



PISA 2018 Released Field Trial and Main Survey New Reading Items

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A Note on this Update

In 2018, prior to the Main Survey, this report was written to describe items from two units that were not selected for the Main Survey (Chicken Forum and Cow's Milk). Additionally, this report contained items from a unit that had been developed for, but was not administered in, the Field Trial (The Galapagos Islands).

This updated report addresses three areas. First, it presents updated difficulty information for the items assessed in the Field Trial. Second, it expands the number of released items to include the items from Rapa Nui, a unit that was administered in the Main Survey but was not taken forward to the next cycle of PISA. Third, it incorporates a description of the fluency task, a measure of reading components that was tested in the Field Trial and administered in the Main Survey.

Reading Literacy – Overview

Seven items from the Main Survey, fourteen items from the 2018 Field Trial, and seven items from a unit that was not administered in the Field Trial were approved by the Reading Literacy Expert Group for release as sample items. The items are presented within their units as they were designed and in the case of three units, as they were administered in either the Main Survey or the Field Trial. The cognitive process is provided for each released item, showing how the item was classified according to the construct categories in the 2018 Reading Literacy framework that will be used for scaling. Each cognitive process is explained more fully in the framework. A summary from the framework is provided here for reference.¹

Cognitive Processes

Successful reading, whether reading a single text or reading and integrating information across multiple texts, requires an individual to perform a range of processes. The 2018 Reading Literacy framework defines several cognitive processes that span a range of difficulty. Each cognitive process is assigned to a superordinate category which will be used for the final scaling of the 2018 Main Survey data: Locate information, Understand, and Evaluate and Reflect. The cognitive processes within each category are briefly defined below.

Locate information

- Access and retrieve information within a text – scanning a single text in order to retrieve target information consisting of a few words, phrases or numerical values.
- Search for and select relevant text – searching for information among several texts to select the most relevant text given the demands of the item/task.

¹ For additional information, please consult the PISA 2018 Reading Framework, <https://www.oecd.org/pisa/data/PISA-2018-draft-frameworks.pdf>

Understand

- Represent literal information – comprehending the literal meaning of sentences or short passages, typically matching a direct or close paraphrasing of information in the question with information in a passage.
- Integrate and generate inferences – going beyond the literal meaning of information in a text by integrating information across sentences or even an entire passage. Tasks that require the student to create a main idea or to produce a summary or a title for a passage are classified as “integrate and generate inference” items.
- Integrate and generate inferences across multiple sources – integrating pieces of information that are located within two or more texts.

Evaluate and Reflect

- Assess quality and credibility – evaluating whether the information in a text is valid, current, accurate, unbiased, reliable, etc. Readers must identify and consider the source of the information and consider the content and form of the text or in other words, how the author is presenting the information.
- Reflect on content and form – evaluating the form of the writing to determine how the author is expressing their purpose and/or point of view. These items often require the student to reflect on their own experience and knowledge to compare, contrast or hypothesize different perspectives or viewpoints.
- Detect and handle conflict – determining whether multiple texts corroborate or contradict each other and when they conflict, deciding how to handle that conflict. For example, items classified as “detect and handle conflict” may ask students to identify whether two authors agree on the stance of an issue or to identify each author’s stance. In other cases, these items may require students to consider the credibility of the sources and demonstrate that they accept the claims from the more reliable source over the claims from the less reliable source.

Texts

Texts can be classified along four different dimensions described in the framework: source, organization and navigation, format, and type. Each dimension is briefly described below.

Source

- Single – a single unit of text that has an author or a group of authors, a time of writing or publication date and a reference title or number.
- Multiple – multiple units of texts where each has a different author, different publication times or have different titles or reference numbers.

Organization and Navigation

- Static – texts with simple organization and a low density of navigation tools; typically texts with one or several pages organized in a linear way.
- Dynamic – texts with a more complex, non-linear organization and a higher density of navigation tools.

Format

- Continuous – texts formed by sentences that are organized into paragraphs.
- Non-continuous – texts composed of a number of lists or elements such as tables, graphs, diagrams, advertisements, schedules, catalogues, indexes, forms, etc.
- Mixed – texts containing both continuous and non-continuous elements.

Type

- Description – texts with information that refers to properties of objects in space. Description texts provide an answer to “what” questions. Examples include a depiction of a place in a travelogue, a catalogue or a process in a technical manual.
- Narration – texts with information that refers to objects in time. Narration texts provide answers to “when” or “in what sequence”. Examples include a report, a news story, a novel, a short story or a play.
- Exposition – texts with explanations of how different elements interrelate in a meaningful way and provide answers to “how” questions. Examples include a scholarly essay, a diagram showing a model of memory, a graph of population trends, or a concept map for an entry in an online encyclopedia.
- Argument – texts that present the relationship among concepts or propositions. Argument texts provide answers to “why” questions. An important subclassification of argumentative texts is persuasive and opinionative texts, referring to opinions and points of view. Examples include a letter to the editor, a poster advertisement, posts in an online forum or a review of a book or film.
- Instruction – a text that provides instructions on what to do. Examples include a recipe, a series of diagrams showing how to give first aid or guidelines for operating software.
- Transaction – a text that aims to achieve a purpose such as requesting that something is done, organizing a meeting or making a social engagement with a friend. Examples include a letter, an email or a text message.

Scenarios

Reading is a purpose-driven activity; that is, it occurs when a reader wishes to accomplish a particular goal, such as locating information to fill out a form or understanding a topic well enough to participate in a discussion with peers. In many traditional reading assessments, however, the “goal” is simply to answer a few discrete questions about a text on a general topic and then move on to the next. In contrast to this artificial world of traditional reading assessments, the Reading Literacy units developed for 2018 are scenario-based. Each unit begins with a fictional scenario that describes the over-arching goal for reading the text or collection of texts in the unit. Thus, the reader is given both a context and a purpose that helps to shape the way he or she searches for, comprehends, and integrates information.

Scenarios were developed to address a range of situations. The framework describes several types of situations that relate to the overarching scenario developed for each unit:

- Personal – situations that contain text that satisfies an individual’s personal interests in both practical and intellectual ways. Examples include personal letters, fiction, biography and informational texts that are read to satisfy curiosity or for leisure as well as personal emails, instant messages and blogs.

- Public – situations that contain text that relates to activities and concerns of the society at large. Examples include official documents, information about public events, message boards, news websites and public notices.
- Educational – situations that contain text designed for the purpose of instruction and that is often chosen by an instructor rather than the reader. Examples include printed or electronic textbooks and interactive learning software.
- Occupational – situations that contain text that supports the accomplishment of an immediate task. Examples include texts used to search for a job such as printed classified ads or online job websites, and texts that provide workplace directions.

Released Items

Below, released items for four units are presented. The unit Rapa Nui was administered in the PISA 2018 Main Survey but was not carried forward to future cycles of PISA. This unit was not selected for future PISA cycles due to the length of the unit and the fact that while the items met quality standards, they were not as strong as items in other units. The units Chicken Forum and Cow's Milk were administered in the PISA 2018 Field Trial. These units were omitted from the Main Survey based on objections to the content within the unitsⁱ; however, most of the items demonstrated strong measurement properties. Two items that did not demonstrate adequate measurement properties have not been released for the unit Cow's Milk.

The unit The Galapagos Islands was omitted prior to the Field Trial based on the recommendation of the Reading Expert Group. While the content and items were acceptable and tapped into elements of digital literacy that are important to assessing reading literacy, the content of the stimuli prepared for the website did not allow for a rich diversity of item types. Thus, in the interest of retaining units that did allow for a richer item diversity, The Galapagos Islands was omitted from the Field Trial. Consequently, the items presented here were not administered and their measurement properties were not ascertained. Nevertheless, some of the items are provided in this report to give the reader an idea of how reading units based on a simulated website with multiple webpages were designed in order to measure students' ability to locate and comprehend information about a topic.

Difficulty information for each item in Rapa Nui, Chicken Forum, and Cow's Milk is provided. No difficulty information can be provided for the items released for The Galapagos Islands because these items were not administered in the Field Trial or the Main Survey.

Unit CR551: *Rapa Nui*

Rapa Nui Scenario

PISA 2018

Rapa Nui
Introduction

Read the Introduction. Then click on the NEXT arrow.

Imagine that a local library is hosting a lecture next week. The lecture will be given by a professor from a nearby university. She will discuss her field work on the island of Rapa Nui in the Pacific Ocean, over 3200 kilometres west of Chile.

Your history class will attend the lecture. Your teacher asks you to research the history of Rapa Nui so that you will know something about it before you attend the lecture.

The first source you will read is a blog entry written by the professor while she was living on Rapa Nui.

Click on the NEXT arrow to read the blog.

In this unit's scenario, the student is preparing to attend a lecture about a professor's field work that was conducted on the island of Rapa Nui. The situation is classified as educational because it represents a student conducting background research on Rapa Nui in preparation for attendance at a lecture.

Rapa Nui is a multi-source unit. It consists of three texts: A webpage from the professor's blog, a book review, and a news article from an online science magazine. The blog is classified as a multiple source text; dynamic (the webpage contains active links to the other texts in the unit); continuous; and narrative. The blog post is an example of a multiple source text because the comment section at the bottom of the blog page represent different authors. Both the book review and the news article are classified as single text; static; continuous; and argumentative.

Initially, the student is provided with the blog post only. Several questions are presented that focus only on the content of this blog. Once those questions have been answered, the student receives the second text, the book review. After reading the book review, the student responds to a question that

focuses solely on its content. Then, the student receives the third text, the article from the online science magazine. The student sees questions that focus only on the article. After that, the student is given items that require integrating the information from all sources.

This model was used for several of the multiple-text units in the new material developed for Reading Literacy. This approach was chosen because it allows the student first to demonstrate proficiency on questions that relate to one text and then to demonstrate the ability to handle information from multiple texts. This is an important design feature because there may be readers who can succeed with information when it is presented in a single text and even integrate information within one text, but who struggle when asked to integrate *across* multiple texts. Thus, this design allows students with varying levels of ability to demonstrate proficiency on at least some elements of the unit.

The “Rapa Nui” unit was intended to be of moderate to high difficulty. The three texts result in a larger amount of information to work through within the unit compared to a single text unit. In addition, the way the texts relate to one another needs to be considered by the student, requiring him or her to recognize whether they corroborate each other or whether they differ in their stances. This kind of cognitive engagement with the material and the unit overall is expected to require more effort than a unit that presents all the information within one text.

Please note that the screenshot provided for Released Item #1 shows the full text of the blog for the purposes of this report. The student had to scroll to see the full text in the programmed version which was programmed uniformly across language versions so that all students would have to scroll to see the full text.

Rapa Nui Released Item #1

PISA 2018

Rapa Nui
Question 1 / 7

Refer to the Professor's Blog on the right. Click on a choice to answer the question.

According to the blog, when did the professor start her field work?

- o During the 1990s.
- o Nine months ago.
- o One year ago.
- o At the beginning of May.

Blog
www.theprofessorblog.com/fieldwork/RapaNui

 The Professor's Blog

Posted May 23, 11:22 a.m.

As I look out of my window this morning, I see the landscape I have learned to love here on Rapa Nui, which is known in some places by the name Easter Island. The grasses and shrubs are green, the sky is blue, and the old, now extinct volcanoes rise up in the background.

I am a bit sad knowing that this is my last week on the island. I have finished my field work and will be returning home. Later today, I will take a walk through the hills and say good-bye to the moai that I have been studying for the past nine months. Here is a picture of some of these massive statues.



If you have been following my blog this year, then you know that the people of Rapa Nui carved these moai hundreds of years ago. These impressive moai had been carved in a single quarry on the eastern part of the island. Some of them weighed thousands of kilos, yet the people of Rapa Nui were able to move them to locations far away from the quarry without cranes or any heavy equipment.

For years, archeologists did not know how these massive statues were moved. It remained a mystery until the 1990s, when a team of archeologists and residents of Rapa Nui demonstrated that the moai could have been transported and raised using ropes made from plants and wooden rollers and tracks made from large trees that had once thrived on the island. The mystery of the moai was solved.

Another mystery remained, however. What happened to these plants and large trees that had been used to move the moai? As I said, when I look out of my window, I see grasses and shrubs and a small tree or two, but nothing that could have been used to move these huge statues. It is a fascinating puzzle, one that I will explore in future posts and lectures. Until then, you may wish to investigate the mystery yourself. I suggest you begin with a book called *Collapse* by Jared Diamond. [This review of Collapse is a good place to start.](#)

 Traveler_14 May 24, 4:31 p.m.

Hi Professor! I love following your work on Easter Island. I can't wait to check out *Collapse*!

 KB_Island May 25, 9:07 a.m.

I also love reading about your experiences on Easter Island, however, I think there is another theory that should be considered. Check out this article: www.sciencenews.com/Polynesian_rats_Rapa_Nui

In this item, the student must locate the correct information within the blog post. Its difficulty is likely driven by the existence of other time-related information within the blog, i.e. the date it was posted and

the time period in which the first mystery of the moai was solved (the 1990s). Here, the correct answer is (B) Nine months ago.

| | |
|------------------------------------|---|
| <i>Item Number</i> | CR551Q01 |
| <i>Cognitive Process</i> | Access and retrieve information within a text |
| <i>Response Format</i> | Simple Multiple Choice – Computer Scored |
| <i>Source Requirement for Item</i> | Single |
| <i>Difficulty</i> | 559 – Level 4 |

Full Credit

Code 1: Responses refer to the disappearance of the materials used to move the statues (moai).

- What happened to these plants and large trees that had been used to move the moai? *[Direct quotation]*
- There are no large trees left that could have moved the moai.
- There are grasses, shrubs and some small trees, but no trees large enough to move the large statues.
- Where are the large trees? *[Minimal]*
- Where are the plants? *[Minimal]*
- What happened to the resources that were needed to transport the statues?
- She was referring to what moved the Moai because when she looked around there were no big trees or plants. She is also wondering what happened to them. *[Although this response begins by referring to the wrong mystery, it contains the correct elements.]*

Rapa Nui Released Item #3

PISA 2018

Rapa Nui
Question 3 / 7


Refer to the Review of Collapse on the right. Click on the choices in the table to answer the question.

