



Overview

“Making a Road” describes the process of constructing a road, from the planning through to sealing and road marking. This information text is well supported by clear subheadings and other visual language features such as labelled photographs and diagrams.

This text requires students to “confidently use a range of processing and comprehension strategies to make meaning from and think critically about” text (from *The Literacy Learning Progressions*, page 14).

There is a PDF of the text and an audio version as an MP3 file at www.juniorjournal.tki.org.nz

Related texts

Stories about machines or vehicles: “Breakdown” (JJ 48)

Texts describing a technological process: *The Impossible Bridge* (Ready to Read, Gold); “Our Recycled Worm Farm” (JJ 40); “Catching Mustelids” and “A New Home for Mokomoko” (JJ 43); “Making Paper” (JJ 44)

Information texts that explore aspects of social sciences: “Fronting the Show” (JJ 41); “The Port” (JJ 47)

Text characteristics

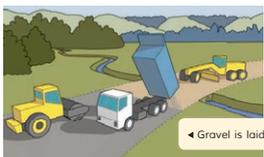
Key text characteristics relating to the reading standard for after three years at school are shown in the boxes with a solid outline. Other boxes indicate additional characteristics.

A mix of explicit and implicit content that requires students to make connections between ideas in the text, the visual language features, and their prior knowledge in order to track ideas and make simple inferences, for example, about the importance of planning, why a road needs so many layers, or why busy roads are likely to be covered in hot mix rather than chip seal

Some unfamiliar words and phrases, including subject-specific vocabulary, the meaning of which is supported by the context, visual language features, and definitions or explanations close by

Laying down the road

When the route has been cleared, the road can be laid down. A road is made of several layers. The first is **gravel**.



◀ Gravel is laid down.

Dump trucks bring gravel and tip it out. Graders smooth the gravel, and then rollers go back and forth to pack it down so that the surface will be hard. The gravel helps to make the road strong so that when cars and trucks travel over the finished road, the road surface is not damaged.

▼ A grader and a roller smooth and pack down gravel.





▲ A roller works on the new road while vehicles drive on a temporary road.

When all the gravel has been laid, a layer of **crushed stone** is spread on top of it, and again, graders and rollers smooth and pack down the stone. The pieces of crushed stone are smaller than the pieces of gravel, so the surface of this layer is much smoother.

The surface of the road is shaped so that it is higher in the middle than at the edges. This lets rainwater drain away to the sides so no puddles are left on the road.



Crushed stone

Gravel

Cleared earth

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Visual language features such as subheadings, photographs, captions, labels, and diagrams that are clearly explained and linked to the body text

A variety of sentence structures, including complex sentences, sentences that include questions for the reader, and many cause-and-effect sentences with several clauses

The structure of the text as an information report, told in the continuous present tense

Ideas and information organised in paragraphs

English (Reading)

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

Level 2 – Language features: Show some understanding of how language features are used for effect within and across texts.

Technology

Level 2 – Nature of Technology: Characteristics of technology.

Social Sciences

Level 2 – Social studies: Understand how places influence people and people influence places.

Select from and adapt the suggestions below according to your students' strengths, needs, and experiences – their culture, language, and identity (*The New Zealand Reading and Writing Standards for years 1–8*, Knowledge of the Learner, page 6).

Possible reading purposes

(What can the students expect to find out or think about as a result of reading this text?)

- To find out how roads are planned and constructed

Possible learning goals

(What opportunities does this text provide for students to learn more about how to “read, respond to, and think critically” about texts?)

- The students **ask questions** about aspects they are not sure of or want to know more about and attempt to find answers in the text.
- They **identify** the steps in making a road.
- They **make connections** between the text and the visual features to support their understanding and **track information** in the text.
- They **monitor** their reading and when they notice something is unclear, they take action to solve the problem (for example, rereading a sentence or looking for clues close to the word).



Text and language features

Possible supporting strategies

(These suggestions may be used before, during, or after reading in response to students' needs.)

Vocabulary

- Possibly unfamiliar words: “overcrowded”, “unsafe”, “vehicles”, “developed”, “planners”, “investigate”, “likely”, “brochures”, “engineers”, “design”, “expected”, “zigzag”, “nearby”, “layers”, “damaged”, “temporary”, “alert”, “headlights”
- Subject-specific words: “bulldozers”, “excavators”, “dump trucks”, “graders”, “rollers”, “gravel”, “chip seal”, “bitumen”, “hot mix”, “rumble strip”, “road stud”.

Readers are able to use strategies for working out unfamiliar words only when they know most of the vocabulary in a text. For students who need support with vocabulary, introduce and practise selected items before reading. See [ESOL Online: Vocabulary](#) for suggestions.

