

PROGRESS IN INTERNATIONAL READING LITERACY STUDY

PIRLS



PIRLS 2011 Assessment Framework

Ina V.S. Mullis, Michael O. Martin, Ann M. Kennedy, Kathleen L. Trong,
and Marian Sainsbury



TIMSS & PIRLS
International Study Center
Lynch School of Education, Boston College

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Assessment Framework

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Foreword

Central to a nation's pursuit of its social, political, and economic goals is a literate and well-educated population. Furthermore, the ability to read is fundamental to individual intellectual development and personal growth. Knowledge about how well students can read, together with information about which policy-related factors are implicated in understanding reading achievement, can provide policy makers and researchers in every country with insights into how to improve literacy and reading achievement.

The Progress in Reading Literacy Study (PIRLS) was developed to help improve the teaching of reading and the acquisition of reading skills around the world, and was approved by the IEA General Assembly as an essential component of the IEA's regular cycle of core studies, which also includes mathematics and science (known as TIMSS). PIRLS is in its third round of assessing reading achievement for students in their fourth year of school.

The International Association for the Evaluation of Educational Achievement (IEA) was founded in 1959 for the purpose of conducting comparative studies focusing on educational policies and practices in countries around the world. In the 50 years since, IEA's membership has grown to more than 60 countries. It has a Secretariat located in Amsterdam, the Netherlands, and a data processing and research center in Hamburg, Germany. IEA studies have reported on a wide range of topics and subject matters, each contributing to a deep understanding of educational processes within individual countries and within a broad international context.

PIRLS 2011 provides countries with the unique opportunity to obtain internationally comparative data about how well their children

can read after four years of primary schooling. Countries also will obtain detailed information about home supports for literacy as well as school instruction. For the countries that participated in PIRLS 2001 and PIRLS 2006, PIRLS 2011 will provide information on changes in students' reading achievement. Since PIRLS will continue on a five-year cycle into the future, countries participating for the first time can collect important baseline information for monitoring trends in reading literacy.

As a new initiative in 2011, IEA has developed the prePIRLS assessment in response to the needs of the growing population of countries requiring the kind of information provided by PIRLS but whose students are earlier in the process of learning to read than expected by the PIRLS assessment. PrePIRLS, which can be administered to students in the 4th, 5th, or 6th grades, is designed to test basic reading skills that are a prerequisite for success on PIRLS.

The *PIRLS 2011 Assessment Framework* is intended as a blueprint for IEA's 2011 assessment of reading literacy. Adapted from the widely accepted earlier versions of the PIRLS framework, the 2011 framework resulted from a collaborative process involving many individuals and groups—notably the PIRLS Reading Development Group (RDG) and the National Research Coordinators (NRCs) of the more than 50 participating countries. All told, the framework underwent several iterations in response to the comments and interests of the PIRLS countries and the reading research community, and embodies the ideas and interests of many individuals and organizations around the world.

Funding for PIRLS was provided by the National Center for Education Statistics of the U.S. Department of Education and the participating countries, with support from Boston College and the U.K.'s National Foundation for Educational Research. The work contained in this document represents the efforts of a considerable

number of people. I would like to express my thanks to the Reading Development Group; the staff of the TIMSS & PIRLS International Study Center at Boston College, especially Ann M. Kennedy, the PIRLS Coordinator, and Kathleen L. Trong, prePIRLS Coordinator; and to the staff involved from the IEA Data Processing Center and Secretariat, Statistics Canada, and the Educational Testing Service. I appreciate, in particular, the contribution of the National Research Coordinators, and of the PIRLS Executive Directors, Ina V.S. Mullis and Michael O. Martin.

Hans Wagemaker
Executive Director, IEA

Chapter 1

Overview of IEA's PIRLS Assessment





Chapter 1

Overview of IEA's PIRLS Assessment

Reading literacy is one of the most important abilities students acquire as they progress through their early school years. It is the foundation for learning across all subjects, it can be used for recreation and for personal growth, and it equips young children with the ability to participate fully in their communities and the larger society.

Because developing reading proficiency is vital to every child's development, the International Association for the Evaluation of Educational Achievement—more widely known as IEA—conducts a regular assessment of children's reading literacy and the factors associated with its acquisition in countries around the world. IEA's Progress in International Reading Literacy Study, called PIRLS, focuses on the achievement of young children in their fourth year of schooling and the experiences they have at home and at school in learning to read.

Inaugurated in 2001, PIRLS is conducted every five years to measure progress in students' reading achievement as well as trends in the associated home and school contexts for learning to read. The number of countries participating in PIRLS has grown with each subsequent assessment cycle. Approximately 55 countries from all around the world are planning to participate in PIRLS 2011.

In 2011, the PIRLS five-year cycle comes into alignment with the four-year cycle of TIMSS (IEA's mathematics and science study).

Throughout the framework, various sources that have provided a research and scholarly basis for the framework are referenced. These references are only a sample of the volumes of literature and research that have informed the PIRLS framework, including considerable research by countries participating in PIRLS.

Therefore, at fourth grade, by participating in both IEA studies, countries can conduct one comprehensive assessment of the three core curriculum subjects—reading, mathematics, and science.

Extending PIRLS in 2011

The fourth year of schooling was chosen as a focal point for PIRLS because it is an important transition point in children’s development as readers. Typically, at this point, students have learned how to read and are now reading to learn.

For a variety of reasons, however, there are countries where most children in the fourth grade are still developing fundamental reading skills. Thus, beginning in 2011, IEA has extended PIRLS to meet the needs of these countries by offering PIRLS at grade levels beyond fourth grade and by developing a less difficult reading assessment designed to be a stepping stone to PIRLS. Consistent with the purpose of extending PIRLS or bridging to PIRLS, the newly developed assessment has been named prePIRLS. The prePIRLS assessment follows the same conception of reading literacy as PIRLS outlined in this publication, but is intended to measure the reading comprehension skills of students who are still in the process of learning how to read.

PIRLS at the 5th or 6th Grades

In some countries, students are more likely to have developed the reading comprehension competencies necessary for success on PIRLS by the fifth or sixth grade. IEA encourages participation in PIRLS 2011 at the fifth or sixth grade for these countries, because participation at a higher grade could provide valuable information about students’ strengths and weaknesses in reading, whereas participation at the fourth grade would provide little information except that the assessment was too difficult.

prePIRLS

PIRLS 2011 has been extended to include prePIRLS—an assessment that reflects the same conception of reading as PIRLS, except it is less difficult and is designed to test basic reading skills that are a prerequisite for PIRLS. The reading passages are shorter, with easier vocabulary and syntax. Students’ ability to read and answer questions about these passages can provide valuable information about their strengths and weaknesses in reading comprehension. This new assessment offers an excellent basis for countries with relatively low levels of learning to systematically measure and improve children’s learning outcomes.

The availability of prePIRLS enables IEA to target the PIRLS assessment to each country’s situation to provide the best possible measurement. Depending on a country’s educational development and the students’ reading level, countries can participate in either or both PIRLS and prePIRLS to conduct the most effective assessment. The goal is to provide the best policy-relevant information about how to improve teaching and learning and help children become accomplished and self-sufficient readers.

Monitoring Trends

From its inception, PIRLS was designed to measure trends in reading literacy achievement. It is conducted every five years, and previous PIRLS assessments took place in 2001 and 2006. The next assessment after the 2011 assessment is planned for 2016. Many of the countries participating in PIRLS 2011 also participated in the previous study cycles. These countries will have the opportunity to measure progress in reading achievement across three time points—2001, 2006, and 2011.

PIRLS and TIMSS in 2011

2011 presents a unique opportunity for international assessment at the fourth grade, because the five-year cycle of PIRLS and the four-year cycle of TIMSS will be in alignment. 2011 is the fifth in the series of IEA's TIMSS (Trends in International Mathematics and Science Study) mathematics and science assessments that have been conducted at the fourth and eighth grades every four years since 1995.

Because IEA's PIRLS and TIMSS international assessments both will be conducted in 2011, countries have the opportunity to conduct a comprehensive assessment of reading, mathematics, and science at the fourth grade. This will enable countries to profile students' relative strengths in reading, mathematics, and science in an international context. The assessments will include an extensive array of contextual background information for improving teaching and learning in these three basic curriculum areas. Participation in PIRLS and TIMSS in 2011 will provide valuable policy-relevant information about curricula and instructional practices and the opportunity to examine in-depth information about effective school environments and instructional resources.

A Definition of Reading Literacy

The *PIRLS 2011 Assessment Framework* and the instruments developed to assess the framework reflect IEA's commitment to be forward thinking and incorporate the latest approaches to measuring reading literacy. The PIRLS framework for assessing reading was initially developed for the first assessment in 2001, using IEA's 1991 Reading Literacy Study (Elley, 1992, 1994; Wolf, 1995) as the basis for the PIRLS definition of reading literacy and for establishing the aspects of reading literacy to be assessed. Since then, the PIRLS assessment framework has been updated for subsequent cycles of

the assessment (Campbell, Kelly, Mullis, Martin, & Sainsbury, 2001; Mullis, Kennedy, Martin, & Sainsbury, 2006).

PIRLS joins the terms reading and literacy to convey a broad notion of what the ability to read means—a notion that includes the ability to reflect on what is read and to use it as a tool for attaining individual and societal goals. The term “reading literacy” has been used by IEA since naming its 1991 Reading Literacy Study, and it remains the appropriate term for what is meant by “reading” and what PIRLS is assessing.

In developing a definition of reading literacy to serve as the basis for PIRLS, the Reading Development Group for 2001 looked to IEA’s 1991 study, in which reading literacy was defined as “the ability to understand and use those written language forms required by society and/or valued by the individual.” The Reading Development Group for 2001 elaborated on this definition for PIRLS so that it applies across ages yet makes explicit reference to aspects of the reading experience of young children. Beginning with PIRLS 2006, the definition was refined to highlight the widespread importance of reading in school and everyday life. The definition follows.

For PIRLS, reading literacy is defined as the ability to understand and use those written language forms required by society and/or valued by the individual. Young readers can construct meaning from a variety of texts. They read to learn, to participate in communities of readers in school and everyday life, and for enjoyment.

This view of reading reflects numerous theories of reading literacy as a constructive and interactive process (Alexander & Jetton, 2000; Anderson & Pearson, 1984; Chall, 1983; Ruddell & Unrau, 2004; Walter, 1999). Readers are regarded as actively constructing meaning and as knowing effective reading strategies and how to reflect on

reading (Afflerbach & Cho, 2009; Clay, 1991; Langer, 1995). They have positive attitudes toward reading and read for recreation. Readers can learn from a host of text types, acquiring knowledge of the world and of themselves. They can enjoy and gain information from the many multi-modal forms in which text is presented in today's society (Greaney & Neuman, 1990; Organization for Economic Cooperation and Development, 1999; Wagner, 1991). This includes traditional written forms such as books, magazines, documents, and newspapers. It also encompasses information and communication technologies, such as the Internet, email, and text messaging, as well as text integrated with various video and television media (Leu, Kinzer, Coiro, & Cammack, 2004).

Meaning is constructed through the interaction between reader and text in the context of a particular reading experience (Snow, 2002). Before, during, and after reading, the reader uses a repertoire of linguistic skills, cognitive and metacognitive strategies, and background knowledge (Baker & Beall, 2009; Pressley & Gaskins, 2006). The text contains certain language and structural elements and focuses on a particular topic. The context of the reading situation promotes engagement and motivation to read, and often places specific demands on the reader.

Discussing what they have read with different groups of individuals allows students to construct text meaning in a variety of contexts (Almasi & Garas-York, 2009; Guice, 1995). Social interactions about reading in one or more communities of readers can be instrumental in helping students gain an understanding and appreciation of texts (Galda & Beach, 2001; Kucer, 2005). Socially constructed environments in the classroom or school library can give students formal and informal opportunities to broaden their perspectives about texts and to see reading as a shared experience with their classmates (Guthrie, 1996). This can be extended to

communities outside of school as students talk with their families and friends about ideas and information acquired from reading.

Overview of Aspects of Student's Reading Literacy

PIRLS focuses on three aspects of student's reading literacy:

- purposes for reading
- processes of comprehension
- reading behaviors and attitudes.

Reading Purposes and Processes

Purposes for reading and processes of comprehension are the foundation for the PIRLS written assessment of reading comprehension. The PIRLS assessment focuses on the two overarching purposes for reading that account for most of the reading done by young students both in and out of school:

- reading for literary experience
- reading to acquire and use information.

Four types of comprehension processes are assessed in PIRLS:

- focus on and retrieve explicitly stated information
- make straightforward inferences
- interpret and integrate ideas and information
- examine and evaluate content, language, and textual elements.

The four processes are assessed within each purpose for reading. Figure 1 shows the reading purposes and processes assessed by PIRLS and the percentages of the test devoted to each for PIRLS and prePIRLS. Both the PIRLS and prePIRLS assessments devote half of the test to each of the purposes for reading. However, because prePIRLS is

Figure 1 Percentages of the PIRLS and prePIRLS Reading Assessments Devoted to Reading Purposes and Processes

PIRLS		prePIRLS	
Purposes for Reading		Purposes for Reading	
• Literary Experience	50%	• Literary Experience	50%
• Acquire and Use Information	50%	• Acquire and Use Information	50%
Processes of Comprehension		Processes of Comprehension	
• Focus on and Retrieve Explicitly Stated Information	20%	• Focus on and Retrieve Explicitly Stated Information	50%
• Make Straightforward Inferences	30%	• Make Straightforward Inferences	25%
• Interpret and Integrate Ideas and Information	30%	• Interpret and Integrate Ideas and Information	25%
• Examine and Evaluate Content, Language, and Textual Elements	20%	• Examine and Evaluate Content, Language, and Textual Elements	25%

designed for students earlier in the process of learning to read, a larger percentage of items (50 percent of the assessment) is devoted to measuring the ability to focus on and retrieve explicitly stated information—the essential foundation of reading comprehension.

The PIRLS reading purposes and the processes for comprehension are described in Chapter 2. Sample reading passages and questions from the PIRLS 2006 assessment are presented in Appendix B, and a sample reading passage and questions that exemplify the prePIRLS assessment are presented in Appendix C.

Reading Literacy Behaviors and Attitudes

Reading literacy involves not only the ability to construct meaning from a variety of texts, but also behaviors and attitudes that support lifelong reading. Such behaviors and attitude contribute to the full realization of the individual's potential within a literate society.

A substantial proportion of the questionnaire given to students will address students' attitudes towards reading and their reading habits. Chapter 3 describes the behaviors and attitudes assessed by PIRLS as well as the full range of home and school contexts for learning to read that are addressed by the PIRLS questionnaires.

A Look to the Future—PIRLS Web-based Reading Initiative

As new and affordable technologies are being developed, the range of information available on the Internet is expanding. In many countries, children are accessing web-based information before beginning primary school. By the fourth grade, many students prefer using Internet and other electronic information resources to traditional paper-based information resources. In recognition of the prevalence and growth of web-based reading, countries are beginning to formalize the role of web-based reading within their school curricula and standards. PIRLS, too, has responded to the place of web-based reading in children's lives and the development of policies that support student learning with information and communication technologies. In coordination with the development of the PIRLS 2011 assessment, PIRLS launched a web-based reading initiative to explore the possibilities of broadening the representation of informational reading to include web-based texts in future cycles of PIRLS.

Summary of the Assessment Design

The assessment design and specifications are discussed in detail in Chapter 4. The reading purposes and comprehension processes will be assessed using test booklets based on a rotated booklet design. The PIRLS booklets will contain five literary and five informational passages, and the prePIRLS booklets will contain three literary and three informational passages. The passages will be distributed across the test booklets, with each booklet comprised of two passages.

Each passage will be accompanied by approximately 12 questions, with about half multiple-choice and half constructed-response item format. In addition, questionnaires will be given to students' parents, teachers, and school principals to gather information about students' home and school experience in developing reading literacy. Countries will complete questionnaires about their education systems and reading curricula.

Chapter 2

PIRLS Reading Purposes and Processes of Reading Comprehension





2

Chapter 2

PIRLS Reading Purposes and Processes of Reading Comprehension

PIRLS examines the purposes for reading and the processes of comprehension. However, they do not function in isolation from each other or from the contexts in which students live and learn. As described in Chapter 1, for both PIRLS and prePIRLS (a less difficult reading assessment newly developed for 2011 to extend PIRLS to cover a range of basic reading skills that can be considered prerequisites for PIRLS) the first two aspects of reading literacy addressed by PIRLS—purposes for reading and processes of comprehension—form the basis of the written test of reading comprehension. The third aspect, students’ reading literacy behaviors and attitudes, will be addressed by the student questionnaire (see Chapter 3).

Purposes for Reading

Reading literacy is directly related to the reasons why people read. Broadly, these reasons include reading for personal interest and pleasure, reading to participate in society, and reading to learn. For young readers, emphasis is placed on reading for interest or pleasure and reading to learn.

The PIRLS assessment of reading literacy will focus on the two purposes that account for most of the reading done by young students both in and out of school:

- reading for literary experience
- reading to acquire and use information.

Because both types of reading are important at this age, the PIRLS assessment contains an equal proportion of material assessing

each purpose. Although the assessment distinguishes between purposes for reading, the processes and strategies readers use for both purposes are perhaps more similar than different.

Each of these purposes for reading is often associated with certain types of texts. For example, reading for literary experience is often accomplished through reading fiction, while reading to acquire and use information is generally associated with informative articles and instructional texts. However, purposes for reading do not align strictly with types of texts. For example, biographies or autobiographies can be primarily informational or literary, but include characteristics of both purposes. Because people's tastes and interests are so varied, almost any text could meet either purpose.

The content, organization, and style that may be typical of a particular text genre have implications for the reader's approach to understanding the text (Alexander & Jetton, 2000; Graesser, Golding, & Long, 1996; Kirsch & Mosenthal, 1989; Weaver & Kintsch, 1996). It is in the interaction between reader and text that meanings are made and purposes are achieved. For the assessment, passages will be classified by their primary purposes and by the kinds of questions asked. That is, passages classified as informational will be accompanied by questions about the information contained in the passages and those classified as literary will have questions addressing theme, plot events, characters, and setting.

The early reading of most young children centers on literary and narrative text types. In addition, many young readers also enjoy acquiring information from books and other types of reading material. This kind of reading becomes more important as students develop their literacy abilities and are increasingly required to read in order to learn across the curriculum (Duke, 2004; Langer, 1990; Palincsar & Duke, 2004).

Within each of the two purposes for reading, many different text forms can be identified. Texts differ in the way in which ideas

are organized and presented and elicit varying ways of constructing meaning (Goldman & Rakestraw, 2000; Kobayashi, 2002). Text organization and format can vary to a great degree, ranging from sequential ordering of written material to snippets of words and phrases arranged with pictorial and tabular data. In selecting texts for the PIRLS assessment, the aim is to present a wide range of text types within each purpose for reading. Texts will be selected only from sources typical of those available to students in and out of school. The goal is to create a reading experience for students participating in the assessment that, as much as possible, is similar to authentic reading experiences they may have in other contexts.

The two purposes for reading and the different types of texts included within each are described in the following sections.

Reading for Literary Experience

In literary reading, the reader engages with the text to become involved in imagined events, setting, actions, consequences, characters, atmosphere, feelings, and ideas, and to enjoy language itself. To understand and appreciate literature, the reader must bring to the text his or her own experiences, feelings, appreciation of language and knowledge of literary forms. For young readers, literature offers the opportunity to explore situations and feelings they have not yet encountered. The main form of literary texts used in the PIRLS assessment is narrative fiction. Given differences in curricula and cultures across the participating countries, it is difficult for PIRLS to include some types of literary texts. For example, poetry is difficult to translate and plays are not widely taught in the primary grades.

Events, actions, and consequences depicted in narrative fiction allow the reader to experience vicariously and reflect upon situations that, although they may be fantasy, illuminate those of real life. The text may present the perspective of the narrator or a principal

character, or there may be several such viewpoints in a more complex text. Information and ideas may be described directly or through dialogue and events. Short stories or novels sometimes narrate events chronologically, or sometimes make more complex use of time with flashbacks or time shifts.

Reading to Acquire and Use Information

In reading for information, the reader engages not with imagined worlds, but with aspects of the real universe. Through informational texts, one can understand how the world is and has been, and why things work as they do. Readers can go beyond the acquisition of information and use it in reasoning and in action. Informational texts need not be read from beginning to end; readers may select the parts they need. Different organizations make different demands on the reader, although there are no hard and fast distinctions. It also can be noted that despite their organization, informational texts may or may not have headings or other types of textual organizers.

Informational texts ordered chronologically present their ideas as a sequence ordered in time. Such texts may recount events, for example, as historical facts or as diary entries, personal accounts, or letters. Biographies and autobiographies, detailing the events of real lives, are a major group of texts of this type. Other chronologically organized texts are procedural, for example, recipes and instructions. Here, the imperative form is often used and the reader is expected not just to understand but also to act in accordance with what is read.

