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PISA 2012 Reading Framework

This chapter discusses the conceptual framework underlying the PISA 2012 assessment of students' reading competencies. It provides the PISA definition of reading literacy and presents the elements of the survey which have remained consistent throughout the previous cycles, along with a new element introduced in PISA 2009: reading and understanding digital texts. It describes how PISA assesses and analyses print and digital reading tasks, as well as the way in which students navigate through digital texts and respond to the format of tasks. Sample print and digital reading items are included throughout the chapter to further illustrate how students' skills are measured.



INTRODUCTION

Reading literacy was the major domain assessed in 2000, for the first PISA cycle (PISA 2000) and in 2009, for the fourth PISA cycle (PISA 2009). For the fifth PISA cycle (PISA 2012), reading is a minor domain and its framework has not changed from the previous cycle, PISA 2009 (OECD, 2009). There were two major modifications to the PISA 2009 version of the reading framework: the incorporation of the reading of digital texts and the elaboration of the constructs of reading engagement and metacognition.

Proficiency in reading literacy is a key to unlocking not only the world of printed texts but also digital texts, which are becoming an increasingly important part of students' and adults' reading. In all countries, Internet use is closely linked with socio-economic status and education (Sweets and Meates, 2004). Yet the requirement to use computers is not confined to particular social and economic strata. Beyond the workplace, computer technology has a growing importance in personal, social and civic life (Pew Internet and American Life Project, 2005).

While many of the skills required for print and digital reading are similar, digital reading demands that new emphases and strategies be added to the repertoires of readers. Gathering information on the Internet requires skimming and scanning through large amounts of material and immediately evaluating its credibility. Critical thinking, therefore, has become more important than ever in reading literacy (Halpern, 1989; Shetzer and Warschauer, 2000; Warschauer, 1999). Warschauer concludes that overcoming the "digital divide" is not only a matter of achieving online access, but also of enhancing people's abilities to integrate, evaluate and communicate information.

The new demands on reading proficiency created by the digital world led to the framework's inclusion of digital reading in the PISA 2009 assessment, acknowledging the fact that any definition of reading in the 21st century needs to encompass both printed and digital texts. An assessment of digital reading was also included in PISA 2012. Not all participating countries elected to take part in the administration of the digital reading assessment either in PISA 2009 or in PISA 2012, which was therefore implemented as an international option. Twenty-three OECD countries and nine partner countries and economies chose this option in PISA 2012, an increase of more than 50% over the PISA 2009 numbers.

Changes in our concept of reading since 2000 have already led to an expanded definition of reading literacy, which recognises motivational and behavioural characteristics of reading alongside cognitive characteristics. In light of recent research, reading engagement and metacognition were featured more prominently in the PISA 2009 reading framework as elements that can make an important contribution to policy makers' understanding of factors that can be developed, shaped and fostered as components of reading literacy. However, in PISA 2012, reading is a minor domain and no data on engagement or metacognition in reading were collected.

The PISA framework for assessing the reading literacy of students towards the end of compulsory education, therefore, must focus on reading literacy skills that include finding, selecting, interpreting and evaluating information from the full range of texts associated with situations in the classroom and also those that reach beyond the classroom.

This chapter discusses the conceptual framework underlying the PISA 2012 assessment of students' reading competencies. The definition of the domain is the same as in PISA 2009 when it was, for the second time, the major domain assessed, apart from a new element: reading and understanding digital texts. It describes how PISA assesses and analyses digital reading tasks, and the way in which students navigate through texts and respond to the format of tasks. Sample print and digital reading items are included throughout the chapter to further illustrate how students' skills are measured.

DEFINING READING LITERACY

Definitions of reading and reading literacy have changed over time in parallel with changes in society, economy, and culture. The concept of learning, particularly the concept of lifelong learning, has expanded the perception of reading literacy. Literacy is no longer considered to be an ability acquired only in childhood during the early years of schooling. Instead, it is viewed as an expanding set of knowledge, skills and strategies that individuals build on throughout life in various contexts, through interaction with their peers and the wider community.

Cognitive-based theories of reading literacy emphasise the interactive nature of reading and the constructive nature of comprehension, in the print medium (Binkley and Linnakylä, 1997; Bruner, 1990; Dole et al., 1991) and to an even greater extent in the digital medium (Fastrez, 2001; Legros and Crinon, 2002; Leu, 2007; Reinking, 1994). The reader generates meaning in response to text by using previous knowledge and a range of text and situational cues that are often socially and culturally derived. While constructing meaning, the reader uses various processes, skills and strategies to foster, monitor and maintain understanding. These processes and strategies are expected to vary with context and



purpose as readers interact with a variety of continuous and non-continuous texts in the print medium and (typically) with multiple texts in the digital medium.

The PISA 2012 definition of reading literacy is as follows:

Reading literacy is understanding, using, reflecting on and engaging with written texts, in order to achieve one's goals, develop one's knowledge and potential, and participate in society.

Reading literacy...

The term “reading literacy” is preferred to “reading” because it is likely to convey to a non-expert audience more precisely what the survey is measuring. “Reading” is often understood as simply decoding, or even reading aloud, whereas the intention of this survey is to measure something broader and deeper. Reading literacy includes a wide range of cognitive competencies, from basic decoding, to knowledge of words, grammar and larger linguistic and textual structures and features, to knowledge about the world.

In this study, “reading literacy” is intended to express the active, purposeful and functional application of reading in a range of situations and for various purposes. According to Holloway (1999), reading skills are essential to the academic achievement of middle- and high school students. PISA assesses a wide range of students. Some will go on to university; some will pursue further studies in preparation for joining the labour force; some will enter the workforce directly after completing compulsory education. Achievement in reading literacy is not only a foundation for achievement in other subject areas within the education system, but also a prerequisite for successful participation in most areas of adult life (Cunningham and Stanovich, 1998; Smith et al., 2000). Indeed, regardless of their academic or labour-force aspirations, students’ reading literacy is important for their active participation in their community and economic and personal life.

Reading literacy skills matter not just for individuals, but for economies as a whole. Policy makers and others are coming to recognise that in modern societies, human capital – the sum of what the individuals in an economy know and can do – may be the most important form of capital. Economists have for many years developed models showing generally that a country’s education levels are a predictor of its economic growth potential (Coulombe et al., 2004).

...is understanding, using, reflecting on...

The word “understanding” is readily connected with “reading comprehension”, a well-accepted element of reading. The word “using” refers to the notions of application and function – doing something with what we read. “Reflecting on” is added to “understanding” and “using” to emphasise the notion that reading is interactive: readers draw on their own thoughts and experiences when engaging with a text. Of course, every act of reading requires some reflection, drawing on information from outside the text. Even at the earliest stages, readers draw on symbolic knowledge to decode a text and require a knowledge of vocabulary to construct meaning. As readers develop their stores of information, experience and beliefs, they constantly, often unconsciously, test what they read against outside knowledge, thereby continually reviewing and revising their sense of the text.

...and engaging with...

A reading literate person not only has the skills and knowledge to read well, but also values and uses reading for a variety of purposes. It is therefore a goal of education to cultivate not only proficiency but also engagement in reading. Engagement in this context implies the motivation to read and comprises a cluster of affective and behavioural characteristics that include an interest in and enjoyment of reading, a sense of control over what one reads, involvement in the social dimension of reading, and diverse and frequent reading practices.

...written texts...

The term “written texts” is meant to include all those coherent texts in which language is used in its graphic form, whether printed and digital. Instead of the word “information”, which is used in some other definitions of reading, the term “texts” was chosen because of its association with written language and because it more readily connotes literary as well as information-focused reading.

These texts do not include aural language artefacts such as voice recordings; nor do they include film, TV, animated visuals, or pictures without words. They do include visual displays such as diagrams, pictures, maps, tables, graphs and comic strips that include some written language (for example, captions). These visual texts can exist either independently or they can be embedded in larger texts. Digital texts are distinguished from printed texts in a number of respects, including physical readability; the amount of text visible to the reader at any one time; the way different parts of a text and different texts are connected with one another through hypertext links; and, given these text characteristics, the way



that readers typically engage with digital texts. To a much greater extent than with printed or hand-written texts, readers need to construct their own pathways to complete any reading activity associated with a digital text.

...in order to achieve one's goals, develop one's knowledge and potential, and participate in society.

This phrase is meant to capture the full scope of situations in which reading literacy plays a role, from private to public, from school to work, from formal education to lifelong learning and active citizenship. "To achieve one's goals and to develop one's knowledge and potential" spells out the idea that reading literacy enables the fulfilment of individual aspirations – both defined ones, such as graduating or getting a job, and those less defined and less immediate that enrich and extend personal life and lifelong education. The word "participate" is used because it implies that reading literacy allows people to contribute to society as well as to meet their own needs. "Participating" includes social, cultural and political engagement.

ORGANISING THE DOMAIN

This section describes how the domain is represented, a vital issue because the organisation and representation of the domain determines the test design and, ultimately, the evidence about student proficiencies that can be collected and reported.¹

Reading is a multidimensional domain. While many elements are part of the construct, not all can be taken into account in building the PISA assessment. Only those considered most important were selected.

The PISA reading literacy assessment is built on three major task characteristics to ensure a broad coverage of the domain:

- *situation*, which refers to the range of broad contexts or purposes for which reading takes place;
- *text*, which refers to the range of material that is read; and
- *aspect*, which refers to the cognitive approach that determines how readers engage with a text.

In PISA, features of the text and aspect variables (but not of the situation variable) are also manipulated to influence the difficulty of a task.

Reading is a complex activity. The elements of reading, do not exist independently of one another in neat compartments. The assignment of texts and tasks to framework categories does not imply that the categories are strictly partitioned or that the materials exist in atomised cells determined by a theoretical structure. The framework scheme is provided to ensure coverage, to guide the development of the assessment and to set parameters for reporting, based on what are considered the marked features of each task.

Situation

The PISA situation variables were adapted from the Common European Framework of Reference (CEFR) developed for the Council of Europe (Council of Europe, 1996). The four situation variables – personal, public, educational and occupational – are described in the following paragraphs.

The *personal* situation relates to texts that are intended to satisfy an individual's personal interests, both practical and intellectual. This category also includes texts that are intended to maintain or develop personal connections with other people. It includes personal letters, fiction, biography, and informational texts that are intended to be read to satisfy curiosity, as a part of leisure or recreational activities. In the digital medium it includes personal e-mails, instant messages and diary-style blogs.

The *public* category describes the reading of texts that relate to activities and concerns of the larger society. The category includes official documents and information about public events. In general, the texts associated with this category assume a more or less anonymous contact with others; they also therefore include forum-style blogs, news websites and public notices that are encountered both on line and in print.

The content of *educational* texts is usually designed specifically for the purpose of instruction. Printed text books and interactive learning software are typical examples of material generated for this kind of reading. Educational reading normally involves acquiring information as part of a larger learning task. The materials are often not chosen by the reader, but instead assigned by an instructor. The model tasks are those usually identified as "reading to learn" (Sticht, 1975; Stiggins, 1982).



Many 15-year-olds will move from school into the labour force within one to two years. A typical *occupational* reading task is one that involves the accomplishment of some immediate task. It might include searching for a job, either in a print newspaper's classified advertisement section, or on line; or following workplace directions. The model tasks of this type are often referred to as "reading to do" (Sticht, 1975; Stiggins, 1982).

