Issue 6 March 2011

The New Zealand Curriculum

Update

In this issue:

Welcome to *The New Zealand Curriculum Update*

Curriculum Updates support school leaders and teachers as they work to design and review their school curriculum, in line with the New Zealand Curriculum and with current knowledge and understandings about effective classroom teaching.

Curriculum Updates are published in the *Education Gazette* and are available online at http://nzcurriculum.tki.org.nz

This Update focuses on the illustrations that support the National Standards for reading, writing, and mathematics and how teachers can use them.

Illustrations supporting the National Standards

The key aim of the illustrations is to help teachers understand the National Standards.

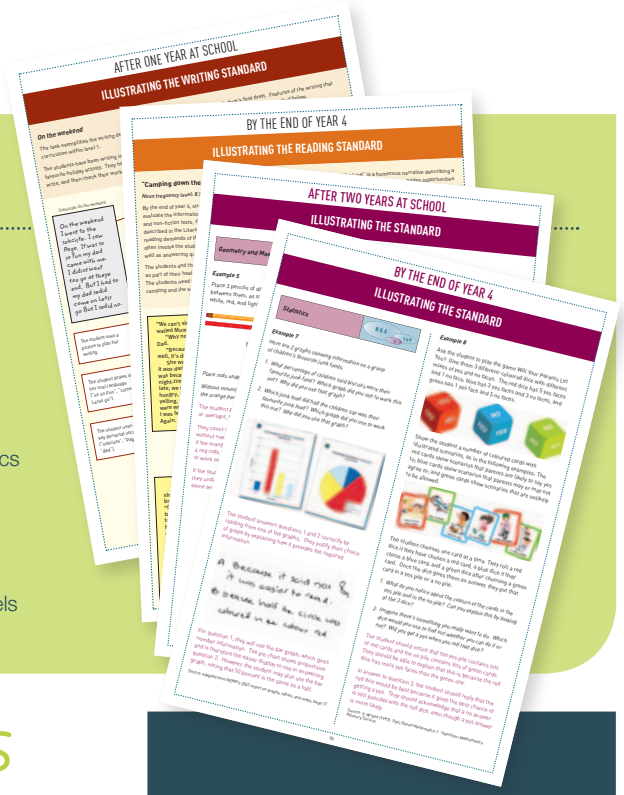
The illustrations are examples of what a student's response to a task looks like when it meets the standard for a particular year level. They show and explain how a student's response demonstrates that he or she is meeting specific aspects of a standard. No single illustration exemplifies all aspects of the standard. They are examples only and should not be used as tests to assess students.

Initial sets of illustrations were included in the two National Standards books, which are available in print and online. Further illustrations to support the National Standards for reading, writing, and mathematics have been developed, and these too are now available through the online website at: http://nzcurriculum.tki.org.nz/National-Standards

Using the illustrations

Each illustration models what you as a teacher might observe, in a specific context, about how a student is meeting a particular standard. This can help you to:

- understand the language and intent of the standards;
- strengthen understanding about how students use reading, writing, and mathematics to engage with the curriculum;
- make judgments about where an individual student is in relation to the standards;
- plan deliberately for learning across the curriculum;
- discuss with colleagues what the expectations are for students at different year levels (for example, when moderating examples of student responses across the school).



The reading illustrations

Each one-page reading illustration gives an example of a student reading largely by themselves at a level designated in the standard.

The knowledge, skills, and attitudes the student draws on as he or she engages with the text are described in the Literacy Learning Progressions. The progressions can be found at: www.literacyprogressions.tki.org.nz

In the reading standards, the emphasis in years 1–3 is on developing knowledge and skills as students learn to read and write. In years 4–8, the emphasis is on the knowledge and skills students need to meet the demands of increasingly complex texts and tasks across the curriculum. This difference in emphasis is supported by the illustrations for the standards.

The illustrations for reading feature the same text and task at years 5 and 6 and at years 7 and 8. This enables teachers to pinpoint some of the differences between achievement at two successive year levels.

Further illustrations that use the same text at adjacent year levels will be developed.