Sometimes information and ideas are organized logically rather than chronologically. For example, a research paper may describe cause and effect, articles can compare and contrast such things as societies or the weather, and editorials may present arguments and counter arguments or put forth a viewpoint with supporting evidence. Persuasive texts aim directly at influencing the reader's

view, as in the presentation of a problem and recommended solution. In discussion and persuasion, the reader must follow the development of ideas and bring to the text a critical mind in forming his or her own opinion.

Sometimes informational texts are expository, presenting explanations or describing people, events, or things. In a thematic organization, aspects of a topic are clustered and described together in the text. Finally, it should be observed that presentation of information need not be in the form of continuous text. Such forms include brochures, lists, diagrams, charts, graphs, and those that call for actions on the part of the reader like advertisements or announcements. It should be emphasized that a single informational text often uses one or more ways of presenting information. Even informational pieces that are primarily text often are documented with tables or illustrated with pictures and diagrams.

Processes of Comprehension

Readers construct meaning in different ways. They focus on and retrieve specific ideas, make inferences, interpret and integrate information and ideas, and examine and evaluate text features. Transcending these processes are the metacognitive processes and strategies that allow readers to examine their understanding and adjust their approach (Jacobs, 1997; Kintsch & Kintsch, 2005; Paris, Wasik, & Turner, 1996; Pressley, 2006; VanDijk & Kintsch, 1983). In addition, the knowledge and experiences that readers bring to reading equip them with an understanding of language, texts, and the world through which they filter their comprehension of the material (Alexander & Jetton, 2000; Beach & Hynds, 1996; Clay, 1991; Galda & Beach, 2001; Hall, 1998).

Four types of comprehension processes are used in the PIRLS assessment in developing the comprehension questions based on the

passages presented to students. Across the assessment, a variety of comprehension questions, each dealing with one of the processes, enables students to demonstrate a range of abilities and skills in constructing meaning from written texts. Along with each process and its components, examples of questions that may be used to assess that process are discussed. The types of comprehension processes are described below.

In thinking about assessment questions, there is, of course, a substantial interaction between the length and complexity of the text and the sophistication of the comprehension processes required. It may initially seem that locating and extracting explicitly stated information would be less difficult than, for example, making interpretations across an entire text and integrating those with external ideas and experiences. All texts are not equal, however, and can vary enormously in features such as length, syntactic complexity, abstractness of ideas, and organizational structure. Thus the nature of the text can have a substantial impact on the difficulty of the question asked, across and within the four types of comprehension processes.

Focus on and Retrieve Explicitly Stated Information

Readers vary the attention they give to explicitly stated information in the text. Some ideas in the text may elicit particular focus and others may not. For example, readers may focus on ideas that confirm or contradict predictions they have made about the text's meaning or that relate to their general purpose for reading. In addition, readers often need to retrieve information explicitly stated in the text, in order to answer a question they bring to the reading task, or to check their developing understanding of some aspect of the text's meaning.

In focusing on and retrieving explicitly stated information, readers use various ways to locate and understand content that is relevant to the question posed. Retrieving appropriate text

information requires that the reader not only understand what is stated explicitly in the text, but also how that information is related to the information sought.

Successful retrieval requires a fairly immediate or automatic understanding of the text. This process needs little or no inferring or interpreting. There are no “gaps” in meaning to be filled—the meaning is evident and stated in the text. The reader must, however, recognize the relevance of the information or idea in relation to the information sought.

Focus on the text typically remains at the sentence or phrase level in this type of text processing. The process may require the reader to focus on and retrieve several pieces of information; but in each case the information is usually contained within a sentence or phrase.

Reading tasks that may exemplify this type of text processing include the following:

- identifying information that is relevant to the specific goal of reading
- looking for specific ideas
- searching for definitions of words or phrases
- identifying the setting of a story (e.g., time, place)
- finding the topic sentence or main idea (when explicitly stated).

Make Straightforward Inferences

As readers construct meaning from text, they make inferences about ideas or information not explicitly stated. Making inferences allows the reader to move beyond the surface of texts and to fill in the “gaps” in meaning that often occur in texts. Some of these inferences are straightforward in that they are based mostly on information that

is contained in the text: the reader may merely need to connect two or more ideas or pieces of information. Although the ideas may be explicitly stated, the connection between them is not, and thus must be inferred. Straightforward inferences are very much text based. Although not explicitly stated in the text, the meaning remains relatively clear.

Skilled readers often make these kinds of inferences automatically. They may immediately connect two or more pieces of information, recognizing the relationship even though it is not stated in the text. In many cases, the author has constructed the text to lead readers to the obvious or straightforward inference. For example, the actions of a character across the story may clearly point to a particular character trait, and most readers would come to the same conclusion about that character's personality or viewpoint.

With this type of processing, the reader typically focuses on more than just sentence- or phrase-level meaning. The focus may be on local meaning, residing in part of the text, or on more global meaning, representing the whole text. In addition, some straightforward inferences may call upon readers to connect local and global meanings.

Reading tasks that may exemplify this type of text processing include the following:

- inferring that one event caused another event
- concluding what is the main point made by a series of arguments
- determining the referent of a pronoun
- identifying generalizations made in the text
- describing the relationship between two characters.

Interpret and Integrate Ideas and Information

As with the more straightforward inferences, the reader engaging in this process may focus on local or global meanings, or may relate details to overall themes and ideas. In any case, the reader is processing text beyond the phrase or sentence level.

As readers interpret and integrate ideas and information in the text, they often need to draw on their understanding of the world. They are making connections that are not only implicit, but that may be open to some interpretation based on their own perspective. When they interpret and integrate text information and ideas, readers may need to draw on their background knowledge and experiences more than they do for straightforward inferences. Because of this, meaning that is constructed through interpreting and integrating ideas and information is likely to vary among readers, depending upon the experiences and knowledge they bring to the reading task.

By engaging in this interpretive process, readers are attempting to construct a more specific or more complete understanding of the text by integrating personal knowledge and experience with meaning that resides in the text. For example, the reader may draw on experience to infer a character's underlying motive or to construct a mental image of the information conveyed.

Reading tasks that may exemplify this type of text processing include the following:

- discerning the overall message or theme of a text
- considering an alternative to actions of characters
- comparing and contrasting text information
- inferring a story's mood or tone
- interpreting a real-world application of text information.

Examine and Evaluate Content, Language, and Textual Elements

As readers examine and evaluate the content, language, and elements of the text, the focus shifts from constructing meaning to critically considering the text itself. In terms of content, readers draw on their interpretations and weigh their understanding of the text against their understanding of the world—rejecting, accepting, or remaining neutral to the text’s representation. For example, the reader may counter or confirm claims made in the text or make comparisons with ideas and information found in other sources.

In reflecting on text elements, such as structure and language, readers examine how meaning is presented. In doing so, they draw upon their knowledge of text genre and structure, as well as their understanding of language conventions. They may also reflect on the author’s devices for conveying meaning and judge their adequacy, and question the author’s purpose, perspective, or skill.

The reader engaged in this process is standing apart from the text and examining or evaluating it. The text content, or meaning, may be examined from a very personal perspective or with a critical and objective view. Here the reader relies on knowledge about the world or on past reading.

In examining and evaluating elements of text structure and language, readers draw upon their knowledge of language usage and general or genre-specific features of texts. The text is considered as a way to convey ideas, feelings, and information. Readers may find weaknesses in how the text was written or recognize the successful use of the author’s craft. The extent of past reading experience and familiarity with the language are essential to this process.

Reading tasks that may exemplify this type of text processing include the following:

- evaluating the likelihood that the events described could really happen
- describing how the author devised a surprise ending
- judging the completeness or clarity of information in the text
- determining an author's perspective on the central topic.

Chapter 3

Contexts for Learning to Read





3

Chapter 3

Contexts for Learning to Read

This chapter establishes the foundation for the information that will be collected via the PIRLS background questionnaires given to the students themselves as well as to their parents, teachers, and schools. Participating countries also provide important information about the national contexts and curriculum for instruction in language and reading. PIRLS makes every attempt to collect important contextual information about procedures and practices that have been shown to be effective in increasing achievement in reading. In this way, countries can better evaluate their PIRLS results in terms of the prevalence of the situation or practice in their country and its relationship with student achievement in reading.

Young children acquire reading literacy through a variety of activities and experiences within different contexts. During their primary school years, children develop the skills, behaviors, and attitudes associated with reading literacy mainly at home and in school. Various resources and activities have fostered their reading literacy, including those that occur as a natural and informal part of daily activities. Less structured activities can be as critical in helping young children develop reading literacy as the more structured activities that occur in classrooms as part of reading instruction. Moreover, each environment supports the other, and the connection between home and school is an important element in learning.

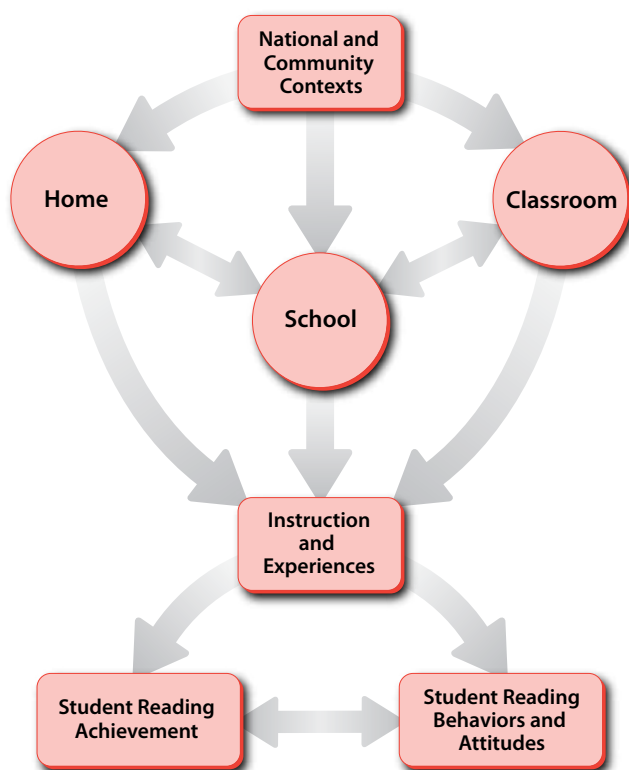
Beyond the direct home and school influences on children's reading are the broader environments in which children live and learn. Children's schools and homes are situated in communities with different resources, goals, and organizational features. These aspects of the community will

likely influence home environments and schools and thus children's reading literacy. Even broader, yet as important, is the national context in which children live and go to school. The level of resources generally available in a country; government decisions about the priorities given to education; and the curricular goals, programs, and policies related to reading education will undoubtedly influence the school and home contexts for learning to read. Because the factors that may foster success in learning or those that may impede learning are distributed across community, home, and school environments, PIRLS has adopted a framework that takes the nesting of these situations into account.

Figure 2 shows the relationships among the home, school, and classroom influences on children's reading development and how this interaction is shaped by the community and country context. The figure illustrates how student outcomes, such as reading achievement and behaviors and attitudes, are a product of instruction and experiences gained in a variety of contexts. Also, it is noted that achievement and attitudes can reinforce one another. Better readers may enjoy and value reading more than poorer readers, thus reading more and further improving their skills.

To better understand the different components of children's literacy development, PIRLS utilizes background information from a variety of sources. To provide information about the national contexts in which children's homes and schools are situated, PIRLS publishes the PIRLS Encyclopedia as part of each assessment (for PIRLS 2001, Mullis, Martin, Kennedy, & Flaherty, 2002; for PIRLS 2006, Kennedy, Mullis, Martin, & Trong, 2007). As in previous cycles, the *PIRLS 2011 Encyclopedia* will be a collection of chapters from participating countries describing their policies and practices for reading education. The *PIRLS 2011 Encyclopedia* will also include an introduction that focuses on the national contexts for the support and implementation of reading curricula and policies

Figure 2 Contexts for Developing Children's Reading Literacy



across countries based on responses to a curriculum questionnaire. To gather information about the home, school, and classroom factors associated with the development of reading literacy, PIRLS 2011 will collect responses to background questionnaires completed by the students tested, their parents or caregivers, their school principals, and their teachers.

National and Community Contexts

Cultural, social, political, and economic factors all contribute to the backdrop of children's literacy development within a country and community. The success a country has in educating its children and producing a literate population depends greatly on the country's emphasis on the goal of literacy for all, the resources it has available,

and the mechanisms it can establish for providing effective programs and incentives that foster reading and improve achievement.

Languages and Emphasis on Literacy

The historical background of language and literacy in a country can influence the challenges and instructional practices in teaching children to read. For example, some countries have one commonly spoken language, but other countries have historical roots in two or more languages and, additionally, widespread immigration can result in a multilingual culture. Thus, decisions about the language(s) of instruction and how to implement those decisions can be very complicated.

Also, the value that a country places on literacy and literacy activities affects the commitment of time and resources necessary for a literature-rich environment. A country's decision to make literacy a priority is influenced in part by people's backgrounds and beliefs about the importance of literacy for success both within and outside of school (Street, 2001). Even without extensive economic resources, countries can promote literacy through national and local policies on reading education. Outside of school, parents and others within the community can foster an environment that values reading by inviting and sharing experiences with text (Tse & Loh, 2007).

Demographics and Resources

The characteristics of a country's population and the national economy can have a tremendous impact on the relative ease or difficulty of producing high rates of literacy among its people and on the availability and extent of the resources required. The sheer size of a country geographically can create difficulties in delivering a uniformly rigorous curriculum, as can a very large population. Having greater economic resources allows for better educational facilities and greater numbers of well-trained teachers

and administrators. It also provides the opportunity to invest in literacy through widespread community programs and by making print materials and technology more readily available in community or school libraries, classrooms, and in homes (Neuman, 1999).

Countries with a large and diverse population and few material and human resources generally face greater challenges than those with more favorable circumstances (Bos, Schwippert, & Stubbe, 2007; Gradstein & Schiff, 2006; Kirsch, Braun, Yamamoto, & Sum, 2007; Taylor & Vinjevoold, 2000; Trong, 2009). Nationally and locally, the diversity of languages used, levels of adult literacy, and other social and health demographics can influence the difficulty of the educational task. Changing populations due to migration within and across country borders also may affect priorities among literacy-related issues in education policy and require additional resources.

Organization and Structure of the Education System

How educational policies are established and implemented can have a tremendous impact upon how schools operate. Some countries have highly centralized systems of education in which most policy-related decisions are made at the national or regional level and there is a great deal of uniformity in education in terms of curriculum, textbooks, and general policies. In comparison, there also are countries that have much more decentralized systems in which many important decisions are made at the local and school levels, resulting in greater variation in school operations and classroom instruction.

The way students proceed through school (also referred to as “student flow”) is a feature of education systems that varies across countries (Kennedy, Mullis, Martin, & Trong, 2007). Particularly relevant for a study of fourth-grade reading achievement are the age of entry to formal schooling and the age when formal reading instruction begins. Students in countries that begin formal schooling at a younger age do not necessarily begin to receive formal reading

instruction in their first year, due to the cognitive demands of reading. In addition, for a study of children at this level, the type of school that students generally attend during the early years and whether students will eventually move into a tracked or comprehensive program of study are of interest, as are promotion and retention policies. The presence of an examination system with consequences for program placement or grade promotion can have a significant influence on children's progress in learning to read.

Even before they begin formal primary school, children may receive considerable exposure to literacy materials and activities as part of their preprimary educational experience. As described in the *PIRLS 2006 Encyclopedia* (Kennedy, Mullis, Martin, & Trong, 2007), countries vary dramatically in their policies and practices with regard to early (preprimary) education, ranging from no specific requirements to compulsory kindergarten in a formal school setting. In addition, and partly as a result of this variability, PIRLS has found that students entering primary school differ considerably both within and among countries in the amount of preprimary education they have received, from none at all to three years or more. Furthermore, on average across countries, there is a positive relationship between years of preprimary education and reading achievement in the fourth grade (Mullis, Martin, Kennedy, & Foy, 2007).

The Reading Curriculum in the Primary Grades

Curricular policies are shaped in many different ways. At the highest level, they may be established in some detail by government and jurisdictional requirements and then further affected by regional and local school personnel and characteristics, even in countries with considerable centralized decision making. Policies may range from those governing the grade in which formal reading instruction begins to those that prescribe the types of material and the methods to be used in teaching reading.

Curricular aspects and governing policies particularly relevant to the acquisition of reading literacy include standards or benchmarks established for reading development, prevalence of school and classroom libraries, instructional time, methods and materials, and ways of identifying students in need of remediation. Considerable research evidence, including results from IEA studies (Kennedy, Mullis, Martin, & Trong, 2007; Mullis, Martin, Kennedy, & Foy, 2007), indicates that students' academic achievement is closely related to the rigor of the curriculum. This involves a coherent progression of instruction and materials through the grade levels, including emphasis on decoding and comprehension strategies, and access to a variety of reading materials. Effective methods for disseminating the curriculum to teachers, parents, and the general public are important, as are ways for making sure that revisions and updates are integrated into instruction.

Delivering a coherent and rigorous curriculum is dependent on well-qualified teachers. Research has established the importance of teachers being prepared in the subject matter they teach and of their certification status (Wayne & Youngs, 2003). The requirements to become a primary teacher may include certain types of academic preparation, passing an examination, or meeting other certification criteria. Some countries also have induction or mentoring programs for entering teachers and a number of opportunities for ongoing professional development to keep teachers apprised of current developments.

Home Contexts

Much research has provided insight into the importance of home environments for children's reading literacy. Long before children develop the cognitive and linguistic skills necessary for reading, early experiences with printed and oral language establish a foundation for learning (Adams, 1990; Ehri, 1995; Verhoeven, 2002). Particular

home characteristics can create a climate that encourages children to explore and experiment with language and various forms of texts. Parents and other family members impart their own beliefs about reading that shape the way that children are exposed to and experience text (Baker, Afflerbach, & Reinking, 1996; Cramer & Castle, 1994). The following discussion highlights some of the major aspects of the home that contribute to reading literacy development.

Economic, Social, and Educational Resources

Research consistently shows a strong positive relationship between achievement and socioeconomic status, or indicators of socioeconomic status such as parents' or caregivers' occupation or level of education (Bradley & Corwyn, 2002; Haveman & Wolfe, 1995; Willms, 2006). Children with less exposure to books at home, parents less involved in schooling, and who are less likely to be regularly read to by parents are less likely to be good readers (Aikens & Barbarin, 2008; Darling & Westberg, 2004; Senechal & LeFevre, 2002). An important aspect of the home environment is the availability of reading material and educational resources. Research shows that ready access to various types of printed material is strongly associated with literacy achievement (Purves & Elley, 1994). Homes that make such material available convey to children the expectation that learning to read is a desirable and worthwhile goal.

Because learning to read is dependent on children's early language experiences, the language or languages spoken at home and how they are used are important factors in reading literacy development. As formal reading instruction begins, children are likely to be at an initial disadvantage if their knowledge of the language of instruction is substantially below the expected level for their age (Scarborough, 2001). In addition, use of different languages or dialects at home and at school is related to young students' literacy development (Bialystok, 2006; Hoff & Ellidge, 2005).

Parental Emphasis on Literacy Development

Early parental involvement in children's literacy activities can impact literacy development with long-lasting effects (Levy, Gong, Hessels, Evans, & Jared, 2006; Senechal & LeFevre, 2002). As young children engage in more challenging and complex activities for play and recreation, both alone and with peers, the time devoted to literacy-related activities becomes critical. Throughout a child's development, the involvement of parents or caregivers remains essential to the acquisition of reading literacy. Central to the home environment are the literacy-related activities that parents or caregivers engage in with children or encourage and support (Gadsden, 2000; Leseman & de Jong, 2001; Snow & Tabors, 1996; Weinberger, 1996). As children develop their capacity for oral language, they are learning the rules of language use. This knowledge will be translated into expectations for printed language as well.

Perhaps the most common and important early literacy activity involves adults and older children reading aloud to young children (Federal Interagency Forum on Child and Family Statistics, 2008; Hart & Risley, 2003; Raikes, Pan, Luze, Tamis-LeMonda, Brooks-Gunn, Constantine, Tarullo, Raikes, & Rodriguez, 2006). When children are read aloud to and encouraged to engage with the text and pictures in books, they learn that printed text conveys meaning and that being able to read is valuable and worthwhile. Joint book reading, encouraging children to read independently, and visiting the library with children can contribute to increased levels of literacy.

As children mature, the support and guidance provided at home contributes to literacy development in many different ways. Parents' or caregivers' involvement in children's schooling is fundamental to literacy development (Federal Interagency Forum on Child and Family Statistics, 2002; Wells, 1985). Although it is a two-way street, parents should try to be supportive of school efforts, just as schools

need to reach out to inform, encourage, and show receptivity to parents' input. Students with parents involved in their schooling have higher academic performance than students whose parents are not involved in their schooling (Jeynes, 2005). Research shows that students who discuss their school studies and what they are reading with their parents or caregivers are higher achievers than those who do not (Mullis, Martin, Gonzalez, & Kennedy, 2003). Involved parents or caregivers can reinforce the value of learning to read, monitor children's completion of reading assignments for school, and encourage children through praise and support.

