

Pencarrow: New Zealand's First Lighthouse

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School Journal
Level 2, August 2019
Year 4



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 materials provide multiple opportunities for revisiting the text several times.

This article tells the story of Pencarrow Lighthouse, which stands at the entrance to Wellington Harbour. Not only was it New Zealand's first lighthouse, but from 1859 to 1865, it was also run by Mary Jane Bennett, New Zealand's first and only female lighthouse keeper. Mary Jane Bennett took over the lighthouse when her husband died and she still had six children to support.

This article:

- provides an opportunity to look at some fascinating aspects of New Zealand's history, including the dangers of sea travel, the rugged living conditions of the early European settlers, and the lack of social security

- outlines the changing technology that led to the lighthouse being decommissioned in 1966
- will support students to build their literacy skills and knowledge for reading historical non-fiction
- includes diagrams, a map, and photographs.

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

Texts related by theme

"Journey on the Sea" SJ L3 Aug 2018 | "Six Photos" SJ L3 Aug 2016 | "My Name is Davy Lowston" SJ L2 May 2016 | "What a Disaster!" SJ L2 Aug 2012 | "Building for the Future" *Mahi Tahi*, Connected 3, 2017 | "Life Jackets" JJ 54 | "An Island in Time" SJSJL 2011

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>



But in 1855, George Bennett drowned, and Mary Jane Bennett became the main keeper of the Pencarrow light. She is the only woman ever to be a lighthouse keeper in New Zealand.

The lighthouse was made of **cast iron**. It was built in England and shipped out to New Zealand in

some places where information and ideas are implicit and where students need to make inferences based on information that is easy to find because it is nearby in the text and there is little or no competing information

The wreck of the *Maria*

In July 1851, the ship *Maria* was sailing towards Wellington. It was night, and there was a storm. The *Maria* struck a rock near the entrance to Wellington Harbour. The ship broke in half, and its lifeboat was smashed on the rocks. Only two of the twenty-eight people on board survived. After this disaster, many people in Wellington asked for a lighthouse to be built.

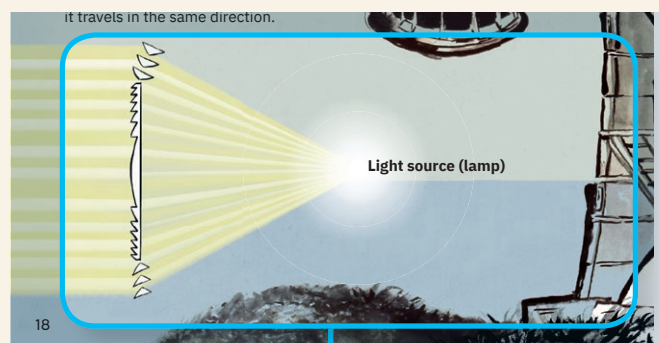
some compound and complex sentences, which may consist of two or three clauses

What is a lighthouse?

A lighthouse is a tower with a light at the top. It guides sailors into harbours at night and warns them of hidden rocks and reefs.

In early lighthouses, wood or coal were burnt to make the light, but these fuels don't burn very brightly. Later lighthouses burnt oil or **kerosene** and then **acetylene gas**, which give off a stronger light. Today, most lighthouses use electricity.

The lights in lighthouses have special **lenses** that bend the light and make more of it travel in the same direction. This makes the



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

VOCABULARY

- Some topic words explained in a glossary: "acetylene gas", "benefit", "cast iron", "kerosene", "lens", "lighthouse keeper", "winch"
- Other unfamiliar topic-specific words and phrases, including "coastline", "washed", "lifeboat", "perilous", "traditional", "guides", "fuel", "reefs", "Fresnel", "solid panels", "weights", "rollers", "gears", "Pencarrow Head", "cottage", "drowned", "shipped", "steam-powered", "wind up", "coal range", "hailed", "solar panels", "sea level", "automatic", "controlled by computers", "rays"
- Markers of time, including "Since the 1790s", "In July 1851", "After this disaster", "In early lighthouses", "Later lighthouses", "Today", "In 1852", "in 1855", "When the ship arrived", "On 1 January 1859", "the first time", "Every fifteen minutes", "Once every hour", "In the 1850s", "During the day", "daily", "until 1865", "over time", "in 1906", "In 1955", "all night", "These days", "is now", "it once"

