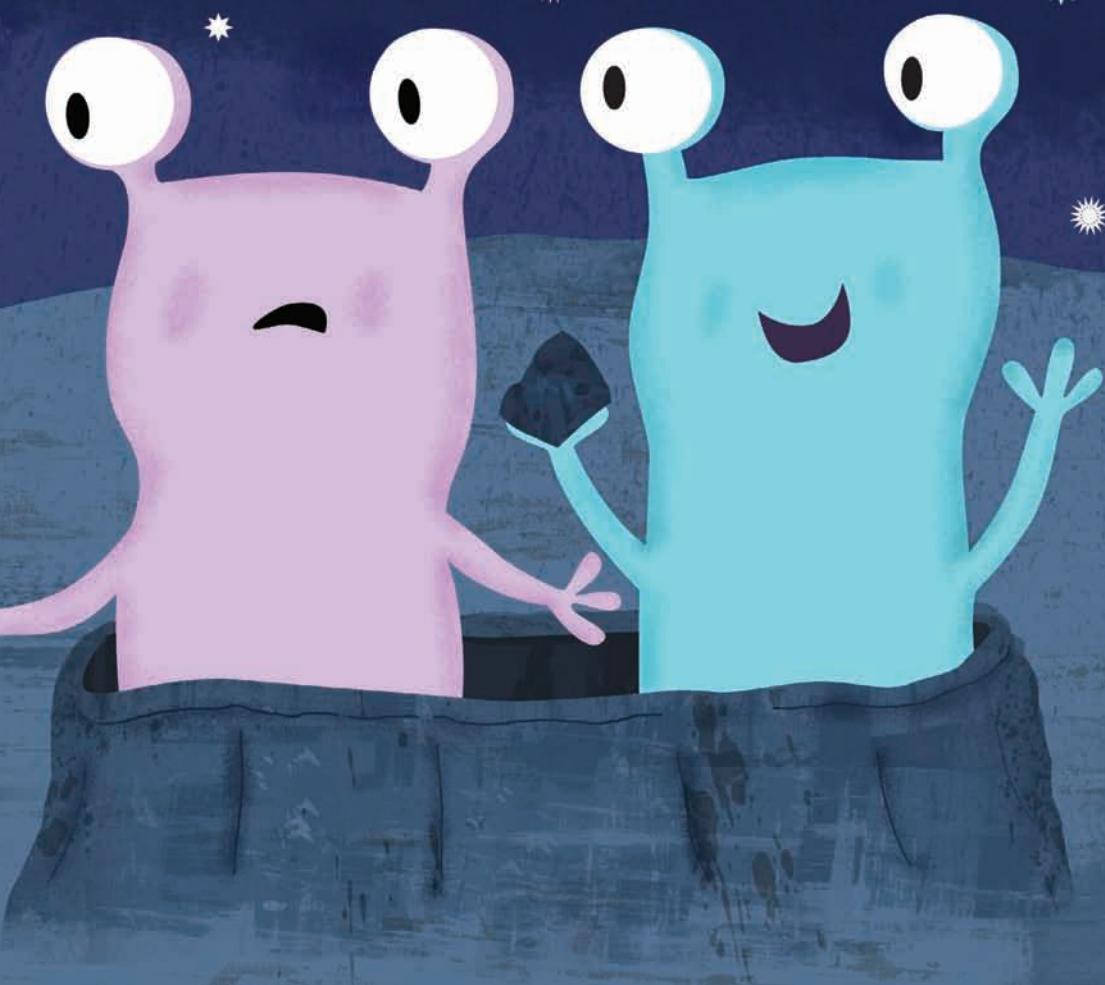


Junior Journal

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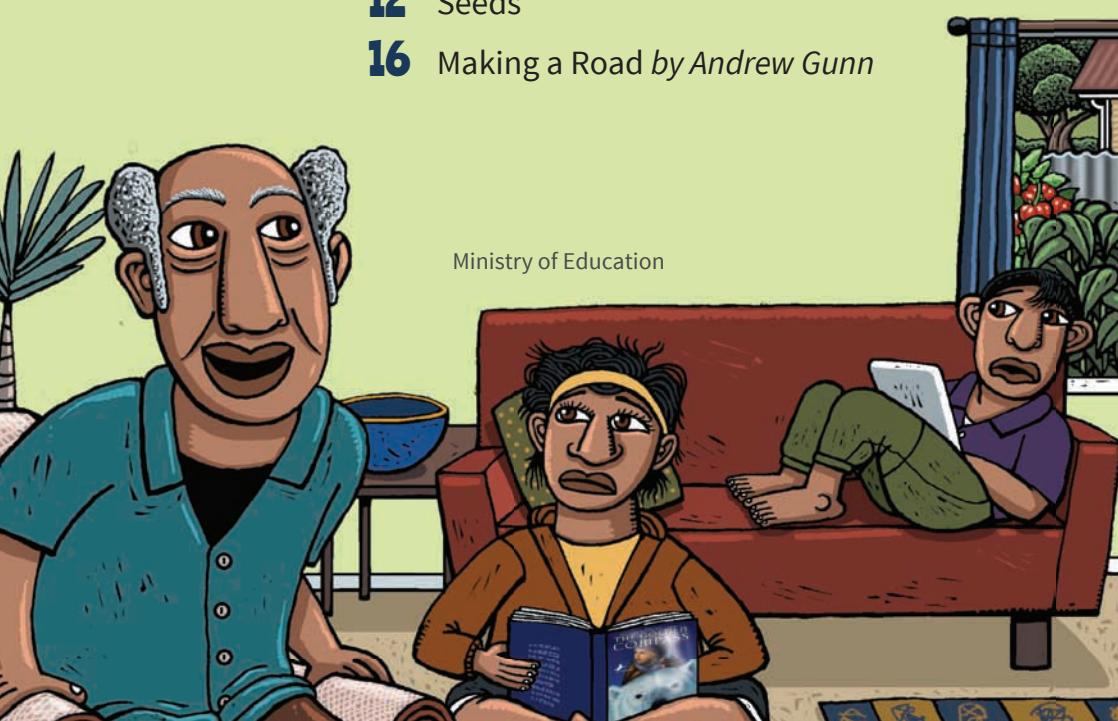