Parents' Reading Behaviors and Attitudes

For most children, the home provides modeling and direct guidance in effective literacy practices. Parents and other family members convey their beliefs and attitudes in the way they teach their children to read and to appreciate text (Baker & Scher, 2002). Parents' and caregivers' engagement in many literacy activities foster children's positive attitudes toward reading (Sonnenschein & Munsterman, 2002). Young children who see adults and older children reading or using texts in different ways are learning to appreciate and use printed material. Beyond modeling, parents or other caregivers can directly support reading development by expressing positive opinions about reading and literacy. Parents who promote the view that reading is a valuable and meaningful activity have children who are motivated to read for pleasure.

School Contexts

Although the home can be a rich environment for developing reading literacy, for most children school remains the main location for formal learning and educational activities. By their fourth year of formal schooling, many students have acquired basic reading skills and are beginning to read more complex material with greater independence. This is due in part to the changed curricular

demands placed on students at this level. At this point, children are transitioning from “learning to read” to “reading to learn” (Chall, 1983). Students’ educational experiences may be especially significant at this point in their reading literacy development.

Many factors in school affect reading literacy acquisition, directly or indirectly. Some of the main school factors that contribute to the acquisition of reading literacy are discussed below.

School Characteristics

Schools in economically depressed neighborhoods may provide an environment less conducive to learning than schools in areas more well-to-do economically, where schools may be more likely to have strong goals emphasizing academic achievement. Depending on the country, schools in urban areas may have access to more resources (e.g., museums, libraries, bookstores) than schools in rural areas. In contrast, in some countries schools in urban areas are located in neighborhoods with considerable poverty (Darling-Hammond, 1996; Erberber, 2009; Howie, 2007; Trong, 2009; vanDiepen, Verhoeven, & Aarnoutse, 2008). Often, children from poor families attend schools in poor and distressed neighborhoods, thereby further exacerbating the effects of poverty on reading achievement.

School Organization for Instruction

Literacy-related policy and curriculum at the school level establishes the context for the formal reading instruction children receive from the beginning of formal schooling. Such policies may include decisions about the emphasis on reading instruction in relation to other content areas (Kennedy, Mullis, Martin, & Trong, 2007). They also may include preferences of instructional approaches to be implemented at various stages of language development. In turn, such decisions help to shape the environment within the school and the resources that are required.

As an instructional leader, the school principal or head may promote a positive school climate and increase students' academic achievement. This leadership generally involves a clear articulation of the school's mission and managing curriculum, but can have different dimensions (Davies, 2009; Marzano, Waters, & McNulty, 2005; Robinson, 2007). Prominent theories of educational leadership share several key elements, such as the importance of a leader's role in communicating expectations, promoting teacher learning and development, and identifying necessary resources for planning and implementing curricular goals. For example, the principal may actively support instructional programs by participating in professional development activities and giving priority to instructional concerns. Also, the principal may facilitate collaborative efforts among teachers, use instructional research to make decisions, and encourage teachers to improve their instructional methods. As a communicator, the principal has clear goals for the school and articulates those goals to faculty and staff. School leadership also plays an important role in developing a system for monitoring and evaluating the success of the implementation of a school's goals. As a visible presence, the principal may engage in frequent classroom observations and be highly accessible to faculty and staff, providing direct assistance to teachers in their day-to-day activities.

School Climate for Learning

The school environment encompasses many factors that affect a student's learning (Sherblom, Marshall, & Sherblom, 2006). A school with a positive environment has a rigorous academic program with a coherent progression through the grade levels. The staff members show positive attitudes toward students and they are dedicated to participating in professional development. The school environment is also enhanced when staff members collaborate in curricular activities.

The sense of security that comes from having few behavior problems and little or no concern about student or teacher safety at school promotes a stable learning environment. A general lack of discipline, especially if students and teachers are afraid for their safety, does not facilitate learning.

Research has shown that good attendance by students and teachers is related to higher achievement. If students do not attend school regularly, they dramatically reduce their opportunity to learn. Previous PIRLS research has shown that students have lower achievement in schools where principals report attendance problems (Mullis, Martin, Kennedy, & Foy, 2007). Similarly, teachers' absences reduce students' achievement (Abadzi, 2007; Clotfelter, Ladd, & Vigdor, 2007a; Miller, Murnane, & Willett, 2007), and teachers being absent or leaving school before the end of the school year is an increasing problem.

School Resources

The extent and quality of school resources are also critical for quality instruction (Greenwald, Hedges, & Laine, 1996; Lee & Barro, 2001). These may include resources as basic as trained teachers or adequate classroom space. The presence of a library or multi-media center may be particularly relevant for developing reading literacy. School libraries arranged to have rotating collections to augment classroom libraries are effective, as is collaboration between library media specialists and classroom teachers to help students use a variety of resources (U.S. National Commission on Libraries and Information Science, 2008). In addition, the school may have other specialists, such as various reading, psychology, or technology specialists that can be important in providing support for reading instruction.

Parental Involvement

The success of a school can be greatly facilitated by a cooperative attitude among school administrators, teachers, and parents (National Education Association, 2008). This cooperation, however, requires outreach by the school. Schools that encourage and welcome parental involvement are more likely to have highly involved parents than schools that do not make an effort to keep parents informed and participating in various activities. High levels of parental involvement can improve student achievement, as well as students' overall attitude toward school (Darling & Westberg, 2004; Dearing, Kreider, & Weiss, 2008; Taylor, Pearson, Clark, & Walpole, 2000). Parental involvement may range from meeting with a teacher or attending a school open house to activities demonstrating a greater degree of involvement such as acting as a volunteer to organize or supervise a school event, serving on a committee to revise curriculum, or participating in fundraising. Helping with academic activities can range from supporting teachers with classroom activities to closely monitoring their children's schoolwork assignments.

Classroom Contexts

Even though the curricular policies and resources of the school often set the tone for accomplishment in the classroom, students' day-to-day classroom activities are likely to have a more direct impact on their reading development than the school environment. The instructional approaches and materials used are clearly important to establishing teaching and learning patterns in the classroom, including the curriculum, the strategies employed to teach it, and the availability of books, technology, and other resources. The teacher, of course, is another very influential determinant of the classroom environment (Lundberg & Linnakyla, 1993; Rivkin, Hanushek, & Kain, 2005). This can include his or her preparation and training, use of particular instructional approaches, and experience in teaching reading.

Finally, the behaviors, attitudes, and literacy level of students in the classroom may influence the teacher's instructional choices, thereby affecting a student's reading development (Kurtz-Costes & Schneider, 1994; Nichols, Zellner, Rupley, Wilson, Kim, Murgan, & Young, 2005).

Teacher Education and Development

The qualification and competence of teachers can be critical, and prospective teachers need coursework to gain knowledge and understanding about how students learn to read, as well as about effective pedagogy in teaching reading. They also need experience in schools as part of their training, and a good induction process when they enter the profession. Much has been written about what makes a teacher effective. One issue is the nature, amount, and content of teachers' training and education (Darling-Hammond, 2000). For example, whether or not a teacher has been extensively trained in teaching reading may be especially relevant for students' acquisition of reading literacy. In the 21st century, it is more important than ever for a teacher to have extensive content and curriculum knowledge as well as pedagogical knowledge, knowledge about learners and their characteristics, and knowledge about information technology (Darling-Hammond, 2006; Ertmer, 2003).

The extent of teachers' continuing education and exposure to recent developments within the field of teaching reading is also important. Professional development through seminars, workshops, conferences, and professional journals can help teachers to increase their effectiveness and broaden their knowledge of reading literacy acquisition (Scanlon, Gelzheiser, Vellutino, Schatschneider, & Sweeney, 2008; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). In some countries and jurisdictions, teachers are required to participate in such activities. Moreover, it has been suggested that the profession of teaching is one that requires lifelong learning, and that the most

effective teachers continue to acquire new knowledge and skills throughout their careers.

Teacher Characteristics and Attitudes

Teachers' personal characteristics and the attitudes they bring to the classroom can shape their students' learning experience. To a large extent, demographic characteristics of the teacher population may reflect educational contexts, policies, and reforms and vary across countries and regions (Kennedy, Mullis, Martin, & Trong, 2007; Mullis, Martin, Kennedy, & Foy, 2007). Research has shown that some teacher characteristics, such as training, certification, experience, and their attitudes towards teaching are particularly important to student's academic success (Clotfelter, Ladd, & Vigdor, 2007b; Croninger, Rice, Rathbun, & Nishio, 2007; Palardy, & Rumberger, 2008).

A teacher's effectiveness in the classroom can be influenced by the climate and available resources at their school. A positive school environment can lead to greater teacher self-efficacy and job satisfaction, which in turn can increase student learning (Caprara, Barbaranelli, Steca, & Malone, 2006; Ware, & Kitsantas, 2007). Schools can support teachers in many ways. One important type of support in teaching can be collaboration with colleagues, which can be important in fostering a professional community where instructional ideas and innovations are shared (Louis, Marks, & Kruse, 1996). A growing aspect of instruction is the use of technology in the classroom, and teachers' familiarity and comfort with technology is increasingly important. Teachers' decisions to use technology in the classroom can result from their beliefs and attitudes, as well as access to training and materials (Russell, Bebell, O'Dwyer, & O'Connor, 2003).

Classroom Characteristics

Because young students spend many hours each day in one or more classrooms, the classroom environment and structure can have a significant influence on reading literacy development. One fundamental characteristic that may dictate how teachers approach instruction is class size, or teacher-to-student ratio. Some research has indicated that smaller class sizes during the early years of schooling may benefit students' reading development (Rivkin, Hanushek, & Kain, 2005).

The classroom can vary greatly, from highly structured and teacher-centered to more open and student-centered. Also related to reading development is the interaction among students, informally and in classroom discussion of reading and literacy-related activities (Baker, 1991; Baker, Dreher, & Guthrie, 2000; Gambrell & Almasi, 1997; Guthrie & Alvermann, 1999). Classrooms that encourage language development and establish a supportive environment for talking about reading may be especially effective.

The characteristics of the students themselves can be very important to the classroom atmosphere. Students need to be healthy and to have the prerequisite skills before they can make gains in reading achievement. A classroom full of alert, well-fed students will be more ready to learn than tired, hungry students suffering from malnutrition (Taras, 2005). Because prior knowledge guides learning, effective teachers assess students' language skills and conceptual understanding, and link new ideas, skills, and competencies to prior understandings (Pressley, 2006). Finally, to be motivated readers, students need to enjoy books, happily read independently, and be intent on gaining meaning from whatever they are reading.

Instructional Materials and Technology

Another aspect of the classroom that is relevant for reading literacy includes the extent of the variety and richness of the reading material available to students. The reading material and technology that teachers use in reading instruction form the core of students' reading experience in school.

The presence of a classroom library or a special place for independent reading may foster positive reading habits and attitudes, in addition to giving students ready access to a wide variety of texts and text types. Also, in many countries, computers are widely available in schools and Internet access is steadily increasing. The use of electronic texts and other technologies is emerging as an important part of students' literacy learning (Kamil, Intrator, & Kim, 2000; Labbo & Kuhn, 1998; McKenna, 1998). Reading "on-line" is becoming an essential literacy skill as more and more diverse types of texts and information are made available to students through the Internet and other electronic modes of communication. Regardless of format, research has indicated that the students' exposure to a variety of texts and text types is associated with achievement in reading (Moats, 1999).

Instructional Strategies and Activities

The effective classroom discusses conceptual themes, has hands-on experiences related to reading, and provides time for extended reading (Guthrie, 2004). Teachers use an abundance of interesting texts, including literary chapter books and information trade books, that include such features as a table of contents, index, illustrations, and bold headings. There are innumerable strategies and activities that teachers may use for reading instruction (Alexander & Jetton, 2000; Creighton, 1997; Dole, Nokes, & Drets, 2009; Langer, 1995; Pressley, 2000; Stierer & Maybin, 1994). Much research has been devoted to investigating which reading instructional activities are

most effective. Most educators and researchers agree that using elements of various approaches may be best, particularly when teachers tailor them to the needs of their students (Dole, Duffy, Roehler, & Pearson, 1991). Effective instruction provides a balanced program integrating many components, including multiple texts, teacher- and student-led discussions, guided instruction, group and independent reading decoding and comprehensions strategies, and a variety of assessment techniques (Gambrell & Mazzoni, 2003). It is important to support students' collaboration and discourse around a variety of text types to clarify understanding, including searching for information and summarizing the overall messages.

Research has shown that increasing students' motivation increases the time they spend reading and their engagement with their reading, which in turn increases reading comprehension. Students learn best when they are interested and involved. Major instructional practices that increase motivation for reading and reading comprehension include setting goals, providing interesting texts, affording students choices about what they read, and providing extrinsic rewards and praise (Guthrie, Wigfield, Humenick, Perencevich, Taboada, & Barbosa, 2006; Miller & Faircloth, 2009). To move students from extrinsic to intrinsic motivation, teachers can give students knowledge-building experiences based on content, vocabulary, and plenty of silent reading, and can express genuine care for their students' cognitive, emotional, and physical needs. It is important to increase students' self-esteem and self-efficacy as readers by asking them to share and explain their opinions and to initiate literacy projects.

Homework is a way to extend instruction and assess student progress. The types of homework assignments assigned in reading classes regularly include independent reading, comprehension questions about what students have read, or some combination

of the two. The amount of homework assigned for reading varies both within and across countries. In some countries, homework is assigned typically to students who need the most practice—those who tend to have the most difficulty reading or understanding what they have read. In other countries, students receive homework as enrichment exercises. Time spent on homework generally has an inverse relationship with achievement (Mullis, Martin, Kennedy, & Foy, 2007). Those students for whom reading is difficult require more time to complete the assigned homework.

Assessment

In addition to homework, teachers have a number of ways to monitor student progress and achievement. Informal assessment during instruction helps the teacher to identify needs of particular individuals, or to evaluate the pace of the presentation of concepts and materials (Lipson & Wixson, 1997). Formal tests, both teacher-made and standardized assessments, typically are used to make important decisions about the students, such as grades or marks, promotion, or tracking (Kennedy, Mullis, Martin, & Trong, 2007). The types of question included in tests and quizzes can send strong signals to students about what is important. For example, teachers can ask about a variety of textual information, such as facts, ideas, character motivations, and comparisons with other materials or personal experiences. Teachers also can use a variety of test formats ranging from multiple-choice questions to essays.

Student Characteristics and Attitudes

Student Reading Literacy Behaviors

As children continue to develop reading literacy, the time they devote to reading and other recreational activities becomes significant. The child not only enjoys reading for recreation but also practices skills that are being learned. Reading for fun or to investigate topics of

interest is the hallmark of lifelong reading. Children should read frequently and for different purposes (Duke, 2004). Thus, children may choose to spend their out-of-school time reading books or magazines, looking up information on the Internet, or going to a local library to read or take out books (Shapiro & Whitney, 1997).

Independent reading and discussing reading can be an integral part of the ongoing activities in the home. Children's parents and caregivers can encourage them to strike a balance between time spent on literacy-related activities and time spent on perhaps less enriching pastimes such as playing video games or watching excessive amounts of television (National Reading Panel, 2000). Some research indicates a negative correlation between time spent watching television and reading achievement, while time spent reading for fun is positively correlated (Van der Voort, 2001).

Reading literacy goes beyond the ability to construct meaning from a variety of texts to encompass behaviors and attitudes that support lifelong reading. Such behaviors and attitudes contribute to the full realization of the individual's potential within a literate society. Children who are good readers report not only reading frequently, but also participating in the social aspects of reading, including reading to others at home, going to the library, and talking about books (Sainsbury and Schagen, 2004).

Discussing reading with their families, friends, and community members gives children the opportunity to participate in one or more communities of readers (Baker, 2003; Beck & McKeown, 2001). These social interactions strengthen young readers' abilities to gain meaning from text and understand how different readers can make different interpretations. Young readers and their friends can be encouraged to take advantage of extracurricular activities promoting literacy skills provided through school and local libraries or other venues. The influence of peers can be helpful in making it desirable

to participate in such activities. For example, students can share experiences and interpretations of text by attending plays or joining book clubs.

Positive Attitudes Toward Reading

A positive attitude toward reading may be among the most important attributes of a lifelong reader. Children who read well typically display a more positive attitude than do children who have not had a great deal of success with reading (Mullis, Martin, Kennedy, & Foy, 2007). Children who have developed positive attitudes and self-concepts regarding reading are also more likely to choose reading for recreation. Such reading activities may further build up students' interests and confidences in reading (Wigfield & Guthrie, 1997). When children read on their own time they are not only demonstrating a positive attitude, they are also gaining valuable experience in reading different types of texts that further their development as proficient readers (Leppänen, Aunola, & Nurmi, 2005).

Student Attitudes Toward Learning to Read

Research, including the results from both PIRLS assessments, has shown that children with greater self-efficacy or higher self-esteem about themselves as readers typically are better readers (Mullis, Martin, Gonzalez, & Kennedy, 2003; Mullis, Martin, Kennedy, & Foy, 2007). Because motivation to learn to read includes feeling that you can succeed, it is important for students to have a strong self-concept about their reading ability in order to continue building on current levels of learning to move to higher plateaus (McLaughlin, McGrath, Burian-Fitzgerald, Lanahan, Scotchmer, Enyeart, & Salganik, 2005). Successful readers enjoy challenging reading. Fluent reading involves understanding the meaning of a text beyond simple decoding and word recognition, which requires

practice with a variety of texts (Pressley, 2006). Learning to read well involves spending considerable time reading, and students' value for reading and their preferences for reading materials can influence the time they spend reading both in and outside of school. Motivation to learn to read involves being interested or engaged in what is being read. Personal interest in a subject motivates the learner and facilitates the learner in going beyond surface level information.

Chapter 4

Assessment Design and Specifications





4

Chapter 4

Assessment Design and Specifications

PIRLS 2011 consists of a wide-ranging assessment of reading comprehension to measure fourth-grade students' reading literacy achievement as well as a series of questionnaires focusing on contexts for reading literacy development to gather information about community, home, and school contexts for developing reading literacy. Conducted on a regular five-year cycle, with each assessment linked to those that preceded it, PIRLS provides regular data on trends in students' reading literacy on a common achievement scale.

By assessing students at the fourth grade, PIRLS provides data that complement TIMSS, IEA's Trends in International Mathematics and Science Study, which assesses achievement at fourth and eighth grades every four years. The fifth in the TIMSS series of assessments, TIMSS 2011 will be the first TIMSS assessment to have data collection in the same school year as PIRLS, providing a rare opportunity for countries to collect internationally comparable information on reading, mathematics, and science in the same year and on the same students.¹

Student Population Assessed

PIRLS assesses the reading literacy of children in their fourth year of formal schooling. This population was chosen for PIRLS because it is an important transition point in children's development as readers. Typically, at this point, students have learned how to read and are now reading to learn. In many countries also, this is where

¹ Countries participating in PIRLS and TIMSS at the fourth grade in 2011 will have the option of administering the assessments to the same students or to separate student samples. Most countries are planning to administer the two assessments to the same students.

students begin to have separate classes for different subjects, such as mathematics and science. The target population for PIRLS is defined as follows.

The PIRLS target grade should be the grade that represents four years of schooling, counting from the first year of ISCED Level 1.

ISCED is the International Standard Classification of Education developed by the UNESCO Institute for Statistics and provides an international standard for describing levels of schooling across countries. The ISCED system describes the full range of schooling, from preprimary (Level 0) to the second level of tertiary education (level 6). ISCED Level 1 corresponds to primary education or the first stage of basic education. The first year of Level 1 should mark the beginning of “systematic apprenticeship of reading, writing and mathematics” (UNESCO, 1999). Four years later would be the PIRLS target grade, which is the fourth grade in most countries. However, given the linguistic and cognitive demands of reading, PIRLS wants to avoid assessing very young children. Thus, PIRLS recommends that countries assess the next higher grade (i.e., fifth grade) if the average age of fourth grade students at the time of testing would be less than 9.5 years.