Prompt students to remember the strategies they can use, often in combination, for example:

- when **decoding**:
 - recognising words, word chunks, and syllables within a word (“over-crowded”, “near-by”, “un-safe”, “like-ly”, “in-ves-tig-ate”, “ex-ca-va-tors”)
- when working out **word meanings**:
 - using the context of the sentence and surrounding sentences
 - noticing words in bold print and looking for supporting information close by (for example, in the text or a labelled photograph)
 - reading on to look for further information.

Have a dictionary available for students to confirm or clarify word meanings, but remind them that they can make a best attempt at a word and come back to it later. Have bilingual dictionaries available, where appropriate.

Text features

- Visual language features: (captions, diagrams, labels, photographs, subheadings)
- Structural features:
 - (the heading, the lead sentence with the main idea, and the supporting ideas within a paragraph)
 - indicators of time that clarify the sequence of steps within the road building process (“After”, “Then”, “When”, “again”, “Finally”, “Once”, “Soon”)
 - connective words and phrases that clarify the links between ideas within and across sentences (“to”, “for example”, “so”, “which”, “Like”, “However”, and “but”).

Clarify that the photographs and illustrations are closely linked to the ideas in the text. For example, point out the connection between the text on page 24 and the photograph on page 25 that shows how lane markings are added to a road.

Before the students read the whole text themselves, read page 17 and review the structure of each paragraph on this page (see Introducing the text).

Remind the students that the article is about the steps involved in planning and building a road. Discuss the sorts of words that help to indicate time.

Select an example of a cause-and-effect sentence, for example, “People will need a road to get to and from the new houses” (page 17) and explain that the word “to” connects the idea of people needing a road with the reason they need the road (to get to and from their houses). Tell the students to be alert for other sentences like this that have explanations and that “to” and “so” are important words to notice (and see After reading).



Metacognition

HOW YOU CAN SUPPORT YOUR STUDENTS TO BE METACOGNITIVE

Here are some ways you can build students' awareness of the processes and strategies they are using as they make meaning and think critically.

- What did you do to work out this word (“brochures”)?
- What helped you work out the difference between “hot mix” and “chip seal”?

Introducing the text

- Use your knowledge of your students to ensure that your introduction to the text is effective in activating their prior knowledge and providing appropriate support for a successful first reading. Deliberately feed in some of the subject-specific vocabulary as you discuss the article.
- Have the students read the title and the opening paragraph and confirm this is an information text. Allow time for them to share their ideas about the author's question, "Have you ever wondered how roads are made?" Make links to their prior knowledge: *Who has been past a road being built? What did you notice?* As the students discuss what they know, and any questions they have, you could quickly record their points on a KWL chart for them to refer to during and after the reading.
- Have the students look through the article and make predictions about what the article will tell them. They may want to add further questions to the KWL chart.
- Draw their attention to the information text features, and discuss how they help the reader. Explain that the words in bold print are there to indicate that there is some supporting information close by. Have the students read the first sentence on page 19 and support them to notice that the bracketed words are explaining what it means to "clear a route".

- You could provide extra support to understand the style and structure of information texts by having them read and discuss page 17. Together, review the structure of this section. Draw attention to the purpose of the heading, the sequence of information, the lead sentence with the main idea, and the development of information within a paragraph. You could create a chart like the one below to clarify the structure.

Structure of the section	Main ideas
Heading: Planning	It will be about planning the road.
Paragraph 1:	Lead sentence (first sentence): There are many reasons for building a road. Supporting sentences: – the kinds of reasons
Paragraph 2:	Lead sentence (first sentence): The planners also think about the type of road that should be built. Supporting sentences: – the sorts of questions the planners ask to decide what type of road
Summary	This is about what the planners need to find out about before building a road.

- Share the reading purpose and learning goal(s).
- You could provide the students with sticky notes to mark information that relates to the KWL chart or to mark any questions they have.

Reading and discussing the text

Suggestions for ways that you can support the students to achieve the learning goals are in the right-hand column of the table below. **Select from and adapt** the suggestions below according to your students' needs. You may want to return to this text several times. These suggestions may apply to the first or subsequent readings of the text.

Student behaviours

Examples of what to look for and support as the students work towards achieving their learning goal(s). Much of the processing that students do at this level is "inside their heads" and may not be obvious until after they have read the text and you are discussing it as a group.

The first reading

- The students read page 17 and then reread the subheading and the first sentence to help track the sequence of ideas.
- As they read page 18, the students may wonder what things local people might want to change on a planning map. They look at the map to clarify their thinking and make some predictions.
- The students demonstrate evidence of self-monitoring. For example: they reread the first paragraph on page 19 to check their understanding about why a road might need to "zigzag"; on page 23, they reread the paragraph about hot mix and compare it with the description and photograph of chip seal on page 22 to clarify how they are different.
- The students think of new questions as they read. For example, on page 20, they may note a question about the "layers" of the road.
- As the students finish, they scan the text to reflect on what they have found out and to identify any questions they have not found answers to.