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I Spy

by Simon Cooke

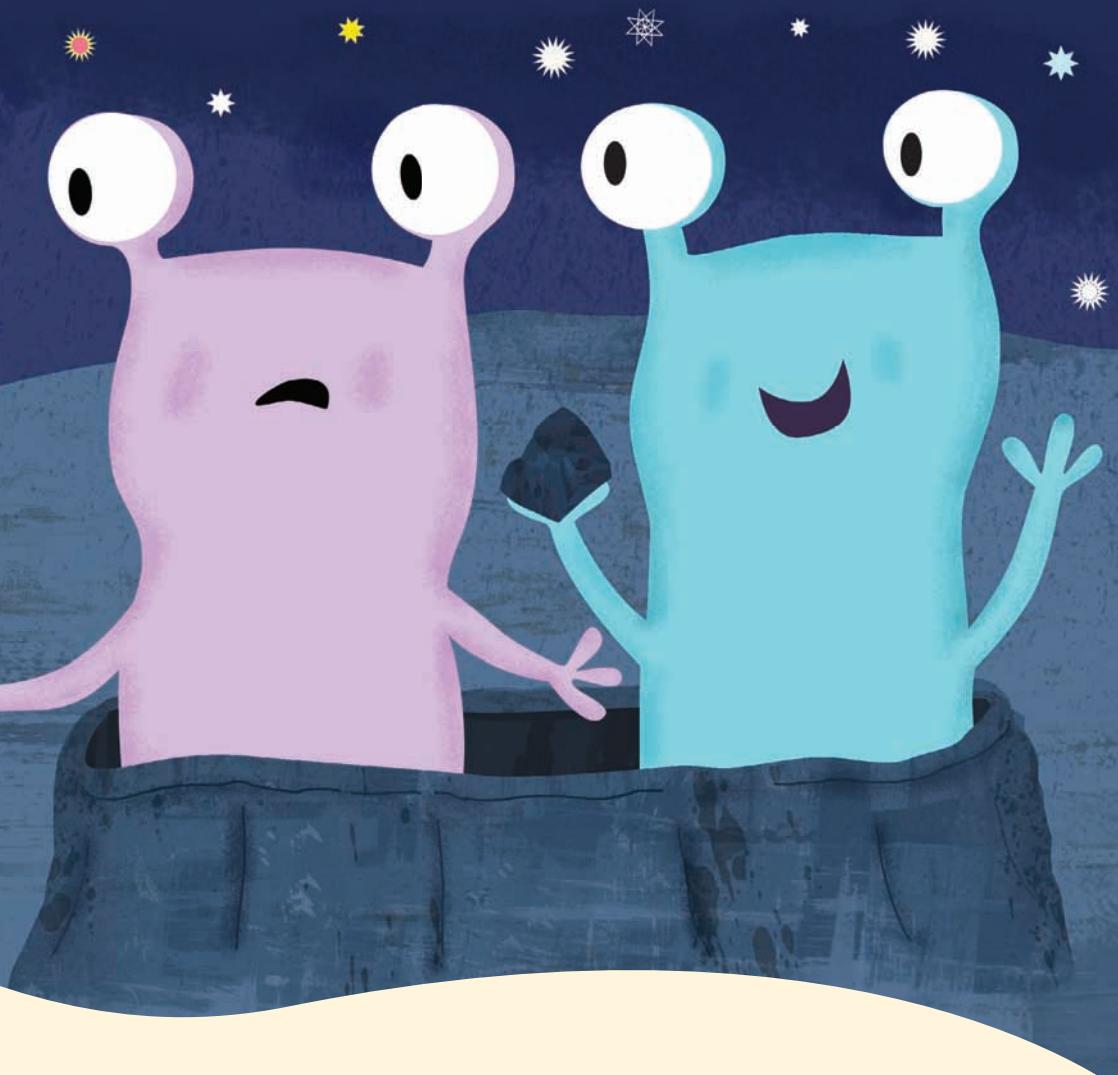
“I spy with my little eye ...,” said Stone.