Listed below are statements from the Review of Collapse. Are these statements facts or opinions? Click on either **Fact** or **Opinion** for each statement.

| Is the statement a fact or an opinion? | Fact | Opinion |
|--|-----------------------|-----------------------|
| In the book, the author describes several civilizations that collapsed because of the choices they made and their impact on the environment. | <input type="radio"/> | <input type="radio"/> |
| One of the most disturbing examples in the book is Rapa Nui. | <input type="radio"/> | <input type="radio"/> |
| They carved the moai, the famous statues, and used the natural resources available to them to move these huge moai to different locations around the island. | <input type="radio"/> | <input type="radio"/> |
| When the first Europeans landed on Easter Island in 1722, the moai were still there, but the trees were gone. | <input type="radio"/> | <input type="radio"/> |
| The book is written well and deserves to be read by anyone who is concerned about the environment. | <input type="radio"/> | <input type="radio"/> |

Blog Book Review

www.academicbookreview.com/Collapse

 Review of Collapse

Jared Diamond's new book, *Collapse*, is a clear warning about the consequences of damaging our environment. In the book, the author describes several civilizations that collapsed because of the choices they made and their impact on the environment. One of the most disturbing examples in the book is Rapa Nui.

According to the author, Rapa Nui was settled by Polynesians sometime after 700 CE. They developed a thriving society of, perhaps, 15,000 people. They carved the moai, the famous statues, and used the natural resources available to them to move these huge moai to different locations around the island. When the first Europeans landed on Rapa Nui in 1722, the moai were still there, but the trees were gone. The population was down to a few thousand people who were struggling to survive. Mr. Diamond writes that the people of Rapa Nui cleared the land for farming and other purposes and that they over-hunted the numerous species of sea and land birds that had lived on the island. He speculates that the dwindling natural resources led to civil wars and the collapse of Rapa Nui's society.

The lesson of this wonderful but frightening book is that in the past, humans made the choice to destroy their environment by cutting down all the trees and hunting animal species to extinction. Optimistically, the author points out, we can choose **not** to make the same mistakes today. The book is written well and deserves to be read by anyone who is concerned about the environment.

For this item, the student is presented with the second text in the unit, a book review of *Collapse*, which was referenced in the blog post. The student must complete a table by selecting “Fact” or “Opinion” for each row. The question asks the student to identify whether each statement from the book review is a fact or an opinion. The student must first understand the literal meaning of each statement and then decide if the content was factual or represented the perspective of the author of the review. In this way, the student must focus on the content and how it is presented rather than just the meaning. To receive full credit for this item, the student was required to get all 5 rows correct. For partial credit, students were required to get 4 out of the 5 rows correct. If students got fewer than 4 rows correct, they received no credit. The correct answers are: Fact, Opinion, Fact, Fact, Opinion.

| | |
|------------------------------------|---|
| <i>Item Number</i> | CR551Q06 |
| <i>Cognitive Process</i> | Reflect on content and form |
| <i>Response Format</i> | Complex Multiple Choice – Computer Scored |
| <i>Source Requirement for Item</i> | Single |
| <i>Difficulty</i> | 654 – Level 5 |

Rapa Nui Released Item #4

The screenshot displays a PISA 2018 interface. On the left, a blue header reads "PISA 2018". Below it, a light blue box contains the title "Rapa Nui" and "Question 4 / 7". The main text area on the left contains the following text:

Refer to the article "Did Polynesian Rats Destroy Rapa Nui's Trees?" on the right. Click on a choice to answer the question.

What do the scientists mentioned in the article and Jared Diamond agree on?

- o Humans settled Rapa Nui hundreds of years ago.
- o Large trees have disappeared from Rapa Nui.
- o Polynesian rats ate the seeds of large trees on Rapa Nui.
- o Europeans arrived on Rapa Nui in the 18th century.

On the right, a browser window shows a "Science News" article. The browser tabs include "Blog", "Book Review", and "Science News". The address bar shows "www.sciencenews.com/Polynesian_rats_Easter_Island". The article title is "Did Polynesian Rats Destroy Rapa Nui's Trees?" by Michael Kimball, Science Reporter. The article text is as follows:

In 2005, Jared Diamond published *Collapse*. In the book, he described the human settlement of Rapa Nui (also called Easter Island).

The book caused a huge controversy soon after its publication. Many scientists questioned Diamond's theory of what happened on Rapa Nui. They agreed that the huge trees had disappeared by the time Europeans first arrived on the island in the 18th century, but they did not agree with Jared Diamond's theory about the cause of the disappearance.

Now, two scientists, Carl Lipo and Terry Hunt, have published a new theory. They believe that the Polynesian rat ate the seeds of the trees, preventing new ones from growing. The rat, they believe, was brought over either accidentally or purposefully on the canoes that the first human settlers used to land on Rapa Nui.

Studies have shown that a population of rats can double every 47 days. That's a lot of rats to feed. To support their theory, Lipo and Hunt point to the remains of palm nuts that show the gnaw marks made by rats. Of course, they acknowledge that humans did play a role in the destruction of the forests of Rapa Nui. But they believe that the Polynesian rat was an even greater culprit among a series of factors.

For this item, the student is presented with the third text in the unit, an article from an online science magazine. Note that at this point in the unit, all three texts are available to the student using a tab structure; the student can click on any tab to toggle back and forth between the texts. The item itself remains fixed on the left side of the screen during any toggling action. In this item, the student is required to locate the section of the article that contains the reference to the scientists and Jared Diamond (paragraph 2) and identify the sentence that contains the information agreed upon. While texts are available to the student, this item is not classified with a cognitive process that reflects the use of multiple sources. This is because the student can find the answer within this text, and the item instructions on the upper left corner instruct the student to refer to this article only. Thus, the support from the item instructions eliminates the need to consider the other sources. The difficulty of this item is likely driven by the existence of plausible (but incorrect) distracting information within the paragraph with respect to human settlement. Here, the correct answer is (B) Large trees have disappeared from Rapa Nui.

| | |
|------------------------------------|---|
| <i>Item Number</i> | CR551Q08 |
| <i>Cognitive Process</i> | Access and retrieve information within a text |
| <i>Response Format</i> | Simple Multiple Choice – Computer Scored |
| <i>Source Requirement for Item</i> | Single |
| <i>Difficulty</i> | 634 – Level 5 |

Rapa Nui Released Item #5

PISA 2018

Rapa Nui
Question 5 / 7

Refer to the article "Did Polynesian Rats Destroy Rapa Nui's Trees?" on the right. Click on a choice to answer the question.

What evidence do Carl Lipo and Terry Hunt present to support their theory of why the large trees of Rapa Nui disappeared?

- The rats arrived on the island on settlers' canoes.
- The rats may have been brought by the settlers purposefully.
- Rat populations can double every 47 days.
- The remains of palm nuts show gnaw marks made by rats.

Blog Book Review Science News

www.sciencenews.com/Polynesian_rats_Easter_Island

SCIENCE NEWS

Did Polynesian Rats Destroy Rapa Nui's Trees?
By Michael Kimball, Science Reporter

In 2005, Jared Diamond published *Collapse*. In the book, he described the human settlement of Rapa Nui (also called Easter Island).

The book caused a huge controversy soon after its publication. Many scientists questioned Diamond's theory of what happened on Rapa Nui. They agreed that the huge trees had disappeared by the time Europeans first arrived on the island in the 18th century, but they did not agree with Jared Diamond's theory about the cause of the disappearance.

Now, two scientists, Carl Lipo and Terry Hunt, have published a new theory. They believe that the Polynesian rat ate the seeds of the trees, preventing new ones from growing. The rat, they believe, was brought over either accidentally or purposefully on the canoes that the first human settlers used to land on Rapa Nui.

Studies have shown that a population of rats can double every 47 days. That's a lot of rats to feed. To support their theory, Lipo and Hunt point to the remains of palm nuts that show the gnaw marks made by rats. Of course, they acknowledge that humans did play a role in the destruction of the forests of Rapa Nui. But they believe that the Polynesian rat was an even greater culprit among a series of factors.

In this item, the student is required to understand what information in the text supports, or corroborates, the theory put forward by the scientists. The correct answer is (D) The remains of palm nuts show gnaw marks made by rats. Here, the student must go beyond an understanding of the text and identify which element of the text can be used as evidence to support a claim. All other items classified as detect and handle conflict require detecting a conflict between two sources or recognizing that the information in two or more sources and is corroborated. However, in discussing this item prior to the Field Trial, the experts felt that the act of identifying which piece of information supports the theory proposed by Carl Lipo and Terry Hunt was most appropriately identified by the cognitive process of detect and handle conflict. Furthermore, while this item could be classified as requiring only a single source, the requirement for the student to first consider the theory proposed by Lipo and Hunt and then to determine which evidence supports the theory is akin to working with multiple sources.

| | |
|---------------------------------|--|
| <i>Item Number</i> | CR551Q09 |
| <i>Cognitive Process</i> | Detect and handle conflict |
| <i>Response Format</i> | Simple Multiple Choice – Computer Scored |
| <i>Source Required for Item</i> | Multiple |
| <i>Difficulty</i> | 597 – Level 4 |

Rapa Nui Released Item #6

PISA 2018

Rapa Nui
Question 6 / 7

Refer to all three sources on the right by clicking on each of the tabs.

Drag and drop the causes, and the effect they have in common, into the correct places in the table about the theories.

The Theories

| Cause | Effect | Supporters of the Theory |
|-------|--------|--------------------------|
| | | Jared Diamond |
| | | Carl Lipo and Terry Hunt |

| | | |
|--|---|--|
| The moai were carved in the same quarry. | Polynesian rats ate tree seeds and as a result no new trees could grow. | Settlers used canoes to bring Polynesian rats to Rapa Nui. |
| The large trees disappeared from Rapa Nui. | Rapa Nui residents needed natural resources to move the moai. | Humans cut down trees to clear land for agriculture and other reasons. |

Blog **Book Review** **Science News**


www.theprofessorblog.com/fieldwork/EasterIsland

The Professor's Blog

Posted May 23, 11:22 a.m.

As I look out of my window this morning, I see the landscape I have learned to love here on Rapa Nui, which is known in some places by the name Easter Island. The grasses and shrubs are green, the sky is blue, and the old, now extinct volcanoes rise up in the background.

I am a bit sad knowing that this is my last week on the island. I have finished my field work and will be returning home. Later today, I will take a walk through the hills and say good-bye to the moai that I have been studying for the past nine months. Here is a picture of some of these massive statues.



In this item, students must integrate information across the texts with respect to the differing theories put forward by Jared Diamond on the one hand and Carl Lipo and Terry Hunt on the other. The student must identify the shared effect (the disappearance of the large trees) by rejecting information presented in the blog post about where the moai were carved (in the same quarry). Further, the student must understand what each scientist believes is the cause of the disappearance. To receive credit for this item, the student was required to get all three answers correct. The correct answers are: Cause (Jared Diamond) – Humans cut down trees to clear land for agriculture and other reasons. Cause (Carl Lipo and Terry hunt) – Polynesian rats ate tree seeds and as a result no new trees could grow. Effect (shared) – The large trees disappeared from Rapa Nui.

| | |
|------------------------------------|---|
| <i>Item Number</i> | CR551Q10 |
| <i>Cognitive Process</i> | Integrate and generate inferences across multiple sources |
| <i>Response Format</i> | Complex Multiple Choice – Computer Scored |
| <i>Source Requirement for Item</i> | Multiple |
| <i>Difficulty</i> | 665 – Level 5 |

Rapa Nui Released Item #7

PISA 2018

Question 7 / 7

Rapa Nui

Refer to all three sources on the right by clicking on each of the tabs. Type your answer to the question.

After reading the three sources, what do you think caused the disappearance of the large trees on Rapa Nui? Provide specific information from the sources to support your answer.

Blog Book Review Science News


www.theprofessorblog.com/fieldwork/EasterIsland

The Professor's Blog

Posted May 23, 11:22 a.m.

As I look out of my window this morning, I see the landscape I have learned to love here on Rapa Nui, which is known in some places by the name Easter Island. The grasses and shrubs are green, the sky is blue, and the old, now extinct volcanoes rise up in the background.

I am a bit sad knowing that this is my last week on the island. I have finished my field work and will be returning home. Later today, I will take a walk through the hills and say good-bye to the moai that I have been studying for the past nine months. Here is a picture of some of these massive statues.



In this item, the student must integrate information from across the texts and decide which theory to support. In this way, the student must understand the theories—and that they are at odds with one another—and must present a response that contains support from the texts. To receive credit, a student could choose to support either theory or could choose neither theory as long as the explanation is focused on the need for additional research. This is an open response - human coded item, and the coding guide used in the Main Survey is provided below. This item was coded with high reliability in the Main Survey.

| | |
|------------------------------------|-----------------------------|
| <i>Item Number</i> | CR551Q11 |
| <i>Cognitive Process</i> | Detect and handle conflict |
| <i>Response Format</i> | Open Response – Human Coded |
| <i>Source Requirement for Item</i> | Multiple |
| <i>Difficulty</i> | 588 – Level 4 |

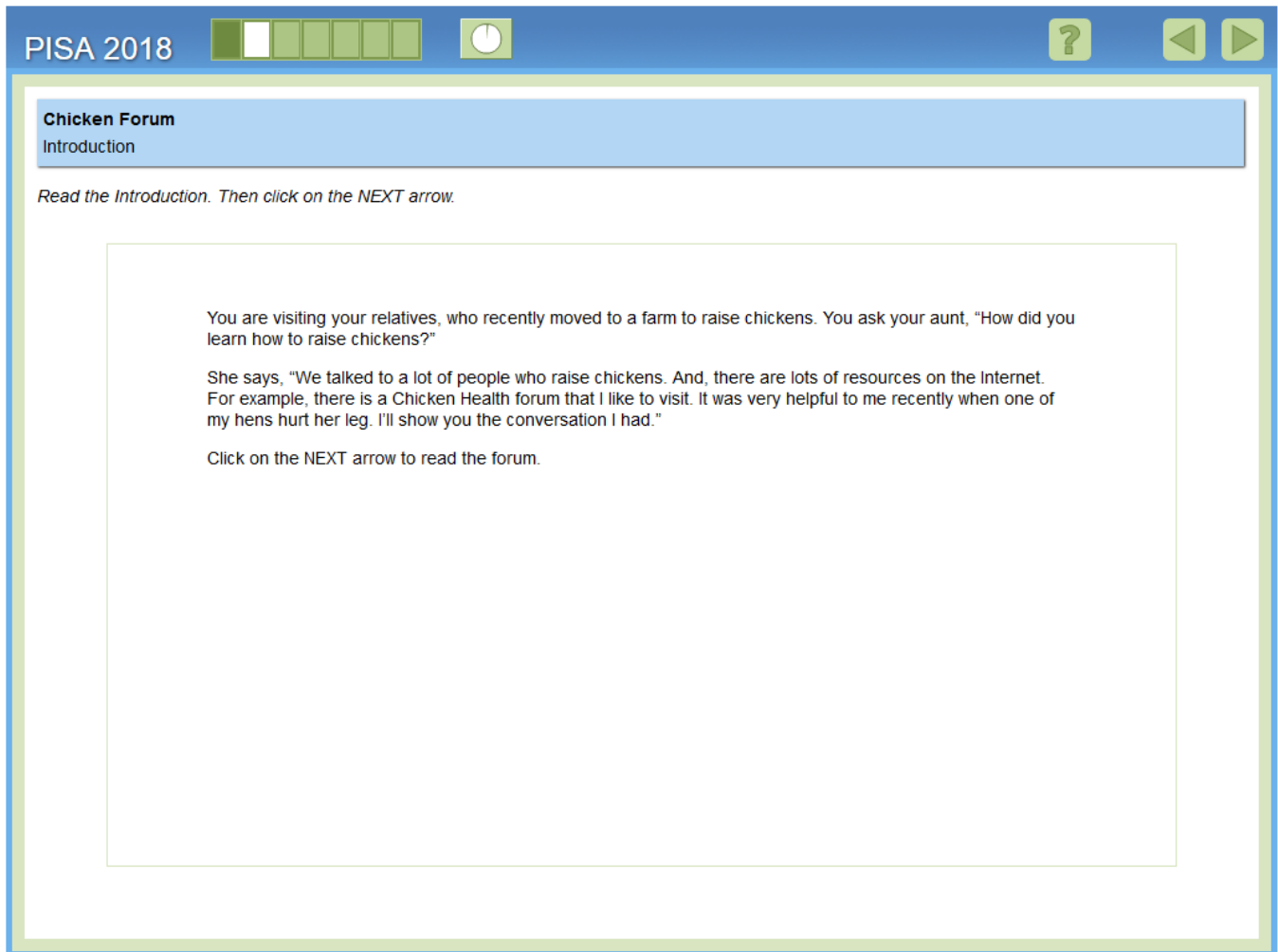
Full Credit

Code 1: Includes one or more of the following descriptions:

1. The people cut down or used the trees (to move the moai and/or cleared the land for agriculture).
2. The rats ate the seeds of the trees (so new trees could not grow).
3. It is not possible to say exactly what happened to the large trees until further research is conducted.
 - I think the trees disappeared because people cut too many of them down to move the moai. [1]
 - People cleared the land for agriculture. [1]
 - Trees were used to move moai. [1]
 - People cut the trees down. [1]
 - It was the people's fault because they wanted to move the moai. [1 – *this response doesn't explicitly refer to cutting down the trees, but it is acceptable because they refer to people and one reason they cut down the trees (to move the moai)*]
 - *People's fault. They destroyed the environment. [1 – this response doesn't explicitly refer to cutting down the trees, but it is an acceptable way of summarizing the results of cutting down the trees.]*
 - I think the rats probably caused the most damage by eating the seeds of the trees. [2]
 - The rats ate the seeds. [2]
 - There is no proof that either one is correct, so we have to wait until there is more information. [3]
 - Both. The people cut down the big trees for farming, and then the rats ate the tree seeds! [1 and 2]

Unit CR548: *Chicken Forum*

Chicken Forum Scenario



The screenshot shows the PISA 2018 interface. At the top left, it says "PISA 2018" next to a progress bar and a power button. On the top right, there is a question mark icon and navigation arrows. Below the header, the title "Chicken Forum" is displayed in a blue box, with "Introduction" underneath. A instruction reads: "Read the Introduction. Then click on the NEXT arrow." The main content area contains the following text:

You are visiting your relatives, who recently moved to a farm to raise chickens. You ask your aunt, "How did you learn how to raise chickens?"

She says, "We talked to a lot of people who raise chickens. And, there are lots of resources on the Internet. For example, there is a Chicken Health forum that I like to visit. It was very helpful to me recently when one of my hens hurt her leg. I'll show you the conversation I had."

Click on the NEXT arrow to read the forum.

In this unit's scenario, the student is visiting family members who raise chickens. The aunt describes an Internet forum that focuses on chicken health and was a useful resource when one of her chickens was injured. The situation is classified as personal because it represents an individual satisfying personal interests through an Internet forum.

The text in this unit is the set of posts on the web forum used by the aunt. It is classified as: multiple text (the posts on the forum are written by distinct authors at different times); static (while the original conversation would have unfolded dynamically, the student is presented with the full and final conversation; continuous; and transactional.

This text was designed to be accessible for a wide range of student abilities. It is short, but it possesses all the complexities of multiple texts where multiple points of view need to be considered, and the origin and content of the posts need to be evaluated to determine credibility. In this way, the test developers felt that even low ability students would have a chance to succeed when faced with a transactional, multiple text.

Please note that the screenshot provided for Released Item #1 shows the full text of the forum for the purposes of this report. The student had to scroll to see the full text in the programmed version.

Chicken Forum Released Item #1

PISA 2018

Chicken Forum
Question 1 / 7

Refer to the *Chicken Health Forum* on the right. Click on a choice to answer the question.

What does Ivana_88 want to know?

- If she can give aspirin to an injured hen.
- How often she can give aspirin to an injured hen.
- How to contact a veterinarian about an injured hen.
- If she can determine the pain level of an injured hen.

www.chickenhealth.com/forum/aspirin-chickens

Chicken Health

Your online resource for healthy chickens

About Forum Pictures

Giving Aspirin to Chickens

Ivana_88 THREAD STARTER Posted 28 October 18:12

Hello everyone!
Is it okay to give aspirin to my hen? She is 2 years old and I think she hurt her leg. I can't get to the veterinarian until Monday, and the vet isn't answering the phone. My hen seems to be in a lot of pain. I'd like to give her something to make her feel better until I can go to the vet. Thank you for your help.

NellieB79 Posted 28 October 18:36

I don't know if aspirin is safe for hens or not. I always check with my vet before giving my birds medicine. I know that some drugs that are safe for humans can be very dangerous for birds.

Monie Posted 28 October 18:52

I gave an aspirin to one of my hens when she was hurt. There was no problem. The next day I went to the vet but she was already better. I think it might be dangerous if you give too much, so don't exceed the dose limits! I hope she feels better!

Avian_Deals Posted 28 October 19:07

Hi! Don't forget to check out my super low deals on all bird supplies. I'm having a great sale right now!

Bob Posted 28 October 19:15

Can someone please tell me how to know if a chicken is sick? Thanks.

Frank Posted 28 October 19:21

Hello Ivana,
I am a veterinarian, specializing in birds. It is okay to give injured chickens aspirin if they are showing signs that they are in pain. When prescribing aspirin to birds, I follow the guidelines published in *Clinical Avian Medicine*. Chickens should receive 5mg of aspirin per kg of body weight. You can give this 3-4 times per day until you can see your veterinarian. It is very important to follow up with your vet. Good luck!

In this item, the student must consider Ivana_88's post and understand the literal meaning of the post. The student must match the paraphrase of Ivana_88's initial question (Is it okay to give aspirin to my hen?) to the options in the item. This is not simply an "Access and retrieve information within a text" item because there is not a direct, verbatim match between the item options and the stimulus. Here, the correct answer is (A) If she can give aspirin to an injured hen. The fact that the forum has posts from different authors created at different times means that the stimulus is a multiple source text. However, this item is classified as requiring a single source because the formulation of the item focuses the students solely on Ivana_88's post. In this way, the student only needs to understand the first post.

| | |
|------------------------------------|--|
| <i>Item Number</i> | CR548Q02 |
| <i>Cognitive Process</i> | Represent literal meaning |
| <i>Response Format</i> | Simple Multiple Choice – Computer Scored |
| <i>Source Requirement for Item</i> | Single |
| <i>Difficulty</i> | 328 – Level 1b |

Chicken Forum Released Item #2

PISA 2018

Chicken Forum
Question 2 / 7

Refer to the *Chicken Health Forum* on the right. Click on a choice to answer the question.

Why does Ivana_88 decide to post her question on an Internet forum?

- Because she doesn't know how to find a veterinarian.
- Because she thinks the hen's problem isn't serious.
- Because she wants to help her hen as soon as possible.
- Because she cannot afford to go to the veterinarian.

www.chickenhealth.com/forum/aspirin-chickens

Chicken Health

Your online resource for healthy chickens

About Forum Pictures

Giving Aspirin to Chickens

Ivana_88 THREAD STARTER Posted 28 October 18:12

Hello everyone!
Is it okay to give aspirin to my hen? She is 2 years old and I think she hurt her leg. I can't get to the veterinarian until Monday, and the vet isn't answering the phone. My hen seems to be in a lot of pain. I'd like to give her something to make her feel better until I can go to the vet. Thank you for your help.

NellieB79 Posted 28 October 18:36

I don't know if aspirin is safe for hens or not. I always check with my vet before giving my birds medicine. I know that some drugs that are safe for humans can be very dangerous for birds.

Monie Posted 28 October 18:52

I gave an aspirin to one of my hens when she was hurt. There was no problem. The next day I went to the vet but she was already better. I think it might be dangerous if you give too much, so don't exceed the dose limits! I hope she feels better!

Avian_Deals Posted 28 October 19:07

Hi! Don't forget to check out my super low deals on all bird supplies. I'm having a great sale right now!

Bob Posted 28 October 19:15

Can someone please tell me how to know if a chicken is sick? Thanks.

Frank Posted 28 October 19:21

Hello Ivana,
I am a veterinarian, specializing in birds. It is okay to give injured chickens aspirin if they

In this item, the student must understand Ivana_88's post at a deeper level than in the previous item. The student must go beyond what is represented literally in the post (I can't get to the veterinarian until Monday, and the vet isn't answering the phone) and the full context of her post to identify the correct answer. Here, the correct answer is (C) Because she wants to help her hen as soon as possible. The student can infer that because her hen is in a lot of pain and she is not able to get a quick response in another way (going to the vet or calling), she has posted on the forum. Similar to the first item, the formulation of the item focuses the student solely on Ivana_88's post which means that a single source is required for the item.

| | |
|------------------------------------|--|
| <i>Item Number</i> | CR548Q03 |
| <i>Cognitive Process</i> | Integrate and generate inferences |
| <i>Response Format</i> | Simple Multiple Choice – Computer Scored |
| <i>Source Requirement for Item</i> | Single |
| <i>Difficulty</i> | 357 – Level 1a |

Chicken Forum Released Item #3

PISA 2018

?
◀ ▶

Chicken Forum
Question 3 / 7

Refer to the Chicken Health Forum on the right. Click on the choices in the table to answer the question.

Some posts on a forum can be relevant to the topic while some posts are not. Click on either **Yes** or **No** to indicate whether the posts in the table below are relevant to Ivana_88's problem.

| Is the post relevant to Ivana_88's problem? | Yes | No |
|---|-----------------------|-----------------------|
| NellieB79's post | <input type="radio"/> | <input type="radio"/> |
| Monie's post | <input type="radio"/> | <input type="radio"/> |
| Avian_Deals's post | <input type="radio"/> | <input type="radio"/> |
| Bob's post | <input type="radio"/> | <input type="radio"/> |
| Frank's post | <input type="radio"/> | <input type="radio"/> |

← → ↻ www.chickenhealth.com/forum/aspirin-chickens

Chicken Health

Your online resource for healthy chickens

About
Forum
Pictures

Giving Aspirin to Chickens

Ivana_88 THREAD STARTER
Posted 28 October 18:12

Hello everyone!
Is it okay to give aspirin to my hen? She is 2 years old and I think she hurt her leg. I can't get to the veterinarian until Monday, and the vet isn't answering the phone. My hen seems to be in a lot of pain. I'd like to give her something to make her feel better until I can go to the vet. Thank you for your help.

NellieB79
Posted 28 October 18:36

I don't know if aspirin is safe for hens or not. I always check with my vet before giving my birds medicine. I know that some drugs that are safe for humans can be very dangerous for birds.

Monie
Posted 28 October 18:52

I gave an aspirin to one of my hens when she was hurt. There was no problem. The next day I went to the vet but she was already better. I think it might be dangerous if you give too much, so don't exceed the dose limits! I hope she feels better!

Avian_Deals
Posted 28 October 19:07

Hi! Don't forget to check out my super low deals on all bird supplies. I'm having a great sale right now!

Bob
Posted 28 October 19:15

Can someone please tell me how to know if a chicken is sick? Thanks.

Frank
Posted 28 October 19:21

Hello Ivana,
I am a veterinarian, specializing in birds. It is okay to give injured chickens aspirin if they

In this item, the student must complete a table by selecting “Yes” or “No” for each row. The question asks the student to identify whether each post in the forum is relevant to the topic. The student must first understand the literal meaning of each post and then reflect on the content and how it relates to the main topic – Giving Aspirin to Chickens. To receive credit for this item, the student was required to get all 5 rows correct. The correct answers are: Yes, Yes, No, No, Yes. Here, the student must consider the content of Ivana_88’s post and then evaluate whether each post in the table is relevant or not. Thus, this item is best classified as requiring multiple sources.

| | |
|------------------------------------|---|
| <i>Item Number</i> | CR548Q01 |
| <i>Cognitive Process</i> | Reflect on content and form |
| <i>Response Format</i> | Complex Multiple Choice – Computer Scored |
| <i>Source Requirement for Item</i> | Multiple |
| <i>Difficulty</i> | 458 – Level 2 |

PISA 2018 Released FT and MS Reading Literacy Items

26

Chicken Forum Released Item #4

PISA 2018

Chicken Forum
Question 4 / 7

Refer to the *Chicken Health Forum* on the right. Click on a choice to answer the question.

Who has had positive experiences giving aspirin to an injured hen?

Ivana_88
 NellieB79
 Monie
 Bob

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Chicken Health

Your online resource for healthy chickens

About Forum Pictures

Giving Aspirin to Chickens

Ivana_88 THREAD STARTER Posted 28 October 18:12

Hello everyone!
Is it okay to give aspirin to my hen? She is 2 years old and I think she hurt her leg. I can't get to the veterinarian until Monday, and the vet isn't answering the phone. My hen seems to be in a lot of pain. I'd like to give her something to make her feel better until I can go to the vet. Thank you for your help.

NellieB79 Posted 28 October 18:36

I don't know if aspirin is safe for hens or not. I always check with my vet before giving my birds medicine. I know that some drugs that are safe for humans can be very dangerous for birds.

Monie Posted 28 October 18:52

I gave an aspirin to one of my hens when she was hurt. There was no problem. The next day I went to the vet but she was already better. I think it might be dangerous if you give too much, so don't exceed the dose limits! I hope she feels better!

Avian_Deals Posted 28 October 19:07

Hi! Don't forget to check out my super low deals on all bird supplies. I'm having a great sale right now!