Deliberate acts of teaching

Examples of how you can support students as they work towards achieving their learning goal(s). This may involve individual students rather than the whole group.

- Remind the students to reread the subheading and the lead sentence to help them understand the information.
- If necessary, support the students to interpret the planning map on page 18.
- Remind the students about the use of bold print to indicate supporting information close by.
- Prompt the students to use the visual language features as well as the text to clarify their thinking.
- Remind the students to mark their questions with a sticky note so they can go back if they are still unsure.
- If necessary, support students to interpret the labelled cross-section diagram on page 21.
- As they complete their reading, remind them to think about their questions and what they have found out so far.

Discussing the text after the first reading

- The students use the text, the subheadings, and their sticky notes to help answer the questions on the KWL chart.
- They identify aspects of the text that they are not sure about and would like to investigate further.
- The students work in pairs, each pair focusing on one or two of the double-page spreads from pages 18–25. They identify the steps and the main ideas involved, recording their findings on a summary chart (as in Introducing the text). Each pair shares their summary with the rest of the group, referring to information in the article to support their summaries.
- Have the students add any answers and new questions to the KWL chart.
- Remind the students of their reading purpose and ask them to work in pairs to identify the main points in the process of building a road. Write the subheadings on a large sheet of chart paper to support the students to keep "the big picture" in mind while they work on their particular section.

Supporting metacognition

With support, the students reflect on their learning. They revisit the reading purpose and learning goal(s).

- The students explain what helped them to identify and summarise the text.
- The students share how asking and answering (or trying to answer) questions helped them understand information.

Remind the students of the reading purpose and learning goal(s).

- *What did you use to help you summarise how the road was made?*
- *I noticed you looking at the diagram on page 21. How did it help with your questions about this section?*

After reading: Practice and reinforcement

- The students can reread the article as they listen to the audio version. Audio versions also provide English language learners with good models of pronunciation, intonation, and expression.
- Provide opportunities for students to reread this text, as well as other texts about machines and how things are constructed (see Related texts, above). They could also read “The Inventor” on page 26 of this journal and discuss how this relates to the article – in particular, the reference to the “light in the cat’s eyes” and how that links to reflecting road studs.
- To provide practice in identifying and summarising information, have the students use information from the text and their summaries to create a flow chart of the road-making process. The students could work in pairs, with each pair focusing on one or two sections.
- Support the students to find information on unresolved questions or to expand their knowledge of the information (using the text, the earlier KWL chart, their summary charts, and/or their sticky notes from earlier sessions). The students may need to look beyond the text and use sources like a dictionary, the library, a person, and the Internet. If you have students from other countries in your class, encourage them to share what they know about roads in their country.
- Encourage the students to extend their understanding by looking for information about the people who plan and build roads. They could find out more about specific roles, such as planners, engineers, drivers, and machine operators. Note that *The Impossible Bridge* includes examples of engineers’ reports. The students could share their findings in a visual display, such as a pop-up card or poster, or they could present an oral report.
- Have the students work in pairs to use the planning map on page 18 to make inferences about aspects the local people might want changed (for example, they might want to preserve the trees or have the road built up higher where it crosses the river in case of flooding). Alternatively, encourage the students to make connections to the local community: *If a new road was planned near our school, what are some of the things that we would need to think about?*
- Have the students share with a partner any words they found difficult and the strategies they used to work them out. Listen to the discussions. Do you need to follow up on any decoding strategies, particular words, or features of words? Reinforce new vocabulary by having students create a glossary of new words from the text.
- Have the students practise locating information (building on from the suggestion in Text features). Identify a sentence and rephrase it as a question, for example, “Why do the planners investigate before a new road is made?” (page 17). Ask the students to find the answer in the sentence. The students could work in pairs, repeating this activity with other examples. For English language learners and other students who may struggle with locating information in texts, you could cut some cause-and-effect sentences in half and have students match the two halves.
- Build the students’ ability to identify and compare information. Reread pages 22 and 23, drawing the students’ attention to words such as “Most”, “Some”, “Like”, “However”, “smaller”, “smoother”, “more” to show how chip seal and hot mix are different. Develop a comparison chart and have the students work in pairs to complete it. They could use the chart to answer the question: Why do most New Zealand roads have chip seal surfaces?

Chip seal	Hot mix
On most NZ roads	On some very busy NZ roads
Bitumen is sprayed on the road, and then chips are spread on top and rolled in.	The stones are mixed with bitumen before the hot mix is spread on the road.
	Smaller stones
	Smoother surface
	Lasts longer
	Costs more