“Don’t tell me,” sighed Pebble. “It begins with R, and the answer is rock.”

Stone and Pebble were playing in their hideout. It was in a crater on their home planet, Rock 2.

“Wow!” said Stone. “You’re brilliant, Pebble! How did you know?”

“Because it’s always rock,” she grumbled. “There’s nothing else on this planet. Just rocks, rocks, and more rocks.”



Stone picked up a rock and ate it. “I love rocks,” he said. “I could eat them for breakfast, lunch, and dinner.”

Pebble groaned. “You do. That’s all there is to eat here. Rock flakes for breakfast. Rock sandwiches for lunch. Roast rock with boiled rocks for dinner. And crushed, frozen rock for pudding.”

When Pebble got home, her mum gave her a hug. “What’s the matter, my little rock hopper?”

“I’m bored with rocks,” cried Pebble.

“How can anyone be bored with rocks?” asked Mum. “Rocks are a hundred times more exciting than anything else.”

“But there is nothing else,” said Pebble.

“That’s the problem!”

“This might cheer you up,” said her mum.

“Rock cake!”



Pebble crawled into bed. She tried to think of something that wasn’t anything to do with rocks. Instead, she had a nightmare. She was being chased by a giant boulder, and it was trying to make her eat a big piece of rock pie.

The next morning, Pebble got up early and went to the hideout. She wanted to be by herself. She lay down and looked up at the dark sky. Why did they have to live on a planet that was all rock?

As she lay there, she noticed something moving above her – a bright light high in the sky – and it was getting closer. It got bigger and bigger. It was some kind of spaceship. The thing landed with a huge roar of flames. Scared, Pebble hid behind a rock and watched.



Two creatures climbed out of the spaceship. Pebble watched as they put a blanket on the ground and spread out a lot of strange coloured objects. The creatures sat on the blanket and ate the objects, then they climbed back into the spaceship and took off with another roar of flames.

After the spaceship had gone, Pebble crept out from behind the rock. One of the coloured objects had rolled off the blanket and been left behind. It was roundish and red.

“I spy with my little eye,” said Pebble happily.

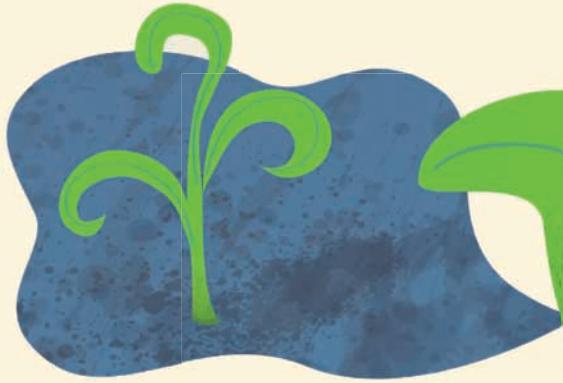
She ran and got Stone.