Bob Posted 28 October 19:15

Can someone please tell me how to know if a chicken is sick? Thanks.

Frank Posted 28 October 19:21

Hello Ivana,
I am a veterinarian specializing in birds. It is okay to give injured chickens aspirin if they

In this item, the student is required to understand the literal meaning of the posts by Ivana_88, NellieB79, Monie and Bob. If the student has understood the literal meaning of each, the student would understand that Ivana_88 is asking about whether she can give aspirin to a hen, NellieB79 is warning Ivana_88 about giving medicine to hens, Bob has posted something irrelevant, and it is Monie who has said she has given aspirin to her hen and it was okay. Here, the correct answer is (C) Monie. This item is classified as requiring only a single source because the student can evaluate each post independently with respect to whether each one states a positive experience.

| | |
|------------------------------------|--|
| <i>Item Number</i> | CR548Q04 |
| <i>Cognitive Process</i> | Represent literal meaning |
| <i>Response Format</i> | Simple Multiple Choice – Computer Scored |
| <i>Source Requirement for Item</i> | Single |
| <i>Difficulty</i> | 328 – Level 1b |

Chicken Forum Released Item #5

PISA 2018

Chicken Forum
Question 5 / 7

Refer to the *Chicken Health Forum* on the right. Click on a choice to answer the question.

Why does Avian_Deals respond to Ivana_88's post?

- To promote a business.
- To answer Ivana_88's question.
- To add to Monie's advice.
- To demonstrate expertise with birds.

www.chickenhealth.com/forum/aspirin-chickens

Chicken Health

Your online resource for healthy chickens

About Forum Pictures

Giving Aspirin to Chickens

Ivana_88 THREAD STARTER Posted 28 October 18:12

Hello everyone!
Is it okay to give aspirin to my hen? She is 2 years old and I think she hurt her leg. I can't get to the veterinarian until Monday, and the vet isn't answering the phone. My hen seems to be in a lot of pain. I'd like to give her something to make her feel better until I can go to the vet. Thank you for your help.

NellieB79 Posted 28 October 18:36

I don't know if aspirin is safe for hens or not. I always check with my vet before giving my birds medicine. I know that some drugs that are safe for humans can be very dangerous for birds.

Monie Posted 28 October 18:52

I gave an aspirin to one of my hens when she was hurt. There was no problem. The next day I went to the vet but she was already better. I think it might be dangerous if you give too much, so don't exceed the dose limits! I hope she feels better!

Avian_Deals Posted 28 October 19:07

Hi! Don't forget to check out my super low deals on all bird supplies. I'm having a great sale right now!

Bob Posted 28 October 19:15

Can someone please tell me how to know if a chicken is sick? Thanks.

Frank Posted 28 October 19:21

Hello Ivana,
I am a veterinarian specializing in birds. It is okay to give injured chickens aspirin if they

In this item, the student must go beyond the literal meaning provided in the text of Avian_Deals's post and make an inference about why this person has made the post. The post by Avian_Deals does not explicitly state that they are promoting their business, thus the student must infer that from the information provided in the post. The correct answer is (A) To promote a business. This item is classified as requiring a single source because ultimately, the student only needs to understand the content of the post by Avian_Deals even though the item refers to Ivana_88's post. No integration is required across posts.

| | |
|------------------------------------|--|
| <i>Item Number</i> | CR548Q05 |
| <i>Cognitive Process</i> | Integrate and generate inferences |
| <i>Response Format</i> | Simple Multiple Choice – Computer Scored |
| <i>Source Requirement for Item</i> | Single |
| <i>Difficulty</i> | 347 – Level 1a |

Chicken Forum Released Item #6

PISA 2018

Chicken Forum
Question 6 / 7

Refer to the Chicken Health Forum on the right. Click on a choice and then type an explanation to answer the question.

Who posted the most reliable answer to Ivana_88's question?

NellieB79
 Monie
 Avian_Deals
 Frank

Give a reason for your answer.

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Chicken Health

Your online resource for healthy chickens

About Forum Pictures

Giving Aspirin to Chickens

Ivana_88 THREAD STARTER Posted 28 October 18:12

Hello everyone!
Is it okay to give aspirin to my hen? She is 2 years old and I think she hurt her leg. I can't get to the veterinarian until Monday, and the vet isn't answering the phone. My hen seems to be in a lot of pain. I'd like to give her something to make her feel better until I can go to the vet. Thank you for your help.

NellieB79 Posted 28 October 18:36

I don't know if aspirin is safe for hens or not. I always check with my vet before giving my birds medicine. I know that some drugs that are safe for humans can be very dangerous for birds.

Monie Posted 28 October 18:52

I gave an aspirin to one of my hens when she was hurt. There was no problem. The next day I went to the vet but she was already better. I think it might be dangerous if you give too much, so don't exceed the dose limits! I hope she feels better!

Avian_Deals Posted 28 October 19:07

Hi! Don't forget to check out my super low deals on all bird supplies. I'm having a great sale right now!

Bob Posted 28 October 19:15

Can someone please tell me how to know if a chicken is sick? Thanks.

Frank Posted 28 October 19:21

Hello Ivana,
I am a veterinarian specializing in birds. It is okay to give injured chickens aspirin if they

This item asks the student to consider the elements of quality and credibility of the four posts by NellieB79, Monie, Avian_Deals and Frank, requiring multiple sources to accurately complete the item. The student must first represent the literal meaning of each post and then think about what elements of each post make it a reliable answer to Ivana_88's question. This is an open response – human coded item, and the coding guide used in the Field Trial is provided below. For this item, the student could select any option except Avian_Deals and receive credit provided that the student gave one of the correct elements described below which supports why the selection is reliable. This item was coded with high reliability in the Field Trial.

| | |
|------------------------------------|--------------------------------|
| <i>Item Number</i> | CR548Q07 |
| <i>Cognitive Process</i> | Assess quality and credibility |
| <i>Response Format</i> | Open Response – Human Coded |
| <i>Source Requirement for Item</i> | Multiple |
| <i>Difficulty</i> | 409 – Level 2 |

Full Credit

Code 1: Selects or responds NellieB79 explicitly or implicitly AND states that NellieB79's answer implied that Ivana_88 should check with her veterinarian before giving any medicine to her hen.

- [NellieB79] Nellie said she asks her vet first.
- [No selection] NellieB79 didn't tell Ivana_88 what to do, but she said she checks with her vet before she gives medicine.

OR: Selects or responds Monie explicitly or implicitly AND states that Monie gave aspirin to her own hen, and the hen recovered.

- [Monie] Monie gave aspirin to her hen, and the bird got better.
- [Monie] Monie has a hen that recovered when she gave her aspirin.

OR: Selects or responds Frank explicitly or implicitly AND states that Frank is a veterinarian/bird specialist or has knowledge about treating birds.

- [Frank] He's a veterinarian.
- [Frank] Frank specializes in birds.
- [Frank] Frank knows the dosage guidelines for chickens.
- [No selection] Frank talks about a book about bird medicine.

Chicken Forum Released Item #7

PISA 2018 [Progress Bar] [Power Icon] [Help Icon] [Navigation Icons]

Chicken Forum
Question 7 / 7

Refer to the Chicken Health Forum on the right. Type your answer to the question.

Why can't Frank give Ivana_88 the exact amount of aspirin for her hen?

Chicken Health
Your online resource for healthy chickens

About Forum Pictures

Giving Aspirin to Chickens

Ivana_88 THREAD STARTER Posted 28 October 18:12

Hello everyone!
Is it okay to give aspirin to my hen? She is 2 years old and I think she hurt her leg. I can't get to the veterinarian until Monday, and the vet isn't answering the phone. My hen seems to be in a lot of pain. I'd like to give her something to make her feel better until I can go to the vet. Thank you for your help.

NellieB79 Posted 28 October 18:36

I don't know if aspirin is safe for hens or not. I always check with my vet before giving my birds medicine. I know that some drugs that are safe for humans can be very dangerous for birds.

Monie Posted 28 October 18:52

I gave an aspirin to one of my hens when she was hurt. There was no problem. The next day I went to the vet but she was already better. I think it might be dangerous if you give too much, so don't exceed the dose limits! I hope she feels better!

Avian_Deals Posted 28 October 19:07

Hi! Don't forget to check out my super low deals on all bird supplies. I'm having a great sale right now!

Bob Posted 28 October 19:15

Can someone please tell me how to know if a chicken is sick? Thanks.

Frank Posted 28 October 19:21

Hello Ivana,
I am a veterinarian specializing in birds. It is okay to give injured chickens aspirin if they

In this item, the student must integrate information from across the posts by Ivana_88 and Frank. The student must understand what Frank has provided in his post (the dosage information - 5mg of aspirin per kg of body weight) and understand what he has not provided (the exact amount of aspirin Ivana_88 should use for her hen). The student must then understand why. This is because Ivana_88 has not provided the weight of her hen, which is what Frank needs to know in order to provide the exact amount of aspirin. This is an open response – human coded item, and the coding guide used in the Field Trial is provided below. This item was coded with high reliability in the Field Trial.

| | |
|------------------------------------|---|
| <i>Item Number</i> | CR548Q09 |
| <i>Cognitive Process</i> | Integrate and generate inferences across multiple sources |
| <i>Response Format</i> | Open Response – Human Coded |
| <i>Source Requirement for Item</i> | Multiple |
| <i>Difficulty</i> | 466 – Level 2 |

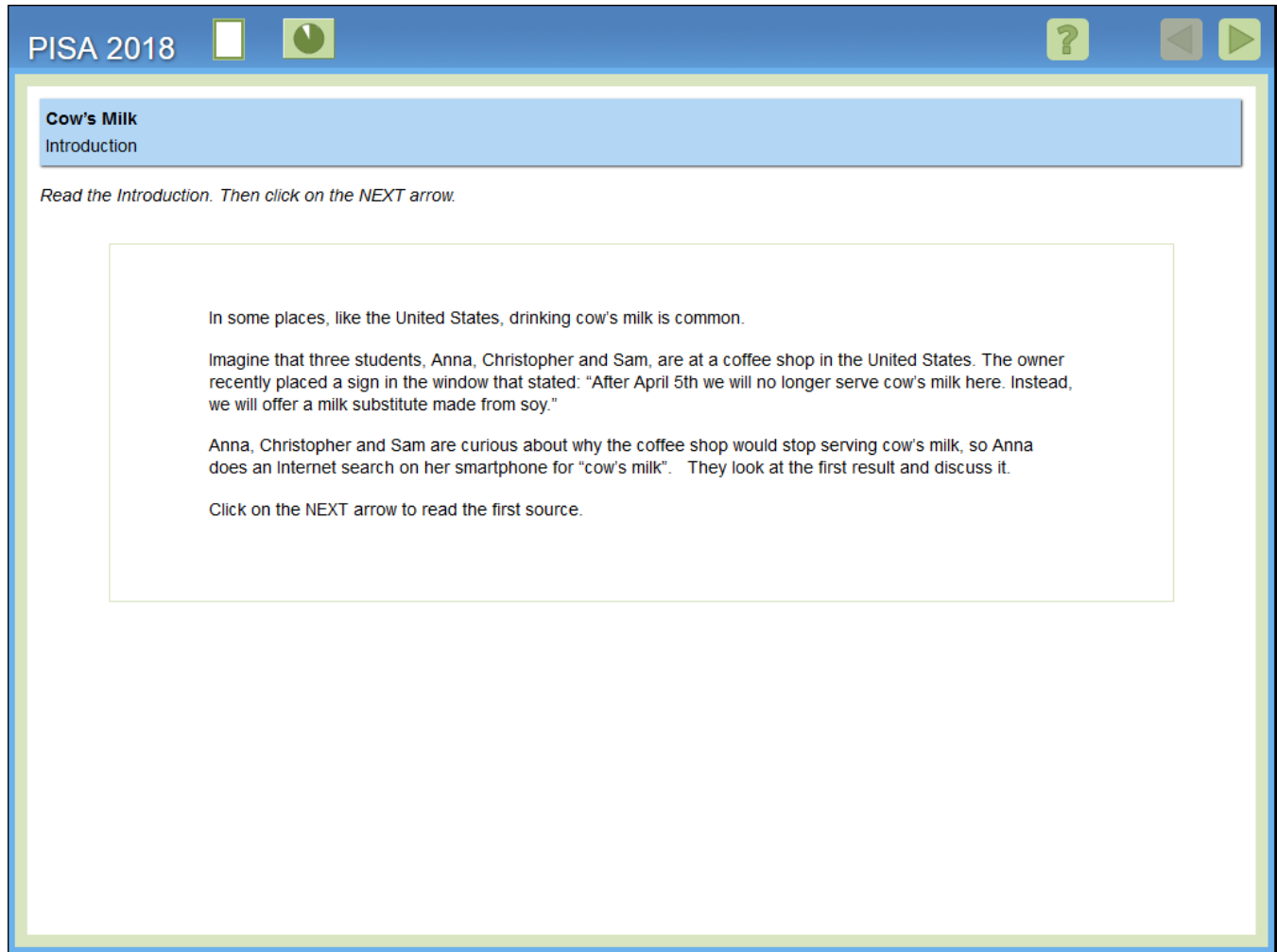
Full Credit

Code 1: States that the weight or size of the chicken was not provided/is not known.

- Ivana_88 didn't include the weight of her chicken in her post.
- Frank doesn't know how much her chicken weighs.
- The chicken's weight is missing.
- The size of the chicken is not known.

Unit CR557: Cow's Milk

Cow's Milk Scenario



PISA 2018

Cow's Milk
Introduction

Read the Introduction. Then click on the NEXT arrow.

In some places, like the United States, drinking cow's milk is common.

Imagine that three students, Anna, Christopher and Sam, are at a coffee shop in the United States. The owner recently placed a sign in the window that stated: "After April 5th we will no longer serve cow's milk here. Instead, we will offer a milk substitute made from soy."

Anna, Christopher and Sam are curious about why the coffee shop would stop serving cow's milk, so Anna does an internet search on her smartphone for "cow's milk". They look at the first result and discuss it.

Click on the NEXT arrow to read the first source.

In this unit's scenario, three students in the United States encounter an announcement at a coffee shop. The announcement states that the shop will no longer be serving cow's milk and will, instead, use a soy substitute. The three students are curious, so they search for information about cow's milk on their smartphones and discuss the results. The situation is classified as personal because it represents three individuals (the students in the coffee shop) satisfying their personal curiosity by reading the text.

The text in this unit consists of two webpages. The first webpage is from "Farm to Market Dairy" a business that sells dairy products, including cow's milk. The second webpage is from a health website and presents an article entitled "Just Say 'No' to Cow's Milk". The text is classified as: multiple text; static; continuous; and argumentative.

