



Overview

This article describes tuatara and how they are bred in captivity. Photos, including X-rays, and a glossary provide support for students as they learn about this fascinating animal. Some of the concepts may be challenging for students, particularly “living fossils”, extinction, and X-rays. Also, the article contains mixed text types, although these are clearly signalled through headings.

These different text types include tense changes for which some students may need extra support. Some competing information is included in the last section on tuatara facts, and although it is not necessarily relevant to the main focus of breeding tuatara in captivity, it provides interesting additional information.

Texts related by theme

“Tuatara” SJ L2 Oct 2012 | “The Tail of the Gecko” SJ 3.1.06

Text characteristics from the year 4 reading standard

some words and phrases that are ambiguous or unfamiliar to the students, the meaning of which is supported by the context or clarified by photographs, illustrations, diagrams, and/or written explanations

some abstract ideas that are clearly supported by concrete examples in the text or easily linked to the students’ prior knowledge



LIVING FOSSILS

by Sue Gibbison

Bugsy the tuatara lies on a log. He keeps as still as a stone. He watches, and he waits.

Bugsy is shedding his skin. The old skin peels off his back like a scaly brown leaf. Underneath, the new skin is spotted yellow and green. It matches his surroundings perfectly. He is well camouflaged.

Suddenly, Bugsy turns his head. He has seen something move. He takes a step forward. He moves quickly and quietly.

Snap! The cicada doesn’t stand a chance. Bugsy crunches the insect between his sharp teeth. He chews and swallows. Then he crawls back to his log to watch and wait once more.

8

figurative language, such as metaphors, similes, or personification

THE LAST SURVIVORS

Tuatara belong to an ancient group of reptiles called Sphenodontia. All the other species in this group are extinct. Tuatara look a lot like their ancestors did two hundred million years ago. In fact, they’ve hardly changed since the time of the dinosaurs, so people sometimes describe them as “living fossils”.

Tuatara are an endangered species. There are only about a hundred thousand alive today. Most of them live on islands where there are no rats or other predators. Sometimes they share a burrow with seabirds.



Possible curriculum contexts

SCIENCE (Living World)

Level 2 – Life processes: Recognise that all living things have certain requirements so they can stay alive.

ENGLISH (Reading)

Level 2 – Purposes and audiences: Show some understanding of how texts are shaped for different purposes and audiences.

ENGLISH (Writing)

Level 2 – Purposes and audiences: Show some understanding of how to shape texts for different purposes and audiences.

Possible reading purposes

- To find out how tuatara are bred in captivity
- To learn how precious endangered animals are cared for
- To identify how different text types can be used when writing factual articles.

See [Instructional focus – Reading](#) for illustrations of some of these reading purposes.

Possible writing purposes

- To describe how to care for an animal
- To report on a programme to save an endangered animal
- To describe a particular animal's behaviour after close observation.

See [Instructional focus – Writing](#) for illustrations of some of these writing purposes.

Text and language challenges

VOCABULARY:

- Possible unfamiliar words and/or topic-specific words, including “shedding”, “camouflaged”, “cicada”, “crunches”, “chews”, “ancient”, “reptiles”, “Sphenodontia”, “species”, “ancestors”, “dinosaurs”, “endangered”, “burrow”, “clinic”, “X-rayed”, “precious”, “oval”, “leathery”, “hatch”, “hatchlings”, “geckos”, “lizards”, “enclosure”, “tuatarium”, “extensions”, “scales”, “survive”
- Compound words, including “seabirds”, “eggshell”, “eardrums”, “jawbone”, “heartbeats”
- Collocations, including “cold-blooded”, “heat lamps”
- Similes, including “as still as stone”, “like a scaly brown leaf”
- Adjectivals, including “spotted yellow and green”, “scaly brown leaf”, “oval, white, and leathery”.

Possible supporting strategies

Preview the glossary on page 15 and make sure students know how to use it.

Encourage students who have a first language other than English to include a translation or an explanation in this language.

Identify key words that will be unfamiliar to the students and introduce them before reading. For example, you could share copies of the images and have the students talk about what they can see. Discuss the key vocabulary as they talk about the pictures, and create a vocabulary list for the reading or the topic. Refer to *The English Language Learning Progressions: Introduction*, pages 39–46, for information about learning vocabulary.

SPECIFIC KNOWLEDGE REQUIRED:

- Knowledge of the rarity of tuatara
- Understanding of the concepts of extinct and endangered species
- Understanding of the time period since the time of the dinosaurs
- Some understanding of concepts such as living fossils and extinction
- Knowledge of how different animals care for their young in very different ways.
- Familiarity with different text types.

Possible supporting strategies

Many students have an interest in dinosaurs. Activate their prior knowledge about dinosaurs and tuatara, and if necessary, provide information to help students understand the links between them.

Use DVDs, photos, books, and websites to build specific knowledge about the habitats, characteristics, and appearance of tuatara. At the same time, build the vocabulary for this topic.

Share or develop simple timelines to explore the period from the time of the dinosaurs to now.

Use photos, books, and websites to develop understandings of fossils.