“That’s a funny looking rock,” said Stone. He turned it over in his hand and tapped it with one finger. “It feels a bit soft,” he said. Then he tossed it into the air, but when he tried to catch it, he missed. The thing hit the ground and smashed. Pieces scattered everywhere. The inside was white with little dark specks.

“Sorry,” said Stone. “I think I broke it.”

Pebble sighed. “That’s OK. We should go home anyway. It looks like it’s going to rain.”





A few weeks later, Pebble and Stone
were playing I Spy again.

“I spy with my little eye ...,” said Pebble.
Then she stopped. She had seen something,
and it didn’t look like a rock.

“Does it begin with R?” Stone asked.

“I don’t know,” said Pebble.

A long, green thing was sprouting out of
the rocky ground.

Each day, Pebble and Stone went back to
their hideout. Each day, the mysterious thing
grew bigger and bigger.

“I don’t think it’s a rock,” said Stone.

“If it isn’t a rock, then it’s ...” Pebble thought
for a while. “Let’s call it a toffle!”

Stone grinned. “I spy with my little eye,
something beginning with T!”

Soon, the toffle had long brown arms, and on each arm, there were green, flat bits.

"Let's call the flat bits blurps," laughed Pebble.

"I spy with my little eye, something beginning with B," said Stone.

The next week, there were pretty, white shapes among the blurps.

"Let's call those plogs," said Pebble.

Then one day, they noticed that the plogs had gone, and there were tiny objects on the toffle.

"Look at those," said Pebble. "They're a bit like the thing that the space creatures left behind. But they're smaller, and they're green."





Over the next few weeks, the things grew bigger than Pebble's fist. They turned a shiny red.

"What shall we call them?" asked Stone, as they sat eating a bag of rock balls.

Pebble grinned. "I know. Let's call them glosheS."

She picked one of the glosheS and looked at it carefully. "I'm so tired of eating rocks," she said. "I wonder if this gloshe tastes any better."

"I don't think it will," said Stone. "It's too soft."

"Well there's only one way to find out," Pebble said, and she took a big bite.

Stone waited for Pebble to spit it out. But she didn't. It tasted wonderful! Better than boiled rock! Better than roasted rock! Better than fried rock!

Juice dribbled down Pebble's chin. She picked another gloshe and gave it to Stone.

"Try it," she said.

Stone took a small bite, then a bigger one. He kept on eating until only the middle was left. With a full mouth, Stone mumbled happily, "I spy with my little eye, something beginning with D."

"I know," laughed Pebble. "Dinner!"

Seeds

Nearly all plants produce seeds.

Seeds come in many shapes, colours, and sizes. They can look very different on the outside.

However, on the inside, every seed contains a tiny plant, as well as food so that the plant can grow.