Situation is used in PISA reading literacy to define texts and their associated tasks, and refers to the contexts and uses for which the author constructed the text. The manner in which the situation variable is specified is therefore about supposed audience and purpose, and is not simply based on the place where the reading activity is carried out. Many texts used in classrooms are not specifically designed for classroom use. For example, a piece of literary text may typically be read by a 15-year-old in a mother-tongue language or literature class, yet the text was written (presumably) for readers' personal enjoyment and appreciation. Given its original purpose, such a text is classified as *personal* in PISA. As Hubbard (1989) has shown, some kinds of reading usually associated with out-of-school settings for children, such as rules for clubs and records of games, often take place unofficially at school as well. These texts are classified as *public* in PISA. Conversely, textbooks are read both in schools and in homes, and the process and purpose probably differ little from one setting to another. Such texts are classified as *educational* in PISA.

It should be noted that the four categories overlap. In practice, for example, a text may be intended both to delight and to instruct (personal and educational); or to provide professional advice that is also general information (occupational and public). While content is not a variable that is specifically manipulated in this study, by sampling texts across a variety of situations the intent is to maximise the diversity of content that will be included in the PISA reading literacy survey.

Table 2.1 shows the approximate distribution of score points by situation for print and digital reading tasks that will not be finalised until analysis of the main survey data is completed.

Table 2.1
Approximate distribution of score points in reading, by situation

Situation	Percentage of total score points PISA 2012	
	Print	Digital
Personal	36	35
Educational	33	15
Occupational	20	0
Public	11	50
Total	100	100

Text

Reading requires material for the reader to read. In an assessment, that material – a text (or a set of texts) related to a particular task – must be coherent within itself. That is, the text must be able to stand alone without requiring additional material to make sense to the proficient reader.² While it is obvious that there are many different kinds of texts and that any assessment should include a broad range, it is not so obvious that there is an ideal categorisation of kinds of texts. The addition of digital reading to the framework has made this issue still more complex. Since 2009, there have been four main text classifications:

- Medium: print and digital.
- Environment: authored, message-based and mixed.
- Text format: continuous, non-continuous, mixed and multiple.
- Text type: description, narration, exposition, argumentation, instruction and transaction.

The classification of medium – print and digital – is applied to each text as the broadest distinction. Below that classification, the text format and text type categories are applied to all texts, whether print or digital. The environment classification, on the other hand, is only applicable to digital texts.

Medium

Since PISA 2009, an important major categorisation of texts is the classification by medium: print or digital.

Print text usually appears on paper in forms such as single sheets, brochures, magazines and books. The physical status of the printed text encourages (though it does not compel) the reader to approach the content of the text in a particular



sequence. In essence, printed texts have a fixed or static existence. Moreover, in real life and in the assessment context, the extent or amount of the text is immediately visible to the reader.

Digital text may be defined as the display of text through Liquid Crystal Display (LCD), plasma, Thin Film Transistor (TFT) and other electronic devices. For the purposes of PISA, however, digital text is synonymous with *hypertext*: a text or texts with navigation tools and features that make possible and indeed even require non-sequential reading. Each reader constructs a “customised” text from the information encountered at the links he or she follows. In essence, such digital texts have an unfixed, dynamic existence. In the digital medium, typically only a fraction of the available text can be seen at any one time, and often the extent of text available is unknown.

Navigation tools and features help readers to negotiate their way into, around and across texts, through different types of devices: navigation icons, scroll bars, tabs, menus, embedded hyperlinks, text search functions such as Find or Search, and global content representation devices, such as site maps. Navigation features also exist in the print medium (they include tables of contents, indexes, chapter and section headings, headers and footers, page numbers and footnotes) but they play a particularly important role in the digital medium, for at least two reasons. First, due to the reduced display size, digital texts come with devices that let the reader move the reading window over the text page (e.g. scroll bars, buttons, index). Second, typical digital reading activities involve the use of multiple texts, sometimes selecting from a virtually infinite pool. Readers must be familiar with the use of retrieval, indexing and navigation tools for linking between texts.

In the PISA assessment of digital reading, a set of navigation tools and structures has been identified for systematic inclusion in the instruments, as one important component in measuring proficiency in digital reading. This set includes scroll bars, tabs for different websites, lists of hyperlinks³ displayed in a row, in a column or as a drop-down menu, and embedded text.

Tasks are more or less easy depending on the number of navigation tools that is required to be used, the number of operations or steps required, and the type of tools used. Generally, the larger the number of operations, and the more complex the tool type, the greater the item difficulty. The familiarity, transparency or prominence of navigation tools and features also affects difficulty. Some digital reading tasks require little or even no navigation.

Environment

The *environment* classification applies only to digital texts, and in the PISA reading framework, only computer-based environments are considered. Two broad kinds of digital environment have been identified for assessing the reading of digital texts: *authored* and *message-based* environments. The distinction between them is based on whether or not the reader has the potential to influence the content of the site.

An *authored* environment is one in which the reader is primarily receptive: the content cannot be modified. Readers use these sites mainly for obtaining information. The different types of text within an *authored* environment include home pages, sites publicising events or goods, government information sites, educational sites containing information for students, news sites and online library catalogues.

A *message-based* environment is one in which the reader has the opportunity to add to or change the content. Readers use these sites not only for obtaining information, but also as a way of communicating. Text within a *message-based* environment include e-mail, blogs, chat rooms, web forums and reviews, and online forms.

In practice, as with many of the variables in the reading framework, the environment classifications are not strictly partitioned. Occasionally a task may require integrated use of both authored and message-based texts. Such tasks are classified as *mixed*. Table 2.2 shows the approximate proportion of score points in each environment category.

Table 2.2
Approximate distribution of digital score points in reading, by environment

Environment	Percentage score points in digital reading assessment
Authored	65
Message-based	27
Mixed	8
Total	100



Text format

An important classification of texts is the distinction between continuous and non-continuous texts.

Texts in *continuous* and *non-continuous* format appear in both the print and digital media. *Mixed* and *multiple* format texts are also prevalent in both media, particularly so in the digital medium. Each of these four formats is elaborated as follows:

Continuous texts are formed by sentences organised into paragraphs. These may fit into even larger structures, such as sections, chapters, and books (e.g. newspaper reports, essays, novels, short stories, reviews and letters for the print medium, and reviews, blogs and reports in prose for the digital).

Non-continuous texts are organised differently to *continuous* texts, and therefore require a different kind of reading approach. *Non-continuous* texts are most frequently organised in matrix format, composed of a number of lists (Kirsch and Mosenthal, 1990) (e.g. lists, tables, graphs, diagrams, advertisements, schedules, catalogues, indexes and forms).

Many texts in both print and digital media are single, coherent artefacts consisting of a set of elements in both a *continuous* and *non-continuous* format. In well-constructed *mixed* texts, the constituents (e.g. a prose explanation, along with a graph or table) are mutually supportive through coherence and cohesion links at the local and global level. *Mixed* text in the print medium is a common format in magazines, reference books and reports. In the digital medium, authored web pages are typically mixed texts, with combinations of lists, paragraphs of prose, and often graphics. Message-based texts such as online forms, e-mail messages and forums also combine texts that are *continuous* and *non-continuous* in format.

Multiple texts are defined as those that have been generated independently, and make sense independently; they are juxtaposed for a particular occasion or may be loosely linked together for the purposes of the assessment. The relationship between the texts may not be obvious; they may be complementary or may contradict one another. For example, a set of websites from different companies providing travel advice may or may not provide similar directions to tourists. Multiple texts may have a single “pure” format (for example, continuous), or may include both continuous and non-continuous texts.

Table 2.3

Approximate distribution of digital score points in reading, by text format

Text format	Percentage of total score points PISA 2012	
	Print	Digital
Continuous	58	4
Non-continuous	31	11*
Mixed	9	4
Multiple	2	81
Total	100	100

* Rounded up, the figure is 12% (11.54) but this would make the total 101%. “Approximate” in the title covers this.

Text type

A different categorisation of text is by text type: description, narration, exposition, argumentation, instruction and transaction.

Texts as they are found in the world typically resist categorisation; they are usually not written with rules in mind, and tend to cut across categories. That notwithstanding, in order to ensure that the reading instrument samples across a range of texts that represent different types of reading PISA categorises texts based on their predominant characteristics.

The following classification of texts used in PISA is adapted from the work of Werlich (1976).

Description is the type of text where the information refers to properties of objects in space. The typical questions that descriptive texts provide an answer to are *what* questions (e.g. a depiction of a particular place in a travelogue or diary, a catalogue, a geographical map, an online flight schedule or a description of a feature, function or process in a technical manual).

Narration is the type of text where the information refers to properties of objects in time. Narration typically answers questions relating to *when*, or *in what sequence*. Why characters in stories behave as they do is another important question that narration typically answers (e.g. a novel, a short story, a play, a biography, a comic strip, fictional texts and



a newspaper report of an event). The proportion of narrative texts in the print medium in PISA 2012 is a little greater than that in the previous PISA cycles (2000-09), at about 20% (formerly about 15%).

Exposition is the type of text in which the information is presented as composite concepts or mental constructs, or those elements into which concepts or mental constructs can be analysed. The text provides an explanation of how the different elements interrelate in a meaningful whole and often answers questions about *how* (e.g. a scholarly essay, a diagram showing a model of memory, a graph of population trends, a concept map and an entry in an online encyclopaedia).

Argumentation is the type of text that presents the relationship among concepts or propositions. Argument texts often answer *why* questions. An important sub-classification of argument texts is persuasive and opinionative texts, referring to opinions and points of view. Examples of text in the text type category *argumentation* are a letter to the editor, a poster advertisement, the posts in an online forum and a web-based review of a book or film.

Instruction is the type of text that provides directions on what to do. The text presents directions for certain behaviours in order to complete a task (e.g. a recipe, a series of diagrams showing a procedure for giving first aid, and guidelines for operating digital software).

Transaction represents the kind of text that aims to achieve a specific purpose outlined in the text, such as requesting that something is done, organising a meeting or making a social engagement with a friend. Before the spread of digital communication, this kind of text was a significant component of some kinds of letters and, as an oral exchange, the principal purpose of many phone calls. This text type was not included in Werlich's (1976) categorisation. It was used for the first time in the PISA 2009 framework because of its prevalence in the digital medium (e.g. everyday e-mail and text message exchanges between colleagues or friends that request and confirm arrangements).

Aspect

Whereas navigation tools and features are the visible or physical features that allow readers to negotiate their way into, around and between texts, *aspects* are the mental strategies, approaches or purposes that readers use to negotiate their way into, around and between texts.

Five aspects guide the development of the reading literacy assessment tasks:

- *retrieving information;*
- *forming a broad understanding;*
- *developing an interpretation;*
- *reflecting on and evaluating the content of a text; and*
- *reflecting on and evaluating the form of a text.*

As it is not possible to include sufficient items in the PISA assessment to report on each of the five aspects as a separate subscale, for reporting on reading literacy these five aspects are organised into three broad aspect categories:

- *access and retrieve;*
- *integrate and interpret; and*
- *reflect and evaluate.*

Retrieving information tasks, which focus the reader on separate pieces of information within the text, are assigned to the *access and retrieve* scale.

