



Overview

This TSM contains information and suggestions for teachers to pick and choose from, depending on the needs of their students and their purpose for using the text. The material provides many opportunities for revisiting the text.

In 1958, a group of intrepid cavers descended into Harwoods Hole, a huge vertical chasm on Takaka Hill. At the bottom, they discovered a spectacular environment, with beautiful stalactites and waterfalls. A month later, they discovered a second cave nearby. The cavers proved that the two cave systems were connected and created a way to travel between them. The themes of exploration and discovery make this article an enthralling read. It's also an excellent introduction to the information texts students will be encountering more frequently as they progress through school.

This article:

- describes the first exploration of Harwoods Hole
- provides information about how limestone and marble caves are formed
- uses photographs and diagrams to illustrate the text
- has links to the level 2 science (physical world) curriculum
- includes a section on creatures that live in caves
- has a glossary.

A PDF of the text is available at www.schooljournal.tki.org.nz

Texts related by theme

“Our Rocks Rock!” SJ L2 Apr 2013 | “Marcus Thomas: New Zealand Caveman” SJSL L4 2015 |
“Underground Explorers” SJ L4 May 2015 |

Text characteristics from the year 4 reading standard

We have retained the links to the National Standards while a new assessment and reporting system is being developed.

For more information on assessing and reporting in the post-National Standards era, see: <http://assessment.tki.org.nz/Assessment-and-reporting-guide>

Going down

The group were cavers – people who like exploring caves. One of them dropped a rock into the hole, and they listened until they heard it hit the ground. By counting how long the rock took to fall, the cavers worked out that the hole was about 200 metres deep.

They decided to go down – but there were no ledges or any easy ways to climb into the hole. How could they get to the cave floor?

The best option was to use a **winch**.

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

How was Harwoods Hole formed?

Harwoods Hole was made by an ancient river. Millions of years ago, the main **shaft** would have been a huge, roaring waterfall giving off spray and mist as it tumbled into the passages below. Today the shaft is dry and silent. Only the deepest parts of the cave still have flowing water.

Solution caves

a straightforward text structure, such as a structure that follows a recognisable and clear text form

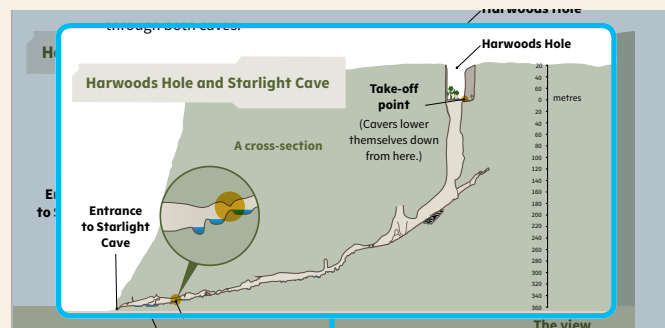
They decided to go down – but there were no ledges or any easy ways to climb into the hole. How could they get to the cave floor?

The best option was to use a **winch**.

Each caver was tied to a wire cable and lowered slowly into the hole. It took an hour

a world nobody had ever seen before.

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



other visual language features that support the ideas and information, for example, text boxes or maps

VOCABULARY

- Possibly unfamiliar words and phrases, including “reflected”, “dye”, “eventually”, “synthetic”, “tumbled”, “experienced”
- Words related to features of cave systems, including “ledges”, “gap”, “squeeze”, “shaft”, “passages”
- Technical terms related to caving and caving equipment, including “winch”, “cable”, “carbide lamp”, “overalls”, “load-bearing belt”, “helmet”, “abseil”
- Scientific terms, including “stalactites”, “solution”, “substance”, “dissolves”, “marble”, “absorbs”, “carbon dioxide”, “acidic”, “limestone”
- Place names: “Harwoods Hole”, “Takaka Hill”, “Nelson”, “Starlight Cave”
- Distances: “200 metres”, “kilometres”
- Time spans: “ancient”, “millions of years”
- Names of cave creatures in English and te reo Māori: “cave wētā (tokoriro)”, “spiders (pūngāwere)”, “native bats (pekapeka)”, “glow-worms (titiwai)”, “eels (tuna)”, “freshwater crayfish (koura)”
- Idiomatic phrases: “follow in the footsteps”