Mandarin seed

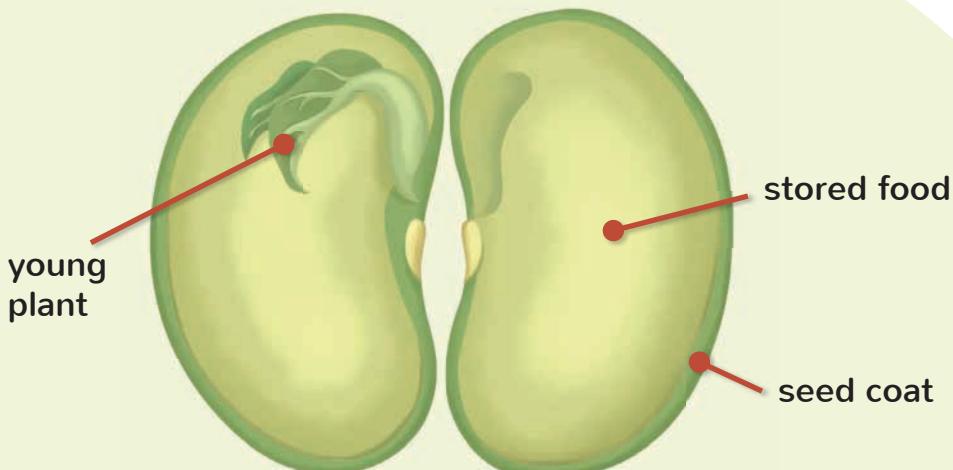


Pumpkin seed



Poppy seeds

A seed cut in half

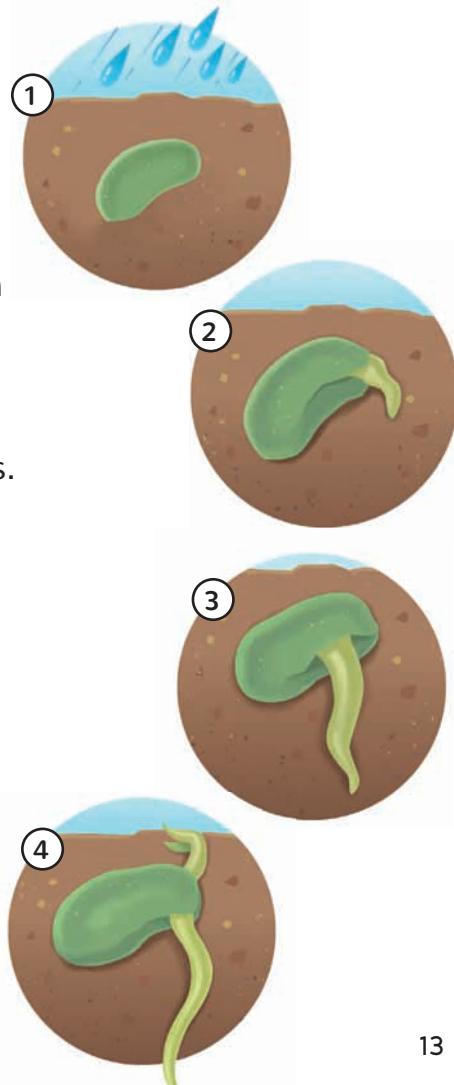




How a seed grows

Most seeds need water, air, soil, and the right temperature to **germinate** (start growing). When it has all these things:

1. The seed takes in water and starts to swell up.
2. The seed coat breaks open as the tiny plant starts to get bigger.
3. The roots grow downwards.
4. The shoot grows upwards.
5. When the shoot gets above the ground, it starts forming leaves.



Kākano

I am small,
but within me
I hold great taonga,
waiting to be shared.

All I need is wai, hihi rā,
onemata, and wā.
Then my taonga is free,
and I begin to grow.

I am kai.
I am hāora.
I am tipu ora.
Green and precious life!

Kelly Joseph

Glossary

hāora oxygen

hihi rā the sun's rays

kai food

kākano seed

onemata fertile soil

taonga treasure

tipu ora budding life

wā time

wai water



Author's note

This poem was inspired by the Māori proverb:

Ahakoa he iti, he pounamu – although small, it is precious.



Making a Road

by Andrew Gunn

There are over ninety thousand kilometres of roads in New Zealand. Have you ever wondered how they are made?



Planning

There are many reasons for building a road. Maybe the nearby roads are overcrowded and unsafe with too many vehicles on them. Maybe a new area of housing is being developed.

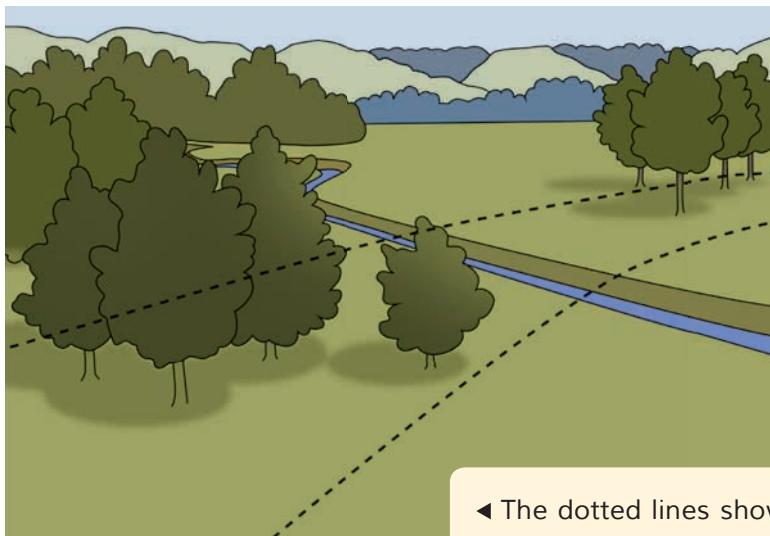
People will need a road to get to and from the new houses. Before any new road is made, planners investigate to see if the road is needed.