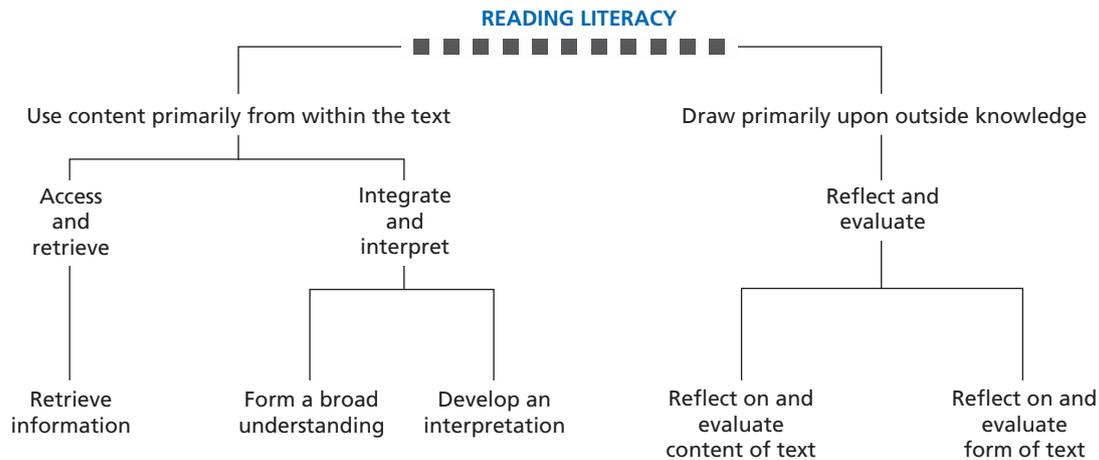
Forming a broad understanding and *developing an interpretation* tasks focus the reader on relationships within a text. Tasks that focus on the whole text require readers to form a broad understanding; tasks that focus on relationships between parts of the text require developing an interpretation. The two are grouped together under *integrate and interpret*.

Tasks addressing the last two aspects, *reflecting on and evaluating the content of a text* and *reflecting on and evaluating the form of a text*, are grouped together into a single *reflect and evaluate* aspect category. Both require the reader to draw primarily on knowledge outside the text and relate it to what is being read. *Reflecting on and evaluating content* tasks are concerned with the notional substance of a text; *reflecting on and evaluating form* tasks are concerned with its structure or formal features.



■ Figure 2.1 ■

Relationship between the reading framework and the aspect subscales



An elaboration of the three broad aspect categories, encompassing tasks in both print and digital media, is given below.

Access and retrieve

Accessing and retrieving involves going to the information space provided and navigating in that space to locate and retrieve one or more distinct pieces of information. Access and retrieve tasks can range from locating the details required by an employer from a job advertisement, to finding a telephone number with several prefix codes, to finding a particular fact to support or disprove a claim someone has made.

While *retrieving* describes the process of selecting the required information, *accessing* describes the process of getting to the place, the information space, where the required information is located. Some items may require retrieving information only, especially in the print medium where the information is immediately visible and where the reader only has to select what is appropriate in a clearly specified information space. On the other hand, some items in the digital medium require little more than accessing (for example, clicking to select an item in a list of search results). However, both processes are involved in most *access and retrieve* tasks in PISA. Difficulty will be determined by several factors including the number of paragraphs, pages or links that need to be used, the amount of information to be processed on any given place, and the specificity and explicitness of the task directions.

Integrate and interpret

Integrating and interpreting involves processing what is read to make internal sense of a text.

Integrating focuses on demonstrating an understanding of the coherence of the text. *Integrating* involves connecting various pieces of information to make meaning, whether it be identifying similarities and differences, making comparisons of degree, or understanding cause and effect relationships.

Interpreting refers to the process of making meaning from something that is not stated. When interpreting, a reader is identifying the underlying assumptions or implications of part or all of the text.

Both *integrating* and *interpreting* are required to *form a broad understanding*. A reader must consider the text as a whole or in a broad perspective. Students may demonstrate initial understanding by identifying the main topic or message or by identifying the general purpose or use of the text.

Both *integrating* and *interpreting* are also involved in *developing an interpretation*, which requires readers to extend their initial broad impressions so that they develop a deeper, more specific or more complete understanding of what they have read. *Integrating* tasks include identifying and listing supporting evidence, and comparing and contrasting information in which the requirement is to draw together two or more pieces of information from the text. In order to process either explicit or implicit information from one or more sources in such tasks, the reader must often infer an intended relationship or category. *Interpreting* tasks may involve drawing an inference from a local context: for example, interpreting the meaning of a word or phrase that gives a particular nuance to the text. This process of comprehension



is also assessed in tasks that require the student to make inferences about the author's intention, and to identify the evidence used to infer that intention.

The relationship between the processes of integration and interpretation may therefore be seen as intimate and interactive. Integrating involves first inferring a relationship within the text (a kind of interpretation), and then bringing pieces of information together, therefore allowing an interpretation to be made that forms a new integrated whole.

Reflect and evaluate

Reflecting and evaluating involves drawing upon knowledge, ideas or attitudes beyond the text in order to relate the information provided within the text to one's own conceptual and experiential frames of reference.

Reflect items may be thought of as those that require readers to consult their own experience or knowledge to compare, contrast or hypothesise. *Evaluate* items are those that ask readers to make a judgment drawing on standards beyond the text.

Reflecting on and evaluating the content of a text requires the reader to connect information in a text to knowledge from outside sources. Readers must also assess the claims made in the text against their own knowledge of the world. Often readers are asked to articulate and defend their own points of view. To do so, readers must be able to develop an understanding of what is said and intended in a text. They must then test that mental representation against what they know and believe on the basis of either prior information, or information found in other texts. Readers must call on supporting evidence from within the text and contrast it with other sources of information, using both general and specific knowledge as well as the ability to reason abstractly.

Reflecting on and evaluating the form of a text requires readers to stand apart from the text, to consider it objectively and to evaluate its quality and appropriateness. Implicit knowledge of text structure, the style typical of different kinds of texts and register play an important role in these tasks. Evaluating how successful an author is in portraying some characteristic or persuading a reader depends not only on substantive knowledge but also on the ability to detect subtleties in language.

Evaluation in the digital medium may take on a slightly different emphasis. The homogeneity of digital text formats (windows, frames, menus, hyperlinks) tends to blur the distinctions across text types. These new features of digital text increase the need for the reader to be aware of authorship, accuracy, quality and credibility of information. As people have access to a broadening universe of information in networked environments, evaluation takes on an increasingly critical role.

To some extent every critical judgment requires the reader to consult his or her own experience; some kinds of reflection, on the other hand, do not require evaluation (for example, comparing personal experience with something described in a text). Thus evaluation might be seen as a subset of reflection.

The aspects of reading in print and digital media

The three broad aspects defined for PISA reading literacy are not conceived of as entirely separate and independent, but rather as interrelated and interdependent. Indeed from a cognitive processing perspective they can be considered semi-hierarchical: it is not possible to interpret or integrate information without having first retrieved it, and it is not possible to reflect on or evaluate information without having made some sort of interpretation. In PISA, however, the framework description of reading aspects distinguishes approaches to reading that are demanded for different contexts and purposes; these are then reflected in assessment tasks that emphasise one or other aspect.

Complex digital reading tasks: Simulating the complexity of real-life reading

While the three aspects do not usually operate entirely independently of one another in either print or digital reading tasks, it is possible to construct relatively simple tasks in which there is a clear emphasis on one or the other aspect. In complex tasks, on the other hand, the process is not so well defined. The reader assimilates the task, and then confronts the problem of interpreting, extrapolating from and evaluating the immediately visible text (for example, the home page of a website) to find relevant information. In an authentic complex task in the digital medium, the reader needs to process the visible information immediately and extrapolate from it: making judgments, synthesising and accessing information in an integrated, recursive sequence.



Table 2.4
Approximate distribution of score points in reading, by aspect

Aspect	Percentage of total score points PISA 2012	
	Print	Digital
Access and retrieve	22	19
Integrate and interpret	56	23
Reflect and evaluate	22	19
Complex	0	39*
Total	100	100

* Rounded (down), the figure is 38% (38.46) but this would make the total 99%. “Approximate” in the title covers this.

Summary of the relationship between printed and digital reading texts and tasks

Table 2.5 presents some of the essential similarities and differences between print and digital reading. One purpose of the table is to describe intrinsic similarities and differences between print reading and digital reading. In many cases the entries under “Print reading” and “Digital reading” are identical. In other places, the descriptions highlight some essential differences in reading between the two media.

A second purpose of the table is to illustrate similarities and differences in what PISA assesses in the two media. In some cases it is a matter of prominence and emphasis: square brackets signify that a feature is given relatively little emphasis in the PISA assessment. In other cases the difference is more absolute. While some features exist in both media, they cannot be or are not assessed in PISA. These are printed in blue.

One of the principles in constructing the PISA frameworks and the assessment tasks that operationalise them is to represent the domains authentically. There is no set way of doing this, and in a sense the decisions and selections made are arbitrary, though based on the best judgment of international reading experts. How the domain is described and operationalised, in this and other respects, is determined by a combination of conceptual, empirical and political considerations. The aim in the scoping of the domain outlined above is to explain the basis for building an assessment since PISA 2009 that captures the essence of reading literacy. Such an assessment will in turn yield an array of data from which to report 15-year-olds’ reading proficiency in ways that are comprehensive, meaningful and relevant.

ASSESSING READING LITERACY

The previous section outlined the conceptual framework for reading literacy. The concepts in the framework must in turn be represented in tasks and questions in order to collect evidence of students’ proficiency in reading literacy.

Building tasks in the print medium

The distribution of tasks across the major framework variables of situation, text and aspect was discussed in the previous section. In this section some of the other major issues in constructing and operationalising the assessment are considered: factors affecting item difficulty, and how difficulty can be manipulated; the choice of response formats; and some issues around coding and scoring.

Factors affecting item difficulty

The difficulty of any reading literacy task depends on an interaction among several variables. Drawing on Kirsch and Mosenthal’s work (see for example Kirsch, 2001; Kirsch and Mosenthal, 1990), we can manipulate the difficulty of items by applying knowledge of the following aspect and text format variables.

In *access and retrieve* tasks, difficulty is conditioned by the number of pieces of information that the reader needs to locate, by the amount of inference required, by the amount and prominence of competing information, and by the length and complexity of the text.

In *integrate and interpret* tasks, difficulty is affected by the type of interpretation required (for example, making a comparison is easier than finding a contrast); by the number of pieces of information to be considered; by the degree and prominence of competing information in the text; and by the nature of the text: the less familiar and the more abstract the content and the longer and more complex the text, the more difficult the task is likely to be.