Reporting Reading Achievement

PIRLS 2011 will provide a comprehensive picture of the reading literacy achievement of the participating students in each country. This will include achievement by reading purpose and comprehension process as well as overall reading achievement. Consistent with the goal of a comprehensive view of reading comprehension, the complete PIRLS 2011 assessment consists of ten reading passages and accompanying questions (known as items) and, similarly, the

prePIRLS assessment consists of six less difficult reading passages and accompanying questions. However, to keep the assessment burden on any one student to a minimum, each student is presented with only part of the assessment according to a systematic booklet assembly and rotation procedure, as described in the next section. Following data collection, student responses are placed on a common reading achievement scale using item response theory methods that provide an overall picture of the assessment results for each country.²

PIRLS was designed from the outset to measure trends over time in reading achievement. Accordingly, the PIRLS reading achievement scale provides a common metric on which countries can compare their fourth grade students' progress in reading over time from assessment to assessment. The PIRLS achievement scale was established in 2001 to have a scale average of 500 and a standard deviation of 100, corresponding to the international mean and standard deviation of the countries that participated in PIRLS 2001. Using passages that were administered in both 2001 and 2006 assessments as a basis for linking the two sets of assessment results, the PIRLS 2006 data also were placed on this scale so that countries could gauge changes in students' reading achievement since 2001. A similar procedure will be employed for PIRLS 2011, so that PIRLS 2011 countries that have participated in PIRLS since its inception can have comparable achievement data from 2001, 2006, and 2011, and can plot changes in performance over this period.

To complement the overall reading literacy scale and similar to PIRLS 2006, PIRLS 2011 will provide separate achievement scales for purposes for reading and for processes of comprehension. More specifically, there will be two scales for reading purposes:

- reading for literary experience
- reading to acquire and use information.

2 The PIRLS scaling methodology is described in detail in Foy, Galia, & Li (2007).

There also will be two scales for processes of reading comprehension:

- retrieval and straightforward inferencing
- interpreting, integrating, and evaluating.³

Test Booklet Design

Given the broad coverage and reporting goals of the PIRLS framework and its emphasis on the use of a variety of authentic texts, it was inevitable that the specifications for the item pool would include extensive testing time. The PIRLS Reading Development Group found that a valid assessment of two purposes for reading, reading for literary experience and reading to acquire and use information, with reliable measures of two processes of comprehension required at least six hours of testing time. While the assessment material that can be presented in that time should provide good coverage of the reading material children meet in their everyday lives, it is not reasonable to expect to administer the entire set of reading passages and test items to any one child. Because of the difficulties of scheduling student assessments and because young children cannot be subjected to long testing periods without suffering loss of concentration and fatigue, the testing time is limited to 80 minutes per student, with an additional 15–30 minutes for a student questionnaire.

With a total testing time of more than six hours but far less than that advisable for any individual student, the assessment material must be divided among students in some way. The PIRLS design uses a matrix sampling technique, whereby the passages and accompanying items are divided into groups or blocks, and individual student booklets are made up from these blocks according to a systematic arrangement.

3 Retrieval and straightforward inferencing combines items from the Focus on and retrieve explicitly stated material and Make straightforward inferences comprehension processes. Similarly, Interpreting, integrating, and evaluating is based on items from the Interpret and integrate ideas and information and Examine and evaluate content, language, and textual elements processes.

In PIRLS 2011, similar to PIRLS 2006, the more than six hours of testing time is divided into ten 40-minute blocks of passages and items, labeled L1–L5 for the literary passages and I1–I5 for the informational texts (see Figure 3). Six of the ten blocks were included in previous PIRLS assessments—two in both PIRLS 2001 and PIRLS 2006 and four in PIRLS 2006 only. These “trend” blocks provide a foundation for measuring trends in reading achievement. Four new blocks will be developed for use for the first time in the 2011 assessment.

Figure 3 PIRLS 2011 Matrix Sampling Blocks

Purpose for Reading	Block				
Literary Experience	L1	L2	L3	L4	L5
Acquire and Use Information	I1	I2	I3	I4	I5

Similar to PIRLS 2006, the ten blocks of passages and items in the PIRLS 2011 design will be distributed across 13 booklets (see Figure 4). Each student booklet will consist of two 40-minute blocks of passages and items. Each student will respond to one assessment booklet and a student questionnaire. So as to present at least some passages in a more natural, authentic setting, two blocks (one literary and one informational) will be presented in a magazine-type format with the questions in a separate booklet. This booklet is referred to as the PIRLS “Reader.”

To enable linking among booklets, at least some blocks must be paired with others. Since the number of booklets can become very large if each block is to be paired with all other blocks, it was necessary to choose judiciously among possible block combinations. In the 13-booklet design used in PIRLS 2006, 12 test booklets are derived by combining four literary (L1, L2, L3, and L4) and four

informational (I1, I2, I3, and I4) blocks in a variety of configurations. The 13th booklet, the Reader, accounts for the remaining literary block, L5, and informational block, I5.

In this design, each of blocks L1 through L4 and I1 through I4 appear in three of the 12 booklets, each time paired with another, different, block. For example, as shown in Figure 4, literary block L1 appears with literary block L2 in Booklet 1 and with informational blocks I4 and I1 in Booklets 8 and 9. Similarly, literary block L2 appears not only with L1 in Booklet 1 but also with literary block L3 in Booklet 2 and with informational block I2 in Booklet 10.

The pairing of blocks in Booklets 1 through 12 ensures that there are good links both among the literary and among the informational passages and also between the two purposes for reading. The blocks in the Reader, L5 and I5, are not linked to any other blocks directly. However, because booklets are assigned to students using a randomized procedure, the group of students responding to the Reader is equivalent to those responding to the other booklets, within the margin of error of the sampling process. Because each block appears in three of Booklets 1 through 12, the Reader is assigned three times more frequently in the distribution procedure than these Booklets so that the same proportion of students respond to blocks L5 and I5 as to each of the other literary and informational blocks.

Selecting Reading Passages for the Assessment

To reach the goal of approximating an authentic reading experience in the assessment, the reading passages presented to students must be typical of those read by students in their everyday experiences. Texts that exist for students to read in and outside school have typically been written by successful authors who understand writing for a young audience. These are more likely than passages written specifically for a test to elicit the full range of comprehension processes.

Figure 4 PIRLS 2011 Student Booklet Design

Booklet	Part 1	Part 2
1	L1	L2
2	L2	L3
3	L3	L4
4	L4	I1
5	I1	I2
6	I2	I3
7	I3	I4
8	I4	L1
9	L1	I1
10	I2	L2
11	L3	I3
12	I4	L4
Reader	L5	I5

Furthermore, they are more likely to engage students' interests, and to yield assessment questions that will elicit a range of responses to text that are similar to those elicited in authentic reading experiences. In the context of an international study, attaining authenticity in the assessment reading experience may be somewhat constrained by the need to translate a text into numerous languages. Thus, care is taken to choose texts that can be translated without loss in meaning or in potential for student engagement.

In selecting texts for use in an international survey of reading literacy, the potential for cultural bias must be considered. The set

of texts used must range as widely as possible across nations and cultures. No country or culture should be overrepresented in the assessment texts. Text selection thus involves collecting potential stimulus texts from as many countries as possible. The final selection of texts is based, in part, on the national and cultural representation of the entire set of assessment texts. Texts that depend heavily on culture-specific knowledge are excluded.

The appropriateness and readability of texts for assessing fourth-grade students is determined through review by educators and curriculum specialists from countries participating in the assessment. Among the criteria used to select texts are topic and theme appropriateness for the grade level; fairness and sensitivity to gender, racial, ethnic, and religious considerations; nature and level of linguistic features; and density of information. In addition, the time constraints of the test situation place some limits on the length of texts. Generally, texts selected for 2011 will be no longer than 800 words so students have time to read the entire passage and answer the comprehension questions. However, length will vary somewhat because other text characteristics also affect rate of reading.

As a basis for measuring trends from 2001 and 2006, PIRLS retained six passages and items from the 2001 and 2006 assessments—three literary and three informational—to be included in the PIRLS 2011 assessment. To complete the design, four new passages and associated items will be selected—two literary and two informational.

Question Types and Scoring Procedures

Students' ability to comprehend text through the four PIRLS comprehension processes is assessed via comprehension questions that accompany each text. Two question formats are used in the PIRLS assessment—multiple-choice and constructed-response.

Each multiple-choice question is worth one point. Constructed-response questions are worth one, two, or three points, depending on the depth of understanding required. Up to half of the total number of points represented by all of the questions will come from multiple-choice questions. In the development of comprehension questions, the decision to use either a multiple-choice or a constructed-response format is based on the process being assessed, and on which format best enables test takers to demonstrate their reading comprehension.

Multiple-Choice Questions

Multiple-choice questions provide students with four response options, of which only one is correct. Multiple-choice questions can be used to assess any of the comprehension processes. However, because they do not allow for students' explanations or supporting statements, they may be less suitable for assessing students' ability to make more complex interpretations or evaluations.

In assessing fourth-grade students, it is important that linguistic features of the questions be developmentally appropriate. Therefore, the questions are written clearly and concisely. The response options are also written succinctly in order to minimize the reading load of the question. The options that are incorrect are written to be plausible, but not deceptive. For students who may be unfamiliar with this test question format, the instructions given at the beginning of the test include a sample multiple-choice item that illustrates how to select and mark an answer.

Constructed-Response Questions

For this type of test item students are required to construct a written response, rather than select a response from a set of options. The emphasis placed on constructed-response questions in the PIRLS assessment is consistent with the definition of literacy underlying the framework.

It reflects the interactive, constructive view of reading—meaning is constructed through an interaction between the reader, the text, and the context of the reading task. This question type is used to assess any of the four comprehension processes. However, it is particularly well suited for assessing aspects of comprehension that require students to provide support or that result in interpretations depending upon students' background knowledge and experiences.

In the PIRLS assessment, constructed-response questions may be worth one, two, or three points, depending on the depth of understanding or the extent of textual support the question requires. In framing these questions, it is important to provide enough information to help students understand clearly the nature of the response expected.

Each constructed-response question has an accompanying scoring guide that describes the essential features of appropriate and complete responses. Scoring guides focus on evidence of the type of comprehension the questions assess. They describe evidence of partial understanding and evidence of complete or extensive understanding. In addition, sample student responses at each level of understanding provide important guidance to scoring staff.

In scoring students' responses to constructed-response questions, the focus is solely on students' understanding of the text, not on their ability to write well. Also, scoring takes into account the possibility of various interpretations that may be acceptable, given appropriate textual support. Consequently, a wide range of answers and writing ability may appear in the responses that receive full credit to any one question.

Score Points

In developing the assessment, the aim is to create blocks that each provide, on average, at least 15 score points—made up of

approximately seven multiple-choice items (1 point each), two or three short-answer items (1 or 2 points each), and one extended-response item (3 points). Items in each block should address the full range of PIRLS comprehension processes. The exact number of score points and the exact distribution of question types per block will vary somewhat, as different texts yield different types of questions.

Releasing Assessment Material to the Public

An essential aspect of the PIRLS design for measuring trends over time in reading achievement is that, with each cycle, PIRLS releases a number of passages and items into the public domain to help readers understand as much as possible about the content and approach of the assessment. At the same time, a number of passages and items are retained and kept confidential to be used in future assessments as the basis for measuring trends. As passages and items are released, new assessment material is developed to take their place.

According to the PIRLS design, four blocks were released following the PIRLS 2006 data collection, two from the original 2001 assessment (L2 and I2) and two from those developed for 2006 (L5 and I5). These released passages and items may be found in the *PIRLS 2006 International Report* (Mullis, Martin, Kennedy, & Foy, 2007). Following the publication of the international report for PIRLS 2011, a further four blocks will be released, two that were used in both the 2006 and 2011 assessments and two from those developed for specifically for PIRLS 2011.

prePIRLS 2011 Assessment Design

The prePIRLS assessment follows the PIRLS student populations and assessment design as closely as possible, with changes made only when appropriate for the prePIRLS context. Also similar to PIRLS, prePIRLS provides a broad picture of students' reading achievement by placing student responses on a common scale and measuring trends in achievement over time.

Like PIRLS, prePIRLS will report student achievement on an overall reading literacy scale and separate achievement scales for the literary and informational reading purposes. The reading comprehension process scales, however, differ from PIRLS due to the greater emphasis on the process of focusing on and retrieving explicitly stated information in the prePIRLS items. More specifically, the two scales for the processes of comprehension will be:

- retrieving explicitly stated information
- inferencing, interpreting, and evaluating.⁴

Following the design that has proven effective in previous cycles of PIRLS, prePIRLS also uses a matrix sampling technique for the administration of the assessment. PrePIRLS is comprised of six blocks of reading passages and their accompanying items, for a total of four hours of testing time (see Figure 5). Because prePIRLS is newly developed for 2011, all of these test blocks will be new and four of the test blocks will be kept secure to measure trends in future assessment cycles.

Figure 5 prePIRLS 2011 Matrix Sampling Blocks

Purpose for Reading	Block		
Literary Experience	L1	L2	L3
Acquire and Use Information	I1	I2	I3

These six test blocks are distributed across nine student booklets, with each block appearing in three booklets to enable linking between the various blocks (see Figure 6). As in PIRLS, each booklet contains

⁴ Retrieving explicitly stated information uses items from the Focus on and retrieve explicitly stated material comprehension process. Inferencing, interpreting, and evaluating is based on items from the Make straightforward inferences, Interpret and integrate ideas and information, and Examine and evaluate content, language, and textual elements processes.

Figure 6 prePIRLS 2011 Student Booklet Design

Booklet	Part 1	Part 2
1	L1	L2
2	L2	L3
3	L3	I1
4	I1	I2
5	I2	I3
6	I3	L1
7	L1	I1
8	I2	L2
9	I3	L3

two 40-minute test blocks, for a total of 80 minutes of testing time per student followed by 15-30 minutes for a student questionnaire.

Like PIRLS, prePIRLS strives to replicate an authentic reading experience with materials that are engaging and familiar to students participating in prePIRLS. However, it is sometimes necessary to adapt texts to ensure that the subject matter is age-appropriate, while keeping the reading load reasonable for prePIRLS students. Passages selected for prePIRLS are generally no longer than 400 words in length to ensure that students have ample time to read the passage and respond to the accompanying items. As an additional step to help students locate information within the text, items are interspersed throughout the passage. When possible, items that require students to focus on a particular page of text are placed on the facing page, so that students can view both the items and the relevant text simultaneously. This distribution of items also helps to

ensure that students can provide answers to some questions, even if they do not complete the entire passage.

The prePIRLS items use multiple-choice and constructed-response formats, as in PIRLS, though constructed-response items are worth only one or two points. However, there is a slightly higher percentage of constructed-response items in the prePIRLS assessment, comprising up to 60 percent of the total score points. This decision was made because constructed-response items that require a very short response are often easier for early readers due to the lighter reading load, as compared with multiple-choice items that require students to read and evaluate response four options. In addition, multiple-choice items may lose some of their effectiveness in passages as short as those used in prePIRLS, as there are fewer plausible distracters that can be drawn from the text.

Background Questionnaires

An important purpose of PIRLS and prePIRLS is to study the community, home, and school factors associated with children's reading literacy by the fourth grade. To that end, PIRLS and prePIRLS 2011 will administer questionnaires to students, their parents, their teachers, and the principals of their schools. The questions are designed to measure key aspects of students' home and school environments. PIRLS and prePIRLS 2011 also will request the National Research Coordinators to complete a curriculum questionnaires for their countries.

Student Questionnaire

A questionnaire will be completed by each student who participates in the PIRLS reading assessment. It asks about aspects of students' home and school lives, including demographic information, home environment, school climate for learning, out-of-school reading behaviors, and attitudes toward reading. The student questionnaire requires 15–30 minutes to complete.

Learning to Read Survey (Home Questionnaire)

This short questionnaire is addressed to the parents or primary caregivers of each student taking part in the PIRLS 2011 data collection. It asks about language spoken in the home, preschool experiences, homework activities, home-school involvement, books in the home, and parents' education and involvement. Also, it collects information on early literacy and numeracy activities, reading and quantitative readiness, parents' reading activities and attitudes toward reading. Together with information collected from the students, parents' responses will provide a more complete picture of an important context for learning to read. This questionnaire is designed to take 10–15 minutes to complete.

Teacher Questionnaire

The reading teacher of each fourth-grade class in PIRLS 2011 will be asked to complete this questionnaire, which is designed to gather information about teacher characteristics and classroom contexts for developing reading literacy. The questionnaire asks teachers about their background and education, the school climate for learning, attitudes toward teaching, classroom characteristics, and student engagement. It also asks about reading instructional time, approaches, activities, and materials; computer and library resources; homework; and preparation to teach reading. This questionnaire requires about 30 minutes of the teacher's time.

School Questionnaire

The principal of each school in PIRLS 2011 will be asked to respond to this questionnaire. It asks about school characteristics, instructional time, resources and technology, parental involvement, school climate for learning, teaching staff, the role of the principal, and students' reading readiness. It is designed to take about 30 minutes.

Curriculum Questionnaire

To provide information about the goals of reading instruction, the national research coordinator in each country will complete a questionnaire about the country's reading curriculum, including national policy on reading, goals and standards for reading instruction, time specified for reading, and provision of books and other literary resources.

PIRLS 2011 Encyclopedia

The PIRLS 2011 Encyclopedia will provide a profile of each country's education system, with a particular focus on reading education for primary-school children. The volume will provide general data on economic and educational indicators and describe how the education system is organized and how decisions about education are made. The reading curriculum, including goals, materials, and instruction, will be discussed, along with information on assessment of reading achievement.

References





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References

- Abadzi, H. (2007, October). *Absenteeism and beyond: Instructional time loss and consequences* (Policy Research Working Paper Number 4376). Washington, DC: World Bank Independent Evaluation Group.
- Adams, M.J. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: MIT Press.
- Afflerbach, P., & Cho, B. (2009). Identifying and describing constructively responsive comprehension strategies in new and traditional forms of reading. In S.E. Israel, & G.G. Duffy (Eds.), *Handbook of research on reading comprehension* (pp. 69-90). New York: Routledge.
- Aikins, N.L., & Barbarin, O. (2008). Socioeconomic differences in reading trajectories: The contribution of family, neighborhood, and school contexts. *Journal of Educational Psychology*, 100, 235-251.
- Alexander, P.A., & Jetton, T.L. (2000). Learning from text: A multidimensional and developmental perspective. In M.L. Kamil, P. Mosenthal, P.D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3) (pp. 285-310). Mahwah, NJ: Lawrence Erlbaum Associates.
- Almasi, J., & Garas-York, K. (2009). Comprehension and discussion of text. In S.E. Israel, & G.G. Duffy (Eds.), *Handbook of research on reading comprehension* (pp. 470-493). New York: Routledge.
- Anderson, R.C., & Pearson, P.D. (1984). A schema-theoretic view of basic processes in reading comprehension. In P. D. Pearson (Ed.), *Handbook of reading research* (pp. 255-291). White Plains, NY: Longman.
- Baker, C. D. (1991). Literacy practices and social relations in classroom reading events. In C. Baker & A. Luke (Eds.), *Toward a critical sociology of reading pedagogy*. Philadelphia, PA: John Benjamins.
- Baker, L. (2003). The role of parents in motivating struggling readers. *Reading & Writing Quarterly*, 19(1), 87-106.
- Baker, L., Afflerbach, P., & Reinking, D. (1996). *Developing engaged readers in school and home communities*. Hillsdale, NJ: Erlbaum.
- Baker, L., & Beall, L. (2009). Metacognitive processes and reading comprehension. In S.E. Israel, & G.G. Duffy (Eds.), *Handbook of research on reading comprehension* (pp. 373-388). New York: Routledge.

- Baker, L., Dreher, J.J., & Guthrie, J.T. (2000). *Engaging young readers: Promoting achievement and motivation*. New York: Guilford Publications.
- Baker, L., & Scher, D. (2002). Beginning readers' motivation for reading in relation to parental beliefs and home reading experiences. *Reading Psychology*, 23(4), 239-269.
- Beach, R., & Hynds, S. (1996). Research on response to literature. In R. Barr, M.L. Kamil, P. Mosenthal, & P.D. Pearson (Eds.), *Handbook of reading research* (Vol. 2) (pp. 453-489). Mahwah, NJ: Lawrence Erlbaum Associates.
- Beck, I.L., & McKeown, M.G. (2001). Text talk: Capturing the benefits of read-aloud experiences for young children. *The Reading Teacher*, 55(1), 10-20.
- Belanger, P., Winter, C., & Sutton, A. (Eds.). (1992). *Literacy and basic education in Europe on the eve of the 21st century*. Strasbourg, France: Council of Europe.
- Bialystok, E. (2006). Second-language acquisition and bilingualism at an early age and the impact on early cognitive development. In R. E. Tremblay, R. G. Barr, & R. D. Peters (Eds.) *Encyclopedia on Early Childhood Development* [online]. Montreal, Quebec: Centre of Excellence for Early Childhood Development. Retrieved November 17, 2008, from http://child-encyclopedia.com/pages/PDF/BialystokANGxp_rev.pdf
- Bos, W., Schwippert, K., & Stubbe, T.C. (2007). Die Koppelung von sozialer Herkunft und Schulerleistung im internationalen Vergleich [The linkage of social background and achievement—an international perspective]. In W. Bos, S. Hornberg, K.H. Arnold, G. Faust, L. Fried, E.M. Lankes, K. Schwippert & R. Valtin (Eds.), *IGLU 2006. Lesekompetenzen von Grundschulkindern in Deutschland im internationalen Vergleich* [International comparisons of reading competencies of primary students in Germany] (p.225-247). Munster: Waxmann.
- Bradley, R., & Corwyn, R. (2002). Socioeconomic status and child development. *Annual Review of Psychology*, 53, 371-399.
- Campbell, J.R., Kelly, D.L., Mullis, I.V.S., Martin, M.O., & Sainsbury, M. (2001). *Framework and specifications for PIRLS assessment 2001* (2nd ed.). Chestnut Hill, MA: Boston College.
- Caprara, G.V., Barbaranelli, C., Steca, P., & Malone, P.S. (2006). Teachers' self-efficacy beliefs as determinants of job satisfaction and students' academic achievement: A study at the school level. *Journal of School Psychology*, 44, 473-490.
- Chall, J. (1983). *Stages of reading development*. New York: McGraw-Hill.
- Clay, M. (1991). *Becoming literate: The construction of inner control*. Auckland, New Zealand: Heinemann.

