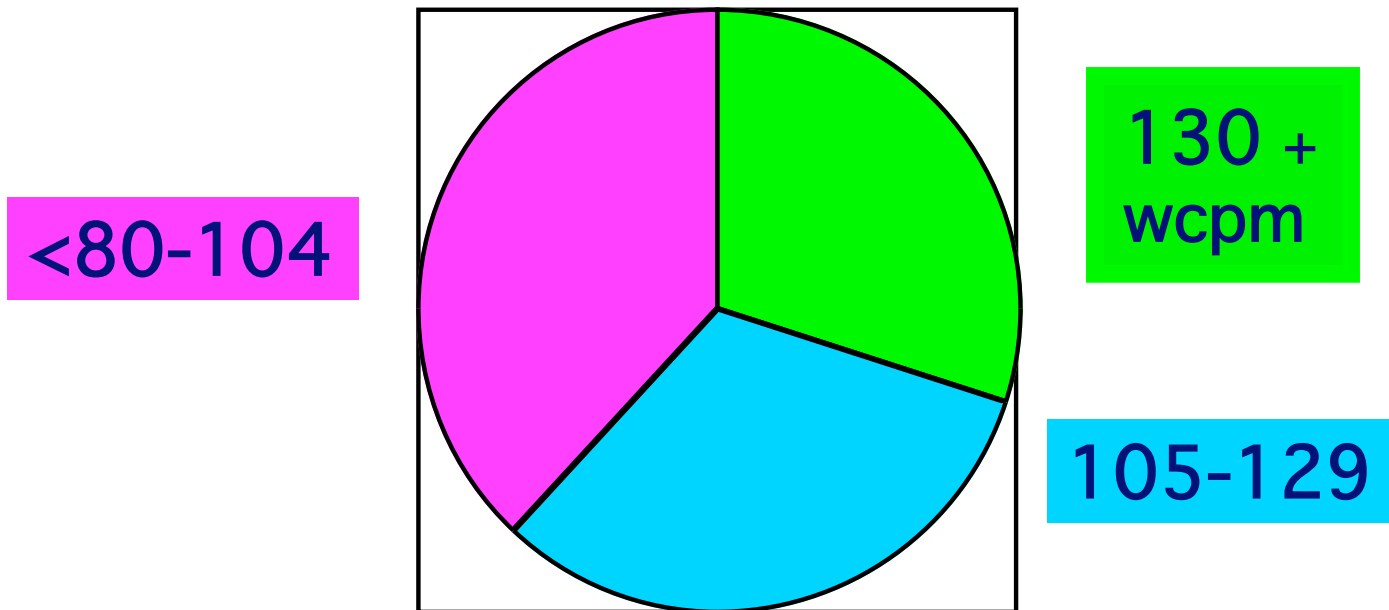
Using Science Texts and Content in Interventions that Bring Struggling Readers to Proficient Reading

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1. The Fluency Problem and its Roots

NAEP (Gr.4)