Initially, the student is provided with the "Farm to Market" webpage only. Several questions are presented that focus only on the content of this webpage. Then, an update to the scenario is presented, and the student receives the second webpage. After reading the second webpage, the student

responds to a set of questions that focus solely on its content. Then, the student is given items that require integrating the information from both webpages.

This model was used for several of the multiple-text units in the new material developed for Reading Literacy. This approach was chosen because it allows the student first to demonstrate proficiency on questions that relate to one text and then to demonstrate the ability to handle information from multiple texts. This is an important design feature because there may be readers who can succeed with information when it is presented in a single text and even integrate information within one text, but who struggle when asked to integrate *across* multiple texts. Thus, this design allows students with varying levels of ability to demonstrate proficiency on at least some elements of the unit.

The “Cow’s Milk” unit was intended to be of moderate difficulty. The two webpages result in a larger amount of information to work through within the unit compared to a single text unit. In addition, the way the two webpages relate to one another needs to be considered by the student, requiring him or her to recognize whether they corroborate each other or whether they differ in their stances. This kind of cognitive engagement with the material and the unit overall is expected to require more effort than a unit that presents all the information within one text.

Cow's Milk Released Item #1

PISA 2018
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◀ ▶

Cow's Milk
Question 1 / 9

Refer to "Farm to Market Dairy" on the right. Click on a choice to answer the question.

According to the IDFA, with which statement do leading health professionals and organizations agree?

Consuming milk and milk products leads to obesity.


Milk is a good source of essential vitamins and minerals.

Milk contains more vitamins than minerals.

Drinking milk is a leading cause of osteoporosis.

Farm to Market

www.farmtomarketdairy.com



FARM TO MARKET DAIRY

About Us Products Nutrition

The Nutritional Value of Milk: Countless Benefits!

Farm to Market Dairy milk products contain key nutrients: calcium, protein, vitamin D, vitamin B12, riboflavin, and potassium. These vitamins and minerals make *Farm to Market Dairy* milk products an important part of a healthful diet. Consuming *Farm to Market Dairy* milk products every day is a great way to ensure that you get the vitamins and minerals your body needs.

Consuming *Farm to Market Dairy* milk products increases weight loss and helps maintain a healthy weight. Milk increases bone strength and density. It even improves cardiovascular health and helps prevent cancer. One glass of milk is packed with vitamins, minerals, and a wealth of health benefits.

According to Bill Sears, MD, Associate Clinical Professor of Pediatrics at the University of California at Irvine, milk contains many important nutrients in one convenient place. The International Dairy Foods Association (IDFA) supports this idea. In fact, the IDFA suggests that many health professionals and groups would also agree.

Milk contains a complete nutrient package of nine essential nutrients. In addition to being an excellent source of calcium and vitamin D, it is a good source of vitamin A, protein and potassium. Dairy is recommended by doctors. Dairy's role in a healthy diet has long been established by the nutrition and science community. This includes the National Osteoporosis Foundation, the Surgeon General, the National Institutes of Health, the American Medical Association's Council of Scientific Affairs and many other leading health organizations.

International Dairy Foods Association, September 27, 2007

The unit starts with an item that requires the student to represent the literal meaning of the information presented by the IDFA. Specifically, the student needs to understand that the IDFA suggests “many health professionals and groups would also agree” that “Milk contains a complete nutrient package of nine essential nutrients” and goes on to list vitamins that occur in milk. Thus, the question stem connects fairly directly with the sentence in the webpage that introduces the quote from the IDFA and option B provides a paraphrase of the first two sentences in the quotation. The student does not have to go beyond the literal meaning presented in the webpage to find that the correct answer is (B) Milk is a good source for essential vitamins and minerals.

| | |
|------------------------------------|--|
| <i>Item Number</i> | CR557Q03 |
| <i>Cognitive Process</i> | Represent literal meaning |
| <i>Response Format</i> | Simple Multiple Choice – Computer Scored |
| <i>Source Requirement for Item</i> | Single |
| <i>Difficulty</i> | 323 – Level 1b |

Cow's Milk Released Item #2

PISA 2018
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Cow's Milk
Question 2 / 9


Refer to "Farm to Market Dairy" on the right. Click on a choice to answer the question.

What is the main purpose of this text?

- To argue that milk products increase weight loss.
- To compare *Farm to Market Dairy* milk products to other dairy products.
- To inform the public of the risks associated with heart disease.
- To support the use of *Farm to Market Dairy* products.

Farm to Market

www.farmtomarketdairy.com



FARM TO MARKET DAIRY

About Us Products Nutrition

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Milk contains a complete nutrient package of nine essential nutrients. In addition to being an excellent source of calcium and vitamin D, it is a good source of vitamin A, protein and potassium. Dairy is recommended by doctors. Dairy's role in a healthy diet has long been established by the nutrition and science community. This includes the National Osteoporosis Foundation, the Surgeon General, the National Institutes of Health, the American Medical Association's Council of Scientific Affairs and many other leading health organizations.

International Dairy Foods Association, September 27, 2007

In this item, the student is asked to identify the main *purpose* of the webpage. Note that the student is not asked to identify the main idea. Instead, the student must understand the overall meaning of the webpage and then consider *why* it is being presented and *how* it has been written. The student must reflect on the content and form of the text. Here, the correct answer is (D) To support the use of *Farm to Market Dairy* products.

| | |
|------------------------------------|--|
| <i>Item Number</i> | CR557Q04 |
| <i>Cognitive Process</i> | Reflect on content and form |
| <i>Response Format</i> | Simple Multiple Choice – Computer Scored |
| <i>Source Requirement for Item</i> | Single |
| <i>Difficulty</i> | 452 – Level 2 |

Cow's Milk Scenario Update

The screenshot shows a software interface for a PISA 2018 scenario. At the top, there is a blue header bar with the text "PISA 2018" on the left and three navigation icons (a question mark, a left arrow, and a right arrow) on the right. Below the header, a light blue bar contains the title "Cow's Milk". Underneath this, a line of text reads: "Read the information below. Then click on the NEXT arrow." A large white rectangular box with a thin green border contains the following text:

Anna, Christopher and Sam are talking about the decision of the coffee shop owner to stop selling cow's milk. Sam says, "Maybe cow's milk is becoming too expensive." Christopher is looking at his smartphone. "Maybe, but I did a web search on cow's milk too. I'm going to text you the link to a more recent article that may explain it."

Anna and Sam open the link Christopher sent and read the article, "Just Say 'No' to Cow's Milk!"

Click on the NEXT arrow to read the second source.

At this point in the unit, the student reads an update to the scenario, learning that one of the students in the scenario finds a different article about cow's milk and shares it with his friends. The article is called "Just Say 'No' to Cow's Milk!", which indicates that this article may not present such favorable information about cow's milk.

Please note that the screenshot provided for Released Item #3 shows the full text of the article for the purposes of this report. The student must scroll to see the full text in the programmed version.

Cow's Milk Released Item #3

PISA 2018
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Cow's Milk
Question 4 / 9

Refer to "Just Say No to Cow's Milk!" on the right. Click on the choices in the table to answer the question.

Could the following statements represent Dr. Garza's purpose for writing the article? Click on either **Yes** or **No** for each statement.


| Could this statement represent the purpose of the article? | Yes | No |
|--|-----------------------|-----------------------|
| To question the benefit of dairy products on general health. | <input type="radio"/> | <input type="radio"/> |
| To discuss various research findings about cow's milk. | <input type="radio"/> | <input type="radio"/> |
| To point out that milk and other dairy products have not been studied. | <input type="radio"/> | <input type="radio"/> |

Farm to Market
Just Say No

www.healtharticlestoday.com/milk

HEALTH ARTICLES TODAY

JUST SAY 'NO' TO COW'S MILK!



By Health Reporter, Dr. R. Garza

Cow's milk is a **big** part of many people's lives in the United States. Babies drink cow's milk in bottles. Children eat cereal drenched in cow's milk. Even adults enjoy a cold glass of milk from time to time. Yes, cow's milk is a huge part of the human diet in many places around the world. However, more and more research is suggesting that milk may not "do a body good" as the popular American advertising slogan claims.

The United States Department of Agriculture, the American Dairy Council, Dairy Management, Inc., and other organizations have worked hard to advocate for milk for many years. They encourage adults to drink at least three glasses of milk a day. However, several studies in the last decade have questioned the bone-strengthening power of milk as well as other claims about the health benefits of milk. The results may surprise you.

One of the most recent and most important studies on the effects of drinking milk was published in the October 2014 issue of the *British Medical Journal*. The findings in this study led to some powerful assertions about the consumption of milk. In this study over 100 000 people in Sweden were followed over periods of 20-30 years. Researchers found that the female milk drinkers suffered more bone fractures. Additionally, both male and female milk drinkers were more likely to suffer from heart disease and cancer. These staggering results are similar to findings from other studies.

The Physicians Committee for Responsible Medicine (PCRM) commented on some of the health problems related to the consumption of milk. It claims that milk and dairy products "have little or no benefit for bones." The PCRM goes further to describe some specific problems associated with milk:

"Milk proteins, milk sugar, fat, and saturated fat in dairy products pose health risks for children and encourage the development of obesity, diabetes, and heart disease."

These are serious claims and more studies are needed in order to confirm the findings. However, there is mounting proof that drinking cow's milk could be less beneficial to our health than originally thought. If these claims become indisputable facts, it may be time to just say 'no' to cow's milk.

In this item, the student must complete a table by selecting "Yes" or "No" for each row. The question asks the student to identify whether each row of the table could represent Dr. Garza's purpose for writing the article. The student must first understand the overall meaning of the article, then reflect on the content of the article and how it is presented. Then, the student must evaluate whether each statement in the table accurately represents a purpose for writing the article. To receive credit for this item, the student was required to get all 3 rows correct. The correct answers are: Yes, Yes, No.

| | |
|------------------------------------|---|
| <i>Item Number</i> | CR557Q07 |
| <i>Cognitive Process</i> | Reflect on content and form |
| <i>Response Format</i> | Complex Multiple Choice – Computer Scored |
| <i>Source Requirement for Item</i> | Single |
| <i>Difficulty</i> | 539 – Level 3 |

PISA 2018 Released FT and MS Reading Literacy Items

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Cow's Milk Released Item #4

PISA 2018
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Cow's Milk
Question 6 / 9

Refer to "Just Say No to Cow's Milk!" on the right. Type your answer to the question.

Dr. Garza presents a few research results which may 'surprise' readers.


State one of them.

Farm to Market Just Say No

www.healtharticlestoday.com/milk

HEALTH ARTICLES TODAY

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The Physicians Committee for Responsible Medicine (PCRM) commented on some of the health problems related to the consumption of milk. It claims that milk and dairy products "have little or no benefit for bones." The PCRM goes further to describe some specific problems associated with milk:

This item asks the student to identify the research results reported in the article and to state one of them. Here, the student needs to represent the literal meaning of information in the article by identifying one of the findings and providing it. Note that in the coding guide used for the Field Trial, there were only two findings that were allowed for this item because there were only two "surprising" research results described. The coding guide that was used in the Field Trial is provided below. This item was coded with high reliability in the Field Trial.

| | |
|------------------------------------|------------------------------------|
| <i>Item Number</i> | <i>CR557Q10</i> |
| <i>Cognitive Process</i> | <i>Represent literal meaning</i> |
| <i>Response Format</i> | <i>Open Response – Human Coded</i> |
| <i>Source Requirement for Item</i> | <i>Single</i> |
| <i>Difficulty</i> | <i>398 – Level 3</i> |

Full Credit

Code 1: Quotes or paraphrases one of the following research results stated in the text:

1. Female milk drinkers suffered more bone fractures.
2. Both male and female milk drinkers were more likely to suffer from heart disease and cancer.
 - Women who drank milk had more broken bones.
 - People who drink milk had more heart disease and cancer.

Cow's Milk Released Item #5

PISA 2018
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Cow's Milk
Question 7 / 9

Refer to both sources on the right by clicking on each of the tabs. Click on the choices in the table to answer the question.

Based on the two texts about milk, are the statements in the table below facts or opinions? Click on either **Fact** or **Opinion** for each statement.

| Is the statement a fact or an opinion? | Fact | Opinion |
|--|-----------------------|-----------------------|
| Recent studies on the health benefits of milk are surprising. | <input type="radio"/> | <input type="radio"/> |
| Studies have shown that drinking milk has detrimental health effects. | <input type="radio"/> | <input type="radio"/> |
| Several studies have questioned the bone strengthening power of milk. | <input type="radio"/> | <input type="radio"/> |
| Drinking milk and other dairy products is the best way to lose weight. | <input type="radio"/> | <input type="radio"/> |

Farm to Market
Just Say No

HEALTH ARTICLES TODAY

JUST SAY 'NO' TO COW'S MILK!


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The United States Department of Agriculture, the American Dairy Council, Dairy Management, Inc., and other organizations have worked hard to advocate for milk for many years. They encourage adults to drink at least three glasses of milk a day. However, several studies in the last decade have questioned the bone-strengthening power of milk as well as other claims about the health benefits of milk. The results may surprise you.

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The Physicians Committee for Responsible Medicine (PCRM) commented on some of the health problems related to the consumption of milk. It claims that milk and dairy products "have little or no benefit for bones." The PCRM goes further to describe some specific problems associated with milk:



In this item, the student must integrate information across both webpages and infer whether the statements in the table represent facts that were presented in the webpages or represent opinions that were presented in the webpages. For this item, full credit was awarded if the student got all 4 correct, and partial credit was awarded if the student got 3 out of 4 correct. The correct answers are: Opinion, Fact, Fact, Opinion.

| | |
|------------------------------------|---|
| <i>Item Number</i> | CR557Q12 |
| <i>Cognitive Process</i> | Integrate and generate inferences across multiple sources |
| <i>Response Format</i> | Complex Multiple Choice – Computer Scored |
| <i>Source Requirement for Item</i> | Multiple |
| <i>Difficulty</i> | 662 – Level 5 |

PISA 2018 Released FT and MS Reading Literacy Items

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Cow's Milk Released Item #6

PISA 2018

Cow's Milk
Question 8 / 9

Refer to both sources on the right by clicking on each of the tabs. Click on a choice to answer the question.

The authors of the two texts disagree on the role of milk in a regular diet.

What is the main point the authors disagree on?

- Milk's effects on health and milk's role in human diets.
- The number of vitamins and minerals found in milk.
- The best form of dairy to regularly consume.
- Which organization is the leading authority on milk.