- Clotfelter, C., Ladd, H., & Vigdor, J. (2007a, November). *Are teacher absences worth worrying about in the U.S.?* (Working Paper Number W13848). Cambridge, MA: National Bureau of Economic Research.
- Clotfelter, C., Ladd, H., & Vigdor, J. (2007b). *How and why do teacher credentials matter for student achievement?* (Working Paper Number 12828). Cambridge, MA: National Bureau of Economic Research.
- Cramer, E., & Castle, M. (Eds.). (1994). *Fostering the love of reading: The affective domain in reading education*. Newark, DE: International Reading Association.
- Creighton, D.C. (1997). Critical literacy in the elementary classroom. *Language Arts*, 74, 438-448.
- Croninger, R.G., Rice, J.K., Rathbun, A., & Nishio, M. (2007). Teacher qualifications and early learning: Effects of certification, degree, and experience on first-grade student achievement. *Economics of Education Review*, 26, 312-324.
- Darling, S., & Westberg, L. (2004). Parent involvement in children's acquisition of reading. *The Reading Teacher*, 57(8), 774-776.
- Darling-Hammond, L. (2006). Constructing 21st-century teacher education. *Journal of Teacher Education*, 57, 300-314.
- Darling-Hammond, L. (2000). How teacher education matters. *Journal of Teacher Education*, 51(3), 166-173.
- Darling-Hammond, L. (1996). The right to learn and the advancement of teaching: Research, policy, and practice for democratic education. *Educational Researcher*, 25(6), 5-17.
- Darling, S. & Westberg, L. (2004). Parental involvement in children's acquisition of reading. *The Reading Teacher*, 57(8), 774-776.
- Davies, B. (Ed.). (2009). *The essentials of school leadership* (2nd ed.). Los Angeles: Sage.
- Dearing, E., Kreider, H. & Weiss, H.B. (2008). Increased family involvement in school predicts improved child-teacher relationships and feelings about school for low-income children. *Marriage & Family Review*, 43(3), 226-254.
- Dole, J.A., Duffy, G.G., Roehler, L.R., & Pearson, P.D. (1991). Moving from the old to the new: Research on reading comprehension and instruction. *Review of Educational Research*, 61, 239-264.
- Dole, J.A., Nokes, J.D., & Drets, D. (2009). Cognitive strategy instruction. In S.E. Israel, & G.G. Duffy (Eds.), *Handbook of research on reading comprehension* (pp. 347-372). New York, NY: Routledge.
- Duke, N. (2004). The case for informational text. *Educational Leadership*, 61(6), 40-44.

- Ehri, L. (1995). The emergence of word reading in beginning reading. In P. Owen & P. Pumfrey (Eds.), *Children learning to read: International concerns* (Vol. 1) (pp. 9-31). London: Falmer Press.
- Elley, W.B. (1992). *How in the world do students read?* The Hague, Netherlands: IEA.
- Elley, W.B. (Ed.). (1994). *The IEA study of reading literacy: Achievement and instruction in thirty-two school systems*. Oxford, England: Elsevier Science Ltd.
- Erberber, E. (2009). *Analyzing Turkey's data from TIMSS 2007 to investigate regional disparities in eighth grade science achievement*. Unpublished doctoral dissertation, Boston College.
- Ertmer, P. (2003). Transforming teacher education: Visions and strategies. *Educational Technology, Research, and Development*, 51, 123-128.
- Federal Interagency Forum on Child and Family Statistics. (2008). *America's children in brief: Key national indicators of well-being, 2008*. Washington, DC: U.S. Government Printing Office.
- Gadsden, V.L. (2000). Intergenerational literacy within families. In M.L. Kamil, P. Mosenthal, P.D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3) (pp. 871-888). Mahwah, NJ: Lawrence Erlbaum Associates.
- Galda, L., & Beach, R. (2001). Response to literature as a cultural activity. *Reading Research Quarterly*, 36(1), 64-73.
- Gambrell, L.B., & Almasi, J.F. (Eds.). (1997). *Peer talk in the classroom: Learning from research*. Newark, DE: International Reading Association.
- Gambrell, L.B., & Mazzoni, S.A. (2003). Principles of best practice: Finding the common ground. In L.B. Gambrell, L.M. Morrow, S.B. Neuman, & M. Pressley, (Eds.), *Best practices in literacy instruction* (pp. 11-21). New York, NY: Guilford Press.
- Genesee, F., Lindholm-Leary, K., Saunders, W., & Christian, D. (2005). English language learners in U.S. schools: An overview of research findings. *Journal of Education for Students Placed at Risk*, 10(4), 363-385.
- Goldman, S. R., & Rakestraw, J. A. Jr. (2000). Structural aspects of constructing meaning from text. In M.L. Kamil, P. Mosenthal, P.D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3) (pp. 311-336). Mahwah, NJ: Lawrence Erlbaum Associates.
- Gradstein, M., & Schiff, M. (2006). The political economy of social exclusion with implications for immigration policy. *Journal of Population Economics*, 19(2), 327-344.

- Graesser, A., Golding, J.M., & Long, D.L. (1996). Narrative representation and comprehension. In R. Barr, M.L. Kamil, P. Mosenthal, & P.D. Pearson (Eds.), *Handbook of reading research* (Vol. 2) (pp. 171-205). Mahwah, NJ: Lawrence Erlbaum Associates.
- Greaney, V., & Neuman, S.B. (1990). The functions of reading: A cross-cultural perspective. *Reading Research Quarterly*, 25, 172-195.
- Greenwald, R., Hedges, L.V., & Laine, R.D. (1996). The effect of school resources on student achievement. *Review of Educational Research*, 66(3), 361-396.
- Guice, S.L. (1995). Creating communities of readers: A study of children's information networks as multiple contexts for responding to texts. *Journal of Reading Behavior*, 27, 379-397.
- Guthrie, J.T. (1996). Educational contexts for engagement in literacy. *The Reading Teacher*, 49(6), 432-445.
- Guthrie, J.T. (2004). Teaching for literacy engagement. *Journal of Literacy Research*, 36(1), 1-29.
- Guthrie, J.T., & Alvermann, D.E. (1999). *Engaged reading: Processes, practice, and policy implications*. New York, NY: Teachers College Press.
- Guthrie, J.T., Wigfield, A., Humenick, N.M., Perencevich, K.C., Taboada, A., & Barbosa, P. (2006). Influences of stimulating tasks on reading motivation and comprehension. *Journal of Educational Research*, 99(4), 232-246.
- Hall, K. (1998). Critical literacy and the case for it in the early years of school. *Language, Culture and Curriculum*, 11, 183-194.
- Hart, B., & Risley, T.R. (2003). The early catastrophe: The 30 million word gap. *American Educator*, 27(1), 4-9.
- Haveman, R., & Wolfe, B. (1995). The determinants of children's attainments: A review of methods and findings. *Journal of Economic Literature*, 33(4), 1829-1878.
- Hoff, E., & Elledge, C. (2005). Bilingualism as one of many environmental variables that affect language development. In J.C. Cohen, K.T. McAlister, K. Rolstad, & J. MacSwan (Eds.), *Proceedings of the 4th International Symposium on Bilingualism* (pp. 1034-1040). Somerville, MA: Cascadia Press.
- Howie, S. (2007). South Africa. In I.V.S. Mullis, M.O. Martin, A.M. Kennedy, & K.L. Trong (Eds.), *PIRLS 2006 encyclopedia: A guide to reading education in the forty PIRLS 2006 countries* (pp. 381-392). Chestnut Hill, MA: Boston College.
- Jacobs, G. (1997). *Successful strategies for extensive reading*. Singapore: RELC.
- Jeynes, W.H. (2005). A meta-analysis of the relation of parental involvement to urban elementary school student academic achievement. *Urban Education*, 40(3), 237-269.

- Kamil, M.L., Intrator, S.M., & Kim, H.S. (2000). The effects of other technologies on literacy and literacy learning. In M.L. Kamil, P. Mosenthal, P.D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3) (pp. 771-788). Mahwah, NJ: Lawrence Erlbaum Associates.
- Kennedy, A.M., Mullis, I.V.S., Martin, M.O., & Trong, K.L. (Eds.) (2007). *PIRLS 2006 encyclopedia*. Chestnut Hill, MA: Boston College.
- Kintsch, W., & Kintsch, E. (2005). Comprehension. In S. Paris, & S. Stahl (Eds.), *Children's reading comprehension and assessment* (pp. 71-92). Mahwah, NJ: Lawrence Erlbaum Associates.
- Kirsch, I.S., Braun, H., Yamamoto, K., & Sum, A. (2007). *America's perfect storm: Three forces changing our nation's future*. Princeton, NJ: Policy Evaluation and Research Center, Educational Testing Service.
- Kirsch, I.S., & Mosenthal, P.B. (1989). *Understanding documents. A monthly column appearing in the Journal of Reading*. Newark, DE: International Reading Association.
- Kirsch, I.S., & Mosenthal, P.B. (1991). *Understanding documents. A monthly column appearing in the Journal of Reading*. Newark, DE: International Reading Association.
- Kobayashi, M. (2002). Method effects on reading comprehension test performance: Text organization and response format. *Language Testing*, 19, 193-220.
- Kucer, S.B. (2005). *Dimensions of literacy: A conceptual base for teaching reading and writing in school settings* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- Kurtz-Costes, B.E., & Schneider, W. (1994). Self-concept, attributional beliefs, and school achievement: A longitudinal analysis. *Contemporary Educational Psychology*, 19, 199-216.
- Labbo, L.D., & Kuhn, M. (1998). Electronic symbol making: Young children's computer-related emerging concepts about literacy. In D. Reinking, M.C. McKenna, L.D. Labbo, & R.D. Kieffer (Eds.), *Handbook of literacy and technology: Transformations in a post-typographic world* (pp. 79-92). Mahwah, NJ: Lawrence Erlbaum Associates.
- Langer, J.A. (1990). The processes of understanding: Reading for literary and informative purposes. *Research in the Teaching of English*, 24, 229-259.
- Langer, J.A. (1995). *Envisioning literature*. Newark, DE: International Reading Association.
- Lee, J., & Barro, R.J. (2001). Schooling quality in a cross-section of countries. *Economica, New Series*, 68(272), 465-488.
- Leppänen, U., Aunola, K., & Nurmi, J.E. (2005). Beginning readers' reading performance and reading habits. *Journal of Research in Reading*, 28(4), 383-399.

- Leseman, P.P.M., & de Jong, P.F. (2001). How important is home literacy for acquiring literacy in school? In L. Verhoeven & C. Snow (Eds.), *Literacy and motivation: Reading engagement in individuals and groups* (pp. 71-94). Mahwah, NJ: Lawrence Erlbaum.
- Leu, D.J., Kinzer, C.J., Coiro, J.L. & Cammack, D.W. (2004). Toward a theory of new literacies emerging from the internet and other information and communication technologies. In R.B. Ruddell and N.J. Unrau (Eds.), *Theoretical models and processes of reading* (5th ed.) (pp. 1570-1613). Newark, DE: International Reading Association.
- Levy, B.A., Gong, Z., Hessels, S., Evans, M.A., & Jared, D. (2006). Understanding print: Early reading development and the contributions of home literacy experiences. *Journal of Experimental Child Psychology*, 93, 63-93.
- Lipson, M.Y., & Wixson, K.K. (1997). *Assessment & instruction of reading and writing difficulties: An interactive approach* (3rd ed.). Boston: Pearson Allyn & Bacon.
- Louis, K.S., Marks, H.M., & Kruse, S. (1996). Teachers' professional community in restructuring schools. *American Educational Research Journal*, 33(4), 757-798.
- Lundberg, I., & Linnakyla, P. (1993). *Teaching reading around the world*. Hamburg, Germany: IEA.
- Martin, M.O., Mullis, I.V.S., & Gonzalez, E.J. (2004, May). *Home environments fostering children's reading literacy: Results from the PIRLS 2001 study of reading literacy achievement in primary schools in 35 countries*. Paper presented at the 1st IEA International Research Conference, Lefkosia, Cyprus.
- Marzano, R.J., Waters, T., & McNulty, B.A. (2005). *School leadership that works: From research to results*. Alexandria, VA: Association for Supervision and Curriculum Development.
- McKenna, M. C. (1998). Electronic texts and the transformation of beginning reading. In D. Reinking, M.C. McKenna, L.D. Labbo, & R.D. Kieffer (Eds.), *Handbook of literacy and technology: transformations in a post-typographic world* (pp. 79-92). Mahwah, NJ: Lawrence Erlbaum Associates.
- McKenna, M.C. (2001). Development of reading attitudes. In L. Verhoeven & C. Snow (Eds.), *Literacy and motivation: Reading engagement in individuals and groups* (pp. 135-158). Mahwah, NJ: Lawrence Erlbaum.
- McLaughlin, M., McGrath, D.J., Burian-Fitzgerald, A., Lanahan, L., Scotchmer, M., Enyeart, C., & Salganik, L. (2005, April). *Student content engagement as a construct for the measurement of effective classroom instruction and teacher knowledge*. Paper presented at the annual meeting of the American Educational Research Association, Montréal, Québec.

- Miller, S. D., & Faircloth, B. S. (2009). Motivation and reading comprehension. In S.E. Israel, & G.G. Duffy (Eds.), *Handbook of research on reading comprehension* (pp. 307-322). New York: Routledge.
- Miller, R., Murnane, R., & Willett, J. (2007). *Do teacher absences impact student achievement? Longitudinal evidence from one urban school district* (Working Paper Number W13356). Washington, DC: National Bureau of Economic Research.
- Moats, L.C. (1999). *Teaching reading is rocket science: What expert teachers of reading should know and be able to do* (Item No. 372). Washington, DC: American Federation of Teachers.
- Mullis, I.V.S., Kennedy, A.M., Martin, M.O., Sainsbury, M. (2006). *PIRLS 2006 assessment framework and specifications* (2nd ed). Chestnut Hill, MA: Boston College.
- Mullis, I.V.S., Martin, M.O., Kennedy, A.M., & Flaherty, C.L. (Eds.). (2002). *PIRLS 2001 encyclopedia: A reference guide to reading education in the countries participating in IEA's Progress in International Reading Literacy Study (PIRLS)*. Chestnut Hill, MA: Boston College.
- Mullis, I.V.S., Martin, M.O., Gonzalez, E.J., & Kennedy, A.M. (2003). *PIRLS 2001 international report: IEA's study of reading literacy achievement in primary school in 35 countries*. Chestnut Hill, MA: Boston College.
- Mullis, I.V.S., Martin, M.O., & Gonzalez, E.J. (2004). *International achievement in the processes of reading education: Results from PIRLS 2001 in 35 countries*. Chestnut Hill, MA: Boston College.
- Mullis, I.V.S., Martin, M.O., Kennedy, A.M., & Foy, P. (2007). *PIRLS 2006 international report: IEA's progress in international reading literacy study in primary schools in 40 countries*. Chestnut Hill, MA: Boston College.
- National Education Association. (2008). *Parent, family, community involvement in education* (Policy Brief No. 11). Washington, DC: Author.
- National Reading Panel. (2000). *Report of the National Reading Panel: Teaching children to read* (pp. 3.21-3.22). Washington, DC: Author.
- Neuman, S.B. (1999). Books make a difference: A study of access to literacy. *Reading Research Quarterly*, 34, 286-311.
- Nichols, W.D., Zellner, L.J., Rupley, W.H., Willson, V.L., Kim, Y., Mergen, S., & Young, C.A. (2005). What affects instructional choice? Profiles of K-2 teachers' use of reading instructional strategies and methods. *Journal of Literacy Research*, 37(4), 437-458.
- Organisation for Economic Cooperation and Development. (1999). *Measuring student knowledge and skills: A new framework for assessment*. Paris: Author.
- Palardy, G.J., & Rumberger, R.W. (2008). Teacher effectiveness in first grade: The importance of background qualifications, attitudes, and instructional practices for student learning. *Educational Evaluation and Policy Analysis*, 30(2), 111-140.

- Palincsar, A., & Duke, N. (2004). The role of text and text-reader interactions in young children's reading development and achievement. *The Elementary School Journal*, 105(2), 183-197.
- Paris, S.G., Wasik, B.A., & Turner, J.C. (1996). The development of strategic readers. In R. Barr, M.L. Kamil, P. Mosenthal, & P.D. Pearson (Eds.), *Handbook of reading research* (Vol. 2) (pp. 609-640). Mahwah, NJ: Lawrence Erlbaum Associates.
- Pressley, M. (2000). What should comprehension instruction be the instruction of? In M.L. Kamil, P. Mosenthal, P.D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3) (pp. 545-562). Mahwah, NJ: Lawrence Erlbaum Associates.
- Pressley, M. (2006, April). *What the future of reading research could be*. Paper presented at the meeting of the International Reading Association's Reading Research, Chicago, Illinois.
- Pressley, M. & Gaskins, I. (2006). Metacognitively competent reading comprehension is constructively responsive reading: How can such reading be developed in students. *Metacognition Learning*, 1, 99-113.
- Purves, A.C., & Elley, W.B. (1994). The role of the home and student differences. In W.B. Elley (Ed.), *The IEA study of reading literacy: Achievement and instruction in thirty-two school systems*. Oxford, England: Elsevier Science Ltd.
- Raikes, H., Pan, B.A., Luze, G., Tamis-LeMonda, C.S., Brooks-Gunn, J., Constantine, J., Tarullo, L.B., Raikes, H.A., & Rodriguez, E.T. (2006). Mother-child bookreading in low-income families: Correlates and outcomes during the first three years of life. *Child Development*, 77, 924-953.
- Rivkin, S.G., Hanushek, E.A., & Kain, J.F. (2005). Teachers, schools, and academic achievement. *Econometrica*, 73(2), 417-458.
- Robinson, V.M.J. (2007). *School leadership and student outcomes: Identifying what works and why* (ACEL Monograph Series No.41). Winmalee, NSW, Australia: Australian Council for Educational Leaders Inc.
- Ruddell, R.B., & Unrau, N.J. (Eds.). (2004). *Theoretical models and processes of reading* (5th ed.). Newark, DE: International Reading Association.
- Russell, M., Bebell, D., O'Dwyer, L., & O'Connor, K. (2003). Examining teacher technology use: Implications for preservice and inservice teacher preparation. *Journal of Teacher Education*, 54, 297-310.
- Sainsbury, M., & Schagen, I. (2004). Attitudes to reading at ages nine and eleven. *Journal of Research in Reading*, 27, 373-386.
- Scanlon, D.M., Gelzheiser, L.M., Vellutino, F.R., Schatschneider, C., & Sweeney, J.M. (2008). *Learning and Individual Differences*, 18, 346-359.

- Scarborough, H.S. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S.B. Neuman & D.K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 97-110). New York, NY: Guilford Press.
- Senechal, M., & LeFevre, J. (2002). Parental involvement in the development of children's reading skill: A five-year longitudinal study. *Child Development*, 73(2), 445-460.
- Shanahan, T. (2006). Relations among oral language, reading, and writing development. In C. Macarthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 171-186). New York, NY: Guilford Press.
- Shanahan, T., & Neuman, S.B. (1997). Conversations: Literacy research that makes a difference. *Reading Research Quarterly*, 32(2), 202-210.
- Shapiro, J., & Whitney, P. (1997). Factors involved in the leisure reading of upper elementary school students. *Reading Psychology*, 18, 343-70.
- Sherblom, S.A., Marshall, J.C., & Sherblom, J.C. (2006). The relationship between school climate and math and reading achievement. *Journal of Research in Character Education*, 4(1&2), 19-31.
- Snow, C.E. (2002). *Reading for understanding: Toward an R&D program in reading comprehension*. Santa Monica, CA: RAND.
- Snow, C.E., & Tabors, P. (1996). Intergenerational transfer of literacy. In L.A. Benjamin, & J.E. Lord (Eds.), *Family literacy: Directions in research and implications for practice* (pp. 73-79). Washington, DC: U.S. Department of Education.
- Sonnenschein, S., & Munsterman, K. (2002). The influence of home-based reading interactions on 5-year-olds' reading motivations and early literacy development. *Early Childhood Research Quarterly*, 17, 318-337.
- Stierer, B., & Maybin J. (Eds.). (1994). *Language, literacy and learning in educational practice*. Buckingham, England: Open University Press.
- Street, B.V. (2001). Literacy empowerment in developing societies. In L. Verhoeven, & C. Snow (Eds.), *Literacy and motivation: Reading engagement in individuals and groups* (pp. 71-94). Mahwah, NJ: Lawrence Erlbaum.
- Taras, H. (2005). Nutrition and student performance at school. *Journal of School Health*, 75(6), 199-213.
- Taube, K., & Mejdning, J. (1996). A nine-country study: What were the differences between the low- and high-performing students in the IEA Reading Literacy Study? In M. Binkley, K. Rust, & T. Williams (Eds.), *Reading literacy in an international perspective* (pp. 67-68). Washington, DC: U.S. Department of Education.