The planners also think about the type of road that should be built. Who is likely to use the road? How many lanes will it need? Where will it join with other roads? Will it have to cross any rivers? Will it have to go over hills?



Checking the plan

The planners draw a map showing where the road could go. Then they use newspapers, brochures, and the Internet to let people know that a new road is planned. Sometimes the planners and the **engineers** (who will design the road) hold public meetings to explain their ideas. People who live nearby and who might use the new road have a chance to look at the map of the road and say what they think about it. Sometimes the people notice problems that the planners and engineers haven't thought about. After the planners and engineers have listened to what people say, they sometimes make changes to the design of the road. Then it's time to start road building.



► The dotted lines show where the new road will go.

Clearing a route

The first step is to **clear a route** (make a space where the road can be built). To make sure that people can drive safely and at a good speed, the road must not be too steep or too bumpy or have any sharp corners. Sometimes this means that a road might need to be a bit longer than expected, for example, it might need to zigzag up a hill rather than go straight up.

Bulldozers and excavators clear away trees, rocks, and soil. Motor scrapers take off a layer of earth from where there is too much and move it to where more is needed. Heavy rollers pack down the earth.

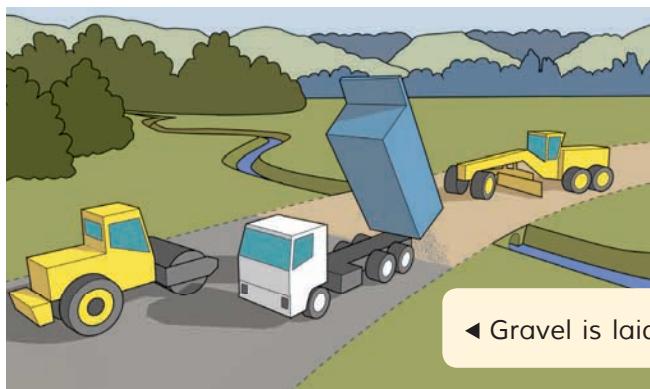


▲ Bulldozers and excavators clear the route.



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**.



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

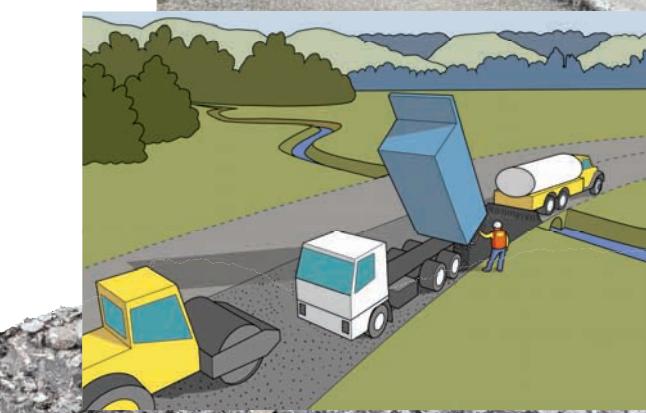
Cleared earth

Finally the top surface of the road is laid down. Most New Zealand roads are covered in **chip seal**. To make chip seal, **bitumen** (a black, sticky mixture) is sprayed on the road. Then crushed stones called **chips** are spread over the bitumen. Rollers push the chips into the bitumen, which acts like a glue to keep the chips in place.

▼ Bitumen is sprayed on the road.



◀ A layer of chip seal is laid down.



Chip seal



- ▶ Hot mix is laid down in a tunnel.

Some very busy roads are covered in **hot mix**. Like chipseal, hot mix is made from stones and bitumen. However, the stones are smaller, and they are mixed together with the bitumen before being spread out on the road. Roads with hot mix surfaces are smoother and more hard-wearing than roads with chip seal surfaces, but they cost more money to make.

Hot mix

Finishing the road

When the road surface is completed, it still needs to be made safe and easy to drive on. Traffic lights, signs, lane markings, and arrows all help to control traffic and show drivers where to go. A **rumble strip** makes a sound when wheels roll over it to alert drivers that they are straying off the road. At night, studs in the road reflect car headlights to help drivers see the road lanes.