Farm to Market **Just Say No**

www.healtharticlestoday.com/milk

HEALTH ARTICLES TODAY

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The Physicians Committee for Responsible Medicine (PCRM) commented on some of the health problems related to the consumption of milk. It claims that milk and dairy products "have little or no benefit for bones." The PCRM goes further to describe some specific problems associated with milk:

In this item, the student must understand how each webpage describes the role of milk within a regular diet and must be able to identify the main point on which they disagree. This is a "Detect and handle conflict" item, but it is easier than many others presented in the PISA 2018 Field Trial because the item already lets the student know that there is a conflict between the two webpages. We expect the difficulty of these types of items to increase when the student first has to detect whether or not a conflict exists, then determine what the conflict is, and then figure out how to handle the conflict. Here, the correct answer is (A) Milk's effects on health and milk's role in human diets.

| | |
|------------------------------------|--|
| <i>Item Number</i> | CR557Q13 |
| <i>Cognitive Process</i> | Detect and handle conflict |
| <i>Response Format</i> | Simple Multiple Choice – Computer Scored |
| <i>Source Requirement for Item</i> | Multiple |
| <i>Difficulty</i> | 406 – Level 1a |

Cow's Milk Released Item #7

PISA 2018

Cow's Milk
Question 9 / 9

Refer to both sources on the right by clicking on each of the tabs. Click on a choice and then type an explanation to answer the question.

Anna, Christopher and Sam are talking about the two texts.

Christopher: No matter what the coffee shop owner does, I'm going to keep drinking milk every day. It's really good for you.

Anna: Not me! I'm going to drink a lot less milk from now on if it's not good for you.

Sam: I don't know, I think we need to know more before we make a conclusion.

With whom do you agree?

Christopher
 Anna
 Sam

Explain your answer. Refer to information from at least one of the texts.

Farm to Market Just Say No

www.healtharticlestoday.com/milk

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The Physicians Committee for Responsible Medicine (PCRM) commented on some of the health problems related to the consumption of milk. It claims that milk and dairy products "have little or no benefit for bones." The PCRM goes further to describe some specific problems associated with milk:



In this item, the student reads three stances provided in the item stem: one that supports continuing to drink milk, one that supports drinking less milk and one that says more needs to be known before a conclusion is reached. The student can select any of the three students in the scenario associated with these stances, but the student must provide a reason from at least one of the texts to support his or her selection. The coding guide for this item is provided below, which lists the acceptable ways a student can support their selection for each of the three options.

This item focuses mainly on the element of handling the conflict rather than detecting it. By asking the student to come to a conclusion and use the webpage or webpages to support the answer, the student demonstrates how he or she handles the conflict between the information presented in the two webpages.

Please note that this item was very challenging to code in the Field Trial, and several countries had difficulty achieving reliable coding. It is not clear to the Test Developers how the coding guide would have been improved, thus, this item would have likely been eliminated for the Main Survey if the unit had not been omitted. However, it is included here for the purpose of illustrating an open response, "detect and handle conflict" item.

| | |
|------------------------------------|-----------------------------|
| <i>Item Number</i> | CR557Q14 |
| <i>Cognitive Process</i> | Detect and handle conflict |
| <i>Response Format</i> | Open Response – Human Coded |
| <i>Source Requirement for Item</i> | Multiple |
| <i>Difficulty</i> | 506 – Level 3 |

Full Credit

Code 1: Selects one of the names and gives an appropriate explanation as described below. If a name is not selected, responses clearly state a choice for Christopher, Anna, or Sam and provide an explanation for the choice by referring to one of the texts.

Selects “Christopher” and provides one or more of the explanations below from the first text, “The Nutritional Value of Milk: *Countless Benefits!*” OR mentions that the second text “Just Say ‘No’ to Cow’s Milk!” isn’t balanced/objective.

1. Milk contains (key) nutrients/many vitamins/minerals/specifically mentions one or more vitamin or mineral (e.g. potassium) that is important for good health.
2. Milk increases weight loss/helps maintain a healthy weight.
3. Milk improves cardiovascular health.
4. Milk prevents cancer.
5. The Farm to Market webpage uses support from a doctor.
6. The Farm to Market webpage cites the International Dairy Foods Association/provides support from the IDFA.
7. The “Just Say ‘No’ to Cow’s Milk!” article/second text is not balanced/is not objective or gives an example of how it isn’t balanced or objective.
 - [Christopher] A doctor says it contains many important nutrients. *[Explanation 1/5]*
 - [Christopher] Milk has minerals we need to be healthy. *[Explanation 1]*

OR: Selects “Anna” and provides one or more of the explanations below from the second text, “Just Say ‘No’ to Cow’s Milk!” OR mentions that the first text “The Nutritional Value of Milk: *Countless Benefits!*” is biased or trying to sell its products.

1. Milk may not be as good for you according to new research.
2. Milk may lead to weaker bones/more bone fractures.
3. Milk may cause more heart disease/cancer.
4. The article provides support from the Physicians Committee for Responsible Medicine (PCRM).
5. The article talks about growing proof that milk isn’t as good for people as originally thought.
6. A study in Sweden showed that people who drank milk had more heart disease AND/OR cancer AND/OR bone fractures.
7. The “Nutritional Value of Milk: *Countless Benefits!*” (can refer to the article as the first text) or Farm to Market Dairy is a biased source/is trying to sell its products and the claims can’t be trusted.
 - [Anna] They did a study in Sweden that showed that women who drank milk had more broken bones. *[Explanation 6]*
 - [Anna] That first one is just trying to sell us their milk, so you can’t really trust them. *[Explanation 7]*

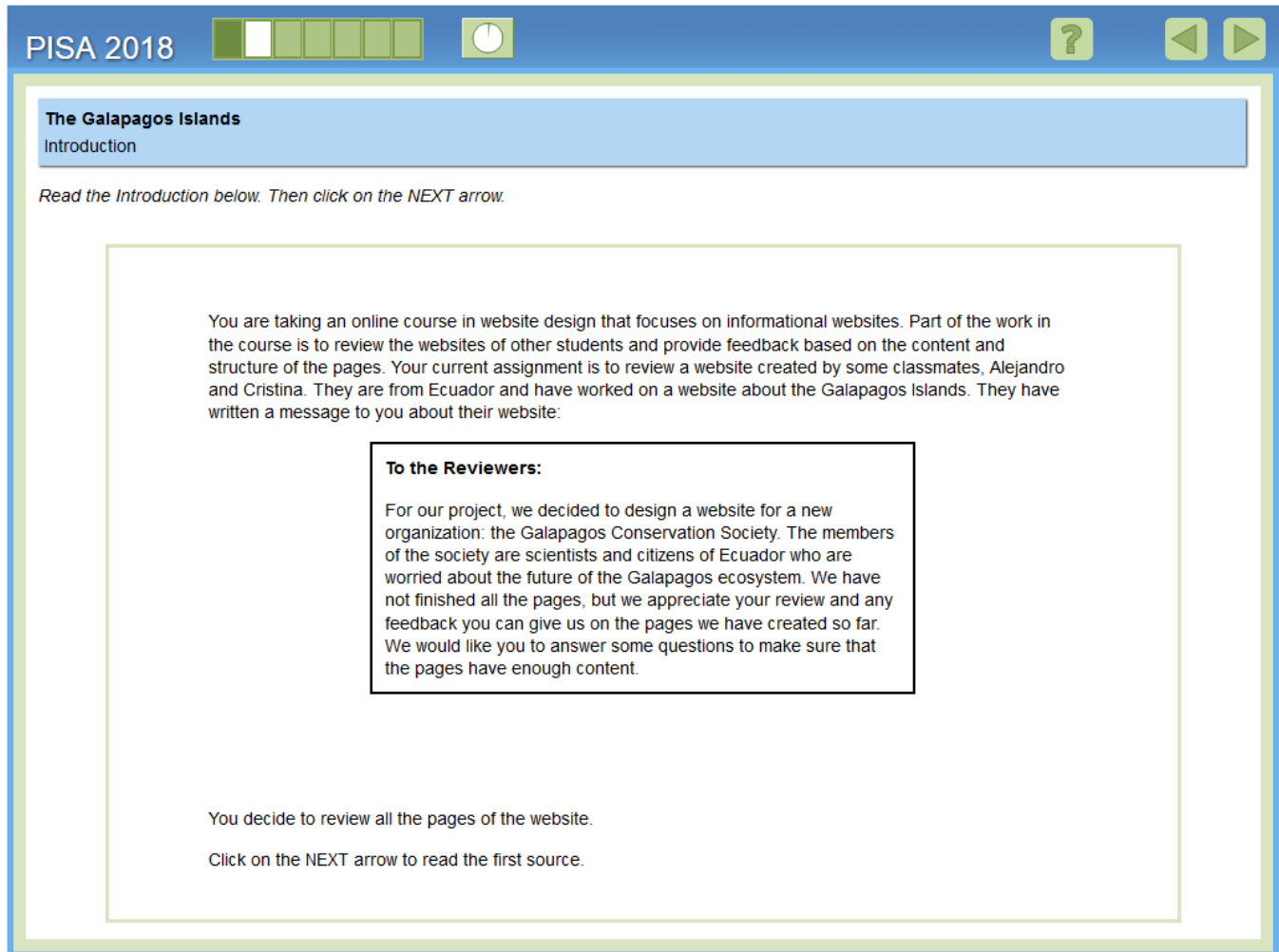
OR:

Selects “Sam” and provides an explanation that refers to the content or limitations of the texts to support the stance that a conclusion cannot be reached at this time. Responses include one of the following explanations:

1. The “Just Say ‘No’ to Cow’s Milk!” article/the second text points out that more studies are needed to confirm the research findings.
2. Milk has been consumed regularly for a long time and the studies mentioned in the second article are new, so more time or research is needed to draw a conclusion.
3. These are only two texts and more research is needed before a conclusion can be made.
4. It would be good to verify the information found in each article before making a conclusion.
5. The two texts contradict one another, so a conclusion cannot be drawn OR provides a specific example of how they contradict one another (one text says milk creates strong bones and the other one says it causes more fractures).
 - [Sam] Just Say No says that more studies are needed before we will really know.
[Explanation 1]
 - [Sam] I need to make sure that what each article says is true before I can decide.
[Explanation 4]

Untested Unit: *The Galapagos Islands*

The Galapagos Islands Scenario



PISA 2018

The Galapagos Islands
Introduction

Read the Introduction below. Then click on the NEXT arrow.

You are taking an online course in website design that focuses on informational websites. Part of the work in the course is to review the websites of other students and provide feedback based on the content and structure of the pages. Your current assignment is to review a website created by some classmates, Alejandro and Cristina. They are from Ecuador and have worked on a website about the Galapagos Islands. They have written a message to you about their website:

To the Reviewers:

For our project, we decided to design a website for a new organization: the Galapagos Conservation Society. The members of the society are scientists and citizens of Ecuador who are worried about the future of the Galapagos ecosystem. We have not finished all the pages, but we appreciate your review and any feedback you can give us on the pages we have created so far. We would like you to answer some questions to make sure that the pages have enough content.

You decide to review all the pages of the website.

Click on the NEXT arrow to read the first source.

In this unit’s scenario, the student is participating in an online website design course where classmates review each other’s websites. The student is asked to review a website produced by some classmates and answer questions to help them determine whether there is enough content in the existing pages. The website that the student is to review is about a fictional organization called the Galapagos Conservation Society and covers information about the Galapagos Islands off the coast of Ecuador. The situation is classified as educational. The text in this unit consists of four webpages for the site (“About”; “Animals”; “Conservation”; and “Volunteer”). The text is classified as: multiple; dynamic; mixed; and expository.

This unit was designed to fully address the digital aspects of reading literacy discussed in the Reading Literacy framework. The text consists of a simulated website with four webpages. It was designed to have the navigational elements typical of a standard website with navigational tabs at the top of the page, each labeled with a title to link the tab with the content of the page. In order to complete each item, the student must search among the four webpages to find the answers to the questions. Some items direct the student explicitly to the page where the information is to be found while other items do

not. Items that do not direct the student to a specific page all share a core cognitive process of search and select the relevant text. Some items only require the students to search for and select the relevant text to locate a specific piece of information that is a direct match with the question stem or one of the response options. Other items require the student to search for and select the relevant text but then go beyond this cognitive process to engage more deeply with the text. The released items below demonstrate this range of depth of text engagement.

Below, each webpage of the website is presented to show the content presented in the entire stimulus. The student begins the unit with the “About” webpage visible. This webpage introduces the islands and describes how and why the animals that inhabit the islands are unique. The webpage also describes how the islands’ ecosystems have been threatened. The second webpage provides brief descriptions of three animals that are endemic to the islands. The student navigates to this stimulus by clicking on the tab labeled “Animals”. The third webpage is titled “Conservation” and describes two programmes that have been successful in restoring the Galapagos Tortoise population. The final webpage is titled “Volunteer”. This webpage is “under construction” and does not contain information.

This unit was not programmed because the Reading Expert Group chose to exclude it from the Field Trial. If it had been programmed, the student would have started each new item with the “About” webpage on the right side of the screen. Even if the student had ended the previous item while viewing a different webpage, the “About” webpage would have been presented for the new item. This standardized each item across all students.

Please note that the graphics for this unit were designed by Test Developers so that members of the PISA team in each country could get an idea of how the unit would “look and feel”. The other released units (“Chicken Forum” and “Cow’s Milk”) went through a formal design and programming process. Additionally, the French Source was not developed for this unit. The process of creating the French version improves the linguistic clarity of the English version of the unit. However, because the French version of this unit was not developed, the English version presented here did not go through that linguistic refinement.

The Galapagos Islands Stimulus 1

PISA 2018

The Galapagos Islands

Alejandro and Cristina sent several questions to you. You may click on the tab of any page to answer the questions.

Click Next to see the first question


THE GALAPAGOS ISLANDS – A NATURAL TREASURE

About **Animals** **Conservation** **Volunteer**

Located 1000 kilometres west of the South American coast lie the Galapagos Islands - one of the most fascinating places in the world.

There are currently 95 indigenous species of animals that exist solely on the various islands of the archipelago. Many people travel to the Galapagos Islands to observe these special animals in their natural habitat. The islands are often referred to as a "living laboratory" because they offer scientists great research potential. Being near the equator, the islands receive ample sunshine, while the strong ocean currents provide cool breezes. Many plants and animals thrive in this environment. Tourists and scientists alike are fascinated by the animals who seem just as curious about humans as we are about them. Galapagos animals evolved for centuries without human interference or predation and consequently, when approached by humans, they don't show fear like most animals throughout the world. They often wander up to visitors! This behavior creates amazing photo opportunities, but it has made the animals very vulnerable.