Possible supporting strategies

- Identify words or phrases that may be unfamiliar to your students, especially technical terms related to caving and scientific terms related to how solution caves are formed.
- Discuss the common features of caves and make a word wall of words associated with caving (including caving equipment) and cave systems, using photos and images of caves and cavers where necessary.
- Remind students of strategies for working out the meaning of unfamiliar words, for example, using the context, using the illustrations, or making connections with known words.
- Share association techniques that can be used to learn and retain words, for example, a stalagmite “might” reach the ceiling and a stalactite holds on “tight” to the ceiling.
- Prompt students to make connections with the illustrations and photographs in the text.
- Play **Listen Up!** List the words you want the students to focus on and have them listen while you read the section containing these words. (For example, you might give the students “solution”, “dissolves”, “acidic”, “limestone”, and “carbon dioxide” and read aloud the text box on the formation of solution caves. As they listen, the students write a tally mark next to each word as they hear it, then compare their tallies. Discuss the most frequently used words. These will help to identify the main ideas in the text.
- Remind students how to use the glossary at the end of the article.
- As they read, the students could fill out a 3 by 4 matrix like the one below. Once they have finished reading, challenge them to use every word and idea in their matrix in a piece of writing. You can change the headings in the matrix to suit your reading purpose.

| 3 scientific words | 3 words related to caves | 3 interesting facts | 3 historical facts |
|--------------------|--------------------------|---------------------|--------------------|
| | | | |

- *The English Language Learning Progressions: Introduction*, pages 39–46, has useful information about learning vocabulary.
- See also [ESOL Online, Vocabulary](#), for examples of other strategies to support students with vocabulary.

SPECIFIC KNOWLEDGE REQUIRED

- Some understanding of why people love exploring
- Some knowledge of caves and/or cave systems
- Some understanding of distance, in particular, 200 metres and kilometres
- Some understanding of how dropping an object into a hole can help people to estimate depth
- Some understanding of acids and chemical solutions
- Some concept of very long time spans (millions of years) and the geological changes that can occur over these time spans
- Experience of interpreting maps
- Some understanding of why few animals live in dark, cold places

Possible supporting strategies

- Make connections with other types of exploration, for example, explorations of sea, space, or forests. Discuss what motivates people to explore unfamiliar, potentially dangerous places, including the anticipation and excitement of new discoveries.
- Caving will almost certainly be outside the direct experience of most students, but you can generate interest and build prior knowledge through looking at [images of caves](#) online or watching a YouTube video of people exploring Harwoods Hole.
- Have students share their inferences about how the cavers estimated the depth of the hole.
- Compare the depth of the drop shaft to the length of two football fields to give students a sense of its scale.
- Explore some of the basic properties of everyday chemical solutions, for example, [sugar solutions](#).
- Make connections to acidic liquids, such as lemon juice or vinegar.
- Use an [online image of 1 million dots](#) to give students a sense of how long a million years is. (Scroll to the right to see the full image.)
- Prompt students to make connections between the descriptions of the cave and the cave cross-section. Make comparisons with the illustrated cross-section of a cave in “Marcus Thomas: New Zealand Caveman” (SJSL L4 2015).
- Use Google Earth or another map to locate the Takaka region and Harwoods Hole.

TEXT FEATURES AND STRUCTURE

- A non-fiction article with clear headings and subheadings
- A mix of simple, compound, and complex sentences
- A mix of account and explanation, with additional information provided in text boxes, cross-section/diagrams, and captioned photographs
- A logical progression from the first descent of Harwoods Hole to a description of what the first cavers saw to a scientific explanation of how solution caves are formed
- The use of questions that are answered in the text
- Words in bold text, explained in the glossary
- Some use of dashes and brackets to indicate additional information
- The use of the passive, present continuous voice (“is”, “are”), action verbs to build topic information (“dissolves”, “absorbs”, “makes”), and adverbial phrases (“over millions of years”)

Possible supporting strategies

- Before reading, prompt the students to recall some of the features of information texts. Provide opportunities for students to talk with a partner to remind one another of key features, for example, headings, facts, diagrams.
- Skim and scan the text with the students, prompting them to point out specific features and name them if possible (headings, subheadings, text boxes, photographs, cross-section/diagrams, glossary). Discuss the function of each feature, leaving the content until the students read the whole text. Identify cues that separate each section, for example, changes in font or the use of colour or shading.
- Model how to change a heading into a question by using the Five Ws and an H. Have the students practise changing some of the headings into questions and then seeing whether the text that follows answers the questions, for example:
 - *How did the cavers go down to the bottom of the hole?*
 - *What is Starlight Cave?*
 - *What was caving like in 1958?*
- Model how to integrate information from text boxes and diagrams with the ideas and information in the text.
- Have students match sections of the text with different purposes, for example, to find out how the first group of cavers got into the hole; to find out about equipment used by cavers; and to find out how solution caves are formed. Have students share the strategies they used to locate the matching sections of text.
- Explanations and scientific descriptions can be difficult for many English language learners to master. You could use a Disappearing Definition or Vanishing Cloze task to assist them to notice the language used when writing scientific explanations. These could be based on the text used in the Solution Caves text box on page 7.



Sounds and Words

Possible curriculum contexts

ENGLISH (Reading)

Level 2 – Structure: Show some understanding of text structures.