■ Proficient & Above ■ Basic ■ Below Basic

Fluency Problem and Roots

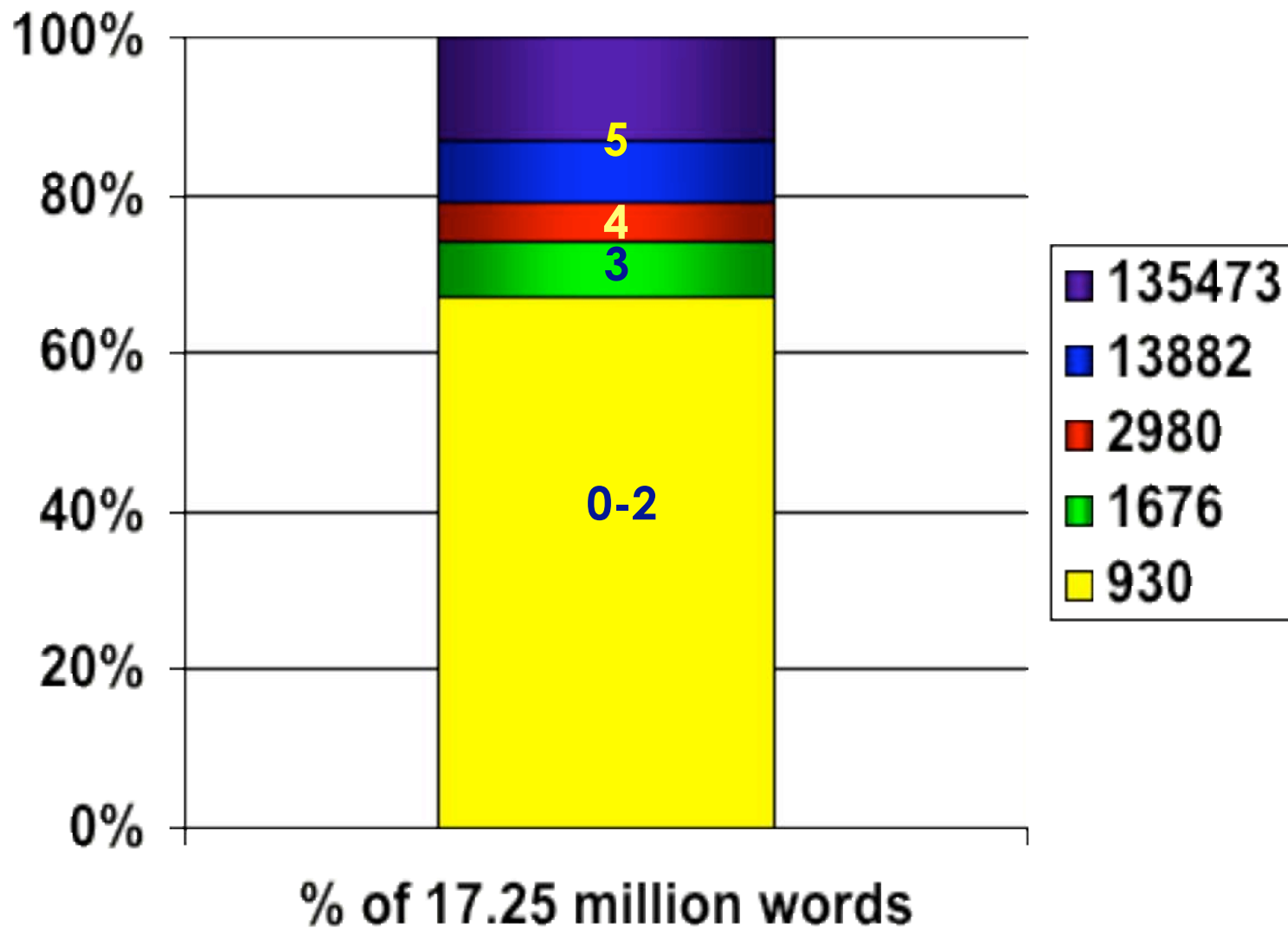
HUNGRY SPIDER AND THE TURTLE

Spider was a hungry one, he always wanted to eat. Everybody in Ashanti knew about his appetite. He was greedy, too, and always wanted more than his share of things. So people steered clear of Spider. But one day a stranger came to Spider's habitation out in the back country.



NAEP Special Study (Pinnell et al., 1995)

The Words that Make up School Texts



Nation's Leading Reading Textbook: Mid-Point of Grade 2

Officer Buckle thought the drawings showed a lot of imagination. His favorite letter was written on a star-shaped piece of paper. It said: You and Gloria make a good team. Your friend, Claire. P.S. I always wear a crash helmet. (Safety tip #7)

Officer Buckle was thumbtacking Claire's letter to the bulletin board when the phones started ringing.