To build understanding of the teaching strategies that help students meet curriculum reading demands, you can use the illustrations in conjunction with the annotated sections of the new teacher support materials for Ready to Read books and *School Journal* items. These suggest deliberate acts of teaching you can use to help your students. Teacher support materials that align with the reading standards and progressions are available through:

- www.readytoread.tki.org.nz
- www.juniorjournal.tki.org.nz
- www.schooljournal.tki.org.nz

These examples illustrate and clarify the standard and exemplify the kinds of texts and tasks students should engage with in their learning in reading. They represent only a small sample of possible texts and responses that teachers might draw on in determining whether a student is meeting the standard.

I wanted to plan learning outcomes and activities to ensure that every student in my year 7 class would meet the reading standard by the end of the year, but I was confused about the word "synthesise", which is used in the standard and the progressions at this level. I couldn't see how synthesising information and ideas was different from integrating them. I checked the glossary in both books and discovered that synthesising (but not integrating) involved creating new understanding. My immediate reaction was "So what on earth does that mean?"

I asked a colleague whether he knew. He wasn't sure either and suggested we look at the year 7 illustrations online. The annotations to the "Estuary Health Check" illustration told me exactly what one student did that met the standard in terms of synthesising – "he summarises … and then synthesises the information to conclude that …"; "He returns and synthesises … and comes to a conclusion that …" The new understanding in this case was the student's own conclusions.

Yes, I can work on helping my students learn to draw conclusions! And that example also helps me to think and talk about what other kinds of new understanding might arise out of synthesising.

Teacher, year 7 class

› EXAMPLE

By the end of year 6: "The Vege Car"

"The Vege Car" includes many of the key characteristics of texts that students read at this level (see paragraph 2 of this illustration), and the illustration describes specific behaviours that the teacher can observe. We are told that the teacher chose this particular text "because it allows students to integrate ideas and information as they evaluate ideas about taking action to influence others and bring about societal change".

The annotations describe how the student locates and integrates information within and across a small range of texts and how he then goes on to evaluate ideas. They also explain that the student is interested in the abstract idea that driving cars that run on petrol puts nasty gases into the air and that he goes on to seek and present further information about the impact of gases on the environment.

The teacher who observed and recorded these behaviours now has evidence that this student can meet some aspects of the standard. In particular, the student is able to locate and summarise ideas (by scanning and by using subheadings) and to evaluate and integrate ideas and information across a small range of texts.

BY THE END OF YEAR 6

ILLUSTRATING THE READING STANDARD

"The Vege Car" *School Journal*, Part 3 Number 1, 2007 — *Noun frequency level: 10–12*

The students in a year 6 class are beginning an integrated learning inquiry into people's consumption of natural resources. Their rich concept (Resources: cause and effect) incorporates science, social sciences, and technology. The students have some prior knowledge to bring to this inquiry from the previous year's focus on conservation and sustainability. They are now identifying how positive changes can result from the choices individuals make and building on the key competency of thinking.

The main idea in "The Vege Car" is about caring for the environment, with a particular focus on taking action and influencing others. The text is a report, with elements of a persuasive text and supporting text boxes. The photographs and map are closely related to, and expand on, the text content. Scientific, topic-specific, and persuasive ("nasty", "worse") vocabulary is used, and there are some Māori concepts and words.

The teacher chose "The Vege Car" because it allows students to integrate ideas and information (from the body of the text and the supporting text boxes) as they evaluate ideas about taking action to influence others and bring about societal change. To do this, they generate questions, such as "Why do people take action on particular issues?" and "What are our opinions about our reliance on fuels from a finite source?"

The following example illustrates aspects of the task and text and demonstrates how a student engages with both task and text to meet the reading demands of the curriculum. A number of such examples would be used to inform the overall teacher judgment for this student.

The text above the example describes why the teacher chose that item for those students.

The paragraph in bold italics explains the purpose of the illustration.

The example itself gives excerpts from the text with annotations describing the student's reading behaviours as he or she engages with text and task.

> And yes, the Macdonalds can even drive their car on vegetable oil after it's been used for cooking – thanks to Dad, James nui Macdonald.

> Around three years ago, James nui decided it was time to build a car that didn't need petrol. It wasn't just to save money. James wanted to protest against the war in Iraq, which he believes is partly about powerful countries like the United States wanting oil from the Middle East.

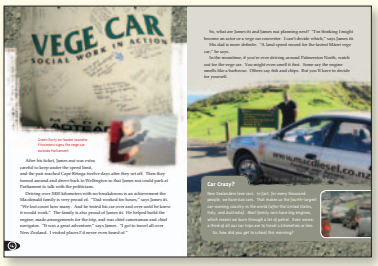
> As James nui says, "Vegetable oil is 100 percent environmentally friendly – and it's recycled!"