Level 2 – Ideas: Show some understanding of ideas within, across, and beyond texts.

ENGLISH (Writing)

Level 2 – Structure: Organise texts, using a range of structures.

SCIENCE (Physical World)

Level 2 – Physical inquiry and physics concepts: Explore everyday examples of physical phenomena, such as movement, forces, electricity and magnetism, light, sound, waves, and heat.

Possible first reading purpose

- Find out about the discovery and first exploration of a famous cave system near Nelson.

Possible subsequent reading purposes

- Find out how some caves are made
- Explore how visual information adds details and explanation to an informational text
- Identify some text features and structures used in this article.

Possible writing purposes

- Research and write about the discovery and/or exploration of another famous cave system in New Zealand, for example, Waitomo Caves
- Write a poem or story about being in a cave
- Recount an experience of exploring an unfamiliar world
- Write about other explorers, for example, the intrepid navigators who crossed the oceans to discover Aotearoa New Zealand or Scott's exploration of Antarctica.



The New Zealand Curriculum

Instructional focus – Reading

English Level 2 – Structure: Show some understanding of text structures.

First reading

- Set the purpose for reading, then skim and scan the article together, prompting students to identify different features of the text. Discuss the ways that headings make information easy to find and follow and the ways that the photographs, diagrams, and cross-section support the text. See the possible supporting strategies in the “Text features and structure” section on page 3 of these TSM.
- Prompt students to make connections between their own non-fiction reading experiences and the text. This will help them to understand that the text will contain facts and that the introduction, together with the title, sets the overall topic.
- As a group, pose questions that the text is likely to answer, including the question in the introductory paragraph about what is at the bottom of the hole.
- Have students share their predictions and questions with a reading partner and remind them to revise their questions as they read through the text.

If the students require more scaffolding

- Chunk the first reading into short sections according to their needs. Have students read the body text (rather than the text boxes on caving gear and solution caves) before attempting other sections of the text.
- Show the students how to use the headings, photographs, diagrams, cross-section, and glossary as supports for reading.
- Prompt the students to make connections with their prior knowledge, for example, with pictures they have seen of caves or their own experiences of caving or exploring.
- Address the vocabulary challenges that the students may have. Refer to the Vocabulary section of “Text and language challenges” on page 2 for further teaching ideas.
- Support students to visualise as they read, modelling how you do this with the introductory paragraph and with some of the more descriptive passages, such as the description of the roaring waterfall. Explain how visualising helps you to understand the details that follow.


Subsequent readings How you approach subsequent readings will depend on your reading purpose. Where possible, have the students work in pairs to discuss the questions and prompts in this section.

The teacher

Have the students find the key ideas in the paragraph titled “Solution Caves” on page 7. Ask questions such as:

- *What is a “solution cave”?*
- *Why is water needed to make a solution cave?*
- *How are these caves formed?*

Have the students use the information on solution caves to construct a flow chart showing how the caves form. Alternatively, they could write a “recipe” for how to make a solution cave.

 You could create a Google slide with a flow chart template for the students to use.

The teacher

Ask the students to reread the text on page 7.

Have them compare the style of writing for the body text (How did Harwoods Hole form?) and the text box (Solution caves).

- *What visual features show that these are separate sections of the article?*
- *Which piece of text is easier to read? Why?*
- *What images or sounds did you have in your mind when you read the text at the top of the page?*
- *How do the two sections of text work together to give the reader useful or interesting information? What connections can you find between the two sections?*
- *Was the photograph at the bottom of the page helpful? Why or why not?*

The teacher

Examine a section of the text with the students and explore ways that the writer signals shifts in time. Some of these shifts might be at a micro level of a few hours or days; others might involve shifts from the distant past to the present.

Select one or two paragraphs to use as a paragraph Text Reconstruction activity. This will help the students to notice how paragraphs are constructed and the type of linking words used.

The students:

- find and discuss the main information about how solution caves are formed
- identify and describe the sequence involved in the formation of a solution cave
- organise their ideas so that they can then construct a flow chart or write a recipe showing how solution caves form.

The students:

- discuss and evaluate the use of headings, different fonts, and shading to separate the two sections of the text
- think critically and discuss which of the two text sections, if any, was easier to read, providing examples from the text
- make connections between the information in the two sections, for example, between the amount of time it takes to create a solution cave and the role running water plays in forming one.

The students:

- identify the time sequence words and phrases on a copy of the text
- use their understanding of conjunctions and adverbial phrases that relate to time to reconstruct a paragraph in a way that makes sense.

Subsequent readings (cont.)

The teacher

As a follow-up activity, have the students discuss whether the person who wrote the article is someone who likes caves, giving examples to support their ideas. If students find this difficult, ask them to look for examples of caves being described as beautiful or exciting. Next, have them look for examples where the writer makes the cave sound scary or unpleasant.