Table 2.5

Similarities and differences between print and digital reading, by main framework characteristics

	Print reading	Digital reading
Situations	Personal Public Occupational Educational	Personal Public Occupational Educational
Texts: Environments	Not applicable	Authored Message-based Mixed
Texts: Formats	Continuous Non-continuous [Mixed] [Multiple]	[Continuous] [Non-continuous] [Mixed] Multiple
Texts: Text Type	Argumentation Description Exposition Narration Instruction Transaction	Argumentation Description Exposition Narration Instruction Transaction
Aspects (1)	Access and retrieve Search Orient and navigate in concrete information space e.g. <i>Go to library, search in a catalogue, find a book</i> Use navigation tools and structures e.g. <i>Table of contents; page numbers; glossary</i> Select and sequence information - low reader control - one sequence of linear reading	Access and retrieve Search Orient and navigate in abstract information space e.g. <i>Enter URL; user search engines</i> Use navigation tools and structures e.g. <i>Menus; embedded hyperlinks</i> Select and sequence information - high reader control - multiple sequences of linear reading
Aspects (2)	Integrate and interpret Integrate at a lower level of demand: larger portions of text are simultaneously visible (one or two pages) Develop an interpretation Form a broad understanding	Integrate and interpret Integrate at a higher level of demand: limited parts of text are simultaneously visible (limited by screen size) Develop an interpretation Form a broad understanding
Aspects (3)	Reflect and evaluate Pre-evaluate information e.g. <i>Use table of contents; skim passages, checking for credibility and usefulness</i> [Evaluate credibility of source - usually less important due to filtering and preselection in the publishing process] Evaluate plausibility of content Evaluate coherence and consistency Hypothesise Reflect in relation to personal experience	Reflect and evaluate Pre-evaluate information e.g. <i>Use menus; skim web pages, checking for credibility and usefulness</i> Evaluate credibility of source - usually more important due to lack of filtering and preselection in open environment Evaluate plausibility of content Evaluate coherence and consistency Hypothesise Reflect in relation to personal experience
Aspects (4)	Complex The range of sources to be consulted is relatively undefined The sequence of steps within the task is undirected e.g. <i>finding, evaluating and integrating information from multiple printed texts</i>	Complex The range of sources to be consulted is relatively undefined The sequence of steps within the task is undirected e.g. <i>finding, evaluating and integrating information from multiple digital texts</i>

In *reflect and evaluate* tasks, difficulty is affected by the type of reflection or evaluation required (from least to most difficult, the types of reflection are: connecting; explaining and comparing; hypothesising and evaluating); by the nature of the knowledge that the reader needs to bring to the text (a task is more difficult if the reader needs to draw on narrow, specialised knowledge rather than broad and common knowledge); by the relative abstraction and length of the text; and by the depth of understanding of the text required to complete the task.



In tasks relating to *continuous texts*, difficulty is influenced by the length of the text, the explicitness and transparency of its structure, how clearly the parts are related to the general theme, and whether there are text features, such as paragraphs or headings, and discourse markers, such as sequencing words.

In tasks relating to *non-continuous texts*, difficulty is influenced by the amount of information in the text; the list structure (simple lists are easier to negotiate than more complex lists); whether the components are ordered and explicitly organised, for example with labels or special formatting; and whether the information required is in the body of the text or in a separate part, such as a footnote.

Response formats

Coding requirements are shown in Table 2.6 for print score points in relation to the three aspect of reading literacy and for digital score points in relation to the four aspects. Items that require expert judgment consist of open-constructed and short-constructed responses that require expert coding. Items that do not require coder judgment consist of multiple-choice, complex multiple-choice and closed-constructed response items. The closed-constructed response items are those that require the student to generate a response, but require minimal judgment on the part of a coder.

The distribution of item types in print reading does not vary much from one cycle/administration to the next. However, the selection for 2012 has a slightly higher proportion of items that do not require expert coding than in previous cycles: 58% non-expert coded and 42% expert coded in 2012 (compared with 55% and 45% respectively in previous administrations). The same ratio applies to print and to digital reading in PISA 2012.

Table 2.6

Approximate distribution of score points in reading, by coding requirement for each reading aspect

Aspect	Print reading			Digital reading		
	Expert judgement required	No expert judgment required	Total	Expert judgement required	No expert judgment required	Total
Access and retrieve	4	18	22	0	19	19
Integrate and interpret	20	36	56	0	23	23
Reflect and evaluate	18	4	22	15	4	19
Complex	0	0	0	27	12	38
Total	42	58	100	42	58	100

Coding and scoring

Codes are applied to test items, either by a more or less automated process of capturing the alternative chosen by the student for a multiple-choice answer, or by a human judge (expert coder) selecting a code that best captures the kind of response given by a student to an item that requires a constructed response. The code is then converted to a score for the item. For multiple-choice or closed-response format items, the student has either chosen the designated correct answer or not, so the item is scored as 1 (full credit) or 0 (no credit) respectively. For more complex scoring of constructed response items, some answers, even though incomplete, indicate a higher level of reading literacy than inaccurate or incorrect answers, and receive partial credit.

Building tasks in the digital medium

This section considers some of the major issues in constructing and operationalising the digital reading literacy assessment: the relationship between navigation and text processing; analysis of tasks with a view to controlling for item difficulty; response formats; and some issues around coding and scoring. The section ends with a note on the way students' progress through the digital reading assessment is controlled.

Relationship between navigation and text processing in the digital reading assessment

Knowledge of some techniques of navigation and some navigation features are part of being literate in the digital medium. Such skills and knowledge should be regarded as ICT skills that are in conjunction with reading literacy. Both the reading of text, as it is conventionally understood, and the ability to navigate within the digital medium are conceived of as integral to proficiency in digital reading. Each digital reading task includes mental processing devoted to navigation decisions, and textual processing, with more or less weight on each element.



Analysis of digital reading tasks

In order to capture the complexity of the steps that the reader needs to perform in order to arrive at an explicitly called-for response, test developers used a system of analysis to describe the text processing and navigation components of each task.

For any task with a moderate degree of complexity in the digital medium, the reader is likely to have several possible ways of proceeding. For the purposes of describing and analysing subtasks, the test developers imagined an optimally efficient, but comprehensive, sequence of steps, where each step was marked by an *action* (a click on a specified link, a text response in the browser area, a selection from a set of alternatives, or simply scrolling).

For each subtask completed with an action, the following variables were tabulated: text complexity; navigation tool/text used; aspect and description; and action.

Illustrative PISA digital reading items

LET'S SPEAK

SCREEN 1A

The screenshot shows a web browser window with the address bar displaying 'http://www.educationnetworkforums.org'. The page title is 'Education Network Forums'. Below the title, there is a navigation breadcrumb: 'Education Network > Study > Tips'. The main heading is 'Public speaking'. A 'Write a Reply' button is visible. The forum posts are as follows:

Author	Date	Text
Mischa	March 10 15:32	Thanks to everyone who contributed, and for Mark's link to Dr. N. The only thing is, now I'm confused about what to believe. Julie, Tobias, Psych OL and Dr. Nauckunaite all said different things. Which one of these four people really knows the most about this issue?
Julie	March 7 10:14	I think that the ability to speak in public depends on each person's personality. Some...

This unit was based on an online discussion forum on the subject of the challenges of speaking in public. The discussion is initiated by Mischa, whose blog entry at the bottom of the discussion forum screen (shown in screen 1E) refers to her terror of speaking in public, to a classroom audience, and asks for help and advice.

The theme of the discussion, set in an educational situation, is an example of a context that would be familiar to most of the PISA students. In terms of text format and text type, *LET'S SPEAK* is categorised as a multiple text, from a number of authors, and argumentative in rhetorical structure. It presents an interactive situation in which the contributors are responding directly to each other. This is a new, or at least much accelerated kind of exchange that is an increasingly prevalent form of communication. In this kind of multiple text, understanding of each text is partly dependent on following the chain of contributions.

The discussion forum page is quite long, comprised of eight entries. In order to read the initiating entry, it is necessary to scroll down. Screens 1B to 1E show what the reader sees when scrolling down.



SCREEN 1B

Let's Speak - Education Network Forums - E022P01 - Internet Browser

Address <http://www.educationnetworkforums.org>

Education Network Forums

<p>Julie</p>  <p>Posts: 22</p>	<p>March 7 10:14</p> <p>I think that the ability to speak in public depends on each person's personality. Some people seem completely incapable of public speaking. When they have to do it, their hands shake and their voice trembles. Others, on the other hand, can discuss a subject fluently, in a way that makes the topic interesting for the audience. These people seem to be able to perform brilliantly, even if they have not had time to prepare! I'd say, there's no point in trying to change what you are.</p>
<p>Psychologist O.L.</p>  <p>Posts: 41</p>	<p>February 28 22:51</p> <p>Our attitude to speaking in public depends a lot on our age. The easiest age at which to speak in public is when we are three years old. At this time we naturally talk incessantly, using various newly coined words of our own. We create and experiment with language, not caring about vocabulary. The emotional part of speech is also very fluent – no-one laughs, cries or shows despair as expressively as a kindergartener. Why are we so bold at that age? It is because we do not judge ourselves, we do not reflect upon ourselves and we do not have the baggage of painful experience. It is when we go to high school that we suddenly find that we are incapable of speaking, when called up to speak in front of the whole class.</p>

SCREEN 1C

Let's Speak - Education Network Forums - E022P01 - Internet Browser

Address <http://www.educationnetworkforums.org>

Education Network Forums

	<p>not have the baggage of painful experience. It is when we go to high school that we suddenly find that we are incapable of speaking, when called up to speak in front of the whole class.</p>
<p>Andrew</p>  <p>Posts: 82</p>	<p>February 3 21:07</p> <p>I am a normal person. I do not suffer from any physiological or psychological problems. So why is it that the second I have to speak in public, my heart starts fluttering and sinks into my boots? Of course I try to pull myself together, but it does not work very well. I am afraid that if I do not face and conquer this problem it will stay with me for the rest of my life.</p>
<p>Mark</p>  <p>Posts: 24</p>	<p>January 28 13:28</p> <p>Yes I agree with everything you say. You can't avoid it. I found a helpful online article by a Doctor Nauckunaite. Take a look.</p>

SCREEN 1D

Let's Speak - Education Network Forums - E022P01 - Internet Browser

Address: <http://www.educationnetworkforums.org>

Education Network Forums

<p>Mark</p>  <p>Posts: 24</p>	<p>January 28 13:28</p> <p>Yes I agree with everything you say. You can't avoid it. I found a helpful online article by a Doctor Nauckunaite. Take a look.</p>
<p>Lauren</p>  <p>Posts: 3</p>	<p>January 27 13:12</p> <p>I don't think avoiding public speaking is a good idea – it is better to try it, and conquer your fear in the process. You can't run away from speaking in public all your life. Even if you are very scared of speaking in public, there are things you can do to overcome your fear.</p>
<p>Tobias</p> 	<p>January 15 16:40</p> <p>I rehearse important speeches at home. I read them out loud using the visual aids I will use when I make the speech in public. That way, not only is my mind less likely to go blank when I'm talking, but my speech will also be supported by the visuals. It is important that you do not just read your speech straight from your notes. You need to be able to speak</p>

SCREEN 1E

Let's Speak - Education Network Forums - E022P01 - Internet Browser

Address: <http://www.educationnetworkforums.org>

Education Network Forums

<p>Tobias</p>  <p>Posts: 82</p>	<p>January 15 16:40</p> <p>I rehearse important speeches at home. I read them out loud using the visual aids I will use when I make the speech in public. That way, not only is my mind less likely to go blank when I'm talking, but my speech will also be supported by the visuals. It is important that you do not just read your speech straight from your notes. You need to be able to speak fluently, just glancing at your notes every once in a while. Practice will help you conquer your fear. So will the knowledge that you know your subject very well.</p>
<p>Mischa</p>  <p>Posts: 18</p>	<p>January 15 15:32</p> <p>I have spoken in front of my whole class a few times. Last time was awful. I forgot everything and mumbled the whole speech off as fast as I could. Next week I have to do another speech in front of my whole class. I cannot stand the idea of all those people focusing their attention solely on me. How can I avoid public speaking?</p>

[Write a Reply](#)

In addition to the starting page, the unit includes only one other piece of stimulus, which is accessed by clicking on an embedded link in one of the blogs that recommends it as “expert advice”. The second screen, advice from Doctor Nauckunaite, also requires some scrolling (see screens 2A and 2B).