(from Officer Buckle and Gloria)

Nation's Leading Reading Textbook: Mid-Point of Grade 2

Leafcutter **ants** live in Central and South America. Some people call them parasol **ants**. Do you know why? The **ants** **chew** off pieces of leaves and carry them back to their **tunnels**. They **march** with the leaves held over their heads like little sunshades, **or** parasols.

(from Ants)

Nation's Leading Reading Textbook: Mid-Point of Grade 2

Two poles were set up as the goalposts at each end of the field. Then the game began. Each team played hard. On the Animals' side Fox and Deer were swift runners, and Bear cleared the way for them as they played. Crane and Hawk, though, were even swifter,

(from The Great Ball Game)

2. Two Interventions with Science Texts/Content

Text Elements by Task (TE_{XT}) Model

- **Cognitive Load: # of Unique Words per 100 that are hard (especially hard words that appear a single time)**
- **Linguistic Curriculum: The high-frequency words and the vowel patterns within monosyllabic and multisyllabic words**

Intervention 1

- **11 classes ($n = 175$ students)**
- **98% of students: English Language Learners**
- **24 weeks of second-grade**
- **Teachers were asked to conduct 15 to 20-minute intervention daily**

TExT Model in Intervention 1

Level A	300 most frequent words; short and long vowels
Level B	500 most frequent words; short, long and r controlled vowels
Level C	1000 most frequent words; all monosyllabic words
Level D	1000 most frequent words; two syllable words
Level E	2500 most frequent words

Level B Texts (500 Most Frequent Words; Short, Long, & r-controlled Vowels in Monosyllabic Words)

How Animals Communicate

Animals don't talk, but they do communicate. When you communicate, you give information to others. Animals have ways of communicating that are different from the ways that people use. When your friend talks to you, your friend uses language to communicate information. In a language, each word means something.

Animals do not use words. They use sounds and signals. Birds sing and move their wings. Some animals move their tails. Other animals communicate by moving their bodies in other ways. Different sounds and signals help animals communicate with each other.

Text 2 of a Topic

The Honeybee Dance

One way honeybees communicate with each other is by dancing. Honeybees do a special dance after they find **nectar** in flowers. Honeybees need nectar to live. When honeybees find nectar, they fly home to tell the other **bees** where to find the nectar.

A bee that finds nectar moves its wings very fast when it dances. The bee moves in a shape that looks like the number 8. The bee does the dance many times. After the dance, the other bees know where to find the flowers with nectar.



Humpback whales can sing for a long time.

Whales

Whales communicate with each other by singing. Different kinds of whales sing different songs. Whales in different parts of the world sing different songs, too. When a whale sings, people can sometimes hear the sound. However, people near a singing whale can also feel the water move from the sound.

When most kinds of whales communicate with each other, the song is short. Yet when a humpback whale sings, it sings only for itself. It also can sing for a long time. A humpback whale can sing for twenty minutes at a time.



Dogs can show they are friendly by wagging their tails and by sitting close to people.

Dogs

A bark is a sound a dog makes to communicate something to people or other animals. A bark can be a friendly way to²³ say "hi." Sometimes dogs bark to tell their owners that they see people they do not know. Sometimes dogs bark to scare other dogs.

Dogs²⁴ also communicate by moving their bodies. Dogs show their teeth when they are upset. They wag their tails when they are happy. They wag their²⁵ tails when their owners give them food. Dogs also wag their tails when their owners take them for walks.²⁶



Danger signals help prairie dogs stay safe.

Danger Signals

People have danger signals to tell others to be careful. Signs at a train crossing and stop signs keep us from danger. Animals²⁵ have danger signals to keep them safe, too.

Some animals make sounds that tell other animals to be careful. When prairie dogs think there is²⁶ danger, they call to each other in a certain way. The danger might be bigger animals that want to catch the prairie dogs. The prairie²⁷ dog's call tells other prairie dogs that a big animal is coming. This call says, "Be careful!"²⁸

•Consistent Instructional Routine

FIRST READ

1. Say to students, "Before you read, think about what you already know about the topic. Also, look for two words that might be new and challenging. Underline these words."
2. Then, ask students to read the passage silently. They may take as much time as they need.
3. After they read, tell students to write on the graphic organizer a few words or phrases that will help them remember what is important about the topic. The graphic organizer is located at the beginning of each Review section in the Student Editions.