You could read to the students Marcus's response to the question "What do you love about caving?" in "Marcus Thomas: New Zealand Caveman" (SJSL L4 2015, page 7).

Have students evaluate the writer's purpose for writing the article, in light of his response.

METACOGNITION

- *How is an information text different from a story? In what ways are they the same?*
- *How did the structure of the text help you to locate the information you needed?*
- *What would it have been like to read this text without the photographs, diagrams, and cross-section? Were any of those features particularly useful when it came to understanding the text?*

If the students require more scaffolding

- make connections across texts to identify that the writer is passionate about caving
- evaluate the writer's purpose for writing the article, making reference to his interview response and how much he enjoys sharing discoveries.

GIVE FEEDBACK

- *I noticed that the first place you looked when you came across an unfamiliar word was the glossary. When you discovered that the word wasn't there, you carefully reread the text and cross-checked to see whether what you thought made sense. It's great to see you testing different strategies and persevering when you can't work out the meaning of a word straight away.*



Reading standard: by the end of year 4



The Literacy Learning Progressions



Assessment Resource Banks

Instructional focus – Writing

English Level 2– Structure: Organise texts, using a range of structures.

Text excerpts from “Harwoods Hole”

Page 2

In 1958, a group of people stood on the edge of a huge hole in the ground. The hole, on Takaka Hill near Nelson, was known as Harwoods Hole. It dropped straight down into darkness. What was at the bottom? The group wanted to find out.

Examples of text characteristics

INTRODUCTORY PARAGRAPH

The opening paragraph of an information text is designed to hook in the reader, tell them what they will learn from the text, and convince them that the article will be interesting or useful.

Teacher (possible deliberate acts of teaching)

Reread the opening paragraph together and have pairs of students evaluate its effectiveness in terms of how well it:

- draws in the reader
- sets the overall topic
- helps readers to make connections, for example, with how they would feel if they were standing on the edge of a huge hole
- gives readers an idea or hint about what they will learn by reading the article.

Discuss how including a question in an opening paragraph can be an effective way to engage readers. Make connections with the way confident readers ask themselves questions as they read, often refining and revising these questions as they come across new information.

Have the students peer-review each other’s opening paragraphs of a piece of informational writing, identifying what questions it evokes and whether it draws them into the text.

Page 8

Harwoods Hole today

Although there are deeper caves in New Zealand, Harwoods Hole is still one of the deepest shafts ever found here. These days, it’s a popular place for experienced cavers to explore. But today’s cavers don’t use a winch to go into the hole – they abseil.

Harwoods Hole is an exciting journey for cavers, who follow in the footsteps of those first explorers.

CONCLUDING PARAGRAPH

The concluding paragraph of an information text usually helps readers to remember the important ideas or pieces of information. A common technique is to make a link to the opening paragraph or help readers to connect what they have learnt to their own lives and situations.

Have pairs discuss what the main idea or ideas are in the concluding paragraph of the article.

For example, what might the writer like them to take away or remember from the article? What is the writer’s purpose for finishing the text in this way? Prompt students to make connections with the writer’s passion for caving.

Have students evaluate whether there are any connections between the first paragraph and the concluding paragraph. Discuss the meaning of the idiom “follow in the footsteps” and its relevance to the focus of the article.

Have students look for ways to make connections between their own opening paragraph and their concluding paragraph. Remind students of the value of revising and refining their writing, encouraging them to adjust their opening paragraphs if needed to make the overall text more cohesive and compelling.

Page 7

Millions of years ago, the main shaft would have been a huge, roaring waterfall giving off spray and mist as it tumbled into the passages below. Today, the shaft is dry and silent.

DESCRIPTIVE LANGUAGE

Descriptive language helps readers to visualise what is happening in a scene.

Lead a discussion about the differences and similarities between information texts and stories. Discuss the value of using descriptive language in an information text.

Have pairs of students share their visual images while reading about the waterfall that tumbled down the shaft millions of year ago.

- *How did the writer create this image?*
- *What words had the biggest impact?*
- *The writer compares it with what the shaft is like today. What effect does that have?*
- *What questions do you have after reading this passage?*

Have students review their writing, looking for opportunities to extend or refine the descriptive language they have used.

METACOGNITION

- *What are one or two main ideas that you want your readers to take from your informational text? How have you used the concluding paragraph to emphasise these ideas? What else could you do to make sure these ideas really stand out?*

GIVE FEEDBACK

- *In your opening paragraph, you’ve used descriptive language that draws your readers into the scene and helps them to see, hear, and feel what the explorers discovered. I wonder whether there is a way to help your readers make connections with their own lives and experiences. Talk to your writing buddy and see whether you can come up with a few ideas.*

Writing standard: by the end of year 4

The Literacy Learning Progressions

ISBN 978-1-77669-584-3 (online)