Possible supporting strategies

- Identify words or phrases that may be unfamiliar. Remind the students of strategies for working out unfamiliar vocabulary, such as looking at the context, finding root words, using knowledge of word patterns and prefixes or suffixes, and making connections to prior knowledge.
- Direct students to the glossary at the end of the article.
- List the compound words and adjectival phrases. Make copies and then cut up the words into their parts. Give the students sets of jumbled words that they can re-assemble.
- Consider using the Frayer Model to front-load the unfamiliar vocabulary. This is an approach where students complete a four-segment chart for each target word, defining it, using it in a sentence, drawing it, and making links to the word. You could model the approach with one word, then assign words to the pairs of students. The students could teach their new words to their peers, then put their charts on display to support the reading.
- 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 awareness of the historical context and the hardships faced by early Pākehā settlers
- Some understanding of the specific vulnerabilities a Pākehā woman faced if left to raise children on her own in New Zealand in the mid-nineteenth century
- Awareness that shipping disasters can occur and that we need to keep ships safe
- Some understanding of how light can be bent by a lens and how various fuels can emit light
- Some understanding of the use of weights, cogs, and a winch to turn a lens
- Some understanding of how social and technological change occurs over time
- An awareness of the time periods involved in relation to human habitation of Aotearoa (roughly two and a half centuries for European settlers and several centuries longer for Māori)
- Knowledge of what a historic place is

Possible supporting strategies


- Prompt the students to share their prior knowledge of lighthouses – where they are sited, why we have them, and how they work. The links could include other texts (such as the Ronda and David Armitage lighthouse keeper series or movies about shipwrecks) and personal experiences (from boating, visiting a lighthouse, or observing the use of buoys to mark safe channels).
- Sketch a rough timeline and invite one of the students to mark on it the number of years they have been alive, the mid-nineteenth century when Pencarrow lighthouse was built, and the late-thirteenth century, when the first Māori are thought to have arrived in Aotearoa.
- Use the map to identify where Pencarrow lighthouse is. Point out its remote location and have them think, pair, and share their thoughts about what it would have been like for a family to live in this place in the middle of the nineteenth century.
- Explain that this article contains a lot of information about lighthouses and what it was like to live in a lighthouse and keep it running 170 years ago. Some of the information is in the written text and some of it is in the visual text.
- Invite the students to suggest the kinds of technology that might be involved in running a lighthouse. *What have we learnt in science and technology that might help us to understand? What have you learnt from home that you might be able to share with us?*
- Conduct hands-on activities that explore topics such as light refraction, lenses, and the use of pulleys and winches to help English language learners understand the scientific and technical concepts and to increase their knowledge of the topic words.
- Have the students think, pair, and share their ideas of what a historical place is and of local examples. *I wonder if a historical place is always a building.*
- Show the students video clips that show how Fresnel lenses bend the light (for example, [Fresnel Lens Section Animation](#)) and explain the advantages of using these lenses in lighthouses (for example, [Fresnel Lenses](#)).

Text and language challenges CONTINUED

TEXT FEATURES AND STRUCTURE

- Historical non-fiction, organised chronologically with relevant dates throughout
- Short sections with subheadings that signpost the content
- The use of a sidebar, photographs, and diagrams to extend and clarify the content
- The text mostly in the past tense, with occasional changes to the present tense to talk about the situation today (“In today’s lighthouses, the lenses are turned by electricity or the light simply flashes on and off.”)
- The repetition of the phrase “Early lighthouses . . .” to reinforce the idea that this section is about the lighthouse in the 1800s
- The use of personification to conclude the text and give a sense of the important role the lighthouse once played: “People can walk or bike along the coast to visit the lighthouse. It still stands proudly above the coast it once protected.”