TEXT FEATURES AND STRUCTURE:

- Mixture of text types including the descriptive “scene setting” introduction, information report about the tuatara, the factual recount about the raising of the babies, and the tuatara facts
- Headings signalling the purpose of each section
- Metaphorical and descriptive language: “like a scaly brown leaf”, “as still as stone”, “living fossils”, “leathery”
- Abstract ideas, such as “living fossils”
- Tense changes with changing text types (present tense in descriptive introduction, past for factual recount, present for factual reports)
- Passive constructions: “young tuatara were moved outside”, “tuatara have been protected”
- Competing information: the tuatara facts at the end of the article.

Possible supporting strategies

Preview the whole article, including headings and photos and support students to notice the different purposes of each section.

Focus on the headings for each section and ask students to predict what information each section might contain and features they expect to find.

Support students to notice the switch from description and information to a recount.

Students could work in pairs to highlight the main verb phrases on pages 9 and 10. Create a chart with headings, for example, verb phrase, verb form, time, and purpose. Fill in some examples with the students (discussing the forms of the verbs and their purpose) and then ask them to complete the chart for the rest of the verbs. Refer to the chart during discussions about reading.

During and after reading, check the students' understanding of the passive constructions, the metaphorical language, and the concept of “living fossils”. Some explicit instruction of how and why the author has used these devices may be helpful for some students.

Instructional focus – Reading

Social Sciences (Living World, level 2 – Life processes: Recognise that all living things have certain requirements so they can stay alive.)

English (Level 2 – Purposes and audiences: Show some understanding of how texts are shaped for different purposes and audiences.)

Text excerpts from “Living Fossils”

Tuatara belong to an ancient group of reptiles called Sphenodontia. All the other species in this group are extinct. Tuatara look a lot like their ancestors did two hundred million years ago. In fact, they’ve hardly changed since the time of the dinosaurs, so people sometimes describe them as “living fossils”.

Tuatara are an endangered species. There are only about a hundred thousand alive today. Most of them live on islands, where there are no rats or other predators. Sometimes they share a burrow with seabirds.

The hatchlings were only a few centimetres long. The keepers kept them in a warm, sheltered place. Being kept with their parents wouldn’t have been safe because Buggy and Honey might have eaten them!

Each day, the staff at Rainbow Springs gave the baby tuatara all the insects they could eat. They made sure the babies had water to drink and heat lamps to keep them warm. Like all reptiles, including snakes, geckos, and lizards, tuatara are cold-blooded. They need sunshine (or heat lamps!) to keep them warm.

Students (what they might do)

The students ask and answer questions about tuatara, locate information in the text, and make links to their vocabulary knowledge to work out what is meant by “living fossils”.

They locate information to clarify the use of Sphenodontia and make connections to their prior knowledge to infer that the tuatara is a very special and unique animal. They also ask and answer questions and use their prior knowledge about the era of dinosaurs to have some understanding of the time scale.

The students ask and answer questions to work out that the survival of tuatara is under threat and evaluate information to infer some reasons why the tuatara is endangered.

The students make connections to their knowledge of text features and grammar, in particular the past tense form of the verbs, to identify that they are now reading a recount of how the babies were cared for.

They slow down and reread the sentence beginning “Being kept” and use their knowledge of the conjunction “because” to infer the main point of the sentence – that tuatara can sometimes eat their own young.

They ask and answers questions to find and evaluate information about what the tuatara eggs need to ensure they are kept alive until they hatch.

Teacher (possible deliberate acts of teaching)

PROMPT the students to find information in the text, including the glossary, to work out what is meant by “living fossil”.

- What do you know about fossils? What are they? Where might they be found? As you read the paragraph, see if you can use the information to explain the term “living fossil”.
- Look for some key words or phrases in these two paragraphs that help you work out what a living fossil is. Tell your partner what you found.
- Why do you think the writer used this term?

If necessary, show the students photos, online images, or real examples of a fossil and explain what they are.

ASK QUESTIONS to elicit what the students know about the dinosaur era.

- When do scientists think the dinosaurs roamed the Earth?
- What do you know about dinosaur characteristics?
- How are tuatara similar to dinosaurs?

EXPLAIN the time periods involved.

- Most of you are about eight years old. That’s not even ten years or a hundred years, let alone a million years. If we draw a timeline and mark it to measure every one million years, we would need 200 of them! Scientists think it was millions of years after the last dinosaur died before the first humans were living on Earth. So this animal has been around for a very long time.

PROMPT the students to notice the purpose for this section.

- How does the heading help us to know what the section is about?
- What word in the first sentence tells us that we are reading about something that has happened in the past?

Highlight other words in the two paragraphs that tell you that the writer is talking about the past. (You’ll need to note that there are also present verbs when the writer is giving general facts.)

MODEL how to read complicated sentences.

- I can see “because” in the third sentence, and I know that “because” joins two ideas in a sentence to tell us the reason for something. Read the part before “because” and tell yourself what you think it is saying, then read the second part that follows “because”, which gives the reason. Underline the parts of the sentence that give the end result and the reason. Summarise the reason and the result with your partner. Finally answer this question: “Why wouldn’t it be safe to keep baby tuatara with their parents?”