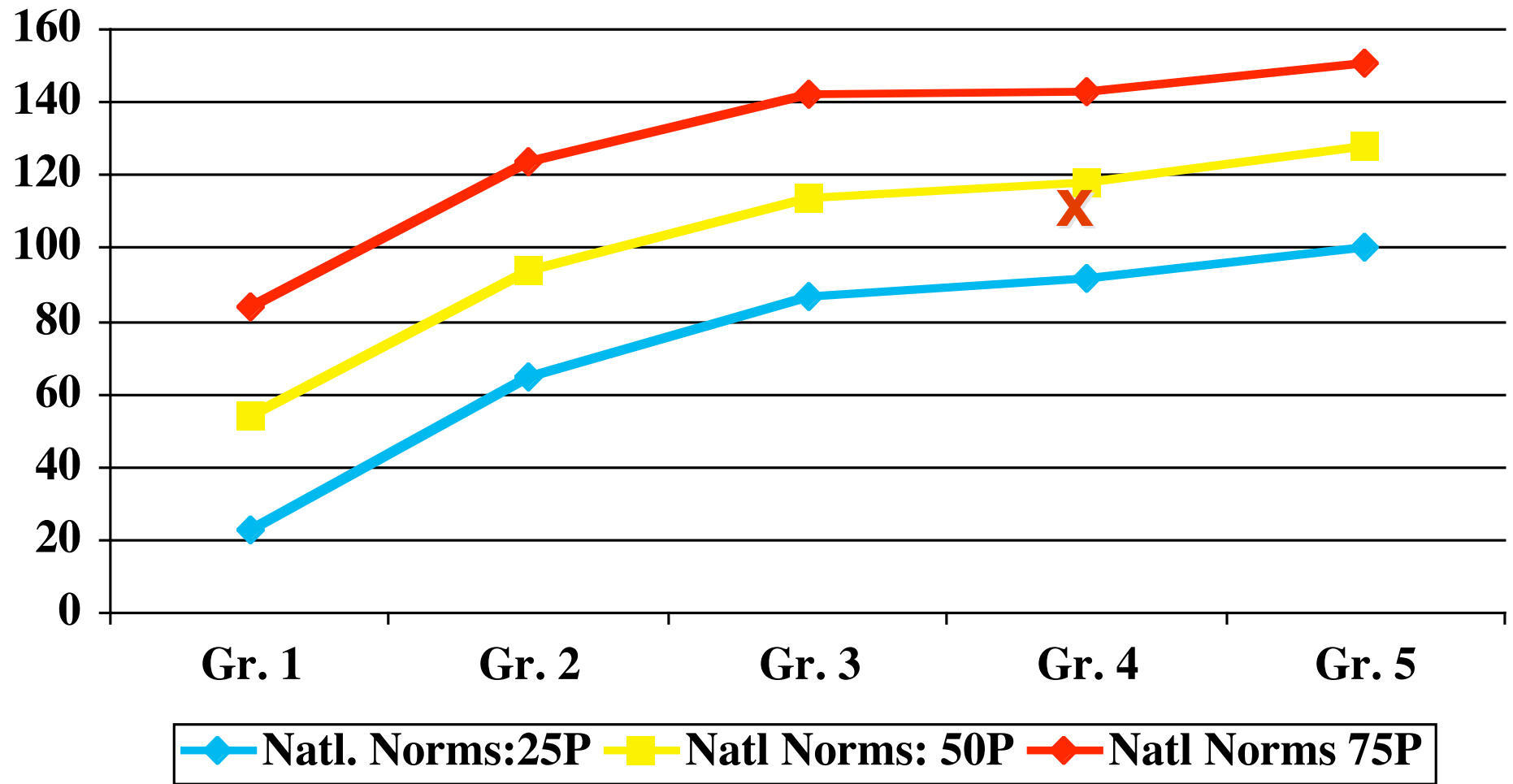
SECOND READ

1. Say to students, "Now I'm going to read aloud as you read along silently. Follow along with me."
2. Then, read the passage aloud at the target rate of one minute.
3. Ask students, "What is one thing the author wants you to remember?"