Possible supporting strategies

- Give the students sticky notes so they can mark places they need to return to for rereading or discussion.
 Alternatively, the students could highlight sections on the PDF of the text using a PDF annotator such as Kami, a Google Chrome app.
- Preview the text with the students. Use the first page to model how to scan the page looking for graphic elements, such as headings, photographs, and diagrams, to get a sense of the information they convey and how this relates to the overall content. Direct the students to continue this activity in pairs. If you did the front-loading activity, refer to this and encourage them to use some of the vocabulary they have learnt in their conversations. The students could share what they found with the rest of the group.



Sounds and Words

Possible curriculum contexts

ENGLISH (Reading)

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

ENGLISH (Writing)

Level 2 – Ideas: Select, form, and express ideas on a range of topics.

TECHNOLOGY

Level 2 – Characteristics of technology: Understand that technology both reflects and changes society and the environment and increases people’s capability.

Possible first reading purpose

- Find out how a lighthouse warns ships of dangers around the coast.

Possible subsequent reading purposes

- Discover what it was like to live at Pencarrow lighthouse in its early days
- Describe how a lighthouse works
- Find out how lighthouses have changed over the years.

Possible writing purposes

- Describe what it would have been like to live at Pencarrow lighthouse in its early days
- Explain why lighthouses are important
- Make a timeline of the changes to the Pencarrow lighthouse over the years.



The New Zealand Curriculum

Instructional focus – Reading

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

Technology Level 2 – Characteristics of technology: Understand that technology both reflects and changes society and the environment and increases people's capability.

First reading

- Share the purpose for reading and give a brief introduction and overview of the text.
- Prompt the students to share any questions they have. *We now have an idea of what this text is about. What are you wondering about?* Encourage them to jot down their questions or to list them on a graphic organiser (see below). English language learners could write these questions and answers in their first language.
- Have the students read the text in sections, recording their questions and answers as they go.

	Questions	Answers
Before		
During		
After		

- As a group, talk about what they found out. Encourage the students to help each other with any unanswered questions. If they are still left with questions, discuss where they might find the answers.
- Invite the students to find the figurative language in the final paragraph. *Why do you think the lighthouse stands so proudly? Do you think it deserves to be identified as a historic place?*

If the students require more scaffolding

- Remind the students of strategies that are useful on a first reading, such as rereading to look for clues, making connections with their prior knowledge, and/or reading on to see if the meaning becomes clear.
- Build more contextual knowledge. For example, find and discuss places where the author describes the physical setting. Draw out background knowledge about the hardships of living in an isolated part of New Zealand in the 1840s and 1850s. Refer to the glossary definition of a benefit, and discuss the difficulties that faced Mary Jane Bennett as a woman on her own with six children to raise and no income.
- Explain that a useful reading strategy is to ask questions in your head as you read. Model some possible questions. *They didn't have electricity back then – what fuel did they use to make the light go? Why did Mary Jane Bennett stay on at the lighthouse with her children after her husband died? They lived such a long way from any shops – how did they get fresh food?*
- Have the students work in pairs to complete the graphic organiser. Monitor their conversations and provide support where necessary.

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

Ask the students to reread the section “Working night and day”. Have them work in pairs to create a Venn diagram contrasting a day in the life of one of Mary Jane Bennett’s children with a day in their own lives.

- *What would be typical about a day in your life?*
- *Imagine you were Mary Jane Bennett’s children. What might a typical day be like? How would it compare with a day in your life? Have a chat about this with your partner.*

As a group, discuss the differences and the pros and cons of each.

- *Which sort of life do you prefer and why?*

Some English language learners may benefit from sentence frame scaffolds to help them compare ideas and offer opinions, for example, *I think that in the ... days, life would have been ... because ...*

If necessary, build word banks together that the students can refer to when selecting what to say. For example, for modal adverbs, a word bank may contain words such as “probably”, “maybe”, “surely”, “possibly”, “no doubt”, “apparently”, “perhaps”, “always”, “definitely”, “sometimes”, “presumably”.

