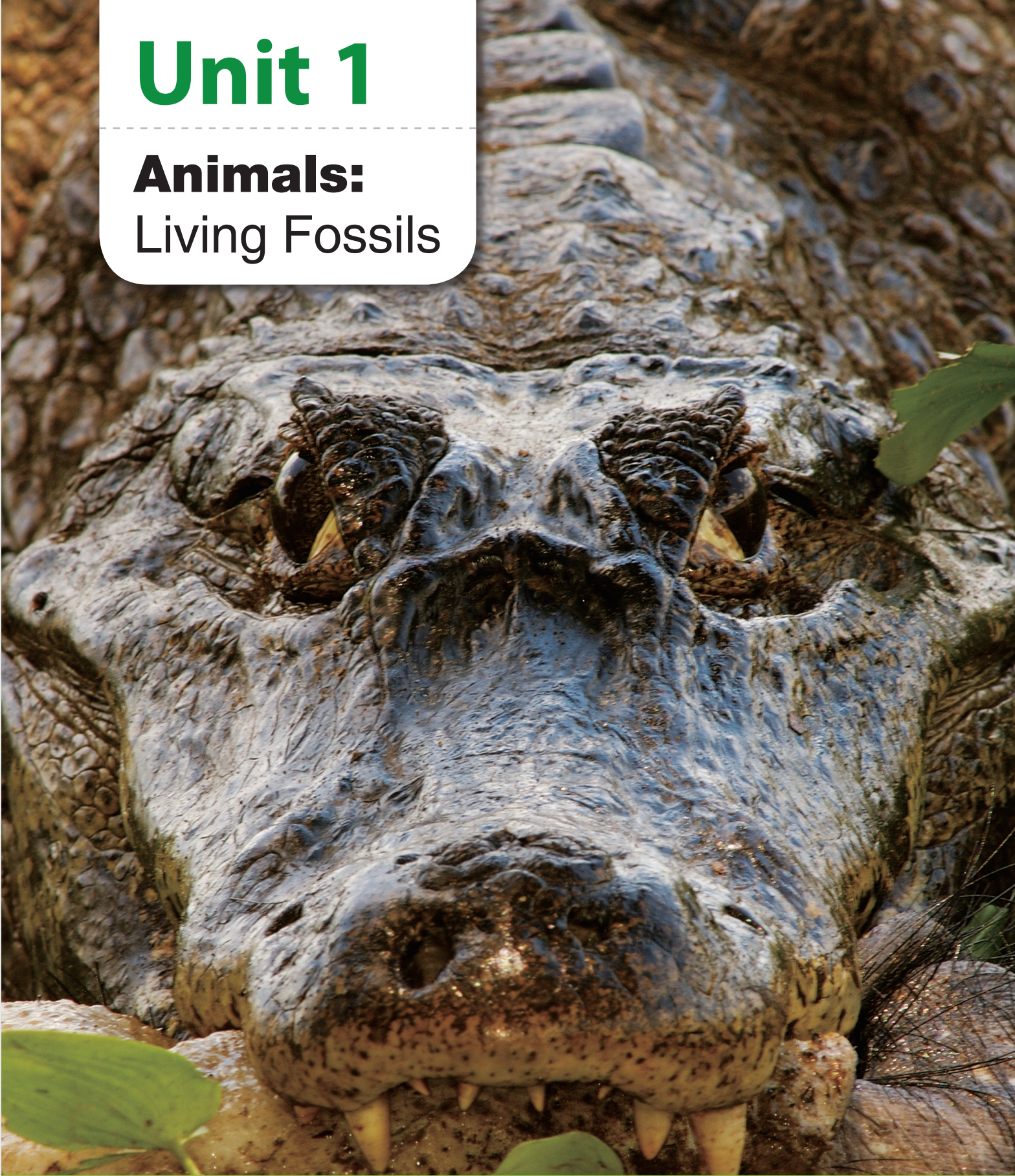


Unit 1

Animals: Living Fossils



👁 Alligators are very old animals, and they haven't changed much in millions of years. That's why they are called living fossils.

Lesson 1

The Tuatara: A New Zealand Survivor

What are fossils?

Fossils are the hard remains of animals, plants, and other organisms from the prehistoric period. They are found inside rock.



What are living fossils?

Living fossils are the animals, plants, and other organisms that have survived while their relatives have become extinct. They are living on Earth now.