- Taylor, B.M., Pearson, P.D., Clark, K., & Walpole, S. (2000). Effective schools and accomplished teachers: Lessons about primary-grade reading instruction in low-income schools. *The Elementary School Journal*, 101(2), 121-165.
- Taylor, N., & Vinjevold, P. (2000). The new South Africa: Idealism, capacity and the market. In D. Coulby, R. Cowen, & C. Jones, (Eds.), *Education in times of transition*. Sterling, VA: Stylus Publishing Inc.
- Trong, K.L. (2009). *Using PIRLS 2006 to measure equity in reading achievement internationally*. Unpublished doctoral dissertation, Boston College.
- Tse, S.K., & Loh, E.K.Y. (2007). The impact of PIRLS in Hong Kong, SAR. In K. Schwippert (Ed.), *Progress in reading literacy: The impact of PIRLS 2001 in 13 countries*. New York, NY: Waxmann Muenster.
- UNESCO Institute for Statistics (1999). *Operation manual for ISCED-1997 international standard classification* (1st ed.). Montreal, Canada: UNESCO.
- United States National Commission on Libraries and Information Science. (2008). *Schools that work!* (3rd ed.). Retrieved November 17, 2008, from http://www2.scholastic.com/content/collateral_resources/pdf/s/slw3_2008.pdf
- van Diepen, M., Verhoeven, L., & Aarnoutse, C. (2008, September). *Determinants of reading literacy in industrialized societies*. Paper presented at the 3rd IEA International Research Conference, Taipei, Chinese Taipei.
- van der Voort, T.H.A. (2001). Television's impact on children's leisure time reading and reading skills. In L. Verhoeven & C. Snow (Eds.), *Literacy and motivation: Reading engagement in individuals and groups* (pp. 95-121). Mahwah, NJ: Lawrence Erlbaum.
- van Dijk, T.A., & Kintsch, W. (1983). *Strategies of discourse comprehension*. New York, NY: Academic Press.
- Verhoeven, L. (2002). Sociocultural and cognitive constraints on literacy development. *Journal of Child Language*, 29, 484-88.
- Wagner, D.A. (1991). Literacy in a global perspective. In I. Lundberg and T. Høien (Eds.), *Literacy in a world of change: Perspectives on reading and reading disability*. Stavanger, Norway: Centre for Reading Research.
- Walter, P. (1999). Defining literacy and its consequences in the developing world. *International Journal of Lifelong Education*, 18, 31-48.
- Ware, H., & Kitsantas, A. (2007). Teacher and collective efficacy beliefs as predictors of professional commitment. *Journal of Educational Research*, 100(5), 303-310.
- Wayne, A.J., & Youngs, P. (2003). Teacher characteristics and student achievement gains. *Review of Educational Research*, 73, 89-122.

- Weaver, C.A., & Kintsch, W. (1996). Expository text. In R. Barr, M.L. Kamil, P. Mosenthal, & P.D. Pearson (Eds.), *Handbook of reading research* (Vol. 2) (pp. 230-245). Mahwah, NJ: Lawrence Erlbaum Associates.
- Weinberger, J. (1996). A longitudinal study of children's early literacy experiences at home and later literacy development at home and school. *Journal of Research in Reading*, 19, 14-24.
- Wells, C.B. (1985). Preschool literacy-related activities and success in school. In M.P. Olson, D.N. Terrance, & A. Hildyard (Eds.), *Literacy, language and learning: The nature and consequences of literacy* (pp. 229-255). Cambridge, England: Cambridge University Press.
- Wigfield, A. & Guthrie, J. (1997). Relations of children's motivation for reading to the amount and breadth of their reading. *Journal of Educational Psychology*, 89(3), 420-432.
- Willms, J.D. (2006). *Learning divides: Ten policy questions about the performance and equity of schools and schooling systems*. Montreal, Canada: UNESCO Institute for Statistics.
- Wolf, R. M. (Ed.). (1995). *The IEA Reading Literacy Study: Technical report*. The Hague, Netherlands: IEA.
- Yoon, K.S., Duncan, T., Lee, S.W., Scarloss, B., & Shapley, K. (2007). *Reviewing the evidence on how teacher professional development affects student achievement*. (Issues & Answers Report, REL 2007–No. 033). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southwest. Retrieved July 2, 2009, from <http://ies.ed.gov/ncee/edlabs>

IEA READING RESEARCH

- Alivernini, F., Manganelli, S., & Vinci, E. (2008, September). *Multilevel analysis of PIRLS 2006 data for Italy*. Paper presented at the 3rd IEA International Research Conference, Taipei, Chinese Taipei.
- Binkley, M., Rust, K., & Williams, T. (Eds.). (1996). *Reading literacy in an international perspective: Collected papers from the IEA Reading Literacy Study*. Washington, DC: U.S. Department of Education.
- Bos, W., Lankes, E.M., Schwippert, K., Walther, G., & Valtin, R. (Hrsg.). (2003). *Erste Ergebnisse aus IGLU. Schülerleistungen am Ende der vierten Jahrgangsstufe im internationalen Vergleich*. Münster, Germany: Waxmann.
- Bos, W., Lankes, E.M., Schwippert, K., Valtin, R., & Walther, G. (Hrsg.). (2004). *IGLU. Einige Länder der Bundesrepublik Deutschland im nationalen und internationalen Vergleich*. Münster, Germany: Waxmann.

- Chamberlain, M. & Caygill, R. (2008, September). *New Zealand students' engagement with the PIRLS 2006 reading passages*. Paper presented at the 3rd IEA International Research Conference, Taipei, Chinese Taipei.
- Chan, Y., Ko, H., & Tse, S.K. (2008, September). *Family factors and reading achievement: Chinese community perspective*. Paper presented at the 3rd IEA International Research Conference, Taipei, Chinese Taipei.
- Chiu, C., & Ko, H. (2006, November). *Relations between parental factors and children's reading behaviors and attitudes: Results from PIRLS 2005 field test in Taiwan*. Paper presented at the 2nd IEA International Research Conference, Washington, D.C.
- Chiu, C., & Ko, H. (2008, September). *Parental factors related to children's reading: Evidence from comparing transnational marriage families and local families*. Paper presented at the 3rd IEA International Research Conference, Taipei, Chinese Taipei.
- Diaconu, D. (2004, May). *The effects of early literacy activities upon reading achievement in grade four in Eastern European countries*. Paper presented at the 1st IEA International Research Conference, Lefkosia, Cyprus.
- Doupona-Horvat, M. (2004, May). *Reading achievement and school performance*. Paper presented at the 1st IEA International Research Conference, Lefkosia, Cyprus.
- Doupona, M., & Krevh, A. (2006, November). *Schools which exceed expectations: Cross-country comparison*. Paper presented at the 2nd IEA International Research Conference, Washington, D.C.
- Elijio, A. (2006, November). *Reading achievements in urban and rural communities: Comparative analysis of the equity in education*. Paper presented at the 2nd IEA International Research Conference, Washington, D.C.
- Elley, W.B. (1992). *How in the world do students read?* The Hague, Netherlands: IEA.
- Elley, W.B. (Ed.). (1994). *The IEA study of reading literacy: Achievement and instruction in thirty-two school systems*. Oxford, England: Elsevier Science Ltd.
- Frank, E., & Rosen, M. (2008, September). *On the importance of parental participation for student achievement in reading literacy*. Paper presented at the 3rd IEA International Research Conference, Taipei, Chinese Taipei.
- Geske, A., & Ozola, A. (2008, September). *Different influence of contextual educational factors on boys' and girls' reading achievement*. Paper presented at the 3rd IEA International Research Conference, Taipei, Chinese Taipei.
- Gustafsson, J.E., & Rosen, M. (2004, May). *The 10-year trend study of reading literacy: A multivariate reanalysis*. Paper presented at the 1st IEA International Research Conference, Lefkosia, Cyprus.

- Hameedy, M.A. (2004, May). *Bilinguality of home and school in Iran: Conditions and consequences as showcased in PIRLS*. Paper presented at the 1st IEA International Research Conference, Lefkosia, Cyprus.
- Hansen, K.Y., Rosen, M., & Gustafsson, J.E. (2004, May). *Effects of socio-economic status on reading achievement at class and individual levels in Sweden in 1991 and 2001*. Paper presented at the 1st IEA International Research Conference, Lefkosia, Cyprus.
- Howie, S., Venter, E., & van Staden, S. (2006, November). *The effect of multilingual policies on performance and progression in reading literacy in South African primary schools*. Paper presented at the 2nd IEA International Research Conference, Washington, D.C.
- Howie, S., Venter, E., & van Staden, S. (2008, September). *The relationship between English second language proficiency and mother tongue in non-native English speakers in South Africa*. Paper presented at the 3rd IEA International Research Conference, Taipei, Chinese Taipei.
- INVALSI. (2003, May). *Studio IEA ICONA: Rapporto di ricerca*. Retrieved June 1, 2004, from www.invalsi.it/ricerche-internazionali/IEA-icona/rapporto/RapportoFinaleMaggioICONA.pdf
- Johansone, I. (2004, May). *PIRLS 2001 results in the context of the European Union expansion*. Paper presented at the 1st IEA International Research Conference, Lefkosia, Cyprus.
- Johansson, S., & Rosen, M. (2008, September). *Teacher assessment of student reading skills as a function of student reading achievement and grade*. Paper presented at the 3rd IEA International Research Conference, Taipei, Chinese Taipei.
- Kennedy, A.M., & Trong, K.L. (2006, November). *A comparison of fourth-graders' academic self-concept and attitudes toward reading, mathematics, and science in PIRLS and TIMSS countries*. Paper presented at the 2nd IEA International Research Conference, Washington D.C.
- Kennedy, A.M. (2008, September). *Examining gender and fourth graders' reading habits and attitudes in PIRLS 2001 and 2006*. Paper presented at the 3rd IEA International Research Conference, Taipei, Chinese Taipei.
- Kontogiannopoulou-Polydorides, G., Frogoulis, G., & Basbas, C. (2004, May). *Culturally embedded mapping of students' answers in PIRLS items*. Paper presented at the 1st IEA International Research Conference, Lefkosia, Cyprus.
- Lucisano, P. (1994). *Alfabetizzazione e lettura in Italia e nel mondo: I risultati dell'indagine internazionale IEA SAL*. Napoli, Italy: Tecnolid.
- Lundberg, I., & Linnakyla, P. (1993). *Teaching reading around the world*. Hamburg, Germany: IEA.

- Martin, M.O., Mullis, I.V.S., & Gonzalez, E.J., (2004, May). *Home environments fostering children's reading literacy: Results from the PIRLS 2001 study of reading literacy achievement in primary schools in 35 countries*. Paper presented at the 1st IEA International Research Conference, Lefkosia, Cyprus.
- Martin, M.O., Mullis, I.V.S., Gonzalez, E.J. & Kennedy, A.M. (2003). *Trends in children's reading literacy achievement 1991-2001: IEA's repeat in nine countries of the 1991 Reading Literacy Study*. Chestnut Hill, MA: Boston College.
- Martin, M., Mullis, I.V.S., & Foy, P. (2008, September). *Interrelationships among reading achievement, grade level, and age in PIRLS 2006*. Paper presented at the IEA International Research Conference, Taipei, Chinese Taipei.
- Monseur, C., Sibberns, H., & Hastedt, D. (2006, November). *Equating errors in international surveys in education*. Paper presented at the IEA International Research Conference, Washington, D.C.
- Moyana, R. (1991). Evidence of students' performance in expository passages and non-mathematical documents: Data from the pilot version of the IEA research study. *Zimbabwe Journal of Educational Research*, 3(1), 1-22.
- Moyana, R. (1991). Evidence of acquisition of the reading skill related to comprehension of the narrative passages: Data from the international literacy study pilot testing in Zimbabwe. *Zimbabwe Journal of Educational Research*, 3(2), 125-143.
- Moyana, R. (2000). *Reading literacy at junior secondary school level in Zimbabwe*. Harare, Zimbabwe: University of Zimbabwe Publications.
- Mullis, I.V.S., Martin, M.O., Kennedy, A.M., & Flaherty, C.L. (Eds.). (2002). *PIRLS 2001 encyclopedia: A reference guide to reading education in the countries participating in IEA's Progress in International Reading Literacy Study (PIRLS)*. Chestnut Hill, MA: Boston College.
- Mullis, I.V.S., Martin, M.O., Gonzalez, E.J., & Kennedy, A.M. (2003). *PIRLS 2001 international report: IEA's study of reading literacy achievement in primary school in 35 countries*. Chestnut Hill, MA: Boston College.
- Mullis, I.V.S., Martin, M.O., & Gonzalez, E.J. (2004). *International achievement in the processes of reading education: Results from PIRLS 2001 in 35 countries*. Chestnut Hill, MA: Boston College.
- Myrberg, E., & Rosen, M. (2004, May). *The impact of differences in teacher competence on reading achievement in independent and public schools in Sweden*. Paper presented at the 1st IEA International Research Conference, Lefkosia, Cyprus.
- Myrberg, E., & Rosen, M. (2006, November). *A cross-country comparison of direct and indirect effects of parents' education on students' reading achievement*. Paper presented at the 2nd IEA International Research Conference, Washington, D.C.

- Netten, A., Verhoeven, L., & Droop, M. (2008, September). *Predictors of reading literacy in the Netherlands*. Paper presented at the IEA International Research Conference, Taipei, Chinese Taipei.
- Ogle, L.T., Sen, A., Pahlke, E., Jocelyn, L., Kastberg, D., Roey, S., & Williams, T. (2003). *International comparisons in fourth-grade reading literacy: Findings from the Progress in International Reading Literacy Study (PIRLS) of 2001*. Washington, DC: National Center for Education Statistics.
- Ogle, L.T., Miller, D.C., & Malley, L.B. (2006, November). *Characteristics of U.S. fourth-grade language minority students in an international context: Findings from PIRLS 2001*. Paper presented at the 2nd IEA International Research Conference, Washington, D.C.
- Ogle, L.T., Begnum, C.B., & Solheim, R.G. (2008, September). *Comparisons of teachers of language minority fourth-graders in Norway and the United States: Results from PIRLS 2006*. Paper presented at the IEA International Research Conference, Taipei, Chinese Taipei.
- Papanastasiou, C., & Froese, V. (2002). *Reading literacy in 14 countries*. Lefkosia, Cyprus: University of Cyprus.
- Papanastasiou, C. (2006, November). *Factors that distinguish the most from the least effective schools in reading: A residual approach*. Paper presented at the 2nd IEA International Research Conference, Washington, D.C.
- Park, H. (2006, November). *Home reading environments and children's reading performance: A comparative study of 25 countries*. Paper presented at the 2nd IEA International Research Conference, Washington, D.C.
- Pavan De Gregorio, G. (2004). *Studio IEA PIRLS-ICONA. Valutazione e insegnamento della lettura nella scuola elementare*. Rome: Armando Editore.
- Postlethwaite, T.N., & Ross, K. (1992). *Effective schools in reading: Implications for educational planners*. Hamburg, Germany: IEA.
- Rosen, M., Hansen, K.Y., & Gustafsson, J. E. (2004, May). *Measures of self-reported reading resources, attitudes, and activities based on latent variable modeling*. Paper presented at the 1st IEA International Research Conference, Lefkosia, Cyprus.
- Rosen, M. (2006, November). *Analyzing trends in levels of reading literacy between 1970 and 2001 in Sweden*. Paper presented at the 2nd IEA International Research Conference, Washington, D.C.
- Schagen, I. (2004, May). *Multilevel analysis of PIRLS data for England*. Paper presented at the 1st IEA International Research Conference, Lefkosia, Cyprus.
- Schagen, I., & Twist, L. (2008, September). *Adding value to PIRLS by combining with national data and using sophisticated modeling techniques*. Paper presented at the 3rd IEA International Research Conference, Taipei, Chinese Taipei.

- Schagen, I., Twist, L., & Rutt, S. (2008, September). *Estimating trends in national performance from international surveys with a focus on PIRLS results for England*. Paper presented at the 3rd IEA International Research Conference, Taipei, Chinese Taipei.
- Seo, M., Chiu, C., & Roussos, L. (2008, September). *Evaluating the dimensionality of the 2001 PIRLS reading assessment: An application of DIMTEST with DESM and CFA*. Paper presented at the 3rd IEA International Research Conference, Taipei, Chinese Taipei.
- Thorndike, R.L. (1973). *Reading comprehension education in fifteen countries. International studies in evaluation III*. Stockholm: Almqvist and Wiksell.
- Tonnessen, F.E. (Ed.). (1993). Special issue on the IEA Reading Literacy Study. *Scandinavian Journal of Educational Research*, 37(1).
- Trong, K.L., & Kennedy, A.M. (2006, November). *Examining literacy, gender, and the home environment in PIRLS 2001 countries*. Paper presented at the 2nd IEA International Research Conference, Washington, D.C.
- Trong, K. (2008, September). *Using PIRLS data to measure equity in reading achievement across countries*. Paper presented at the 3rd IEA International Research Conference, Taipei, Chinese Taipei.
- van Daal, V., Begnum, A.C., & Solheim, R.G., (2006, November). *PIRLS 2001: Secondary analysis of Norwegian data*. Paper presented at the 2nd IEA International Research Conference, Washington, D.C.
- van Daal, V., Begnum, A. C., Solheim, R. G., & Ader, H. (2008, September). *Nordic comparisons in PIRLS 2006*. Paper presented at the 3rd IEA International Research Conference, Taipei, Chinese Taipei.
- Van Damme, J., Vanhee, L., & Pustjens, H. (2008, September). *Explaining reading achievement in PIRLS by age and SES*. Paper presented at the 3rd IEA International Research Conference, Taipei, Chinese Taipei.
- van Diepen, M., Aarnoutse, C., & Verhoeven, L. (2004, May). *Determinants of reading literacy in eleven countries with high economic status*. Paper presented at the 1st IEA International Research Conference, Lefkosia, Cyprus.
- van Staden, S., & Howie, S. (2008, September). *Reading between the lines: Contributing factors that affect grade 4 student reading performances as measured across South Africa's 11 languages*. Paper presented at the 3rd IEA International Research Conference, Taipei, Chinese Taipei.
- Wagemaker, H., Taube, K., Munck, I., Kontogiannopoulou-Polydorides, G., & Martin, M. O. (1996). *Are girls better readers? Gender differences in reading literacy*. Amsterdam: IEA.

- Wolff, U. (2004, May). *Profiles of reading achievement*. Paper presented at the 1st IEA International Research Conference, Lefkosia, Cyprus.
- Yang-Hansen, K. (2006, November). *Changes in reading variations and their relationship with socioeconomic status at school and individual levels in trend countries*. Paper presented at the 2nd IEA International Research Conference, Washington, D.C.
- Yang-Hansen, K., & Gustafsson, J. (2008, September). *Methodology for conducting country-level longitudinal analyses: A review and comparison of procedures*. Paper presented at the 3rd IEA International Research Conference, Taipei, Chinese Taipei.
- Zuzovsky, R. (2008, September). *The impact of socioeconomic factors on achievement gaps on reading literacy between Hebrew speaking and Arabic speaking students in Israel*. Paper presented at the 3rd IEA International Research Conference, Taipei, Chinese Taipei.