> **Nasty Gases**
> Driving a car that runs on petrol puts nasty gases into the air. These include carbon monoxide, carbon dioxide, nitric oxide, nitrogen dioxide, and hydrocarbons.

> James nui, who is Ngā Puhi and Ngāti Whātua, also likes the fact that his car is in keeping with traditional Māori values.

> Why not drive from one end of the country to the other? That way, he could show off his car and teach people about cleaner, cheaper fuels at the same time.

While reading an extended section of text, the student locates and links a number of main ideas. These include: driving a car on vegetable oil so that the family car is environmentally friendly and does not need petrol; James nui's action (building the car); his beliefs about the war in Iraq; and his cultural beliefs. The student identifies the mix of persuasive language and scientific facts included in the text box. After reading, the student scans back through the text and summarises the information so far in order to understand and integrate those main ideas, and he asks questions, for example: "What are the alternatives to petrol for use in cars?" "Would a car really use vegetable oil and be able to go like a 'normal' car?"



The student is interested in the ideas in the text box headed Nasty Gases and makes a note to carry out further research into the impact of gases from petrol cars on people and the environment. He evaluates the choices and decisions of James nui and identifies the possible impact that those decisions might have on people's consumption of natural resources. He also makes connections to the decisions (and the consequences of those decisions) of people in other texts who have cared for the environment, such as Grandad in "The Bittern" (*School Journal*, Part 3 Number 1, 2009).

After a discussion about caring for the environment and taking personal action to influence the actions of others, the student goes to the Internet to research the impact of gases from petrol cars on the environment. He uses the information from the article and his research to formulate inquiry questions related to the class's rich concept.

The writing illustrations

Each one-page writing illustration gives an example of a student creating a text largely by themselves in response to a writing demand in a curriculum area.

The knowledge, skills, and attitudes the student draws on as he or she engages with the text are described in the Literacy Learning Progressions. The progressions can be found at: www.literacyprogressions.tki.org.nz

In the writing standards, throughout years 1–8 the emphasis is on the knowledge and skills students need to meet the demands of increasingly complex texts and tasks across the curriculum.

In the *Reading and Writing Standards for years 1–8*, the illustrations for writing feature different writing tasks at years 5 and 6 and at years 7 and 8. Further illustrations, some of which use the same task at different year levels, will be developed to help teachers pinpoint some of the differences between achievement at two successive year levels.

These examples illustrate and clarify the standard and exemplify the kinds of tasks students should engage with in their learning in writing. They represent only a small sample of possible responses that teachers might draw on in determining whether a student is meeting the standard.

I was concerned about Hone's writing progress because he seemed to find it really hard to create simple texts with more than one sentence. I knew from referring to the writing standard and scanning the key characteristics that until he could communicate his ideas more fully, his writing wouldn't be where it needed to be after two years at school. So I needed to focus on supporting his learning.

I checked out the writing illustrations for "after two years" in the standards book. The introductory text for 'The Tupperware Party' explained that the students had been learning to use planning tools such as oral recounting and brainstorming, and the student's writing included personal vocabulary from her oral language that made it a lively and effective text. This made me realise that I hadn't really been planning for Hone and others to think and talk about what they would write. I had been too keen to get them started on the actual writing!

In my next writing lesson, I began by inviting my students to talk to a buddy about something that they had done in the weekend. Hone needed very little prompting – he had a recent experience that he wanted to share. He told his buddy (and me) that he had been cycling to the marae with Wiremu and the chain had come off his bike. He had managed to put it on again himself! I said, "Wow! Tell me more about that!" His response provided plenty of ideas for him to write more than one sentence.

I then asked the students to rehearse what they were going to write. Hone decided which of the details he had given orally to include and then rehearsed these sentences before writing.

Later, when Hone shared his written story, the feedback from his peers was very positive. And he now has strategies that help him to generate ideas and write extended texts to communicate these ideas.

Teacher, year 2 and 3 class

› EXAMPLE

After one year at school: 'The Three Little Pigs'

'The Three Little Pigs' includes many of the key characteristics of texts that students write at this level. In particular, it has been planned using discussion and pictures and includes several sentences and some attempts at transferring words encountered in oral language and in reading.