Over the years, the ecosystem surrounding the Galapagos Islands has been threatened due to human activity on the islands. Damage to the ecosystem has had negative consequences on populations of many of the Galapagos animals. Thankfully, with the work of committed researchers, the ecosystem is slowly recovering.



The Galapagos Islands

South America

The Galapagos Islands Stimulus 2

PISA 2018

The Galapagos Islands


Alejandro and Cristina sent several questions to you. You may click on the tab of any page to answer the questions.


Click Next to see the first question


THE GALAPAGOS ISLANDS – A NATURAL TREASURE

About Animals Conservation Volunteer

Learn interesting animal facts about the endemic species of the Galapagos Islands! More animals coming soon!

 **Name:** Galapagos Tortoise
Status: Vulnerable
Giant tortoises can live to be over 100 years old and weigh more than 230 kilos. They eat a variety of plants and can survive an entire year without any food or water.

 **Name:** Marine Iguana
Status: Vulnerable
A marine iguana's diet mostly consists of algae found in the ocean. They spend so much time in the ocean that salt water builds up in their bodies. Marine iguanas remove it by sneezing and expelling it out their nostrils.

 **Name:** Flightless Cormorant
Status: Vulnerable
Flightless Cormorants cannot fly, but they are excellent swimmers. They can dive for food for more than 3 minutes under water and up to 100 meters away from shore. There are less than 2000 of them left on the Galapagos Islands, their only home.

The Galapagos Islands Stimulus 3

PISA 2018

The Galapagos Islands

Alejandro and Cristina sent several questions to you. You may click on the tab of any page to answer the questions.

Click Next to see the first question

THE GALAPAGOS ISLANDS – A NATURAL TREASURE

About **Animals** **Conservation** **Volunteer**

There are many interesting examples of conservation programs taking place on the Galapagos Islands. Check back regularly to read about new success stories as we update our page!

A Conservation Program for Tortoises






By 1965, the giant tortoise population had severely declined and several tortoise species had become extinct. Humans who visited and settled the islands had introduced invasive species such as rats that preyed on tortoise eggs and young tortoises. It had become impossible for tortoises to reach maturity in the wild. In response, conservationists launched a breeding program to save the rest of the tortoises from extinction. They began by capturing adult tortoises and transporting them to a facility where they could lay their eggs safely away from rats and other predators. Once the young tortoises were large enough to defend themselves, they were released back to their native island. Numbers were painted on their shells so they can be monitored as they aged in their natural environment. This type of conservation has been critical for maintaining and improving current tortoise populations, but until the giant tortoises can reproduce without the help of humans, they are considered extinct in the wild.

Pinzón Island – A Success Story

Conservationists realized a second approach was necessary to fully restore a breeding population of giant tortoises on Pinzón Island. A massive population of invasive black rats made it impossible for tortoises to reach maturity on the island. The only way forward was to eradicate the rats. Otherwise, no tortoises would be able to safely hatch and survive their most vulnerable years in their native home.

A large-scale rat eradication program was launched in 2012 on the island. Helicopters dropped over 20 tonnes of poison. The poison was designed to be attractive to rats, but not to the native species that also live there. Soon after, Pinzón Island was declared rat-free. Additional proof of the program's success was discovered in December, 2014. A team of scientists found young tortoise hatchlings on the island that had been born in the wild! This is an encouraging finding that suggests the native tortoise population on Pinzón Island may be able to sustain itself naturally after so many years.

The Galapagos Islands Stimulus 4

PISA 2018     

The Galapagos Islands

Alejandro and Cristina sent several questions to you. You may click on the tab of any page to answer the questions.

Click Next to see the first question

THE GALAPAGOS ISLANDS – A NATURAL TREASURE

| | | | |
|-------|---------|--------------|-----------|
| About | Animals | Conservation | Volunteer |
|-------|---------|--------------|-----------|

This page is under construction.
We expect to have descriptions of volunteer opportunities and a secure way to donate money to the Society.

The Galapagos Islands Released Item #1

PISA 2018

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The Galapagos Islands
Question 1 / 7

Refer to the different webpages of the website on the right.
Click on a choice to answer the question.

What do Marine Iguanas eat?

A variety of plants.

Tortoise eggs.

Algae.

Small fish.



THE GALAPAGOS ISLANDS – A NATURAL TREASURE

About
Animals
Conservation
Volunteer

Located 1000 kilometres west of the South American coast lie the Galapagos Islands - one of the most fascinating places in the world.

There are currently 95 indigenous species of animals that exist solely on the various islands of the archipelago. Many people travel to the Galapagos Islands to observe these special animals in their natural habitat. The islands are often referred to as a "living laboratory" because they offer scientists great research potential. Being near the equator, the islands receive ample sunshine, while the strong ocean currents provide cool breezes. Many plants and animals thrive in this environment. Tourists and scientists alike are fascinated by the animals who seem just as curious about humans as we are about them. Galapagos animals evolved for centuries without human interference or predation and consequently, when approached by humans, they don't show fear like most animals throughout the world. They often wander up to visitors! This behavior creates amazing photo opportunities, but it has made the animals very vulnerable.

Over the years, the ecosystem surrounding the Galapagos Islands has been threatened due to human activity on the islands. Damage to the ecosystem has had negative consequences on populations of many of the Galapagos animals. Thankfully, with the work of committed researchers, the ecosystem is slowly recovering.

The Galapagos Islands

In this item, the answer is not located on the "About" webpage, so the student must search through the different webpages to find the answer. By providing the correct answer, the student demonstrates that he or she has selected the relevant text ("Animals"). Once the correct text has been located, a simple match is made between the content within the section on the Marine Iguana and the options in the stimulus. Thus, while this item encourages engagement with the different webpages, it does not require a deep level of engagement with the relevant text. Here, the answer is (C) Algae.

| | |
|------------------------------------|-------------------------------------|
| <i>Item Number</i> | CR571Q13 |
| <i>Cognitive Process</i> | Search for and select relevant text |
| <i>Response Format</i> | Simple multiple choice |
| <i>Source Requirement for Item</i> | Multiple |

The Galapagos Islands Released Item #2

PISA 2018

The Galapagos Islands
Question 2 / 7

Refer to the different webpages of the website on the right.
Type your answer to the question.

On what island have scientists succeeded in restoring a breeding population of giant tortoises?


THE GALAPAGOS ISLANDS – A NATURAL TREASURE

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The Galapagos Islands

This item is similar to the Released Item #1 in that the student is not given information about where the answer to the question is located. Thus, the student must search among the four webpages and select the relevant text ("Conservation"). Here, the student must provide the answer in their own words, and the coding guide for the item can be found below.

| | |
|------------------------------------|-------------------------------------|
| <i>Item Number</i> | CR571Q14 |
| <i>Cognitive Process</i> | Search for and select relevant text |
| <i>Response Format</i> | Open response – human coded |
| <i>Source Requirement for Item</i> | Multiple |

Full Credit

Code 1: Pinzón Island or Pinzón

The Galapagos Islands Released Item #3

PISA 2018

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The Galapagos Islands
Question 3 / 7

Refer to the different webpages of the website on the right. Click on a choice to answer the question.

According to the Conservation webpage, what was the main goal for why conservationists started a breeding program for tortoises?

- To save the tortoises from extinction.
- To monitor how tortoises mature.
- To protect tortoise eggs from predators.
- To track tortoises for a long period of time.



THE GALAPAGOS ISLANDS – A NATURAL TREASURE

About
Animals
Conservation
Volunteer

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The Galapagos Islands

This item is a good contrast to the previous two items. In the two previous items in this unit, the item did not explicitly identify the relevant text for the student. Thus, searching for the relevant text was required to complete the item accurately. Here, the item explicitly refers to the "Conservation" webpage. This should be a strong signal to the student that they need to navigate to the "Conservation" webpage to find the answer. Once students are on the correct webpage, they need to match the information in the question stem (started a breeding program for tortoises) and the webpage (launched a breeding program). Option A is also a very close match with what is in the webpage (...to save the rest of the tortoises from extinction). The correct answer is (A) To save the tortoises from extinction. By contrasting this item and the previous two items, one can see the difference between the two cognitive processes of access and retrieve information within a text, and search for and select relevant text.

| | |
|------------------------------------|---|
| <i>Item Number</i> | CR571Q08 |
| <i>Cognitive Process</i> | Access and retrieve information within a text |
| <i>Response Format</i> | Simple multiple choice |
| <i>Source Requirement for Item</i> | Single |

The Galapagos Islands Released Item #4

PISA 2018

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The Galapagos Islands
Question 4 / 7

Refer to the different webpages on the website on the right. Click on a choice to answer the question.

What do the Galapagos Tortoise, the Marine Iguana, and the Flightless Cormorant have in common?

- Their food comes from the ocean.
- They eat the same foods.
- They live a long time.
- Their populations are threatened.

THE GALAPAGOS ISLANDS – A NATURAL TREASURE

About

Animals



Conservation

Volunteer

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The Galapagos Islands

For this item, the student begins the task by searching for the relevant text to locate the webpage that discusses animals of the Galapagos Islands. If the student has successfully navigated to the “Animals” webpage in the first item, then he or she will likely know where to go to complete this item. However, because the unit would always revert to the “About” webpage had it been programmed, this item would have had, at its core, the cognitive process of searching for and selecting relevant text. Unlike the previous items, this item requires the student to engage more deeply with the information in the webpage. Once the student has navigated to the correct webpage, it is necessary to integrate information across all three descriptions to correctly identify the commonality among the three animals. Because this commonality is not explicitly stated in the webpage and requires integration, this is an “integrate and generate inference” item. Here, the answer is (D) Their populations are threatened.

| | |
|------------------------------------|-----------------------------------|
| <i>Item Number</i> | CR571Q06 |
| <i>Cognitive Process</i> | Integrate and generate inferences |
| <i>Response Format</i> | Simple multiple choice |
| <i>Source Requirement for Item</i> | Multiple |

The Galapagos Islands Released Item #5

PISA 2018

The Galapagos Islands
Question 5 / 7

Refer to the different webpages on the website on the right.
Type your answer to the question.

The Conservation webpage cites two examples of programs that were undertaken to protect the giant tortoises.

What is the key difference in the approach taken between these two conservation programs?



THE GALAPAGOS ISLANDS – A NATURAL TREASURE

About **Animals** Conservation Volunteer

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The Galapagos Islands

In contrast to the previous item, the question stem indicates to which webpage the student must navigate in order to find the answer to the question. However, this item shares similarities with the previous item in that it requires the student to integrate information across one webpage and understand information that is not explicitly stated in the webpage. Thus, this is an "integrate and generate inference" item. It is an open response – human coded item, and the draft coding guide for the item is presented below.

| | |
|------------------------------------|-----------------------------------|
| <i>Item Number</i> | CR571Q07 |
| <i>Cognitive Process</i> | Integrate and generate inferences |
| <i>Response Format</i> | Open response – human coded |
| <i>Source Requirement for Item</i> | Single |

Full Credit

Code 1: Responses indicate that one program focused on the breeding of native species while the other program focused on the eradication of invasive species.

The Galapagos Islands Released Item #6

PISA 2018

The Galapagos Islands
Question 6 / 7

Refer to the different webpages on the website on the right.
Type your answer to answer the question.

The "Animals" and "Conservation" pages present facts and details about animals and conservation efforts in the Galapagos Islands. Why does the Galapagos Preservation Society focus on this information on the two pages?



THE GALAPAGOS ISLANDS – A NATURAL TREASURE

[About](#) [Animals](#) [Conservation](#) [Volunteer](#)

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The Galapagos Islands

This item explicitly tells the student to consider the information presented on two specific webpages, which limits the amount of searching a student needs to do in order to complete the item. To correctly answer this item, the student must understand the content of both webpages with respect to how each discusses the animals and conservation efforts on the islands. The student must go beyond understanding the content and reflect on the way its presentation shapes its purpose.

This item represents how the cognitive processes in the Reading Literacy assessment can build upon one another. First, the student must understand the literal meaning of sentences and paragraphs in the webpage. Then the student has to integrate the information within each webpage as well as across both webpages. Finally, the student must think about how the content is presented to consider a purpose for which the texts may be used. The draft coding guide for this item is presented below.

| | |
|------------------------------------|-----------------------------|
| <i>Item Number</i> | CR571Q11 |
| <i>Cognitive Process</i> | Reflect on content and form |
| <i>Response Format</i> | Open response – human coded |
| <i>Source Requirement for Item</i> | Multiple |

Full Credit

Code 1: Responses indicate that the society uses the facts and details to encourage people to support programs to save the animals and the islands.

The Galapagos Islands Released Item #7

PISA 2018

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The Galapagos Islands
Question 7 / 7

Refer to the different webpages on the website on the right. Click on the choices in the table to answer the question.

After reviewing the pages, you decide to send a list of suggestions to Alejandro and Cristina about how to improve the credibility of the website. Which of the changes listed in the table below make the website more credible for people who want to learn about the islands and the Galapagos Conservation Society? Click on either **Yes** or **No** for each statement in the table below.

| Does this change improve the credibility of the website? | Yes | No |
|--|-----------------------|-----------------------|
| Provide testimonials from tourists who have visited the Galapagos Islands. | <input type="radio"/> | <input type="radio"/> |
| Include more sub-headings. | <input type="radio"/> | <input type="radio"/> |
| Cite authoritative sources. | <input type="radio"/> | <input type="radio"/> |
| Include a description of the Galapagos Conservation Society and its mission. | <input type="radio"/> | <input type="radio"/> |



THE GALAPAGOS ISLANDS – A NATURAL TREASURE

About
Animals
Conservation
Volunteer

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The Galapagos Islands

For the final item in the unit, the student must consider the content of the full website and how it could be improved to present the information in a more credible way for future readers whose purpose is to find out more about the islands and the Galapagos Conservation Society. This item relies on knowledge of what makes a source more credible.