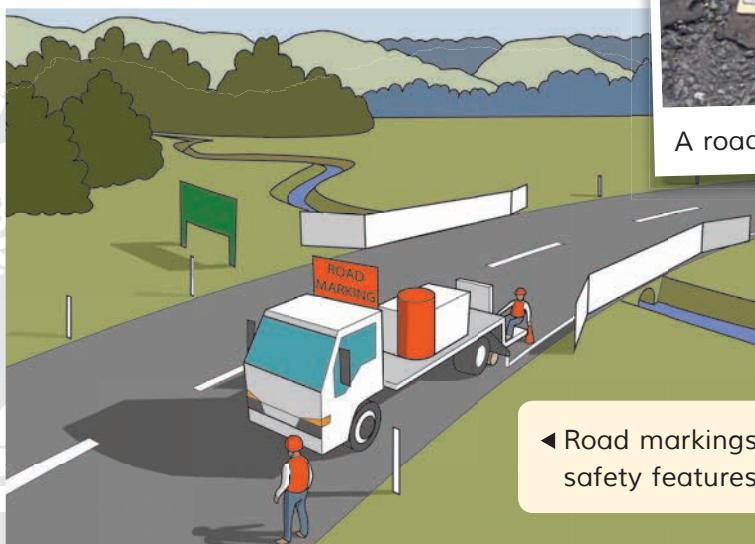
A traffic sign



A rumble strip



A road stud



► Road markings and other safety features are added.

► Lane markings are added.



▲ A close-up photo of the truck spraying the lane markings

Once these have been added, the new road is ready to be used. Soon cars, buses, vans, and trucks will be driving over it – and most of the people in them will never think about how the road was made.



The Inventor

As a baby,
the dump-truck driver would tip
his food onto the floor,



the grader driver would push
her toys across the room,



the roller driver would grind
a biscuit into the carpet ...

and the inventor would stare
at the light in the cat's eyes.

Greg O'Connell



Helpful

by Feana Tu'akoi



"Time to get into the garden," said Grandad, hauling himself out of his seat. "Who will help me with the veges?"

Vika and Kele groaned. They liked eating Grandad's veges, but they hated gardening. It was hard work. They got hot and sweaty, and their backs hurt because they had to bend over to pull out the weeds. The spade and pitchfork gave them blisters. They got dirt under their fingernails and prickles in their hands. Grandad was fussy too, so it always took a long time ... there were lots of other things they would rather be doing.

“Come on, you two,” laughed Dad. “The ‘umu is tomorrow. If you don’t garden, you don’t eat!”

Kele sighed and went to get his shoes.

As soon as Kele left the room, Vika sighed, too. “Oh, Grandad,” she said. “I’d love to help you – really I would, but I promised to help Rishi with his maths homework.” She ignored Dad’s surprised look and sighed again. “I suppose I *could* help you, instead,” she said. “Rishi *might* be able to figure it out on his own ...”

Dad raised an eyebrow, but Grandad smiled at her.

“You go and help your friend,” he said. “Kele can help me.”

“Thanks, Grandad,” said Vika, and she went to get her maths book.

“Such a helpful child!” said Grandad.

Dad shook his head.





When Kele came back with his shoes, Vika beamed at him. “I’m sorry, Kele. I won’t be helping you with the gardening after all,” she said.

Kele dumped his shoes on the floor. “What?” he said. “Why not?”

“She’s helping a friend instead,” said Grandad. “Come on, Kele. This will only take a couple of hours.” He put on his gardening hat and went outside.

Just then, the phone rang. Dad went to answer it.

Kele stomped outside. He sat on the steps and yanked on his shoes.





Next door, Matt was playing basketball. Kele loved basketball, even more than he hated gardening. He waved at Matt as he went to get a spade out of the shed.

“Hey, Kele!” called Matt. “Come and do some shots. You can teach me some moves.”

Kele shook his head. “Not today,” he said. “I have to help Grandad.”

“Have fun,” said Vika, smiling as she went past with her maths book. “Sorry I can’t help.”

“Oh, but you can!” said Dad. He came down the steps, grinning. “That was Rishi on the phone. They’ve got visitors, so you can’t go over today. I told him you’d go tomorrow – after the ‘umu.”

Vika's mouth dropped open. She stared at Dad.

"I knew you wouldn't mind," said Dad. "After all, you love to help Grandad in the garden!"

Vika rolled her eyes. Then she laughed.

"Fair enough," she said. She put her book on the steps. "Come on, Kele. It won't take long if we both help Grandad."