The students:

- use the information in the text and illustrations to make inferences about what it would be like to have been one of Mary Bennett’s children growing up at Pencarrow in the early settler days
- visualise what life was like for Mary’s children and make connections between the lives of those young people and their own
- think critically about this contrast and explain their opinions.

The teacher

Discuss the purpose of the sidebar on pages 18–19 and tell the students that you want them to use both the visual and written text to understand how a lighthouse works.

Organise the students into pairs. Assign each pair one of the visual images: the diagram of how the lens bends light or the one that show how the light turned. Review the topic words and have them use those words to explain their diagram to a partner. They could use Google slides to give an oral presentation to the rest of the group. In their presentations, they should:

- explain what their diagram is showing
- explain what they learnt from the diagram, what they learnt from the adjacent text, and how the text and diagram worked together to convey information
- evaluate the diagram and suggest possible improvements or suggest another way the information could have been conveyed
- answer audience questions.

This task may be difficult for some English language learners. If so, you could work with them to develop a presentation co-operatively or guide them through the process, breaking each step into small chunks and modelling each one before they do the task independently.

Before creating their Google slide presentations, some students may benefit from reviewing the vocabulary and key concepts. A listening task can be helpful for this. For example, copy the diagram and leave off some of the labels, lines, and explanations. Write instructions to finish the diagram and read this aloud, one instruction at a time. The students listen and fill in the missing information.

The teacher

Give the students sticky notes to mark the dates and other markers of time. Prompt them to notice the repetition of the phrase “Early lighthouses ...” and the switch to “In today’s lighthouses ...” *What did we learn about today’s lighthouses compared with those of the past?*

Prompt the students to notice the three functions for markers of time in this text: to provide a chronology of events, to describe the routine of looking after the lighthouse, and to contrast the past with the present. *Which of the markers of time performs which function?*

Working in pairs, have the students create a Venn diagram to compare features of the lighthouse Mary Jane Bennett ran with features of lighthouses today.

METACOGNITION

- How aware were you of the markers of time as you read this article? Do you think that it might help you to pay more attention to those markers in future texts? What else did you learn from this reading that might help you next time you read a historical text?
- How confident are you about explaining the way the lenses turned?

The students:

- use visual and written information to understand technical and scientific information about how a lighthouse works
- use topic-specific vocabulary in their explanations
- explain what they learnt and how aspects of the visual and written texts operated together to convey the information
- think critically about how well the diagram worked to clarify the information in the text and suggest improvements
- justify their opinions
- ask and answer questions about what they learnt from reading the sidebar.

The students:

- locate markers of time and identify their function
- reflect on how markers of time are used for a range of purposes
- draw on related pieces of information from inside the text to compare today’s lighthouses with those of the past.

GIVE FEEDBACK

- *I know you found it quite hard to work out how the lens bends light to make it brighter. It was good to see you identifying this as a question, looking really closely at the diagram to see how that could help you understand, and then talking it through with your partner.*



Reading standard: by the end of year 4



The Literacy Learning Progressions



Assessment Resource Banks

Instructional focus – Writing

English Level 2 – Ideas: Select, form, and express ideas on a range of topics

Technology Level 2 – Characteristics of technology: Understand that technology both reflects and changes society and the environment and increases people's capability.

Text excerpts from “Pencarrow”

Page 23

During the day, there were other tasks to do. The lenses had to be cleaned and polished daily. Mary Jane and her family had to cut firewood, bring up coal from the bottom of the cliff, clean and paint the tower, and repair any damage. They grew their own vegetables ... and they also kept animals for food. There was no electricity, so meals were cooked on a coal range and clothes were washed by hand. Everyone had to help ...

DESCRIPTIONS

Descriptive writing is used to describe a person, place, or thing in such a way that a picture is formed in the reader's mind. Capturing an event or experience through descriptive writing involves paying close attention to the details and using all of your five senses.