SCREEN 2A

Let's Speak - Tips on Public Speaking - E022P04 - Internet Browser

Address <http://www.unikl.lu/philology/nauckunaite/public-speaking.html>

Education Network Forums Tips on Public Speaking




Dr. Zita Nauckunaite Tips on Public Speaking

It is natural to be nervous when you have to give a speech. Concentrate. Try not to think about how you appear to others or how nervous you are, but only about the subject of your speech.

People become most nervous when they feel that others can see their lack of confidence. Knowing how to conceal your sense of fear diminishes the fear itself.

Since people are most nervous at the beginning of the speech, one practical way to overcome fear is to learn the beginning of your speech by heart. Before commencing the speech, look around at your audience. If you know exactly who it is you are speaking to, you will feel more at ease.

If you are feeling overcome by fear during your speech, try not to look

SCREEN 2B

Let's Speak - Tips on Public Speaking - E022P04 - Internet Browser

Address <http://www.unikl.lu/philology/nauckunaite/public-speaking.html>

Education Network Forums Tips on Public Speaking

nervous you are, but only about the subject of your speech.

People become most nervous when they feel that others can see their lack of confidence. Knowing how to conceal your sense of fear diminishes the fear itself.

Since people are most nervous at the beginning of the speech, one practical way to overcome fear is to learn the beginning of your speech by heart. Before commencing the speech, look around at your audience. If you know exactly who it is you are speaking to, you will feel more at ease.

If you are feeling overcome by fear during your speech, try not to look at a particular audience member. Instead, direct your gaze toward the middle of the audience as a whole. When you use that technique, both those sitting in front and those towards the back of the audience will feel that you are, in fact, looking at them. Enunciate each word clearly. Nothing will soothe you more than your own voice sounding clear, and in control.

Extract from
Teaching of Oratory, by Dr. Z. Nauckunaite, Faculty of Philology,
Vilnius Pedagogical University, Lithuania.



This digital reading unit, which was administered in the field trial for PISA 2009, included several tasks that required students to understand the organisation of the website, to identify main ideas both across the blog entries and within an individual entry, and to recognise the existence of conflicting opinions. The final task directed students to read the last entry (at the top of the discussion forum page) in which Mischa has, in an imagined scenario, read all the information provided and is now requesting some final summary advice. This task is reproduced below.

TASK – LET'S SPEAK

Look at Mischa's post for March 10. Click on "Write a Reply" and write a reply to Mischa. In your reply, answer her question about which writer, in your opinion, knows the most about this issue.

Give a reason for your answer.

Click "Post Reply" to add your reply to the forum.

This is a task that requires access and integration of several pieces of information. Mischa's second blog entry asks the reader to consider and compare four short texts (those of Julie, Tobias, Psych OL and Dr. Nauckunaite). It also requires an evaluation of the contributions, in terms of either their professional credentials, or in terms of the intrinsic quality and persuasiveness of the arguments. It is classified as a *complex* item because it draws significantly on all three aspects: *access and retrieve*, *integrate and interpret* and *reflect and evaluate*.

An added dimension of the demand of the task is that the student needs to demonstrate some proficiency in handling the formal structure and navigational conventions of the message-based environment by scrolling, clicking on a link that is embedded in the text, and finally clicking on another link (a button) to write a reply. Once the student has clicked on "Write a reply", the screen 3 appears, with an area in which the response can be entered.

SCREEN 3

The coding of this item for the PISA 2009 field trial was based on the text response that the student enters in the "Write a Reply" area. (Note that full credit could be obtained for the response without clicking on "Post Reply" – that detail was added in the interest of authenticity.) However, in developing the item, both the text-processing requirements and the navigational requirements were deliberately manipulated to shape the task for maximum contribution in populating the information space of the assessment. Table 2.7 shows a simplified version of how this *LET'S SPEAK* task can be analysed in terms of its text-processing and navigation components.



Table 2.7
Analysis of a task from the digital reading assessment, *LET'S SPEAK*

Step	Start page / Required text processing / Text complexity rating	Required navigation tools / features	Aspect / text processing description	Action
1	Screen 1A One short argumentative text Rating: medium	Scrollbar	Interpret: form an understanding of the question posed in Misha's message of March 10. Access: infer that the messages of the four entries referred to in Misha's message can be accessed by scrolling, with the first blogger's name ("Julie") already visible.	Scroll down
2	Screen 1B Two short argumentative texts Rating: medium	Scrollbar	Retrieve: match on two names in Mischa's message ("Julie" and "Psychologist OL"). Interpret: form a broad understanding of the main ideas expressed in Julie's and in Psychologist OL's entries. Access: infer that entries of other required bloggers are accessible by scrolling.	Scroll down
3	Screen 1C Two words highlighted in a short argumentative text Rating: low	Embedded link	Access and retrieve: locate Dr Nauckunaite's link embedded in Mark's blog.	Click on embedded link in Mark's blog
4	Screen 2A Formal text comprising expository and instructional elements Rating: medium to high	Scrollbar	Interpret: form a broad understanding of the main ideas expressed in first part of Dr Nauckunaite's page. Access: infer that article continues below bottom of screen.	Scroll down
5	Screen 2B Formal text comprising expository and instructional elements Rating: medium to high	Back button	Interpret: form a broad understanding of the main ideas expressed in second part of Dr Nauckunaite's page. Access: return to discussion forum page using back button (navigation direction provided explicitly in task).	Click on Back button
6	Screens 1A to 1E Eight short argumentative texts (skim) Screen 1E One of two short argumentative texts Rating: medium	Scrollbar	Access: infer that further scrolling is required to locate the last entry named in Mischa's post. Retrieve: match on name in Mischa's message ("Tobias"). Interpret: form a broad understanding of the main idea expressed in Tobias's entry.	Scroll down
7	Screen 1E Write a Reply button Rating: very low	Write a Reply button	Access: access page to write a reply to Mischa	Click on Write a Reply
8	Screen 3 Text box with Write a Reply button [recall of 3 short argumentative texts from screens 1A, 1B and 1C and formal text comprising expository and instructional elements from Screens 2A and 2B] Rating: very high	None	Reflect and evaluate: generate an evaluation of the most authoritative text, combining prior knowledge with information from three short argumentative texts and one longer expository/instructional text.	Text entry response
9 (Optional)	Screen 3 Post Reply button	Post Reply button	Not applicable	Click on Post Reply

For this task, nine distinct steps are described (the last one optional). However, except for step 8, the order of the steps could be changed to achieve exactly the same result. For example, step 1 could be followed by step 3; or the sequence



could begin with step 7 (but by using the “Write a Reply” button shown in screen 1A, and then the “Back” button to return to the main page of the forum). There are many other possible variations in the sequence. As this task illustrates, even with this relatively restricted set of linked pages, readers in the digital medium construct their own text, to a degree, in terms of the order in which they access and process information. The completion of step 8, for full credit, implies good navigation skills in reading digital text (steps 1 to 7), and also strong text-processing skills, since the response requires processing, integration and evaluation of multiple texts, at least one of which is quite demanding (see steps 4 and 5).

Control of the delivery of tasks in the digital reading assessment

As the screen shots for the task from *LET’S SPEAK* show, the interface for a digital reading unit has two distinct areas: a task area in the lower part of the screen, where the question or instruction is located, and a browser area in the upper part of the screen, where the stimulus is located. The task in the task area remains fixed for the duration of an item while the student can navigate around the browser area to access different simulated web pages or applications in the course of completing a task.

In the digital reading assessment, both units and items within units are delivered in a fixed order, or “lockstep” fashion. The lockstep procedure means that the students are not able to return to an item or unit once they have moved to the next item/unit. A further feature of the task delivery design is that the page that is visible in the browser area at the beginning of each item is fixed: that is, every student sees the same page at the beginning of a given item, regardless of where they finished the previous item. These two features contribute to item independence.

REPORTING PROFICIENCY IN PRINT AND DIGITAL READING

Print reading

PISA reports results in terms of proficiency scales that are interpretable for the purposes of policy. In PISA 2012, reading is a minor domain, and fewer reading items are administered to participating students. A single print reading literacy scale is reported based upon the overall combined scale for print reading.

To capture the progression of complexity and difficulty in PISA 2012, the combined print reading literacy scale is based on the PISA 2009 combined print reading literacy scale and is divided into seven levels. Figure 2.2 describes these seven levels of print reading proficiency. Level 6 is the highest described level of proficiency (Level 5 was the highest level before PISA 2009 reading assessments). The bottom level of measured proficiency is Level 1b (since the PISA 2009 reading assessment, Level 1 was re-labelled as Level 1a and a new level was added, Level 1b, that describes students who would previously have been rated as “below Level 1”). These different levels of proficiency allow countries to know more about the kinds of tasks students with very high and very low reading proficiency are capable of performing. Levels 2, 3, 4 and 5 remain the same in PISA 2012 as in PISA 2000.



■ Figure 2.2 ■

Summary description for the seven levels of proficiency in print reading in PISA 2012

Level	Lower score limit	Percentage of students able to perform tasks at each level or above (OECD average)	Characteristics of tasks
6	698	0.8%	Tasks at this level typically require the reader to make multiple inferences, comparisons and contrasts that are both detailed and precise. They require demonstration of a full and detailed understanding of one or more texts and may involve integrating information from more than one text. Tasks may require the reader to deal with unfamiliar ideas, in the presence of prominent competing information, and to generate abstract categories for interpretations. <i>Reflect and evaluate</i> tasks may require the reader to hypothesise about or critically evaluate a complex text on an unfamiliar topic, taking into account multiple criteria or perspectives, and applying sophisticated understandings from beyond the text. A salient condition for <i>access and retrieve</i> tasks at this level is precision of analysis and fine attention to detail that is inconspicuous in the texts.
5	626	7.6%	Tasks at this level that involve retrieving information require the reader to locate and organise several pieces of deeply embedded information, inferring which information in the text is relevant. Reflective tasks require critical evaluation or hypothesis, drawing on specialised knowledge. Both interpretative and reflective tasks require a full and detailed understanding of a text whose content or form is unfamiliar. For all aspects of reading, tasks at this level typically involve dealing with concepts that are contrary to expectations.
4	553	28.3%	Tasks at this level that involve retrieving information require the reader to locate and organise several pieces of embedded information. Some tasks at this level require interpreting the meaning of nuances of language in a section of text by taking into account the text as a whole. Other interpretative tasks require understanding and applying categories in an unfamiliar context. Reflective tasks at this level require readers to use formal or public knowledge to hypothesise about or critically evaluate a text. Readers must demonstrate an accurate understanding of long or complex texts whose content or form may be unfamiliar.
3	480	57.2%	Tasks at this level require the reader to locate, and in some cases recognise the relationship between, several pieces of information that must meet multiple conditions. Interpretative tasks at this level require the reader to integrate several parts of a text in order to identify a main idea, understand a relationship or construe the meaning of a word or phrase. They need to take into account many features in comparing, contrasting or categorising. Often the required information is not prominent or there is much competing information; or there are other text obstacles, such as ideas that are contrary to expectation or negatively worded. Reflective tasks at this level may require connections, comparisons, and explanations, or they may require the reader to evaluate a feature of the text. Some reflective tasks require readers to demonstrate a fine understanding of the text in relation to familiar, everyday knowledge. Other tasks do not require detailed text comprehension but require the reader to draw on less common knowledge.
2	407	81.2%	Some tasks at this level require the reader to locate one or more pieces of information, which may need to be inferred and may need to meet several conditions. Others require recognising the main idea in a text, understanding relationships, or construing meaning within a limited part of the text when the information is not prominent and the reader must make low level inferences. Tasks at this level may involve comparisons or contrasts based on a single feature in the text. Typical reflective tasks at this level require readers to make a comparison or several connections between the text and outside knowledge, by drawing on personal experience and attitudes.
1a	335	94.3%	Tasks at this level require the reader to locate one or more independent pieces of explicitly stated information; to recognise the main theme or author's purpose in a text about a familiar topic, or to make a simple connection between information in the text and common, everyday knowledge. Typically the required information in the text is prominent and there is little, if any, competing information. The reader is explicitly directed to consider relevant factors in the task and in the text.
1b	262	98.9%	Tasks at this level require the reader to locate a single piece of explicitly stated information in a prominent position in a short, syntactically simple text with a familiar context and text type, such as a narrative or a simple list. The text typically provides support to the reader, such as repetition of information, pictures or familiar symbols. There is minimal competing information. In tasks requiring interpretation the reader may need to make simple connections between adjacent pieces of information.