THIRD READ

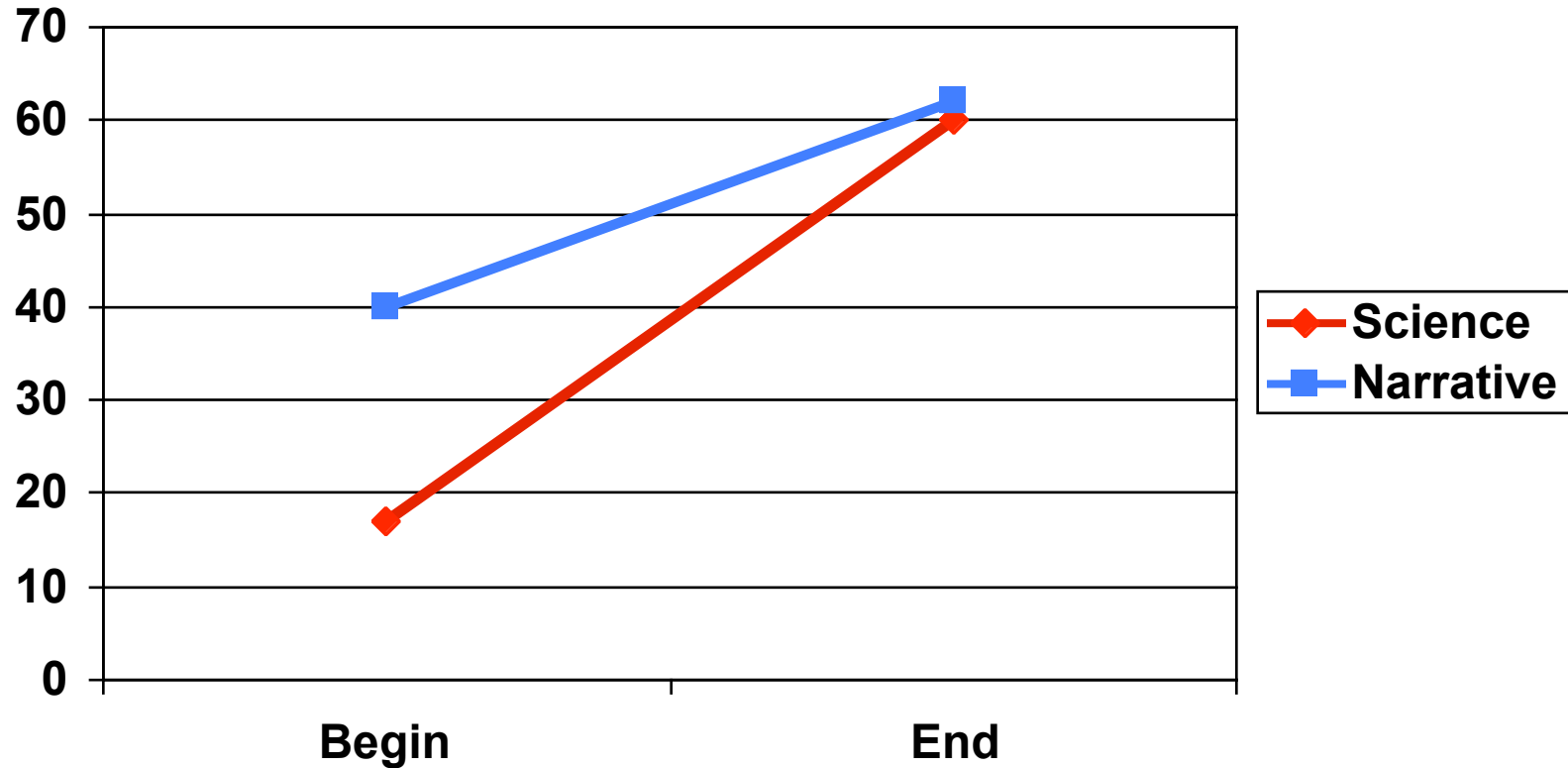
1. Say to students, "On the third read, your goal is to read as much of the passage as you can in a minute."
2. Then, tell students to read silently as you time them for one minute. Tell them to circle the last word they read when you tell them to stop.
3. Ask students to write the number of words they have read at the bottom of the page. Then, ask them to review in their mind what is important to remember from the passage.
4. Assign the comprehension questions in the Review section to check that students have understood what they have read.