Appendix A

Acknowledgements





A

Appendix A

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Appendix B

Sample PIRLS Passages, Questions, and Scoring Guides

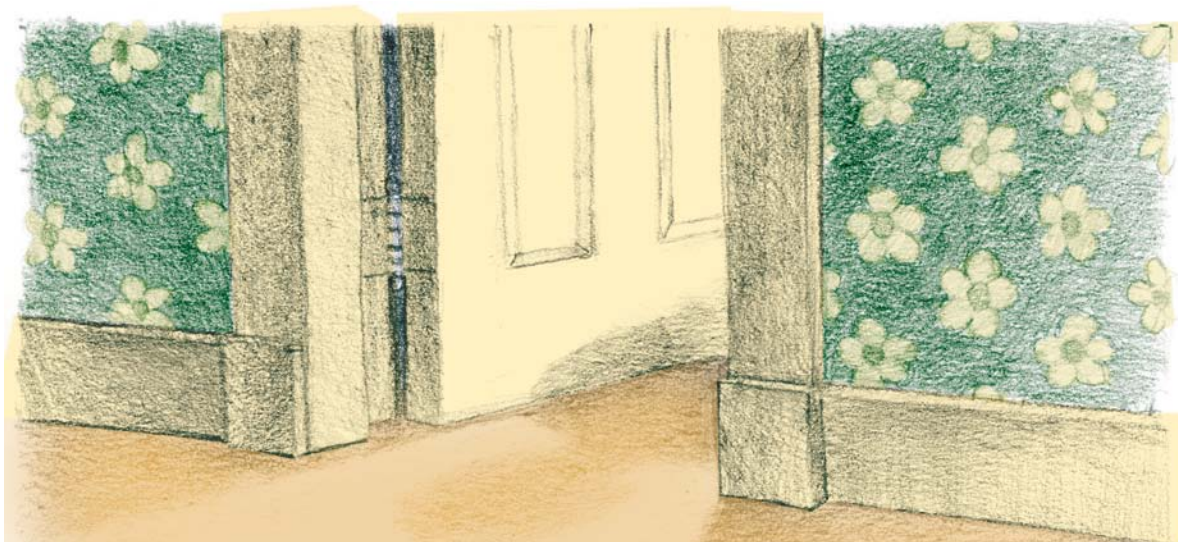
Reading for Literary Experience

An Unbelievable Night

Reading to Acquire and Use Information

Searching for Food





An Unbelievable Night

by Franz Hohler

Anina was ten years old, so even half asleep she could find her way from her room to the bathroom. The door to her room was usually open a crack, and the nightlight in the hallway made it light enough to get to the bathroom past the telephone stand.

One night, as she passed the telephone stand on her way to the bathroom, Anina heard something that sounded like a quiet hissing. But, because she was half asleep, she didn't really pay any attention to it. Anyway, it came from pretty far away. Not until she was on her way back to her room did she see where it came from. Under the telephone stand there was a large pile of old newspapers and magazines, and this pile now began to move. That was where the noise was coming from. All of a sudden the pile started to fall over – right, left, forwards, backwards – then there were newspapers and magazines all over the floor.

Anina could not believe her eyes as she watched a grunting and snorting crocodile come out from under the telephone stand.

Anina was frozen to the spot. Her eyes wide as saucers, she watched the crocodile crawl completely out of the newspapers and slowly look around the apartment. It seemed to have just come out of the water because its whole body was dripping wet. Wherever the crocodile stepped, the carpet under it became drenched.



The crocodile moved its head back and forth letting out a loud hissing sound. Anina swallowed hard, looking at the crocodile's snout with its terribly long row of teeth. It swung its tail slowly back and forth. Anina had read about that in "Animal Magazine"—how the crocodile whips the water with its tail to chase away or attack its enemies.

Her gaze fell on the last issue of "Animal Magazine," which had fallen from the pile and was lying at her feet. She got another shock. The cover of the magazine used to have a picture of a big crocodile on a river bank. The river bank was now empty!

Anina bent down and picked up the magazine. At that moment the crocodile whipped his tail so hard that he cracked the big vase of sunflowers on the floor and the sunflowers scattered everywhere. With a quick jump Anina was in her bedroom. She slammed the door shut, grabbed her bed and pushed it up against the door. She had built a barricade that would keep her safe from the crocodile. Relieved, she let her breath out.

But then she hesitated. What if the beast was simply hungry? Maybe to make the crocodile go away you had to give it something to eat?

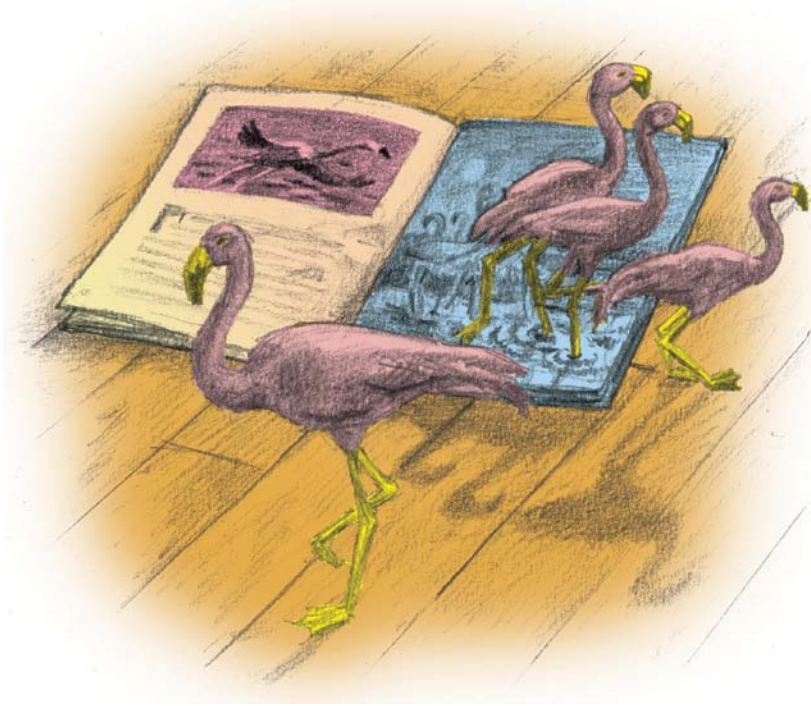
Anina looked again at the animal magazine. If the crocodile could crawl out of a picture then perhaps other animals could too. Anina hastily flipped through the magazine and stopped at a swarm of flamingos in a jungle swamp. Just right, she thought. They look like a birthday cake for crocodiles.

Suddenly there was a loud crack and the tip of the crocodile's tail pushed through the splintered door.

Quickly, Anina held the picture of the flamingos up to the hole in the door and called as loud as she could, "Get out of the swamp! Shoo! Shoo!" Then she threw the magazine through the hole into the hallway, clapped her hands and yelled and screamed.

She could hardly believe what happened next. The entire hallway was suddenly filled with screeching flamingos wildly flapping their wings and running around all over the place on their long, skinny legs. Anina saw one bird with a sunflower in its beak and another grabbing her mother's hat from its hook. She also saw a flamingo disappear into the crocodile's mouth. With two quick bites he swallowed the flamingo and quickly followed it with another, the one with the sunflower in its beak.

After two portions of flamingo the crocodile seemed to have had enough and lay down contentedly in the middle of the hallway. When he had closed his eyes and no longer moved,



Anina quietly opened her door and slipped through it into the hallway. She placed the empty magazine cover in front of the crocodile's nose. "Please," she whispered, "please go back home." She crept back into the bedroom and looked through the hole in the door. She saw the crocodile back on the cover of the magazine.

She now went cautiously into the living room where the flamingos were crowded around the sofa and standing on the television. Anina opened the magazine to the page with the empty picture. "Thank you," she said, "thank you very much. You may now go back to your swamp."

In the morning, it was very difficult for her to explain the giant wet spot on the floor and the broken door to her parents. They weren't convinced about the crocodile even though her mother's hat was nowhere to be found.



Adapted from *Eine Wilde Nacht in Der Große Zwerg und Andere Geschichten* by Franz Hohler. Published in 2003 by Deutscher Taschenbuch Verlag, Munchen, Germany. Illustrations copyright © 2003, IEA. An effort has been made to obtain copyright permission.

Questions An Unbelievable Night

1. What was the **first** sign that something unusual was happening?

- ☐ A A pile of newspapers began to move.
- ☐ B Anina saw the magazine cover.
- ☐ C The door to her room was broken.
- ★ ☐ D Anina heard a hissing sound.

2. Where did the crocodile come from?

- ☐ A the bathroom
- ★ ☐ B a magazine cover
- ☐ C under the bed
- ☐ D a nearby river

3. Which words tell you that Anina was frightened?

- ★ ☐ A “frozen to the spot”
- ☐ B “could not believe her eyes”
- ☐ C “let her breath out”
- ☐ D “sounded like a quiet hissing”

★ **Correct answer**

4. Why did Anina think the crocodile was going to attack?

- ☐ A It showed its long row of teeth.
- ☐ B It let out a loud hissing sound.
- ☐ C It started grunting and snorting.
- ★ ☒ D It swung its tail back and forth.

5. Put the following sentences in the order in which they happened in the story.

The first one has been done for you.

___ Anina saw the crocodile.

___ The crocodile ate two flamingos.

___ Anina tried to explain the broken door to her parents.

1 Anina started to walk to the bathroom.

___ Anina ran to the bedroom and slammed the door.

6. Why did Anina call the flamingos?



★ **Correct answer**

7. How did the bedroom door get broken?

- ★ (A) The crocodile's tail pushed through it.
- (B) The big vase cracked against it.
- (C) The flamingo's sharp beak crashed into it.
- (D) The bed smashed against it.

8. How did the magazine help Anina? Write **two** ways.

 1. _____

 2. _____

9. At the end of the story, how did Anina feel toward the flamingos?

- (A) guilty
- (B) cautious
- ★ (C) grateful
- (D) annoyed

★ **Correct answer**

10. Name **one** thing Anina had difficulty explaining to her parents.



11. You learn what Anina was like from the things she did.
Describe what she was like and give **two** examples of what she did that show this.



12. The author does not tell us whether Anina’s adventure was all a dream.

Give **one** piece of evidence that it **may** have been a dream.



Give **one** piece of evidence that it **may not** have been a dream.



Scoring Guides for Constructed-response Questions

Unbelievable Night, Item 5

Put the following sentences in the order in which they happened in the story. The first one has been done for you.

- ___ Anina sees the crocodile.
- ___ The crocodile ate two flamingos.
- ___ Anina tried to explain to her parents why the door is broken.
- 1 Anina started to walk to the bathroom
- ___ Anina ran to the bedroom and slammed the door.

Process: Make straightforward inferences

1 – Acceptable Response

The response accurately numbers the sentences as shown below. In order to receive full credit, each sentence must have the appropriate number.

Appropriate Ordering of Sentences

- 2 Anina sees the crocodile.
- 4 The crocodile ate two flamingos.
- 5 Anina tried to explain to her parents why the door is broken.
- 1 Anina started to walk to the bathroom.
- 3 Anina ran to the bedroom and slammed the door.

Unbelievable Night, Item 6

Why did Anina call the flamingos?

Process: Make straightforward inferences

1 – Acceptable Response

The response demonstrates an understanding that the flamingos were food to the crocodile.

Example:

To feed the crocodile.

Or, the response demonstrates a general understanding that Anina used the flamingos to help her keep safe from the crocodile.

Example:

So they would protect her from the crocodile.

Unbelievable Night, Item 8

How did the magazine help Anina? Write two ways.

Process: Interpret and integrate ideas and information

2 – Complete Comprehension

The response identifies two ways that Anina used the magazine to help her situation, either by teaching her about the animals from the magazine, helping her to get the animals out of her house, or feeding the crocodile. See the list below for appropriate ways that the magazine helped Anina.

1 – Partial Comprehension

The response identifies only one way the magazine helped her as listed below. The second way identified may be inaccurate or too vague.

Acceptable ideas for how the magazine helped Anina:

It told her that when crocodiles swing their tails/whip the water it means that they are going to attack.

It showed her where the crocodile had come from.

It provided the flamingoes. /It gave her something to feed to the crocodile.

It helped her to get rid of the crocodile/flamingoes (by sending them back on to the pages).

Unbelievable Night, Item 10

Name one thing Anina had difficulty explaining to her parents.

Process: Focus on and retrieve explicitly stated information

1 – Acceptable Response

The response identifies one of the things in the house that Anina might have had trouble explaining: the wet spot on the floor, the broken door, her mother's (missing) hat, the broken vase, or scattered sunflowers.

Unbelievable Night, Item 11

You learn what Anina was like from the things she did. Describe what she was like and give two examples of what she did that show this.

Process: Interpret and integrate ideas and information

3 – Extensive Comprehension

The response provides at least one valid, appropriate description of what Anina was like (e.g., clever, fast thinker, innovative, creative, resourceful, brave, cautious, fearful, frightened, scared, appreciative, grateful, nice, good) with two things that she said or did in the story that support the description and illustrate her character.

Example:

She was brave to come out of her room and then put the magazine right under the crocodile's nose.

2 – Satisfactory Comprehension

The response provides at least one valid, appropriate description and only one supporting thing that she did.

Example:

She was clever because she made a plan to get rid of the crocodile.

1 – Partial Comprehension

The response provides an appropriate description with a reason that is vague or general.

Example:

Anina was clever. She used the magazine.

Or, the response provides at least one appropriate description without a reason.

Example:

Anina was a fast thinker.

Or, the response provides at least one appropriate reason without a description.

Example:

She let the flamingoes out of the magazine and she got the crocodile to go back to its home in the magazine.

Unbelievable Night, Item 12

The author does not tell us whether Anina's adventure was all a dream. Give one piece of evidence that it may have been a dream. Give one piece of evidence that it may not have been a dream.

Process: Examine and evaluate content, language, and textual elements

2 – Complete Comprehension

The response provides one piece of text-based evidence that Anina's adventure may have been a dream, and one piece of evidence that it may not have been a dream. See the list below for appropriate evidence for why it may or may not have been a dream.

1 – Partial Comprehension

The response provides one piece of text-based evidence that Anina's adventure may have been a dream, OR one piece of evidence that it may not have been a dream as listed below.

Evidence for Anina's Adventure Being a Dream/Not a Dream

Acceptable evidence it may have been a dream:

It was nighttime and she was half awake.

There were (wild) animals in house.

Magazines can't come to life.

Acceptable evidence it may NOT have been a dream:

Her mother's hat was missing the next morning.

The door was cracked.

The carpet had a wet spot.

The vase was broken.

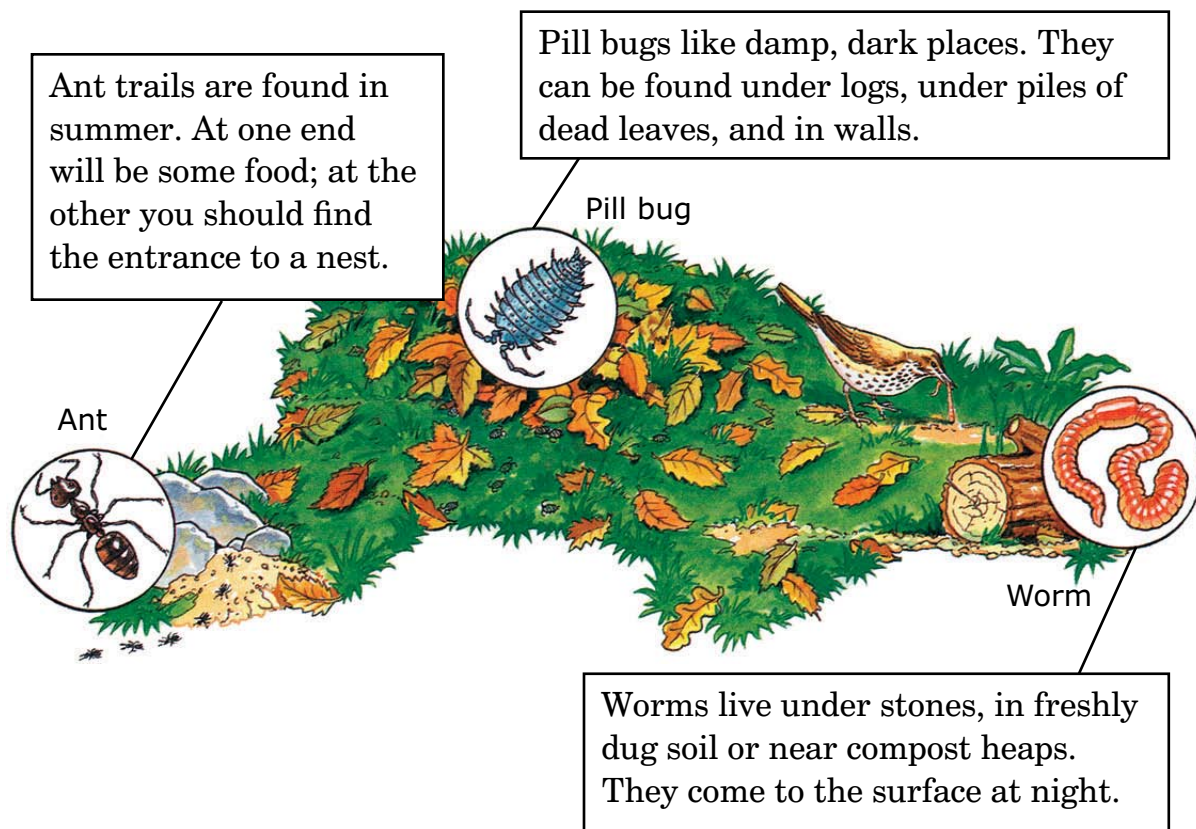
The sunflowers were scattered on the floor.

Searching for Food

Here are three projects about the things small creatures eat and the ways they search for food. First you need to find actual ants, pill bugs, and worms. Treat them carefully and make sure you put them back where you found them after you have finished studying them.

- Follow an Ant Trail
- Study Pill Bugs
- Make a Wormery

Where to find ants, pill bugs, and worms





Follow an Ant Trail



Ants live together in nests. When an ant finds some food it makes a trail for others to follow. To do this experiment you will need to find an ants' nest. You will also need the following materials: a sheet of paper, a small piece of apple, a handful of soil.



1. Put the piece of apple on the sheet of paper and lay the paper close to an ants' nest. Wait for some ants to find the apple. They should all follow the same trail.



2. Move the apple. Do the ants go straight to it?



3. Now sprinkle soil on the paper to cover the trail. The ants should scurry around for a while. Do they make a new trail?



What happens?

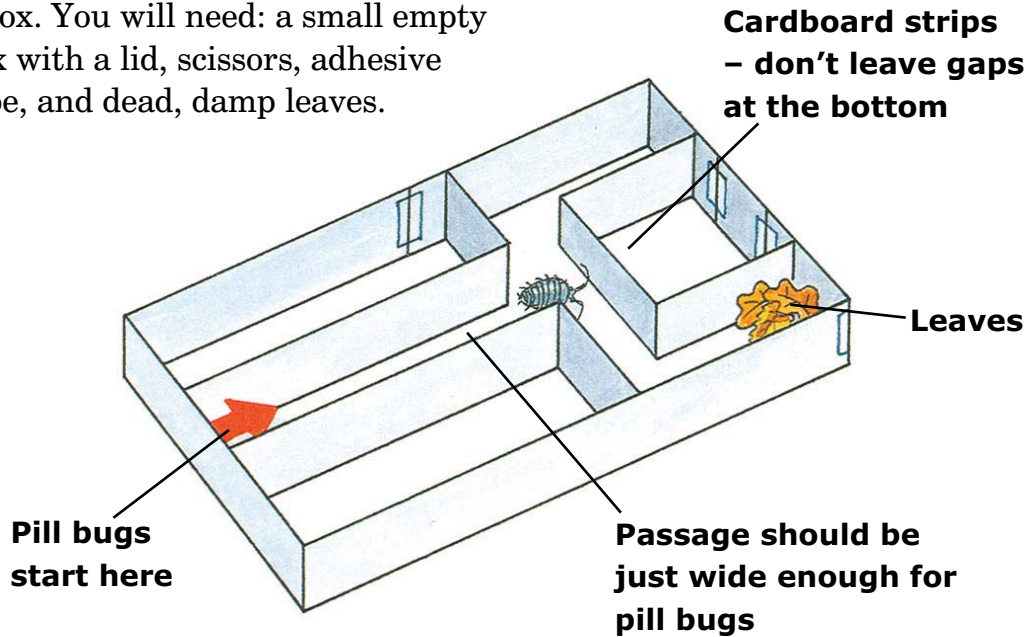
Even after the food has moved, the ants still follow the old trail until a new one is laid.

Why?

Once an ant has found some food, it produces special chemicals that leave a scent trail. Other ants from the nest use their antennae, or feelers, to sense this scent.

Study Pill Bugs

Pill bugs have sensitive antennae. Make this box, then collect six pill bugs in a container. Watch how they find their way when you put them in a box. You will need: a small empty box with a lid, scissors, adhesive tape, and dead, damp leaves.



1. Use the lid to make three long strips for making the passages in the picture.
2. Let your pill bugs walk along the passage one at a time. When they reach the end of the passage, some will turn left and some will turn right.
3. Put damp leaves in the right hand side of the box. Now let the pill bugs walk through the box again. Which way do they go?

What happens?

The pill bugs will turn to the right toward the food.

Why?

The pill bugs can sense the food with their antennae. They use them to find the leaves.

Make a Wormery

Worms are hard to study because they don't like the light. As soon as they sense it, they wriggle away, trying to find a dark place again. To see how worms live and feed, make a wormery like the one shown here. Then find two or three worms to put in it. It is important to remember

not to pull on the worms or you may hurt them. They are covered with bristles that grip the soil tightly.