Digital reading

For those countries that chose to implement the assessment of digital reading, an additional scale, based only on digital reading tasks, was created since PISA 2009 and started a new trend line. Given the relatively small number of items in the pool for PISA 2012 (as for PISA 2009), the range of difficulty of digital reading tasks allows for the description of four levels of reading proficiency: Level 2, Level 3, Level 4 and Level 5 or above. Figure 2.3 describes the four level of proficiency in digital reading. Students with proficiency within the range of Level 2 are likely to be able to successfully complete tasks within that band of difficulty, but are unlikely to be able to complete tasks at higher levels. Students with scores within the range of Level 4 are likely to be able to successfully complete tasks located at that level and at the lower levels.

■ Figure 2.3 ■

Summary description for the four levels of proficiency in digital reading in PISA 2012

Level	Lower score limit	Percentage of students able to perform tasks at each level or above (OECD average)	Characteristics of tasks
5 or above	626	7.8%	Tasks at this level typically require the reader to locate, analyse and critically evaluate information, related to an unfamiliar context, in the presence of ambiguity. They require generating criteria to evaluate the text. Tasks may require navigation across multiple sites without explicit direction, and detailed interrogation of texts in a variety of formats.
4	553	30.3%	Tasks at this level may require the reader to evaluate information from several sources, navigating across several sites comprising texts in a variety of formats, and generating criteria for evaluation in relation to a familiar, personal or practical context. Other tasks at this level demand that the reader interpret complex information according to well-defined criteria in a scientific or technical context.
3	480	60.7%	Tasks at this level require that the reader integrate information, either by navigating across several sites to find well-defined target information, or by generating simple categories when the task is not explicitly stated. Where evaluation is called for, only the information that is most directly accessible or only part of the available information is required.
2	407	83.1%	Tasks at this level typically require the reader to locate and interpret information that is well-defined, usually relating to familiar contexts. They may require navigation across a limited number of sites and the application of web-based navigation tools such as drop-down menus, where explicit directions are provided or only low-level inference is called for. Tasks may require integrating information presented in different formats, recognising examples that fit clearly defined categories.

SUMMARY

An essential function of PISA is to provide information to policy makers about trends over time. Since PISA 2009, the construction of a scale and subscales that are based entirely on print reading tasks has helped to record and analyse trends. A different set of scales is built to report on the digital reading assessment and, where possible, to report the combined results of print and digital reading assessments, therefore providing the basis for establishing new trend lines for future cycles. In anticipating a range of options for reporting, the PISA reading literacy framework and assessment provide a rich array of data to inform the work of policy makers, educators, and researchers.

The PISA 2012 reading framework has not changed from the PISA 2009 framework. The notion of reading literacy in PISA goes beyond the simple measurement of a student's capacity to decode and understand literal information. Reading literacy in PISA also involves understanding, using, reflecting on and engaging with written texts, both to achieve personal goals and to participate actively in society.



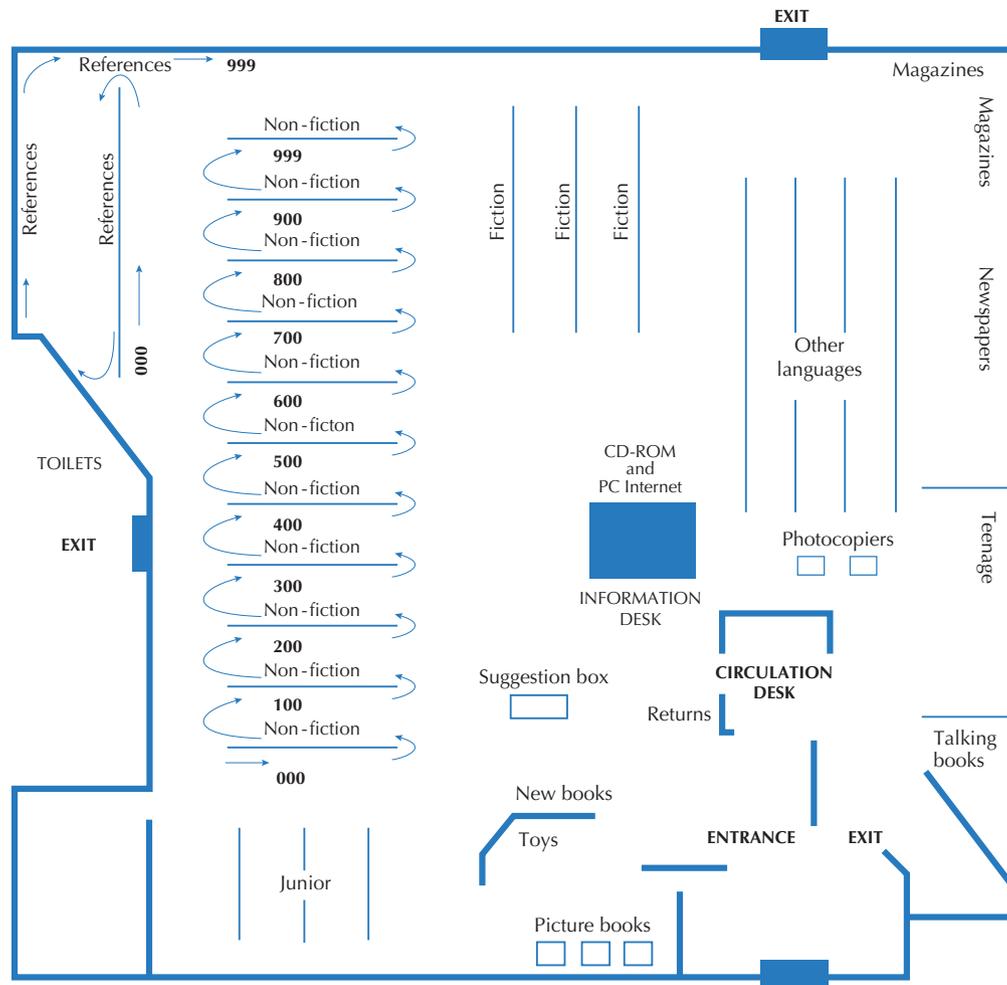
ILLUSTRATIVE PISA PRINT READING ITEMS

LIBRARY MAP

The library map that forms the basis of this unit is an example of a kind of everyday non-continuous text that is often encountered in work, personal, public and educational settings. The context of this example is defined as public because the map relates to the activities of a community (a public library) and assumes anonymous contact with the reader. In terms of text type, the map is classified as description, since the information it contains refers to properties of objects in space and their relationship to one another.

■ Figure 2.4 ■

Items for the unit **LIBRARY MAP**



QUESTION 1

For school you need to read a novel in French.

On the map draw a circle around the section where you would be most likely to find a suitable book to borrow.

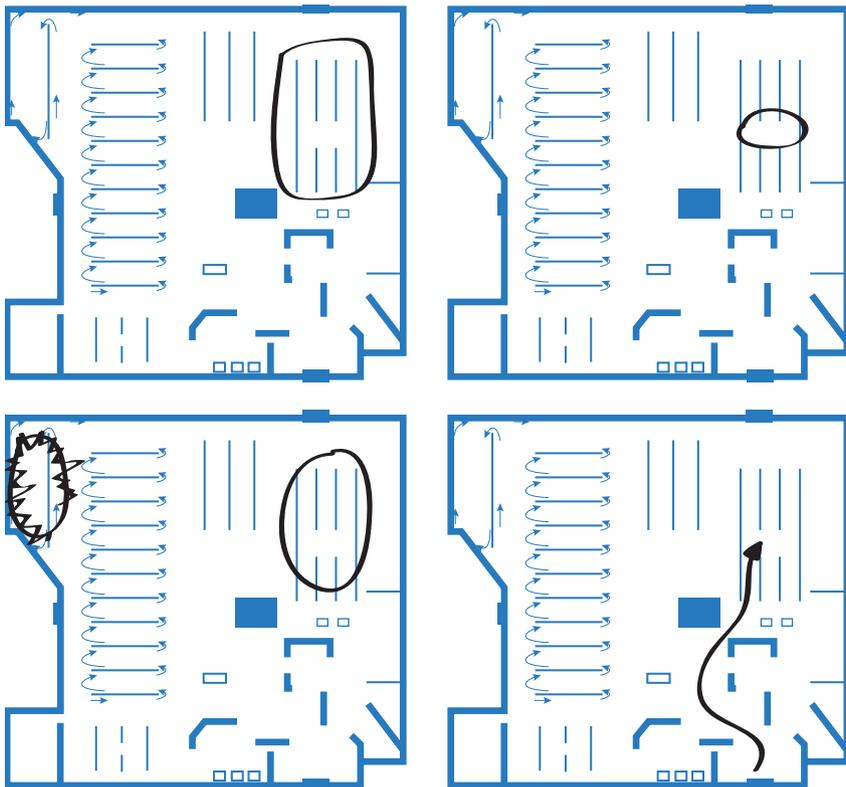
The framework characteristics are described below:

- Situation: Public
- Medium: Print
- Text format: Non-continuous
- Text type: Description
- Aspect: Access and retrieve: Retrieve information
- Question intent: Locate information that matches on one factor using low-level inference
- Item format: Short response



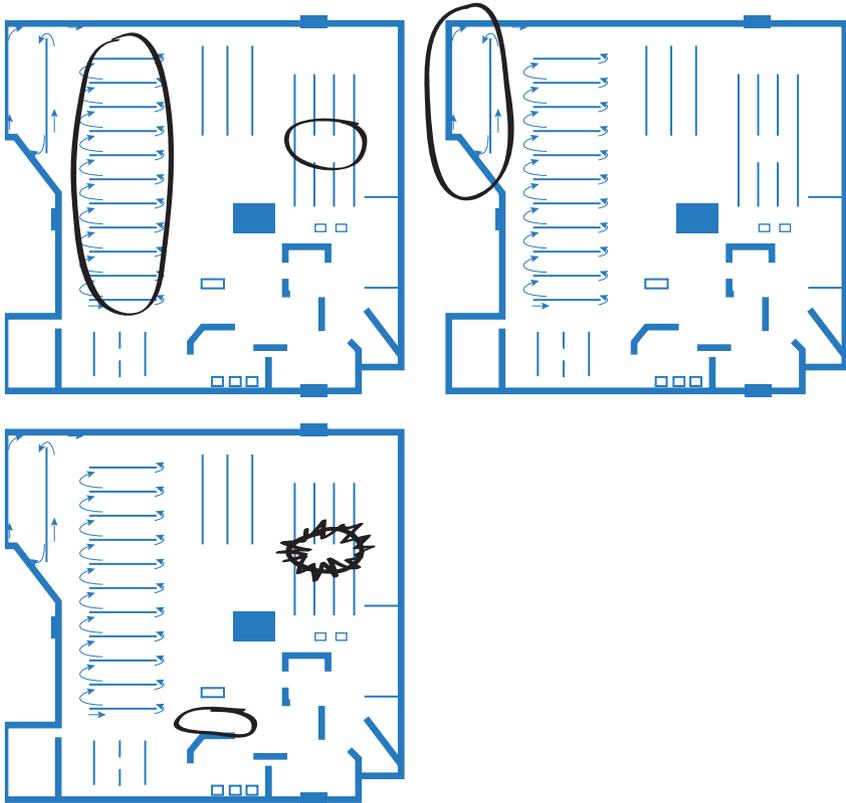
Full credit

Code 1: Circles the words “other languages” or the lines (shelves) near the words.



