

# The Impossible Bridge

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photographs by Jamie Lean

## Overview

This text describes a group of children's attempts to build models of bridges. It incorporates a range of text forms: a recount written in diary form, "engineers' reports", and instructions. There is a Māori version, *Te Piriti Mutunga Kore*, in the Kawenga Kōrero series (item 22998).

## Suggested purposes

This text supports the comprehension strategies of forming hypotheses, asking questions, and identifying and summarising main ideas. The text forms provide useful models for children's writing.

## Text features

(Focus on only one or two per session.)

- the information about bridges
- the idea of manipulating paper or card to make it stronger
- the idea of the children being engineers
- the open ending
- the technical vocabulary
- the use of bold text or quote marks for technical words
- the formats of the diary entries and engineers' reports
- the abbreviations "a.m." and "p.m."
- the heading, numbered instructions, and diagram on the inside back cover
- the idiomatic phrase "bits and pieces"
- the prefixes in "impossible", "Internet", and "triangle"
- the plural possessive apostrophe in "Engineers' Report"
- the use of a dash to indicate a list on page 6
- the "le" in "impossible", "middle", "simple", "table", and "triangle"
- the same sound spelt in different ways – "tion" in "information" and "sion" in "suspension".

## Possible challenges

- the technical vocabulary
- the meaning of "scale model".

## Introducing the text

Tell the children you have a book for them to read about some children who tried to solve a problem about a bridge. Ask the children to tell you about any bridges in the local area or to share anything they know about bridges. Read the title and examine

the photographs on the front cover. *What are the children doing? What does “impossible” mean? What do you think the problem was?*

Alternatively, you could ask the children to browse through the text and formulate their own questions. Record their questions on a chart and refer to them often during the reading.

## During the reading

If you plan to have the children try the challenge on page 14, paperclip page 15 to the back cover to prevent them from reading the solution!

Read the names of the author and the photographer. Ask the children to read the text silently, pausing at various points for discussion or to clarify any difficulties. As they discover answers to their questions, record these on the whiteboard.

Title page – If necessary, prompt the children to chunk the word “Engineers’ ”. Explain that engineers are people who design and build things like machines, buildings – and bridges.

Pages 2 and 3 – Explain what a “scale model” is. For ESOL children, you may need to clarify the meaning of the phrase “bits and pieces”. *What was the problem they discovered? Note the link to the title. What did they try? What will Emma do next?* Draw attention to the heading on page 2 and clarify that the children are recording their experience as a group diary. If necessary, explain what “p.m.” means.

Pages 4 and 5 – *What day it is now? What time of day is it?* Encourage the children to use their knowledge of “p.m.” to work out what “a.m.” means. Talk about the use of bold print for the technical words. *How is an arch bridge different to a beam bridge?*

Pages 6 and 7 – You may need to tell the children the word “Keith”. Prompt them to chunk the word “materials”. Draw out the idea that the teacher is challenging the children (who have already solved their initial problem) both by giving them the new materials and by suggesting that they write an engineers’ report. Draw out the idea that the children are thinking and building just like engineers do. *Why would it be important for engineers to write reports?*

Pages 8 to 10 – *How did the triangles help?* Note the use of quote marks for “truss”. Explain that quote marks are another way of highlighting words.

Pages 11 to 13 – *Why is it called a “suspension” bridge?* Explain that “to suspend” means “to hang”. *What would the “strings” of a real suspension bridge be made from? Draw out the idea that different types of bridge suit different types of conditions. When might a suspension bridge be the best option?*

Page 14 – You could stop the reading here and have the children work in pairs to attempt Mr Keith’s challenge. *Do you think it’s possible?* Have the children come back to talk about their attempts and then read the suggested solution on the inside back cover. *Why did the writer choose this title?*

If the children set their own questions, review whether they found the answers they were looking for. *How did you find that out? What part of the text told you that? Were there any questions that weren’t answered?*

## After the reading

(Choose only one or two per session.)

Listen to the children reread the text with a partner, noting how they manage the challenges of the technical vocabulary.

Ask the children to think, pair, and share what they've learnt about bridges from this text. Encourage them to review the information on the question and answer chart as well as referring to the text. *Is there anything else you would like to find out?*

Have the children identify examples of the technical vocabulary and create a glossary together. (The bold text will help them locate some of the words quickly.)

Focus on the "im" prefix in the word "impossible". *What do you think "im" means?* Think of other sets of opposites that are formed by adding prefixes, such as "im-patient", "un-happy", or "dis-appear".

Discuss the meanings of the prefixes "Inter" and "tri" and list other examples. You could talk about how the word "Internet" is relatively new and link it to the creation of the word "email".

Write the words "information" and "suspension" on the whiteboard. Briefly explain that the "tion" and "sion" endings of these words sound the same but are spelt differently.

Discuss the use of the plural possessive apostrophe in "Engineers' Report". Clarify that the children are all "engineers" and that the report belongs to all of them. *If there was only one engineer, where would the apostrophe go?*

List words from the text that end in "le" and read them together. Draw out the idea that the "le" at the end of these words is pronounced "ill".

## Suggestions for further tasks

Try making the other bridges shown in this book.

Work with a partner to try Mr Keith's challenge. Write an engineers' report together.

Find out more about bridges in the local area, in New Zealand generally, or around the world.

Find out more about what engineers do.

Start a class collection of prefixes.