Time Allocation: Typical Fluency Growth

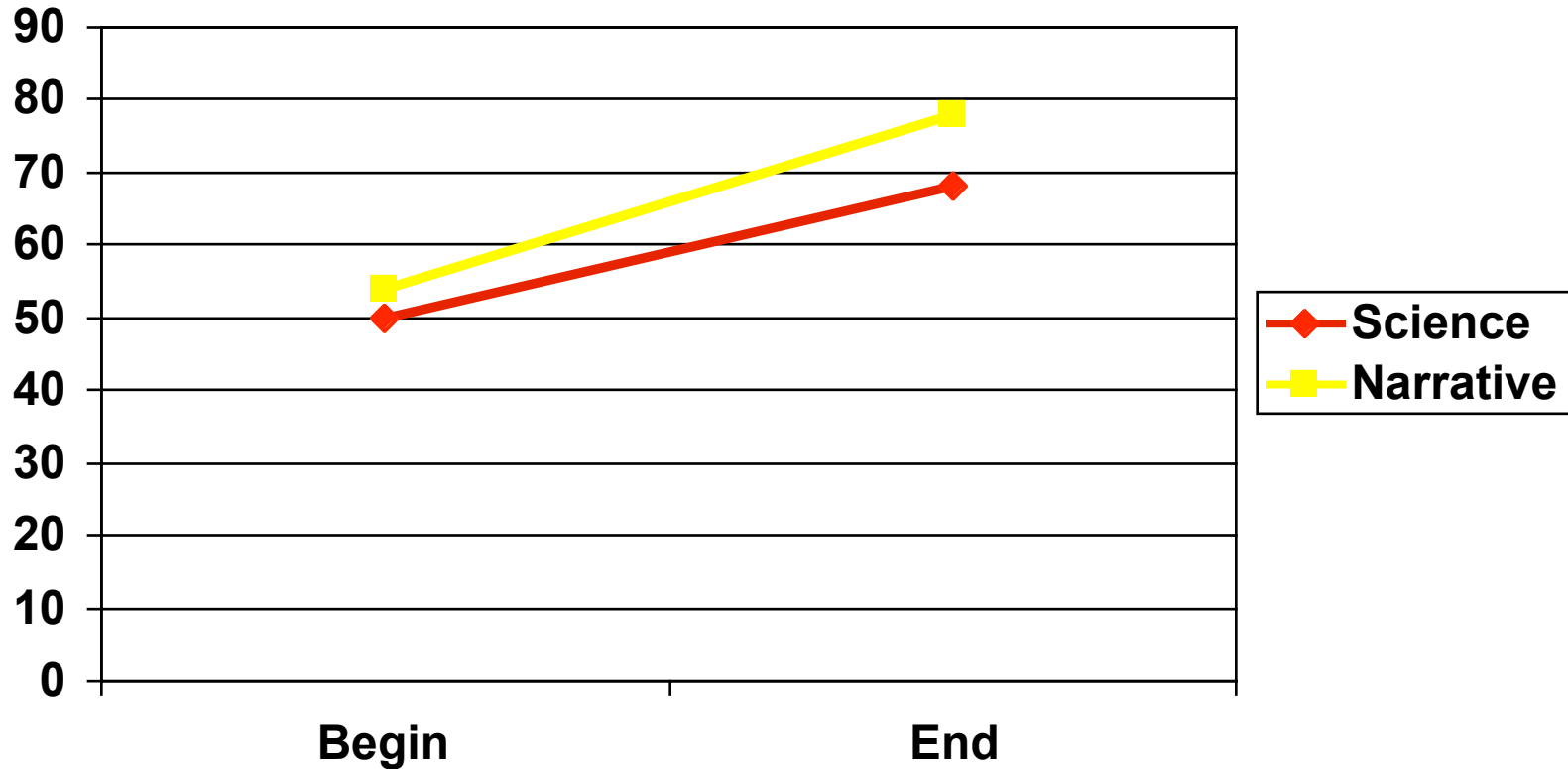


**15 to 20 minutes daily over 20-
week intervention = .5+ words per
week beyond typical gains**

24-Week Intervention: Number of Words Read



24-Week Intervention: Percentage of Correct Comprehension



2. Intervention 2: Seeds/Roots

TExT Model:

- Cognitive Load: 2-3 hard words per 100 running words of text (and these words are repeated 2+ times, whenever possible)**
- Linguistic Curriculum: The goal in the high 2nd to early 3rd grade level is to be fluent with the 1,000 most-frequent words and any vowel pattern in a monosyllabic word**

BLACK TIDE (Seeds/Roots)

Shoreline Disaster

Coast — The beaches of Spain are black with oil. The oil was not stopped before it reached shore. There is oil in the seaweed and oil in the sand. Rocks are covered with it. Animals are covered with it. Everywhere you look, waves are carrying more oil to the beach.

OIL SPILL (Berger, 1994)

The sticky oil soon covered 11,000 square miles of ocean water. That is an area as big as the state of Maryland. It damaged about 1,250 miles of Alaska's coastline. That is longer than the entire Atlantic coast of the United States. The oil stuck to the feathers of many ducks, geese, and other seabirds.

	Unique/ Total Words	New, Unique words per 100	Hard words per 100	Hard words per 100 that are NOT repeated	Hard words in theme or process voca- bulary
Oil Spill (Berger, 1994)	347/ 957	36	7	6	
Black Tide (Parizeau, 2004)	290/ 1092	27	3	1	29%

Consistent Instructional Routine & Time Allocation (2 45-minute sessions per book)

Day 1

- 1. Wonder (14 min.)**
- 2. Read¹**
- 3. Summarize**
- 4. Read²**
- 5. Write**

Day 2

- 6. Review ideas**
- 7. Read³**
- 8. Write**
- 9. Read⁴**
- 10. Revisiting the Big Ideas**

3. Finding Texts: Start with Science Texts

Grade 2 Science Text: February: 1

Trapping germs

Look at the picture of the girl playing baseball. She is kicking up dust as she slides. What are the other children doing? They are also putting dust into the air. Think about how it feels to breathe when dust is in the air.