No credit

Code 0: Other, including circling which includes any other feature of the map completely.





Code 9: Missing.

This short response item requires that the reader search for, locate and select relevant information from the information space: in this case, a map. The required information is found in a single location rather than multiple locations, a factor that is likely to reduce difficulty. On the other hand, the match between the words in the task and the caption on the map is not literal: the reader must make an inference to categorise “French” as “Other languages”. (A translation and adaptation note instructed that in national versions of the item the language referred to in the item should be a foreign language commonly taught in schools.) Nevertheless, this is a rather easy item, with more than four fifths of the students in the field trial able to identify the right section of the library. As indicated in the full credit examples provided with the coding guide, students could mark the text in a number of different ways to show their answer. Although the question specifies that a circle should be drawn to show the answer, the format of the response is not the critical criterion for awarding credit: what is critical is whether or not the response clearly meets the intent of the question – “locating information that matches on one factor using low-level inference”.

QUESTION 2A

Where are *New books* located?

- A. In the fiction section.
- B. In the non-fiction section.
- C. Near the entrance.
- D. Near the information desk.

The correct answer is C: “Near the entrance”. This question is for information only and will not independently contribute to the student’s score. The answer is taken into account in assessing the response to Question 2B.

QUESTION 2B

Explain why this location might have been chosen for *New books*.

.....

The framework characteristics are described below:

- Situation: Public
- Medium: Print
- Text format: Non-continuous
- Text type: Description
- Aspect: Reflect and evaluate: Reflect on and evaluate the content of a text
- Question intent: Hypothesise about the location of a feature of a map drawing on personal knowledge and experience
- Item format: Open-constructed response

Full credit

Code 2: Answer to Part A correct. Gives an explanation which is consistent with the answer “near the entrance”.

- People will see them as soon as they walk in.
- They are away from the other books, and people will find them easily.
- So people can look at them first. [Implies recognition that the new books are near the entrance.]
- So they are very visible.
- They are clearly visible and not hidden away among the bookshelves so that you have to search for them.
- You pass it on your way to fiction.

OR: Answer to previous question Part A correct. Gives an explanation which shows understanding of the location of the new books in relation to a part of the library other than the entrance.

- It gives children a chance to play while adults look around. [Recognises that the new books are near the Toys section.]
- When people are returning books they will see the new ones.



Partial credit

Code 1: Answer to Part A incorrect. Gives an explanation which is consistent with the answer given for previous question.

- [Answer to Part A: In the fiction section.] Because this is the part of the library that most people would be using, so they would notice the new books.
- [Answer to Part A: Near the information desk.] Because they are next to the Information Desk, the librarian can answer questions about them.

No credit

Code 0: Gives insufficient or vague explanation regardless of whether answer to Part A is correct or incorrect.

- Because it's the best place.
- They are near the entrance too. [States where the new books are, without offering explanation.]
- The New books are near the suggestion box. [States where the new books are, without offering explanation.]

OR: Shows inaccurate comprehension of the material or gives an implausible or irrelevant explanation, regardless of whether answer to Part A is correct or incorrect.

- So people would notice them when they were looking at the newspapers. [Inaccurate, implies that new books are near the newspapers.]
- Because there is nowhere else to put them. [Implausible]
- Some people like to read new books. [Answer is irrelevant to question.]
- [Answer to Part A: In the fiction section.] So that they are easy to find. [Answer irrelevant to answer given for Part A]

Code 9: Missing.

The coding rules for this task are somewhat complicated. Students are asked two questions – one multiple-choice and one constructed response – but only the second of these is coded directly. As this task contributes to the *reflect and evaluate* scale, the multiple-choice component, which predominantly requires retrieval of information, does not earn any credit on its own. However, the multiple-choice question is taken into account in the coding of the second, constructed response question.

To gain full credit, the response must include both accurate reading of the map (locating the New books near to the entrance) and a hypothesis about the reason for locating the New books in that position. To make such a hypothesis, readers need to consult their own experience or knowledge – in this case about the way libraries work and the way they are used by the public. In the PISA context, the outside knowledge required is intended to be within the expected range of 15-year-olds' experiences.

Students receive only partial credit if they have failed to correctly locate the New books on the map, but have given a plausible hypothesis about the reason for locating New books in a particular position. Like the full credit responses, this kind of response fulfils the intent of reflecting on content that is the main thrust of this task.

This was an easy item, with over four fifths of the students in the field trial gaining full credit.



SUPERMARKET NOTICE

This public notice consists of a very short text that has an everyday function: to warn about the possible danger of a product to consumers and to give advice to return the product for a refund. While the formatting of the stimulus reflects the international standard for product recall notices, many students may not have seen this kind of notice. Nevertheless, the content of the warning is clearly set out and a minimum number of words is used. Lemon biscuits were chosen as the product because of their familiarity and likely appeal. In developing very short easy items, the test developers sought to use simple pieces of stimulus with familiar content. This was not only to make the cognitive load of the items lighter, but also to present texts that were unlikely to intimidate students with low reading proficiency, since such readers can easily be discouraged from even attempting to read something that they believe looks too hard or too long. The text format classification of the supermarket notice is *non-continuous*, as it consists of a list of described features. In terms of text type, the notice is instructional: it provides directions on what to do if you have bought the product.

■ Figure 2.5 ■

Items for the unit SUPERMARKET NOTICE

Peanut Allergy Alert
Lemon Cream Biscuits

Date of alert: 04 February
Manufacturer's Name: Fine Foods Ltd
Product Information: 125g Lemon Cream Biscuits (Best before 18 June and Best before 01 July)
Details: Some biscuits in these batches may contain pieces of peanut, which are not included in the ingredient list. People with an allergy to peanuts should not eat these biscuits.
Consumer action: If you have bought these biscuits you may return the product to the place of purchase for a full refund.
Or call 1800 034 241 for further information.



QUESTION 1

What is the purpose of this notice?

- A. To advertise Lemon Cream Biscuits.
- B. To tell people when the biscuits were made.
- C. To warn people about the biscuits.
- D. To explain where to buy Lemon Cream Biscuits.

The framework characteristics are described below:

- Situation: Public
- Medium: Print
- Text format: Non-continuous
- Text type: Instruction
- Aspect: Integrate and interpret: Form a broad understanding
- Question intent : Recognise the main idea of a short text by combining adjacent pieces of information
- Item format: Multiple choice

Full credit

Code 1: C. To warn people about the biscuits.

No credit

Code 0: Other responses.

Code 9: Missing.

To answer this question correctly, students must form a global understanding of the text to recognise its overall purpose. In particular, to reject distractors A and D, students must recognise that although the text is about a particular product, it is not an advertisement, but a warning. This item was easy. The easiness of this item comes in part from the fact that the whole text is very short.

QUESTION 2

What is the name of the company that made the biscuits?

.....

The framework characteristics are described below:

- Situation: Public
- Medium: Print
- Text format: Non-continuous
- Text type: Instruction
- Aspect: Access and retrieve: Retrieve information
- Question intent: Locate a synonymous match in a short text
- Item format: Closed-constructed response

Full credit

Code 1: Fine Foods Ltd.

No credit

Code 0: Other responses.



Code 9: Missing.

To answer this question successfully the student needs to locate a single explicitly stated piece of information in the text, using a synonymous match between the task direction and the text (company / manufacturer). The fact that the whole text is very short, and that the needed information is near the beginning of the text, adds to the easiness of the task. The response format for the task is described as closed constructed response, since only one answer (with a small range of variants: Fine Foods or Fine Foods Ltd.) is given full credit.

QUESTION 3

What would **you** do if you had bought these biscuits?

Why would you do this?

Use information from the text to support your answer.

The framework characteristics are described below:

- Situation: Public
- Medium: Print
- Text format: Non-continuous
- Text type: Instruction
- Aspect: Reflect and evaluate: Reflect on and evaluate the content of a text
- Question intent: Hypothesise about a personal course of action in response to the information in a text
- Item format: Open-constructed response

Full credit

Code 1: 3A: Provides a response that is consistent with an understanding that the biscuits may be returned with a refund. May refer to eating the biscuits, not eating the biscuits, returning them or getting rid of them in some other way AND 3B: Gives an explanation consistent with the text and the response in 3A. Must be consistent with the idea that the peanuts pose a potential threat.

- (3A)
Ask for my money back.
- (3B)
It tells me to.
I'm allergic to peanuts.
They did something wrong.
There might be something (else) wrong.
I don't like peanuts.
- (3A)
Throw them away.
- (3B)
I'm allergic to peanuts.
There might be something wrong.
- (3A)
Eat them.
- (3B)
Peanuts won't harm me.
I'm not allergic to peanuts.
I like peanuts.



- (3A)
Give them to my classmate,
(3B)
She's not allergic to peanuts.

- (3A)
Nothing.
(3B)
I'm not allergic to peanuts.
I can't be bothered to go back to the shop.

3A: Quotes from or paraphrases an appropriate section of the text without further explanation (implying that the text tells you what to do and that no further explanation is required).

3B: No response.

- (3A) Return the product to the place of purchase for a full refund. Or call 1800 034 241 for further information.
(3B) (no response)
- (3A) Return the product to the place of purchase for a full refund.
(3B) (no response)
- (3A) Call 1800 034 241 for further information.
(3B) (no response)
- (3A) Call the number for more information.
(3B) (no response)

3A: No response AND 3B: Gives explanation for taking no action. Must be consistent with the idea that the peanuts pose a potential threat.

- (3A) (no response)
(3B) I'm not allergic to peanuts.
- (3A) (no response)
(3B) I can't be bothered to go back to the shop.

No credit

Code 0: Gives an insufficient or vague response.

- (3A) I don't know
(3B) they might have peanuts
- (3A) eat them
(3B) there might be peanuts

Shows inaccurate comprehension of the material or gives an implausible or irrelevant response.

- (3A) (no response)
(3B) check them for nuts.
- (3A) eat them.
(3B) they look good enough to eat.
- (3A) give them to someone.
(3B) it doesn't matter.
- (3A) (no response)
(3B) I'm allergic to peanuts.
- (3A) (no response)
(3B) peanuts can be dangerous.
- (3A) throw them away.
(3B) They're past their Best before date.



Code 9: Missing.