The student was asked to retell a familiar tale and encouraged to plan her writing in three parts to support sequencing. The annotations point out how she uses a series of pictures to plan the sequence of events. They describe the kinds of sentences she writes, and they explain how she uses her oral language, her reading, her visual memory, and her phonemic awareness to choose and spell particular words and phrases. They note her use of capital letters and full stops and her ability to form upper-case and lower-case letters.

The teacher who observed and recorded these behaviours now has some evidence that this student can meet some aspects of the standard. In particular, the student is able to think about, record, and communicate key information from a familiar story. She uses discussion and drawing to plan for writing, and she uses vocabulary drawn from oral language and reading, as specified in the after-one-year-at-school progressions.

AFTER ONE YEAR AT SCHOOL

ILLUSTRATING THE WRITING STANDARD

'The Three Little Pigs'

The task exemplifies the writing demands of the English curriculum within level 1.

As part of a focus on sharing, enjoying, and discussing traditional tales, the teachers asked the students to retell The Three Little Pigs. Students were first encouraged to orally retell the story with a partner, structuring their retelling in three parts to help support the sequence for their subsequent writing task.

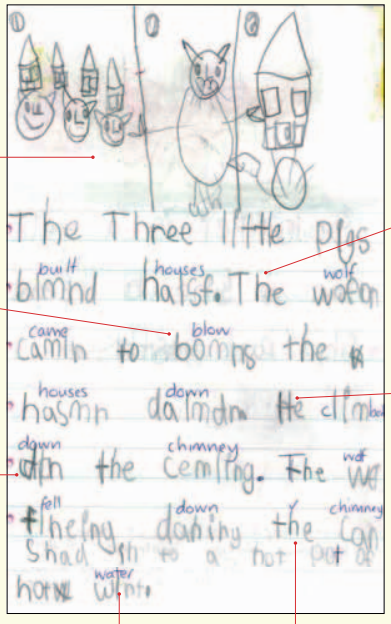
The student wrote this first draft largely by herself.* Features of the writing that demonstrate the standard are described below.

The following example illustrates the sorts of writing that teachers can expect of students who are meeting the standard. To meet the standard, students draw on the knowledge, skills, and attitudes for writing described in the Literacy Learning Progressions for students at this level.

The text above the example describes the context and the particular writing demands.

The paragraph in bold italics explains the purpose of the illustration.

This piece of writing shows a clear response to the task, with the student retelling the story of The Three Little Pigs. The writing is sequenced, reflecting some of the key events in the tale.



The student uses a series of pictures to plan her writing. She numbers each of the three parts to show how she will sequence the events.

The student uses words and phrases from both her reading and her experiences of traditional tales ("bomns the hasmn dalmdn").

The writer demonstrates her developing phonemic awareness by using some dominant sounds for unknown words ("wfl", "camln", "clim", "don").

The student uses her developing visual memory to accurately write some key personal words and some high-frequency words ("The", "Three", "little", "to", "He", "in", "of").

The student uses most capital letters and full stops correctly. She self-corrects the small "h" to a capital "H" at the beginning of the sentence.

The student forms most upper-case and lower-case letters correctly.

The example gives excerpts from the student's writing, with annotations describing how the student meets the standard.

The student draws on her oral language and key personal vocabulary ("shad in to a hot pot of hot wlnt" – i.e., straight into a hot pot of hot water).

The student writes mostly simple sentences. She adds detail by extending the final sentence with an adverbial phrase ("The wfl flneing daning the can shad in to a hot pot of hot wlnt.").

* "Largely by themselves": see page 15 of the *Reading and Writing Standards for Years 1–8.*

The mathematics illustrations

Each mathematics illustration gives an example of an appropriate task and student responses that provide some evidence that they are achieving at a particular standard.

The examples in the *Mathematics Standards for years 1–8* present a task and say how a student might approach it, sometimes giving specific examples of students' work. In order to illustrate different approaches to the task, the examples describe a range of responses and explain why these meet, exceed, or do not meet the expectations.

In response to feedback received, the illustrations that have been developed are different from the examples in the *Mathematics Standards for years 1–8* – see the examples on these pages. They use students' work to show how different responses to the same task provide evidence of how each student is achieving in relation to curriculum objectives and the mathematics standards. This makes it clear that the illustrations are examples of what individual students do and enables you to see how the expectations change from one year level to another.