GIVE FEEDBACK

- You have made a prediction about why tuatara are endangered by using information that adults can eat babies and by seeing how small the babies are in the photos. See if you can find any more information on this page that adds to or changes your prediction.
- You asked a really useful question about why are they endangered when there are a hundred thousand alive. Write down why you think they might be endangered and check your prediction as you read the rest of the article.

METACOGNITION

- Tell your partner how you keep information in your head as you read and what you do when you come across an unfamiliar word.
- What do you look for to work out whether a writer is using the present or past tense? Tell your partner.
- Talk with your partner about how you worked out some of the unfamiliar vocabulary. What strategies did you use? Did you try anything that wasn’t helpful or didn’t work?

Reading standard: by the end of year 4

The Literacy Learning Progressions

Assessment Resource Banks

Instructional focus – Writing

Social Sciences (Living World, level 2 – Life processes: Recognise that all living things have certain requirements so they can stay alive.)

English (Level 2 – Purposes and audiences: Show some understanding of how to shape texts for different purposes and audiences.)

Text excerpts from “Living Fossils”

Tuatara belong to an ancient group of reptiles called Sphenodontia. All the other species in this group are extinct. Tuatara look a lot like their ancestors did two hundred million years ago. In fact, they’ve hardly changed since the time of the dinosaurs, so people sometimes describe them as “living fossils”.

Tuatara are an endangered species. There are only about a hundred thousand today. Most of them live on islands where there are no rats or other predators. Sometimes they share a burrow with seabirds.

More about Tuatara

- Tuatara have no ears or eardrums.
- Tuatara have one row of “teeth” on their bottom jaw and two rows on the top one. (These are not true teeth – they are extensions of the jawbone.) Tuatara have very strong jaws, and they can bite hard.
- On top of their heads, baby tuatara have a third eye. It gets covered over with scales as they grow.
- In cold weather, tuatara save energy. Their hearts slow down to ten heartbeats per minute, and they take just one breath per hour. When their body slows down, they don’t need any food, and so they can survive without eating for a whole year.
- Baby tuatara are most active in the daytime, but the adults are active at night. This helps to protect the babies from becoming the adults’ dinner!
- In New Zealand, tuatara have been protected since 1895. It is against the law to keep tuatara as pets.

Examples of text characteristics

USING TOPIC-SPECIFIC VOCABULARY

Authors deliberately use topic-specific vocabulary to be precise. It enables them to say exactly what they mean.

INCLUDING FACTS

Facts add detail and background to texts such as reports, explanations, and descriptions of real things or recounts of real events.

Teacher

(possible deliberate acts of teaching)

TELL the students how to choose appropriate vocabulary.

- When planning your writing, think carefully about the words that will make your writing more precise and accurate.

ASK QUESTIONS to help the students think about how to support words.

- How did this writer help the reader to understand the meanings of the topic-specific words?
- What will your readers know about these words?
- How can you support your readers to know what these words mean? Can you explain the words in the text, or do you need a glossary?

PROMPT the students to review their use of precise vocabulary.

- This writer has used topic-specific vocabulary, such as “living fossils”, species, extinct, and endangered. She has even used the scientific name for a kind of animal. Look through your writing and find places where topic-specific words would be precise and would make your meaning clearer.

Refer students to the vocabulary charts, lists, and word maps that you have created when reading. Support them to begin using this vocabulary. (Some students may need specific word banks for certain pieces of writing.) Encourage them to experiment with using these words even when they are not totally sure of them. By having the confidence to experiment with vocabulary, they will learn more, even if they make mistakes.

TELL the students that specific facts can add more detail for the reader, enhancing their overall understanding of a topic.

- Although the main purpose of the article “Living Fossils” is to inform us about how people are helping tuatara to breed in captivity, the inclusion of the tuatara facts on the second last page broadens our understanding and helps us understand why they are endangered.

MODEL how you choose facts.

- This writer has chosen some specific facts that relate to earlier information in the article. For instance, information about when babies and adults are active relates to the statement earlier about keeping the babies separate from the adults. So when you choose facts to include in your reports, think about what facts would help your reader to understand a particular point as well as information that would be generally interesting.

GIVE FEEDBACK

- I can see the changes you made to your draft to include more precise vocabulary in your report, like hutch instead of rabbit house. It makes your writing more focused.
- You’ve used a great simile to describe the cat’s fur – it is as soft and smooth as silk. As the reader, I have a good understanding now of how soft and smooth it feels because I know what silk feels like.
- You’ve followed the criteria and included some facts that add information to your explanation. What detail could you add to the last fact to provide even more information for the reader?

METACOGNITION

- Tell your partner how you decided which facts to include in your report.
- How did you make sure your readers would understand your topic-specific vocabulary? What questions did you ask yourself as you decided this?
- Show your partner some places where you made changes to your writing and tell them why you made them.
- How did reading about tuatara help you to choose headings for your report?



Writing standard: by the end of year 4



The Literacy Learning Progressions