

Reading Unit: *The Galapagos Islands*

From the PISA 2018 Field Trial

The Galapagos Islands Scenario

PISA [Progress Indicator] [Help] [Previous] [Next]

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 programs 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.

The Galapagos Islands Stimulus 1

PISA

THE GALAPAGOS ISLANDS – A NATURAL TREASURE

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

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

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

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

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 Stimulus 3

PISA

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

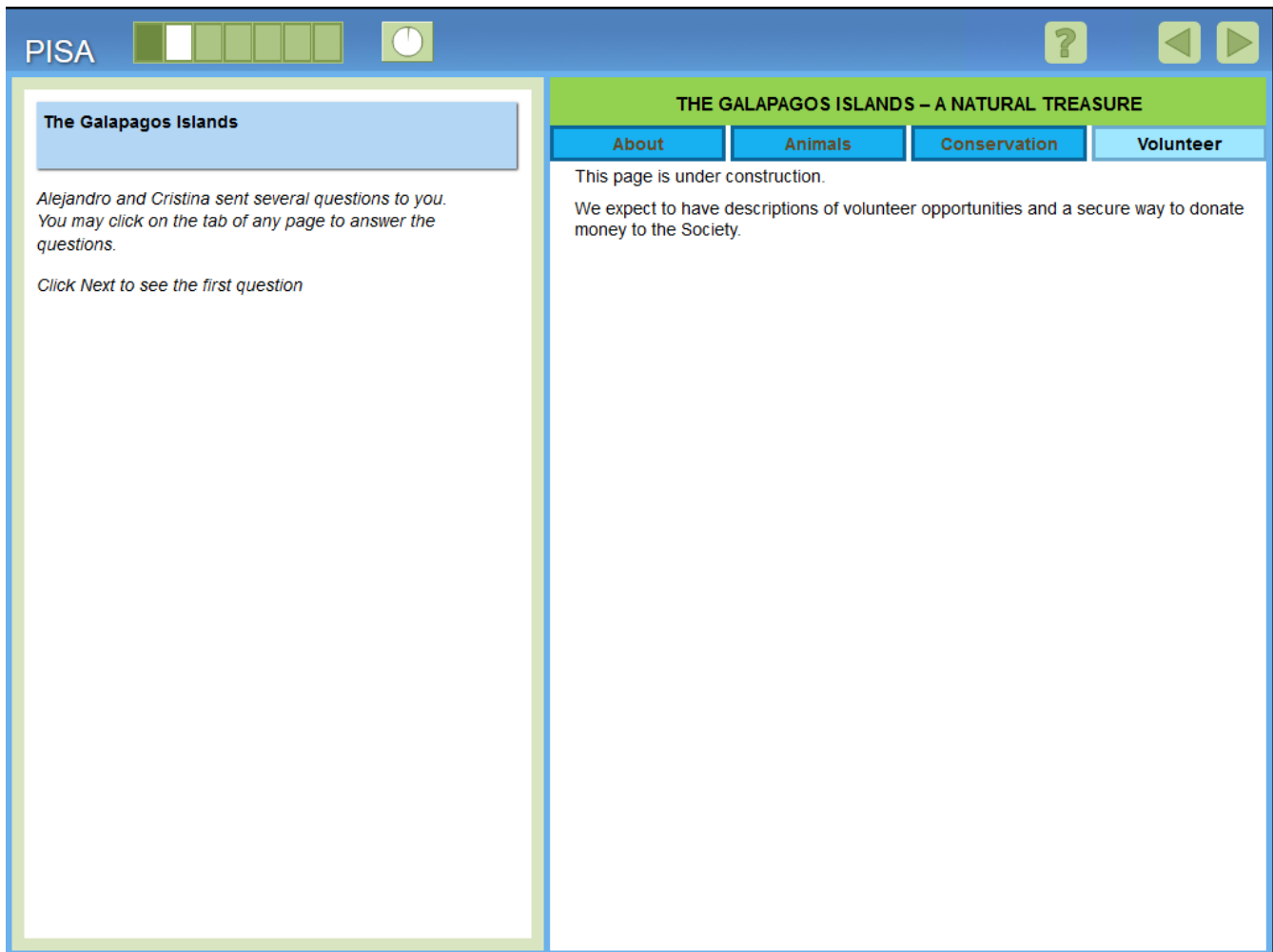
By 1965, the giant tortoise population had severely declined and several tortoise species had become extinct. Humans who visited and settled the islands had introduced invasive species such as rats that preyed on tortoise eggs and young tortoises. It had become impossible for tortoises to reach maturity 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

THE GALAPAGOS ISLANDS – A NATURAL TREASURE

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

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

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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

The Galapagos Islands Released Item #2

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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

About
Animals
Conservation
Volunteer

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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

Full Credit

Code 1: Pinzón Island or Pinzón

The Galapagos Islands Released Item #3

PISA

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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.



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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

The Galapagos Islands Released Item #4

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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.



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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

The Galapagos Islands Released Item #5

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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?



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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

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

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?



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About
Animals
Conservation
Volunteer

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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.

<i>Item Number</i>	CR571Q11
<i>Cognitive Process</i>	Reflect on content and form
<i>Response Format</i>	Open response – human coded

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

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"/>



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About
Animals
Conservation
Volunteer

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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