Same Program's Grade 2 Science Text: February: 2

Protect yourself

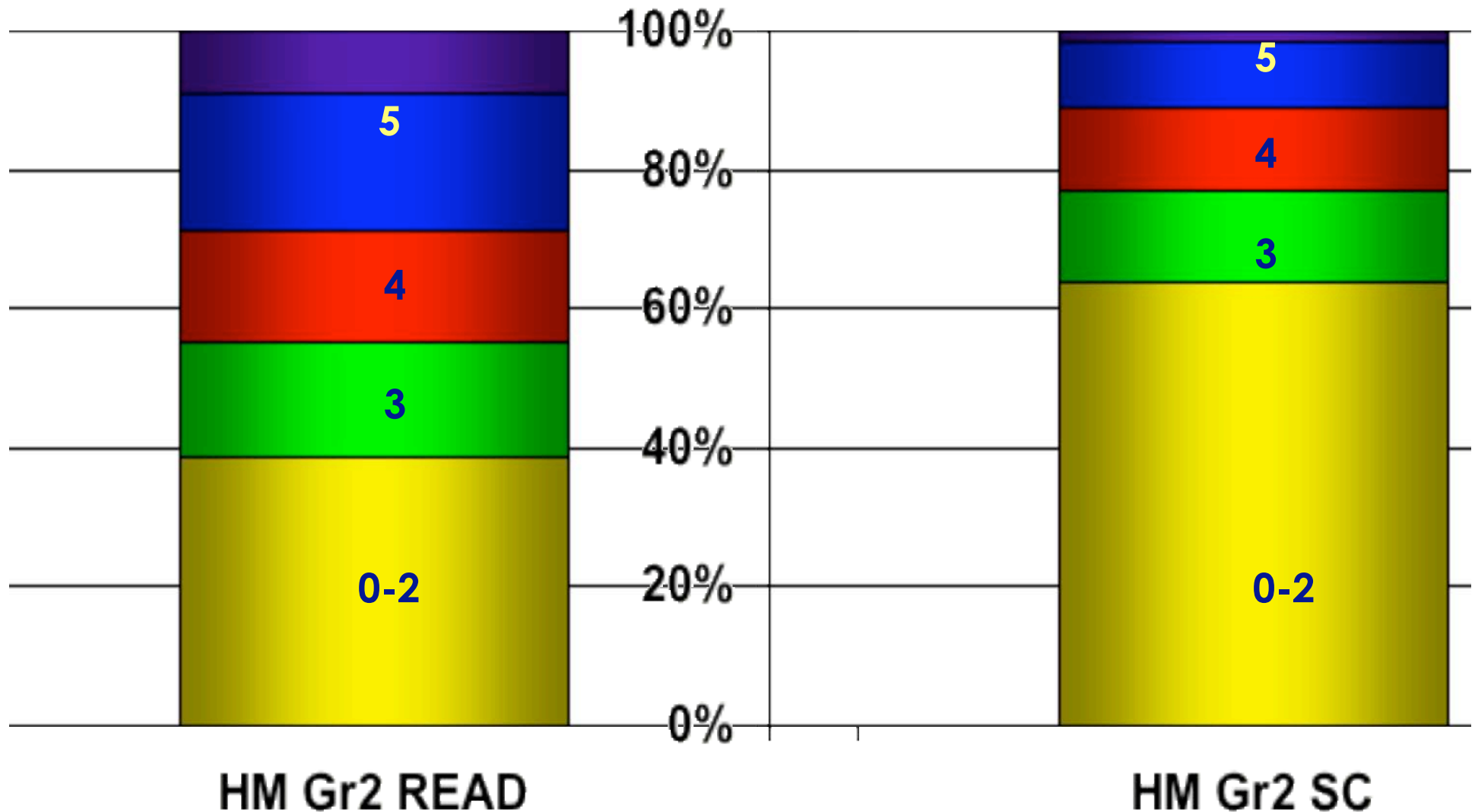
Think about how **germs** might be spread in each picture. The first boy has cut his **knee**. **Germs** can get inside his body through the cut. The girls are **drinking** from the same **straw**. They are sharing **germs**. The last boy is about to pick up an **apple core**.

Same Program's Grade 2 Science Text: February: 3

Preventing injury

Look at the picture story. What happened? One of the boys hit his head on the sidewalk. He has a head injury. Why does one boy have a head injury but the other boy does not? The boy that hurt his head was not wearing a safety helmet.

Nation's Leading Reading Textbook & Its Science Textbook



- 1. The Fluency Problem and its Roots**
- 2. Two Interventions with Science Texts/Content**
- 3. Sources for Science Texts**

Following up

For more on

TE_xT research
program:

www.textproject.org

For copies of “Focus
series” (Fluency,
Vocabulary):

www.prel.org