This question requires students to hypothesise about their likely personal response to the information in the text. Since the question requires a judgement based on personal preferences, or likely behaviours, the question is classified as *reflect and evaluate*. The coding guide indicates that a wide range of responses can receive full credit, so long as the response is consistent with two central ideas of the text: firstly, that it is possible to return the biscuits, and secondly that the biscuits pose a potential threat. The item is easy, with over four-fifths of the field trial respondents gaining full credit. The easiness of the item can be explained in part by the low level of reflection to be done: no specialised knowledge is required in order to explain a personal preference about a course of action regarding the familiar topic of food.

QUESTION 4

Why does the notice include “Best before” dates?

The framework characteristics are described below:

- Situation: Public
- Medium: Print
- Text format: Non-continuous
- Text type: Instruction
- Aspect: Integrate and interpret: Develop an interpretation
- Question intent : Identify the purpose of a conventional feature included in a short text
- Item format: Open-constructed response

Full credit

Code 1: Refers to the fact that the Best before dates identify the batches of biscuits that are affected.

- to identify the batch(es).
- so you know which packets have peanuts.

No credit

Code 0: Refers to when the biscuits should be eaten.

- because that’s when you eat them.
- to tell you when to eat the biscuits.
- so you don’t keep them too long.
- to tell you when they expire.

Gives an insufficient or vague response.

- it’s the date.

Shows inaccurate comprehension of the material or gives an implausible or irrelevant response.

- so you know when the notice is irrelevant.

Code 9: Missing.

This question was answered correctly by less than one-third of students. Given the shortness and simplicity of the text, this illustrates the fact that the characteristics of a text only partly explain the difficulty of an item. The question requires students to identify the purpose of a specified part of the text, namely, the “Best before” dates. The difficulty of the item comes from the fact that students must focus on the purpose of the feature in this particular text. Students who answer by giving the usual purpose of this feature (that is, to tell the consumer when the product should be used by) do not receive credit for this item. In this respect the full credit response is contrary to expectations, an established marker of item difficulty.



DESTINATION BUENOS AIRES

Destination Buenos Aires is an extract from Antoine de Saint-Exupéry's 1931 novel *Vol de Nuit* (published in English as *Night Flight*). The only addition to the original text for its appearance in PISA was an explanatory footnote relating to "Patagonia", as students would certainly have differing levels of familiarity with this place name. The explanation gives context which might help students to negotiate the text. The extract takes place at a landing-ground in Buenos Aires, and is a self-contained portrait of Rivière, a man weighed down by the responsibility of his job. Though the novel was written in 1931, the human themes remain familiar.

■ Figure 2.6 ■

Items for the unit *DESTINATION BUENOS AIRES*

And so the three mail planes from Patagonia,¹ Chile and Paraguay were returning from the South, the West and the North to Buenos Aires. Their cargo was awaited there so that the plane for Europe could take off, around midnight.

Three pilots, each behind an engine casing heavy as a barge, lost in the night, were contemplating their flight and, approaching the immense city, would descend slowly out of their stormy or calm sky, like strange peasants descending from their mountain.

Rivière, who was responsible for the entire operation, was pacing up and down on the Buenos Aires landing-ground. He remained silent, for until the three planes had arrived, the day held a sense of foreboding for him. Minute by minute, as the telegrams reached him, Rivière was conscious that he was snatching something from fate, gradually reducing the unknown, hauling in his crews out of the night, towards the shore.

One of the men came up to Rivière to give him a radioed message:

Chile mail reports that he can see the lights of Buenos Aires.

Good.

Before long, Rivière would hear this plane; already the night was surrendering one of them, just as a sea, swollen with ebbing and flowing and mysteries, surrenders to the shore the treasure it has tossed around for such a long time. And later on, it would give back the other two.

Then this day's work would be over. Then the worn-out crews would go and sleep, to be replaced by fresh crews. But Rivière would have no rest: the mail from Europe, in its turn, would fill him with apprehension. And so it would always be. Always.

Antoine de Saint-Exupéry, *Vol de Nuit* © Éditions Gallimard

1. Southern region of Chile and Argentina.

QUESTION 1

How does Rivière feel about his job? Use the text to give a reason to support your answer.

.....

The framework characteristics are described below:

- Situation: Personal
- Medium: Print
- Text format: Continuous
- Text type: Narration
- Aspect: Integrate and interpret: Develop an interpretation
- Question intent: Link information across a narrative to generalise about a character's state of mind, providing evidence to support the generalisation
- Item format: Open-constructed response



Full credit

Code 2: Describes Rivière’s feeling about his job by referring to stress, persistence, being burdened, or being committed to doing his duty; AND gives an explanation referring to a relevant section of the text. May refer to the text generally, or may paraphrase or quote the text directly. The quotation must match the stated emotion.

- He is overwhelmed by it all, you can see in the last line, he never gets to rest.
- He is stressed. The day has “held a sense of foreboding for him”.
- He is weighed down by it. All day he worries about those three planes, then he has to worry about the Europe one!
- He is resigned. You can see from that last “always” that he thinks things will never change.
- He really cares about his job. He can’t relax until he knows that everyone is safe. [Includes a general reference to the text.]

Partial credit

Code 1: Describes Rivière’s feeling about his job by referring to stress, persistence, being burdened, or being committed to doing his duty, without an explanation that refers to the text.

- He feels really responsible for the things that happen.
- He’s stressed.

No credit

Code 0: Gives an insufficient or vague response.

Shows inaccurate comprehension of the material or gives an implausible or irrelevant response.

- He likes his job because he is in control of lots of things. [not supported by the text]
- He thinks it is cool because he can watch planes. [not supported by the text]

Code 9: Missing.

The coding guide for this item shows that there are two kinds of response that receive credit. Full credit responses are those which accurately respond to the question and give an explanation using the text. Partial credit responses are those which accurately respond to the question, but fail to give an explanation for the response. The partial credit code recognises that an incomplete answer is superior to an inaccurate one. In the field trial, less than half of the students received full credit for this item, but an additional one quarter received partial credit, meaning that about three-quarters of students received some credit (either full or partial) for this item. This question is classified as *integrate and interpret*, because although students are required to generate a response that is not given explicitly in the text, all the information necessary to answer the question is contained within the text.

QUESTION 2

“Destination Buenos Aires” was written in 1931. Do you think that nowadays Rivière’s concerns would be similar? Give a reason for your answer.

.....

The framework characteristics are described below:

- Situation: Personal
- Medium: Print
- Text format: Continuous
- Text type: Narration
- Aspect: Reflect and evaluate: Reflect on and evaluate the content of a text
- Question intent : Hypothesise about the effect on a character of a change in a narrative’s context
- Item format: Open-constructed response



Full credit

Code 1: Answers (or implies) Yes OR No and refers to a time-based comparison AND supports their answer. May refer to material concerns such as technological progress or improvements in security OR to psychological concerns such as anxiety. Answer must be consistent with an accurate reading of the text.

- Now, pilots (planes) have very sophisticated tools intended for orientation, making up for technical issue when the weather conditions are bad.
- No, nowadays, planes have radars and automatic piloting systems, which can help them to escape from dangerous situations.
- Yes, planes are still dangerous, just like any other means of transport. The risks of crash or engine failure are never eradicated.
- Now, new technologies and technical progress are very important, in the planes as well as on the ground.
- Yes, there is still a risk of crashing.
- No, before, there was no fear of terrorist attacks.

No credit

Code 0: Gives an insufficient or vague response.

- No, the fears are different today.
- Yes, some progress has been made.
- In a way, yes, but in the modern day context. [vague]
- Over the years, people would have changed it. [vague]

Shows inaccurate comprehension of the material or gives an implausible or irrelevant response.

- No, because you don't travel by night nowadays. [inaccurate about the world]
- No, because nowadays, pilots are much better trained. [irrelevant]
- No, Rivière is really happy with his job but nowadays there are terrorists to worry about. [inaccurate reading of the text]

Code 9: Missing.

This item was moderately difficult. Just over one-half of students answered correctly. The item requires students to reflect on the context in which a text was written and compare that context to their own. The object of the question is to encourage reflection. Therefore, so long as the response is consistent with an accurate reading of the text, and expresses a plausible position about the modern day context, a wide range of responses receive full credit, regardless of the position adopted.

QUESTION 3

What happens to the main character in this text?

- A. He has an unpleasant surprise.
- B. He decides to change his job.
- C. He waits for something to happen.
- D. He learns to listen to others.

The framework characteristics are described below:

- Situation: Personal
- Medium: Print
- Text format: Continuous
- Text type: Narration
- Aspect: Integrate and interpret: Form a broad understanding
- Question intent : Recognise the main action in a narrative text
- Item format: Multiple choice



Full credit

Code 1: C. He waits for something to happen.

No credit

Code 0: Other responses.

Code 9: Missing.

This item was easy. About three-quarters of students answered correctly. The item requires students to demonstrate a broad understanding of the text by identifying its main idea. The item requires making links across the text and generalising about its overall action. The easiness of the item comes from the fact that the main idea of the text is implied and reinforced across the whole text.

QUESTION 4

According to the second last paragraph (“Before long ...”), in what way are the night and a sea similar?

- A. Both hide what is in them.
- B. Both are noisy.
- C. Both have been tamed by humans.
- D. Both are dangerous to humans.
- E. Both are silent.

The framework characteristics are described below:

- Situation: Personal
- Medium: Print
- Text format: Continuous
- Text type: Narration
- Aspect: Integrate and interpret: Develop an interpretation
- Question intent : Understand the point of comparison in a metaphor
- Item format: Multiple choice

Full credit

Code 1: A. Both hide what is in them.

No credit

Code 0: Other responses.

Code 9: Missing.

The item requires students to interpret a metaphor, although the word “metaphor” is deliberately avoided in the stem: such metalinguistic terms are likely to vary in familiarity for students from different educational backgrounds, and such metalinguistic knowledge is not part of the PISA description of reading proficiency. On the other hand, the ability to construe figurative language is considered an important constituent of interpreting texts, and particularly literary texts. It is recognised that a particular challenge for an international assessment of reading is to reflect this ability across languages and cultures. In this item, the figurative language in question uses terms (“sea” and “night”) that can be regarded as universally familiar, and that have a similar connotation across cultures in the context provided by the narrative passage. The field trial results indicate that the item had robust psychometric qualities and performed similarly across countries and languages. This item demonstrates, then, that it is sometimes possible to successfully construct an item that focuses on a text’s literary qualities, such as figurative language, for an international assessment. This question also demonstrates that while it is most common for multiple-choice items in PISA to have four possible response options, sometimes more than four options are given. The item was moderately difficult, with less than two-thirds of students answering it correctly.



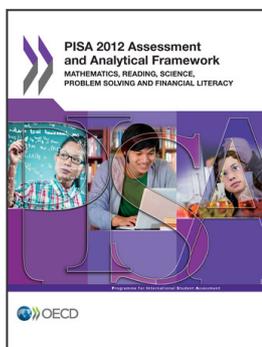
Notes

1. The discussion in this section refers to reading in both print and digital media, unless otherwise stated.
2. This does not preclude the use of several texts in a single task, but each of the texts should be coherent in itself.
3. The hypertext link is a technique that appeared in the 1980s as a way of connecting units of information in large digital documents (Conklin, 1987; Koved and Shneiderman, 1986; Lachman, 1989; Weyer, 1982). The hypertext link or hyperlink is a piece of information (a word or phrase, or a picture or icon) that is logically connected to another piece of information (usually a page). The use of hyperlinks allows for the creation of multi-page documents with a networked structure.



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