Dad gave Kele a nudge. "What did Matt want?" he asked. "I heard him say something about wanting help."

"He wanted me to help with his basketball moves," Kele said.



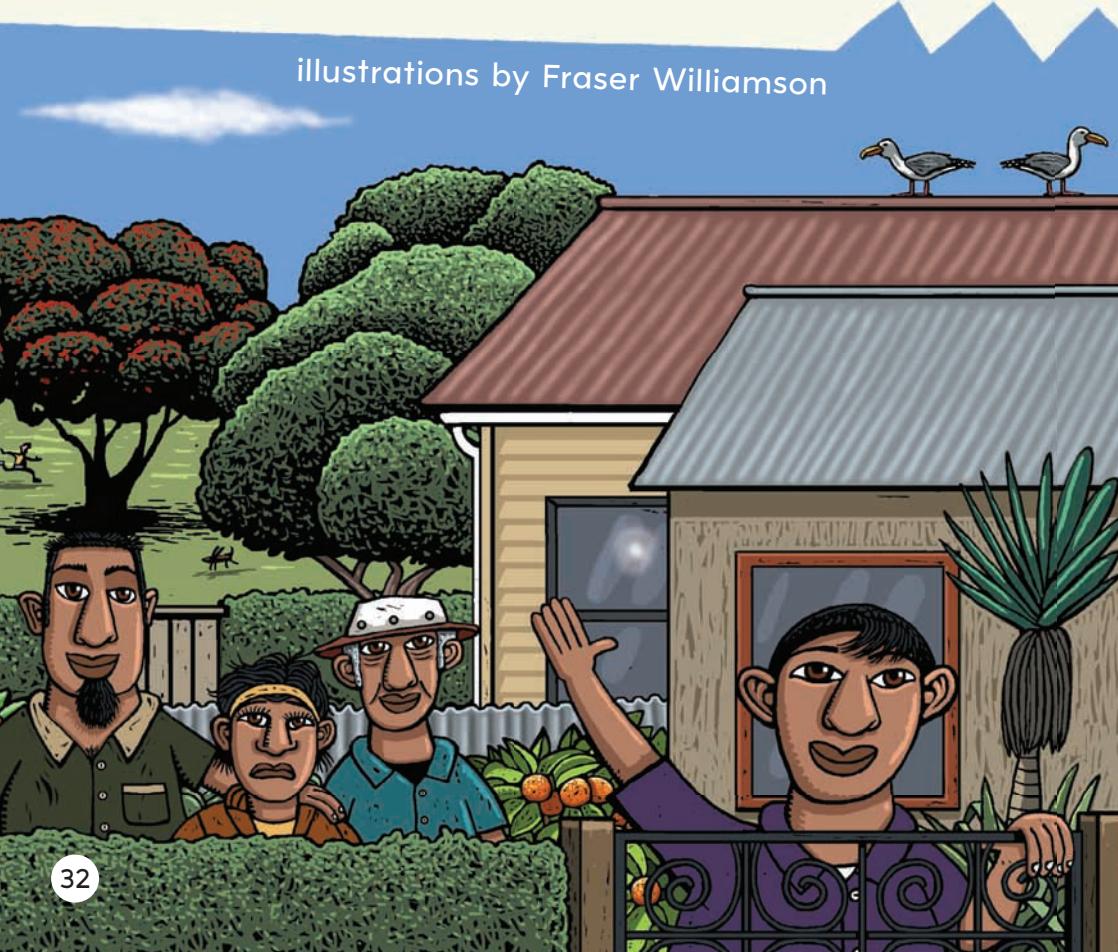
Vika shook her head, but Grandad was nodding.
“Off you go, Kele. It’s always good to help your
friends. We’ll be fine here, won’t we, Vika?”

Vika didn’t say anything.

“Thanks, Grandad,” said Kele. “Have fun, Vika!”
He rushed straight to the gate before Grandad
could change his mind.

Dad laughed and patted Vika on the back.
“Such helpful children!” he said.

illustrations by Fraser Williamson



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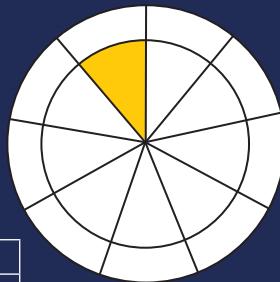
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