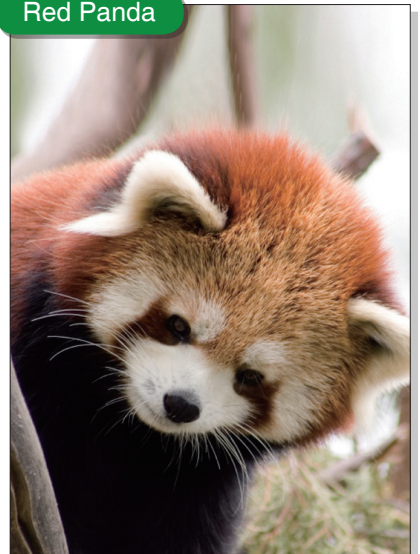
Koala



Ginkgo Tree



Red Panda



1 Pre-Reading



Animals: Living Fossils

A Discussion

1. Answer and discuss these questions with a partner or as a class.

- Have you ever seen a fossil? If you have, when and where?
- What other "living fossils" do you know of?
- What do you think a "tuatara" is?

2. Which do you think is true? Compare and discuss your answers.

- The tuatara lives only in New Zealand. T F
- The tuatara is related to dinosaurs. T F
- The tuatara is a large animal. T F

B Key Vocabulary

Look at the words in bold type in the passage on the next page. Write each word next to its definition using the *base form* of the word.

- _____ different or separate
- _____ the hard remains of animals and plants found inside rock
- _____ a goal or thing that you try to hit
- _____ to work, use, or manage
- _____ to grow well and to be healthy
- _____ the natural environment in which an animal or plant lives
- _____ rank or condition
- _____ to put into a particular group
- _____ related to science
- _____ an answer

The Tuatara:

A New Zealand Survivor

Track 01

“Living **fossil**” is a term used to describe animals that have survived, while many members of their **scientific** family have become extinct. We know that these family members once existed because we’ve found their fossils. That’s why we call the special survivors “living fossils.” They are living, but
5 most or all of their relatives are now just rocky skeletons.

One such species is a reptile called the tuatara, which lives only in New Zealand. The tuatara survived while the dinosaurs and many other reptile species became extinct. Although it resembles modern lizards, the tuatara is actually part of a **distinct** group called Sphenodontia*.

10 The two species of tuatara are the only surviving members of this group, which **flourished** around 200 million years ago. Other members of Sphenodontia were reptiles that were similar to the tuatara, as well as various kinds of pleurosaurs.
15 Pleurosaurs were marine reptiles that could swim.

Despite surviving the great extinction that wiped out the dinosaurs and many other Sphenodontia, the tuatara has been **classified** as an endangered species since 1895. Unfortunately, like many of New Zealand’s native animals, the tuatara is threatened by
20 **habitat** loss and the Polynesian rat, which was introduced to New Zealand 800 years ago. Polynesian rats compete with the tuatara for food and probably also prey on tuatara eggs. Other mammals such as cats and dogs are also a threat. An adult tuatara can grow 60 centimeters long and can



Fact File

On average, tuataras live for 60 years, but they can live for well over 100. Henry, a 111-year old tuatara became a father in 2009! According to some scientists, tuataras could live for up to 200 years in captivity.

Glossary

* Sphenodontia - a group of related reptiles that were common during the Mesozoic era

** sanctuary - a place where animals are protected



weigh between 0.5 and 1 kilogram. Because they are
25 so small, they are an easy **target** for predators.

In **response** to their threatened **status**, the New Zealand Department of Conservation (DOC) is helping to increase the tuatara population. The DOC **operates** a successful breeding program and has created a
30 number of mammal-free island sanctuaries**, so tuatara numbers can increase. In 2005, tuataras were reintroduced to the New Zealand mainland at the Karori Wildlife Sanctuary in Wellington. Thanks to the Department of Conservation, the future of New
35 Zealand's living fossil looks much brighter. 329 words



Pleurosaurs

This pleurosaurs is a distant relative of the tuatara.



Reptiles

All reptiles are cold blooded. They have scales and they also lay eggs.



Mammals

Mammals are warm blooded. They are covered in fur and they also feed their babies milk.

Fact File

Karori Wildlife Sanctuary is a protected natural area. There is a special fence around the sanctuary which stops animals such as rats, cats, and dogs from entering. It was the world's first predator-proof fence.



2 During Reading

Reading Skill Tip

When you are scanning, don't read every word, and don't stop when you see a word you don't know. Read quickly and stop only to find the information you are looking for.

A Scanning for Information Circle the correct answer.

1. Which group does the tuatara belong to?

- a. dinosaurs
- b. sphenodontia
- c. marine reptiles
- d. pleurosaurs

2. What were pleurosaurs?

- a. They were reptiles that looked like a tuatara.
- b. They were the ancestors of the tuatara.
- c. They were reptiles that could swim.
- d. They were mammals.

3. What is a mammal-free island sanctuary?

- a. It's a place where there aren't any mammals.
- b. It's a place where mammals are protected.
- c. It's a place where predators like cats, dogs, and rats are kept.
- d. It's a place where mammals can move around freely.