Teacher (possible deliberate acts of teaching)

Have the students return to the text to identify details the writer has included to help readers picture what life was like at Pencarrow lighthouse in the early days. (If during reading, the students created a Venn diagram contrasting a day in the life of one of Mary Jane Bennett's children with a day in their own, they could add to the details in their diagram.) Model the use of the RAFT approach to write their own descriptions of this. This involves the following elements:

- *Role of the writer: Who am I as the writer? Mary Jane Bennett herself? One of her descendants? The writer of a guide book?*
- *Audience: Who am I writing for? Descendants of the Bennett family? Visitors to Pencarrow lighthouse? Historians of lighthouses?*
- *Format: What format will I use for my writing? A letter? An article? A family history website?*
- *Topic? What am I writing about? I will be writing about what it was like living at Pencarrow lighthouse, so I need to think about what to include, such as how they fed themselves, how they ran the lighthouse, and how they kept warm.*

Following your modelling, you could talk the students through the process in a guided writing session, using a template like the one below.

Title	
Role	Audience
Format	Topic
Writing assignment	

Have the students provide peer feedback on aspects of each other's writing, such as the use of words that appeal to the senses.

- *How could your partner improve their description?*
- *Could they add more detail or choose a more accurate adjective or verb?*

Some students may want more information to add to their descriptions. All may be interested to learn that one of Mary Jane's children returned to the lighthouse years later, with his own family. See [New Zealand History: Pencarrow Lighthouse](#), [Pencarrow Lighthouse Keepers](#).

Discuss the features of an explanatory text. Tell the students that there are several examples of explanatory text in this article. Have them review the text to identify and discuss where they are.

- *What is being explained?*
- *In this example, what was the cause and what was the effect? How is this signalled?*
- *What is the sequence that is described? How are the steps in the sequence signalled?*
- *How effective is this explanation?*

Have the students use this discussion to write a set of criteria for writing explanations. Keeping their criteria in mind, have them write their own explanations of why lighthouses are important. They can then use their criteria to peer-review their explanations.

If students require more support, you could provide them with a copy of this paragraph and have them use highlighter pens to identify each part of the text, for example, blue for the cause and yellow for the effect. Then ask them to circle the verbs and underline the signal words, discussing each as they annotate the text. They could use this as a model when creating the criteria and writing independently.

Page 17

In July 1851, the ship *Maria* was sailing towards Wellington. It was night, and there was a storm. The *Maria* struck a rock near the entrance to Wellington Harbour. The ship broke in half, and its lifeboat was smashed on the rocks. Only two of the twenty-eight people on board survived. After this disaster, many people in Wellington asked for a lighthouse to be built.

EXPLANATIONS

An explanation tells how or why something happens. It illuminates cause and effect. Explanations usually have a logical sequence that helps the reader build their understanding. Verbs are important and should be selected for accuracy and impact.

Page 20

In 1852, George Bennett was given the job of New Zealand's first lighthouse keeper.

TIMELINE

Timelines help us keep track of the order of events and the time period over which they occurred. Understanding this sequence is critical to understanding cause and effect. When creating a timeline, it's important to mark off the time in regular intervals so that the timeline shows the relative distance between events.

Present some examples of timelines and ask the students to discuss and record their features. The video [Timelines for kids](#) (although very America-centric) may be helpful.

If this hasn't already been done, discuss the three ways that the writer uses markers of time: to provide a chronology of events, to describe the routine of looking after the lighthouse, and to contrast the past with the present. Have the students use sticky notes to identify the markers of time that show the chronology of Pencarrow lighthouse. Then have them convert this into a timeline that shows the changes to Pencarrow lighthouse.



The students could use <https://time.graphics/editor> to create their timeline.

METACOGNITION

- What did you think of the RAFT template for descriptive writing? Can you think of other parts of our learning where this might be a helpful technique?

GIVE FEEDBACK

- Your explanation clearly described to me why we need lighthouses. Now I suggest you think more about the words you use to show cause and effect. You used some of the words the writer used in the article, but I think you know more from your other reading.



Writing standard: by the end of year 4



The Literacy Learning Progressions