The first statement describes a way to promote tourism to the islands but does not address aspects of credibility with respect to learning more about the islands and the conservation society. The correct answer is No. The second statement addresses a way in which the content could be organized in order to improve the *readability* of the website but not the *credibility*. The correct answer is No. The third statement is a clear way to make a website or text more credible. The correct answer is Yes. Finally, the fourth statement could improve the quality and credibility of the website because a clearly-stated description of the society and its mission might allow readers to better contextualize the content within the pages. Readers would know that the society's goal is rooted in science and aims to preserve the islands' ecosystem. Without this knowledge, readers are less aware of who the author is and whether or not there is inherent bias in the information presented. The correct answer is Yes.

| | |
|------------------------------------|--------------------------------|
| <i>Item Number</i> | CR571Q12 |
| <i>Cognitive Process</i> | Assess quality and credibility |
| <i>Response Format</i> | Complex multiple choice |
| <i>Source Requirement for Item</i> | Multiple |

Reading Fluency

In PISA 2018, the Reading Expert Group recommended the inclusion of a measure of reading fluency to better assess and understand the reading skills of students in the lower proficiency levels. PISA defines reading fluency as the ease and efficiency with which one can read and understand a piece of text. Reading fluently requires that one can recognize words within a text accurately and automatically and can then parse and process the words into a coherent whole in order to comprehend the overall meaning of the text. When these processes are done efficiently, students' cognitive resources are available for higher-level comprehension tasks, allowing students to engage with texts more deeply.

In the PISA 2018 assessment of reading fluency, students were given three minutes to evaluate the sensibility of as many sentences as they could (i.e. Does the sentence make sense – Yes or No). The number of sentences was restricted to approximately 22 sentences per student so that most students would be able to complete the task within the three minutes. Students were not cut off in the middle of an item or notified that they did not complete all the sentences. Instead, if a student reached the three minutes while viewing a sentence, the task ended after they completed that sentence's sensibility judgment. This was done so that students would maintain motivation for the remaining sections of the PISA assessment.

Items in this task are the easiest items within the Reading Literacy assessment in PISA 2018. Difficulty information is not provided in this report for the practice items because data for these items was not analyzed. However, in the reading fluency assessment, the items fell into proficiency Level 1c and Level 1b. One item was in Level 1a. Items that did not make sense and required a "No" response were more difficult than items that made sense and required a "Yes" response.

Below, the introduction to and practice items for the reading fluency task are provided along with an explanation for how the students were oriented to the task.

Reading Fluency: *Introduction*

The screenshot shows a software interface for the PISA 2018 Reading Fluency task. At the top, there is a blue header bar containing the text "PISA 2018", a progress indicator with five green squares (the first is white), a power button icon, a question mark icon, and left and right arrow icons. Below the header is a light blue bar with the word "Sentences" in bold. Underneath, a line of text reads: "Read the Introduction. Then click on the NEXT arrow." A large white rectangular area with a thin green border contains the following text: "In this test, you will read some sentences and decide if they make sense or not. Click **YES** if the sentence makes sense. Click **NO** if the sentence does not make sense. The next sentence will appear as soon as you respond." Below this text, it says: "Click on the NEXT arrow to see some examples."

In this introduction, students are given the basic instructions for what they will do in the fluency task. Students are notified that the next sentence will appear as soon as they respond so that they are prepared for this style of presentation.

Reading Fluency: *Static Examples*

PISA 2018

Sentences
Examples

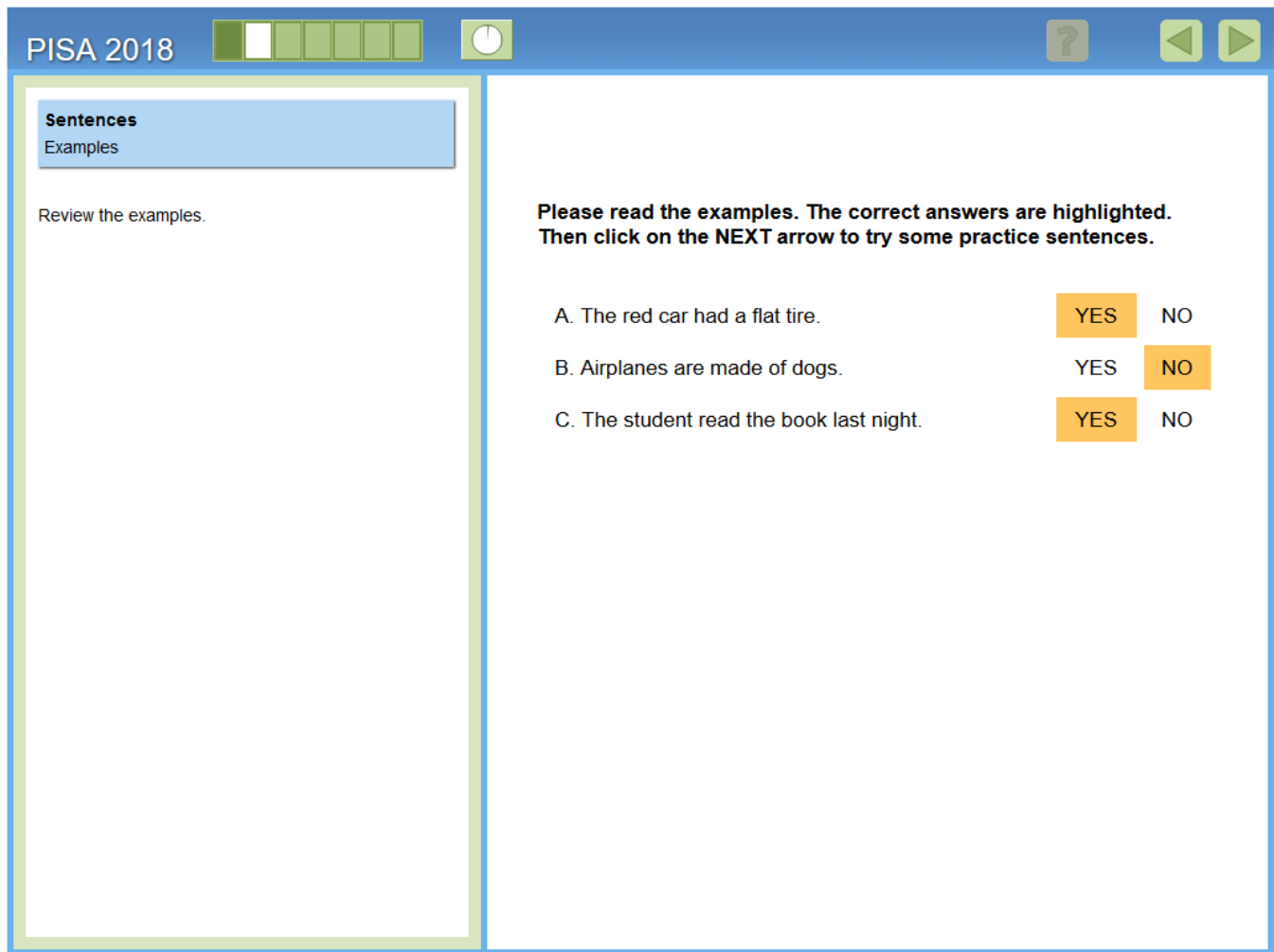
Review the examples.

Please read the examples. The correct answers are highlighted. Then click on the NEXT arrow to try some practice sentences.

A. The red car had a flat tire. YES NO

B. Airplanes are made of dogs. YES NO

C. The student read the book last night. YES NO

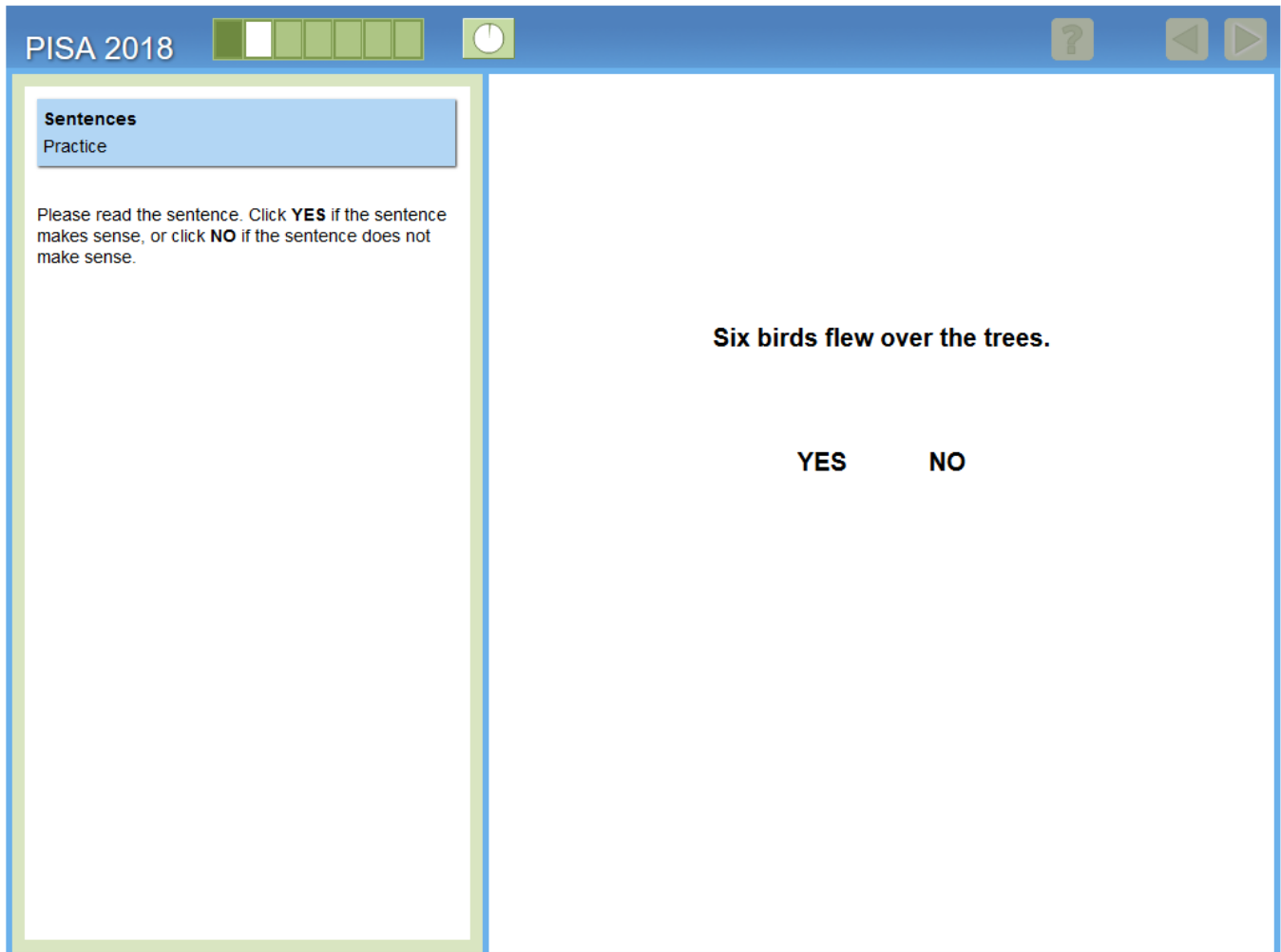
The screenshot shows a software interface for a PISA 2018 reading fluency assessment. At the top, there is a blue header bar with the text 'PISA 2018' on the left, a progress indicator consisting of six green squares (the first is white), a power button icon, a question mark icon, and two navigation arrows (left and right). Below the header, the interface is split into two main sections. The left section has a blue header 'Sentences' and 'Examples', followed by the instruction 'Review the examples.' The right section contains a bold instruction: 'Please read the examples. The correct answers are highlighted. Then click on the NEXT arrow to try some practice sentences.' Below this instruction are three example sentences, each followed by two buttons: 'YES' and 'NO'. In the first example, 'A. The red car had a flat tire.', the 'YES' button is highlighted in orange. In the second example, 'B. Airplanes are made of dogs.', the 'NO' button is highlighted in orange. In the third example, 'C. The student read the book last night.', the 'YES' button is highlighted in orange.

Students are given a set of static examples so that the sensibility judgments are understood prior to interacting with dynamic practice items. Here, three example sentences are provided, two which make sense (a Yes response is correct) and one that does not make sense (a No response is correct).

Reading Fluency: *Dynamic Practice*

The next three images show three dynamic practice items. Students complete these dynamic practice items prior to receiving the first fluency item so that they understand the response mode for the item. For each example, as soon as the student clicks on “Yes” or “No”, the next item appears.

Reading Fluency: *Dynamic Practice Item 1*



The screenshot shows a software interface for a PISA 2018 reading fluency practice item. At the top, there is a blue header bar with the text "PISA 2018" on the left, a progress indicator consisting of five green squares (the first is white), a power button icon, a question mark icon, and left and right navigation arrows. Below the header, the interface is divided into two main sections. On the left, a light blue box contains the text "Sentences Practice". Below this box, instructions read: "Please read the sentence. Click **YES** if the sentence makes sense, or click **NO** if the sentence does not make sense." The right section of the interface is a large white area. In the center of this area, the sentence "Six birds flew over the trees." is displayed in bold black text. Below the sentence, the words "YES" and "NO" are displayed in bold black text, serving as response options.

Here, the correct answer is “Yes”.

Reading Fluency: *Dynamic Practice Item 2*

PISA 2018

Sentences
Practice






Please read the sentence. Click **YES** if the sentence makes sense, or click **NO** if the sentence does not make sense.

The window sang the song loudly.

YES NO

Here, the correct answer is “No”.

Reading Fluency: *Dynamic Practice Item 3*

PISA 2018     

Sentences
Practice

Please read the sentence. Click **YES** if the sentence makes sense, or click **NO** if the sentence does not make sense.

The man drove the car to the store.

YES NO

Here, the correct answer is “Yes”.

Reading Fluency: *End of Practice*

The screenshot shows a software interface for the PISA 2018 Reading Fluency test. At the top, there is a blue header bar with the text 'PISA 2018' on the left, a progress indicator consisting of six green squares (the first is white), a power button icon, a question mark icon, and two navigation arrows (left and right). Below the header, a light blue bar contains the word 'Sentences'. The main content area is white and contains the following text: 'Read the information below. Then click on the NEXT arrow.' followed by a large white box with a thin green border containing the message: 'You have completed the practice sentences. You will have three minutes to read and respond to as many sentences as you can. Click on the NEXT arrow to begin the test.'

Students are told that they have completed the practice sentences. They are also given the time limit for the task, three minutes, and they are told to complete as many sentences as they can within the time limit. Once the student clicks on the NEXT arrow, the task begins and is carried out in the same way as the dynamic practice items. Once students have completed the task, they are notified that the first section of the test is complete and the answers have been saved.

ⁱ The “Chicken Forum” unit describes a person who is seeking information about how to help an injured chicken. Although the information presented in the unit is accurate and medically-sound, some objections were raised regarding the propriety of recommending any pharmaceutical solution to a health problem within the context of the PISA assessment.

The “Cow’s Milk” unit contains a stimulus from a milk producer that touts milk’s ability to help its drinkers lose weight. Some objections were raised with respect to this claim and its focus on body image, even though the unit itself drew attention to the biased nature of the stimulus.