4. Which sentence about living fossils is true?

- a. They are survivors.
- b. Dinosaurs are good examples of living fossils.
- c. All living fossils will become extinct.
- d. We don't know whether their other family members existed or not.

5. Which sentence about tuataras is NOT true?

- a. It lives only in New Zealand.
- b. Polynesian rats often eat tuataras.
- c. It remains an endangered species.
- d. Their numbers will probably increase in the sanctuaries.

B-1 Identifying Main Ideas

Complete the chart using the options below.
Write one sentence in each box.

Main Idea	
Paragraph 2	<hr/> <hr/>
Paragraph 3	<hr/> <hr/>
Options	
<ul style="list-style-type: none"> • The tuatara is a member of Sphenodontia. • The tuatara is an example of a fossil. • The tuatara looks like a lizard. • The tuatara survived the great extinction that wiped out the dinosaurs. • The dinosaurs and many other Sphenodontia became extinct. • The tuatara is an endangered species threatened by habitat loss and predators. 	

Reading Skill Tip

Every paragraph has a main idea. Often, but not always, the main idea is contained in a topic sentence.

B-2 Organizing Information: Identifying Cause and Effect

Complete the chart.

Cause	Effect
① habitat _____ ② the Polynesian _____ ③ other mammals such as _____	The tuatara is _____ _____
① The DOC operates a successful _____ _____ ② The DOC created a number of mammal-free _____ _____ ③ Tuataras were reintroduced to the New Zealand _____	Tuatara numbers can _____ _____ in the future.

Reading Skill Tip

Identify the various actions that occur in the passage. Now consider the consequences of each of those actions. Use this method to summarize what happened in the passage.

Reading Skill Tip

Think about how the target word is related to the topic of the passage. Then look at the words around the target word to guess its meaning.

C Understanding Words in Context Circle the correct answer.

1. In line 15, what does the word *marine* mean?

- a. special b. fast c. living in the sea d. living on land

2. In line 22, what does the word *prey* mean?

- a. eat b. give c. save d. hide

Reading Skill Tip

While making inferences, you combine the information in the passage with your general knowledge.

D Making Inferences Circle the correct answer.

1. In line 1, “living fossil” is used to describe animals that have survived. What do you think these animals have survived?

- a. hungry predators
b. egg-eating mammals
c. climate change and habitat destruction
d. all of the above

2. In line 19, “like many of New Zealand’s native animals, the tuatara is threatened by habitat loss and the Polynesian rat.” What can be inferred from this?

- a. Many of New Zealand’s native animals are threatened by the tuatara.
b. Among New Zealand’s native animals, only the tuatara is threatened by habitat loss and the Polynesian rat.
c. Many of New Zealand’s native animals are threatened by habitat loss and the Polynesian rat, including the tuatara.
d. Just like the tuatara, the Polynesian rat is also threatened by habitat loss.

Reading Skill Tip

Read carefully and choose the restatement that best summarizes the highlighted passage. Your goal should be to leave the meaning unchanged and to include all important information.

E Recognizing Restatement Circle the correct answer.

1. Which of the following sentences best restates the highlighted information in line 33?

- a. Because of the DOC, the tuatara will have a better future than other reptile species.
b. The tuatara looks nicer and brighter because the DOC is helping them.
c. We should thank the DOC because they’re making our future brighter.
d. Because of the DOC, tuatara numbers will probably increase in the future.

3 After Reading

A Vocabulary Practice Fill in the blanks.

classify	status	scientific	response	distinct
operate	fossils	habitat	flourish	target

1. If you take good care of them, these plants will _____.
2. Soldiers try to hit the _____ when they practice shooting.
3. He is an engineer. He has a strong mathematical and _____ background.
4. I sent an application form and got a very positive _____.
5. The style of these two writers is quite _____.
6. Please _____ these books by writer and put them back on the shelf.
7. It's not easy to _____ a company when the economy is bad.
8. We saw some _____ in the museum. They were two million years old!
9. Some professions, such as doctors or lawyers, come with high _____.
10. The jungle is the favored _____ of the monkey.

B Synonyms and Antonyms Fill in the blanks using the words in the box above.

1	grow	=		4	aim (n)	=	
2	different	=		5	answer (n)	=	
3	categorize	=		6	state	=	

= synonym ↔ antonym

C Discussion Talk with your partner and then have a class discussion.

1. What other things could people do to protect the tuatara?
2. Why do you think the other members of the Sphenodontia group became extinct?
3. Why do you think the tuatara survived?

D Writing Practice Write your opinion and share it with your class.

I think the numbers of tuataras will (increase / decrease) in the future because _____