You will need

- Shoe box
- Adhesive tape
- Pen
- Scissors
- Large plastic bottle
- 1 mug of sand
- 3 mugs of damp, crumbly soil
- Small cubes of onion and potato

1. Tape one side of the shoe box lid to the box, so it opens like a door. Poke holes in the top of the box with the pen to let air and light into the wormery.

2. Cut the top off the bottle. Then fill it with loosely packed layers of soil and sand. Scatter potato and onion on the surface.

3. Gently drop in your worms, then stand the bottle in the box and close the door. Leave it outside in a cool, dry place for four days.

4. After four days, go back and look at the bottle. What is different about the sand and soil?

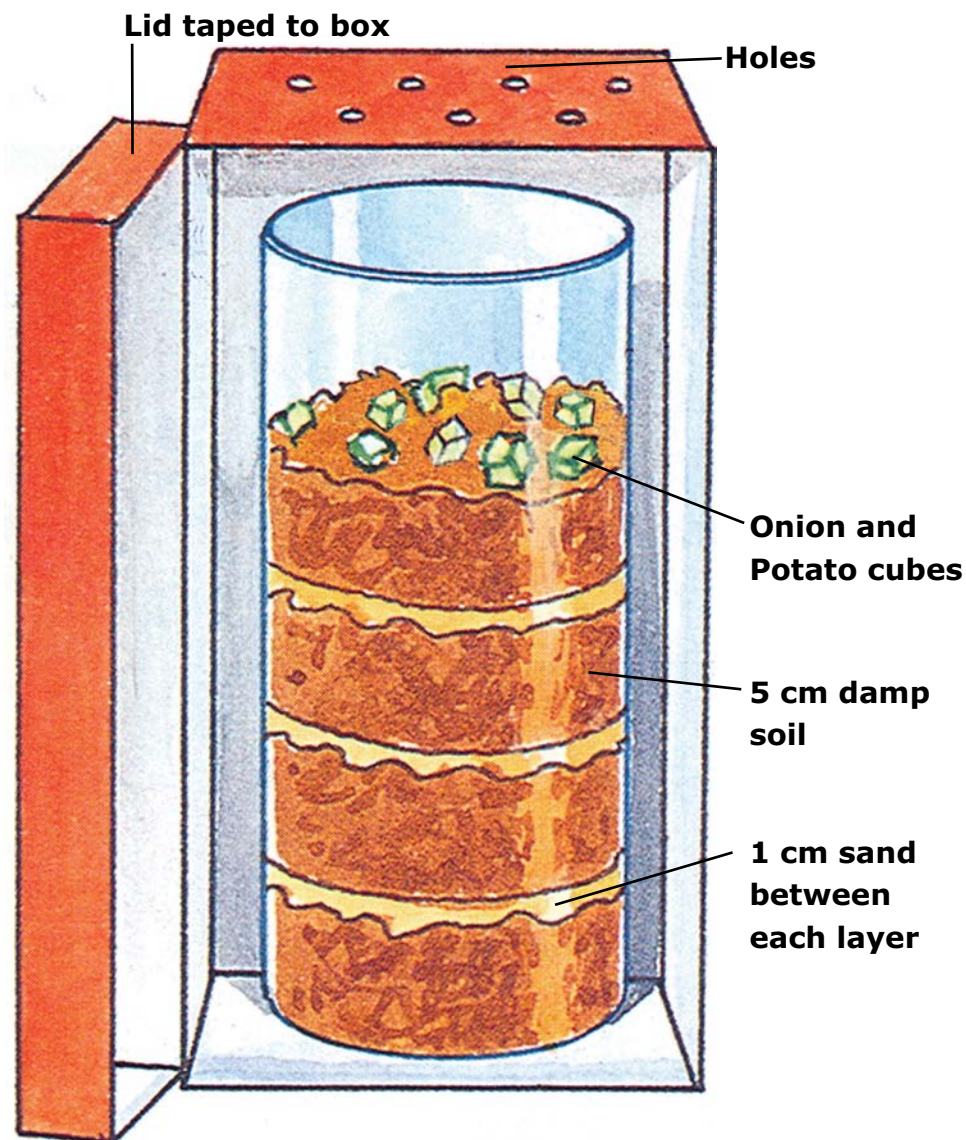
Don't forget: when you've finished with this project, put the worms back where you found them.

What happens?

After four days, the layers of sand and soil will have been mixed together.

Why?

The worms mix the sand and soil coming to the surface to eat the food and then tunneling underground to get away from the light.



From *Animal watching in the Usborne Big Book of Experiments* published in 1996 by Usborne Publishing Ltd., London. An effort has been made to obtain copyright permission.

Questions Searching For Food

1. What is the main purpose of the article?
- ★ (A) to describe different projects you can do
 - (B) to give information about ant trails
 - (C) to show what small creatures look like
 - (D) to explain what worms eat
2. What is one thing you should do to take care of the creatures?
- (A) search for them under rocks and stones
 - (B) find out all about them
 - (C) collect as many as you can
 - ★ (D) put them back where you found them

★ **Correct answer**

Questions 3-5 are about the Ant Project

3. Why do you put the apple by the ants' nest?

- ☐ (A) to block the ants' trail
- ★ ☐ (B) so the ants will make a trail
- ☐ (C) to confuse the ants
- ☐ (D) so the ants will scurry around

4. Once an ant finds some food, how do the other ants from the nest find it too?

- ☐ (A) They watch the first ant and follow it.
- ☐ (B) They run around until they find the food.
- ★ ☐ (C) They sense the scent left by the first ant.
- ☐ (D) They smell the food on the piece of paper.

5. Why do the ants scurry around after you've sprinkled the soil?



★ **Correct answer**

Questions 6-9 are about the Pill Bugs Project

6. How do pill bugs find the food?

- ☐ A They walk down the passage.
- ★ ☒ B They sense food with their antennae.
- ☐ C They follow the scent trail.
- ☐ D They see the food in the dark.

7. Look at the picture for Study Pill Bugs. How does the picture help you to know what to do in the experiment?



★ **Correct answer**

8. Why do you need to let your pill bugs walk along the passage before putting the leaves in the box?

- ☐ A To see if they can learn the maze.
- ★ ☒ B To see what they do when there is no food.
- ☐ C To see if the box is put together correctly.
- ☐ D To see which ones turn which way.

9. In Step 3 of the pill bugs project, what do you think will happen if you move the damp leaves to the left corner of the box?



10. What is similar in the way ants and pill bugs find their food?



★ **Correct answer**

Questions 11-13 are about the Wormery Project

11. Number the steps in the order you would follow to make a wormery. The first one has been done for you.

_____ put the bottle in the shoebox

 1 poke holes in the top of the shoebox

_____ drop in the worms

_____ add potato and onion

_____ fill the bottle with soil and sand

12. Explain why it is important to put layers of soil and sand in the bottle.



13. Explain why putting the onion and potato on the surface of the soil is important to the wormery project.



14. Each project has *What happens* and *Why* in a separate box. What is the purpose of these boxes?

- ☐ A to explain the steps of the project
- ☐ B to tell you what you need for the project
- ☐ C to tell you what to do when you have finished
- ★ ☐ D to explain what you have seen

15. Which of the three projects did you find the most interesting? Use information from the text to explain your answer.



★ **Correct answer**

Scoring Guides for Constructed-response Questions

Searching for Food, Item 5

Why do the ants scurry around after you've sprinkled the soil?

Process: Interpret and integrate ideas and information

1 – Acceptable Response

The response demonstrates understanding that the ants scurry because they have lost their trail (and therefore have to make a new one) or because they are looking for the food.

Example:

They have to make a new trail.

Searching for Food, Item 7

Look at the picture for Study Pill Bugs. How does the picture help you to know what to do in the experiment?

Process: Examine and evaluate content, language, and textual elements

2 – Complete Comprehension

The response provides an explanation of the necessity of the picture to know how to make the box, to know where to put things in the box, or to know what the box should look like.

Example:

It helps you to understand where you have to put the cardboard strips.

Or, the response shows understanding that it is the visual image of the box that makes it possible to make one the same way.

Example:

It shows what it is meant to look like.

1 – Partial Comprehension

The response describes the features of the picture without indicating how they are useful to doing the experiment.

Example:

It uses arrows and labels.

Searching for Food, Item 9

In Step 3 of the pill bugs project, what do you think will happen if you move the damp leaves to the left corner of the box?

Process: Interpret and integrate ideas and information

1 – Acceptable Response

The response provides the appropriate inference from the text that the pill bugs will (eventually) turn to the left toward the leaves. Note that it is appropriate to state that the pill bugs will turn to where the food is or will turn the other way from the original directions in the experiment without having to specifically mention the left corner.

Example:

They will sense the food and find it.

Searching for Food, Item 10

What is similar in the way ants and pill bugs find their food?

Process: Interpret and integrate ideas and information

1 – Acceptable Response

The response demonstrates understanding that ants and pill bugs find their food using their antennae or feelers to sense their food.

Example:

They use their feelers.

Searching for Food, Item 11

Number the steps in the order you would follow to make a wormery.

The first one has been done for you.

- ___ put the bottle in the shoebox
- 1 poke holes in the top of the shoebox
- ___ drop in the worms
- ___ add potato and onion
- ___ fill the bottle with soil and sand

Process: Make straightforward inferences

1 – Acceptable Response

The response accurately numbers the steps as shown below.

In order to receive full credit, each step must have the appropriate number.

Appropriate Ordering of Steps

- 5 put the bottle in the shoebox
- 1 poke holes in the top of the shoebox
- 4 drop in the worms
- 3 add potato and onion
- 2 fill the bottle with soil and sand

Searching for Food, Item 12

Explain why it is important to put layers of soil and sand in the bottle.

Process: Interpret and integrate ideas and information

1 – Acceptable Response

The response demonstrates understanding that the effect of the tunneling (the mixing of the soil and sand) will be visible because of the layers.

Example:

To make it possible to see the effect of the worms tunnelling.

Searching for Food, Item 13

Explain why putting the onion and potato on the surface of the soil is important to the wormery project.

Process: Interpret and integrate ideas and information

1 – Acceptable Response

The response provides an appropriate explanation for putting the food on the surface in order for the worms to tunnel up to the top to eat (and tunnel down to avoid the light).

Example:

To make the worms go to the top.

Searching for Food, Item 15

Which of the three projects did you find the most interesting?
Use information from the text to explain your answer.

Process: Interpret and integrate ideas and information

2 – Complete Comprehension

The response selects a project with specific information referring to the text, or may provide an inference clearly reflecting specific information in the text.

Example:

The ant project because I would like to see if ants would make a trail with food other than an apple.

1 – Partial Comprehension

The response selects a project and provides a general explanation that is related to the text, but could apply to any of the projects.

Example:

The pill bug project because it would be fun to find them.

Appendix C

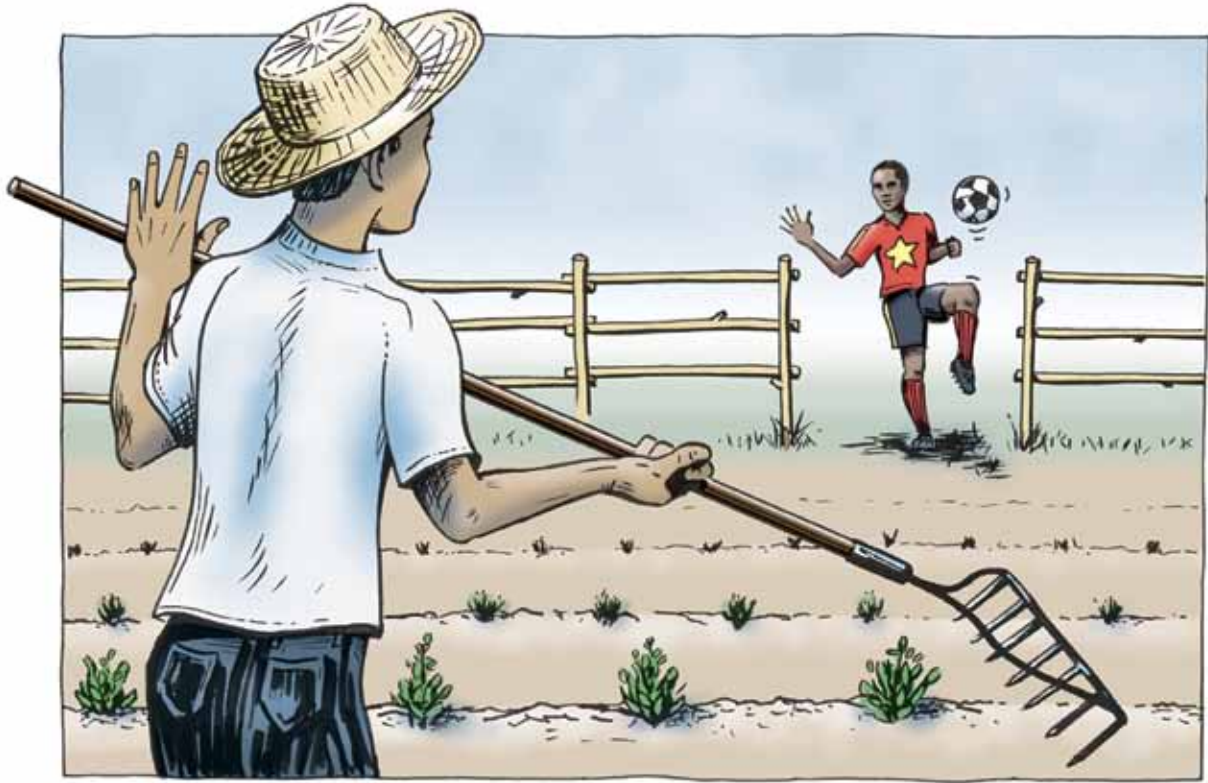
Sample prePIRLS Passage, Questions, and Scoring Guides

Reading for Literary Experience

Charlie's Talent



Charlie's Talent



Summer had just begun. Charlie was planting a garden in front of his house. He looked up as his friend Dave was running by. He stopped and waved.

“What are you doing for the summer?” Charlie asked.

“My soccer team is training for a big tournament. This year, I think we can win!” Dave replied.

“Wow...that sounds great.”

As Dave ran off, Charlie kept planting his seeds. I wish I was on a soccer team, he thought. I should start practicing...

1. Where was Charlie at the beginning of the story?

- ★ ☐ (A) in his garden
- ☐ (B) at school
- ☐ (C) in the street
- ☐ (D) in his house

2. Who was practicing for a soccer tournament?



★ **Correct answer**

The next week, Charlie went to the field. He knew a group of kids that played soccer there. Charlie joined their game, but things did not go well. He tripped over his own feet and scored a goal for the other team. By the end of the game, he knew that soccer was not for him.



Charlie shuffled home and began to work in his garden.

Just then, he saw Jan walking up the street. “Hi Jan!” he called. “What are your plans for the summer?”

Jan said, “I’m singing a lot. My choir is preparing for a big concert.”

Charlie sighed. He thought, that sounds fun. I wish I knew how to sing...Suddenly, digging in the dirt seemed like a silly way to spend his summer.

3. Write **two** things that Charlie did during his soccer game.

 1. _____

 2. _____

4. The story says “Charlie shuffled home”. What does this tell you about how Charlie felt?

☐ (A) He wanted to dance.

★ ☒ (B) He was sad.

☐ (C) He was nervous.

☐ (D) He wanted to garden.

5. What were Jan’s plans for the summer?

 _____

6. How does Charlie feel about gardening after talking to Jan?

 _____

★ **Correct answer**

A few weeks later, Charlie saw a flyer for a new singing group. He went to try out. As he sang, his voice cracked and squeaked. One of the judges made a face. Charlie knew that he would not be chosen.



Charlie went home and pulled some weeds. All of my friends have special talents, he thought. I wish that I had something that I was really good at.

For the rest of the summer, Charlie kept trying to find his talent. After each new activity, Charlie would walk home with his head down and spend time in his garden.

7. What did Charlie see a flyer for?

- Ⓐ a soccer game
- Ⓑ a gardening group
- Ⓒ a summer concert
- ★ Ⓓ a singing group

8. Why did the judge make a face?



9. What did Charlie do after he tried a new activity?



★ **Correct answer**



Towards the end of the summer, Charlie saw his friends Dave and Jan again. “How was the big soccer tournament?” he asked.

“We won!” Dave replied.

“And how was the concert?” Charlie asked Jan.

“It’s tomorrow. But our choir has worked really hard, and I get to sing a solo!”

“Congratulations,” Charlie said to them. “I wish I had something like that to be proud of.”

“Are you kidding?” Jan asked. “The vegetables in your garden are huge! Every time I try to grow something, it turns brown and dies.”

“Really? I guess I never thought gardening was something special.” Charlie smiled. “Why don’t you both come over tomorrow to celebrate Dave’s soccer victory? My mom will make dinner from my garden, and then we can go see Jan’s concert!”

10. How can you tell that Dave's team is good at soccer?



11. Whose vegetables turned brown and died?

Ⓐ Charlie

Ⓑ Dave

★ Ⓒ Jan

Ⓓ Charlie's mom

12. What was Charlie very good at?



★ **Correct answer**

13. What did Jan help Charlie to learn at the end of the story?

- ★ (A) He was already good at something.
- (B) He was good at soccer.
- (C) Gardening is hard work.
- (D) His friends had more talent than him.

14. Why did Charlie invite his friends over at the end of the story?

- (A) to celebrate the end of the summer
- ★ (B) to celebrate all their talents
- (C) to play a game of soccer
- (D) to teach them about gardening

★ **Correct answer**

15. What did Charlie keep looking for during the summer?

- Ⓐ more time to work in his garden
- Ⓑ different friends to play with
- Ⓒ a new place to go and see
- ★ Ⓓ something he was really good at

★ **Correct answer**

Scoring Guides for Constructed-response Questions

Charlie's Talent, Item 2

Who was practicing for a soccer tournament?

Process: Focus on and retrieve explicitly stated information

1 – Acceptable Response

The response recognizes that Charlie's friend Dave was practicing for a soccer tournament with his team.

Examples:

Dave
Charlie's friend
Dave's team

0 – Unacceptable Response

The response does not recognize that Charlie's friend Dave was practicing for a soccer tournament with his team. The response may repeat words from the question.

Charlie's Talent, Item 3

Write two things that Charlie did during his soccer game.

Process: Focus on and retrieve explicitly stated information

2 – Complete Comprehension

The response recognizes that Charlie tripped over his own feet AND scored a goal for the other team during his soccer game.

1—Partial Comprehension

The response recognizes that Charlie tripped over his own feet OR scored a goal for the other team during his soccer game.

0 – Unacceptable Response

The response does not provide either of the things that Charlie did during his soccer game.

Charlie's Talent, Item 5

What were Jan's plans for the summer?

Process: Focus on and retrieve explicitly stated information

1 – Acceptable Response

The response recognizes that Jan was preparing for a singing concert over the summer.

Examples:

Singing

Preparing for a concert

0 – Unacceptable Response

The response does not recognize that Jan was preparing for a singing concert over the summer. The response may repeat words from the question.

Charlie's Talent, Item 6

How does Charlie feel about gardening after talking to Jan?

Process: Make straightforward inferences

1 – Acceptable Response

The response recognizes that Charlie does not feel positively about gardening.

Examples:

He felt like it was silly.

He didn't like it.

0 – Unacceptable Response

The response does not recognize that Charlie felt bad about gardening after talking to Jan. The response may repeat words from the question.

Charlie's Talent, Item 8

Why did the judge make a face?

Process: Make straightforward inferences

1 – Acceptable Response

The response recognizes that the judge did not think Charlie was a good singer.

Examples:

Charlie was a bad singer.

He didn't like Charlie's singing.

0 – Unacceptable Response

The response does not recognize that the judge made a face because he did not think Charlie was a good singer. The response may repeat words from the question.

Charlie's Talent, Item 9

What did Charlie do after he tried a new activity?

Process: Focus on and retrieve explicitly stated information

1 – Acceptable Response

The response recognizes that Charlie gave up on the new activities and went back to gardening.

Examples:

Walked home with his head down.

Spent time in his garden.

He gave up.

0 – Unacceptable Response

The response does not recognize that Charlie gave up on the new activities and went back to gardening. The response may repeat words from the question.

Examples:

He played soccer.

He cried.

Charlie's Talent, Item 10

How can you tell that Dave's team is good at soccer?

Process: Make straightforward inferences

1 – Acceptable Response

The response recognizes that one can tell Dave's team is good at soccer because they won the tournament.

Examples:

Because his team won the tournament.

0 – Unacceptable Response

The response does not provide an appropriate reason for thinking Dave's team was good at soccer. The response may repeat words from the question.

Charlie's Talent, Item 12

What was Charlie very good at?

Process: Focus on and retrieve explicitly stated information

1 – Acceptable Response

The response recognizes that Charlie was very good at gardening.

0 – Unacceptable Response

The response does not recognize that Charlie was very good at gardening. The response may repeat words from the question.



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