Like the curriculum and the National Standards, the mathematics illustrations place a strong emphasis on mathematical thinking as students solve problems or model situations.

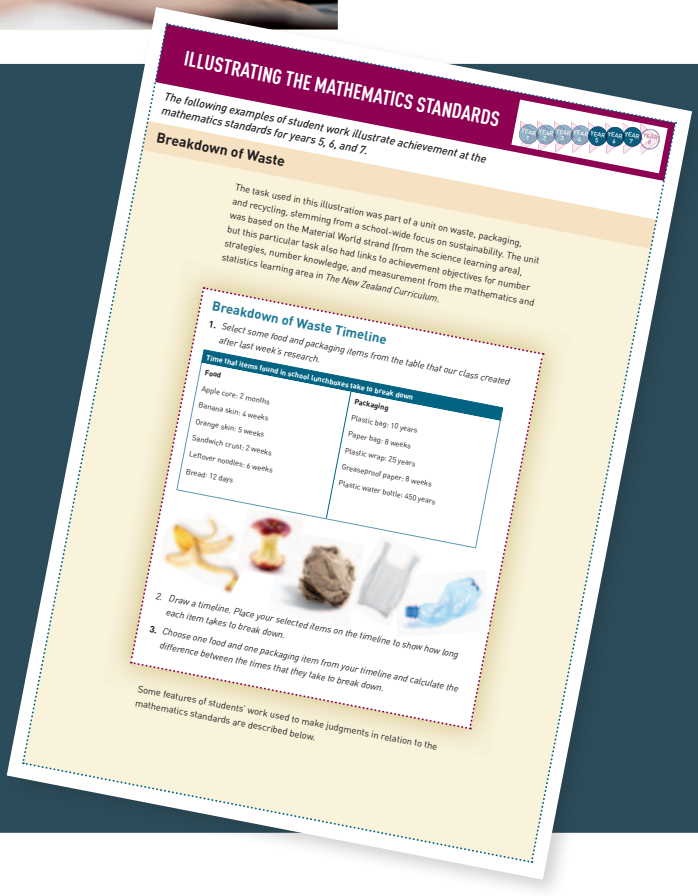
Several of the illustrations (including the one on this page, which has a technology focus) show students engaging with mathematics as they learn across the curriculum.

> [These examples] illustrate and clarify the standard and exemplify the kinds of tasks students should engage with in their learning in mathematics and statistics … they represent only a small sample of possible problems and responses that teachers might draw on in determining whether a student is meeting the standard.
>
> *Mathematics Standards for years 1–8*, page 10

The rich context of some illustrations made me think about how I could assess in relation to the standards, not by using a test or one-off activity but within the context of a broader experience.

For example, the "Breakdown of Waste" illustration was closely related to a unit we were doing last year on establishing a community recycling depot with our council. I had never really "mined" the tasks we were doing within the unit for their rich mathematics opportunities. If I had tied my statistical and measurement work more closely to the depot study, it would have been so easy to use that work when I was making judgments about where my students were in maths.

Teacher, year 5 and 6 class


ILLUSTRATING THE MATHEMATICS STANDARDS

The following examples of student work illustrate achievement at the mathematics standards for years 5, 6, and 7.

Breakdown of Waste

The task used in this illustration was part of a unit on waste, packaging, and recycling, stemming from a school-wide focus on sustainability. The unit was based on the Material World strand from the science learning area, but this particular task also had links to achievement objectives for number strategies, number knowledge, and measurement from the mathematics and statistics learning area in *The New Zealand Curriculum*.

Breakdown of Waste Timeline

1. Select some food and packaging items from the table that our class created after last week's research.

Time that items found in school lunchboxes take to break down

Food	Packaging
Apple core: 2 months	Plastic bag: 10 years
Banana skin: 4 weeks	Paper bag: 8 weeks
Orange skin: 5 weeks	Plastic wrap: 25 years
Sandwich crust: 2 weeks	Greaseproof paper: 8 weeks
Leftover noodles: 6 weeks	Plastic water bottle: 450 years
Bread: 12 days	

2. Draw a timeline. Place your selected items on the timeline to show how long each item takes to break down.
3. Choose one food and one packaging item from your timeline and calculate the difference between the times that they take to break down.

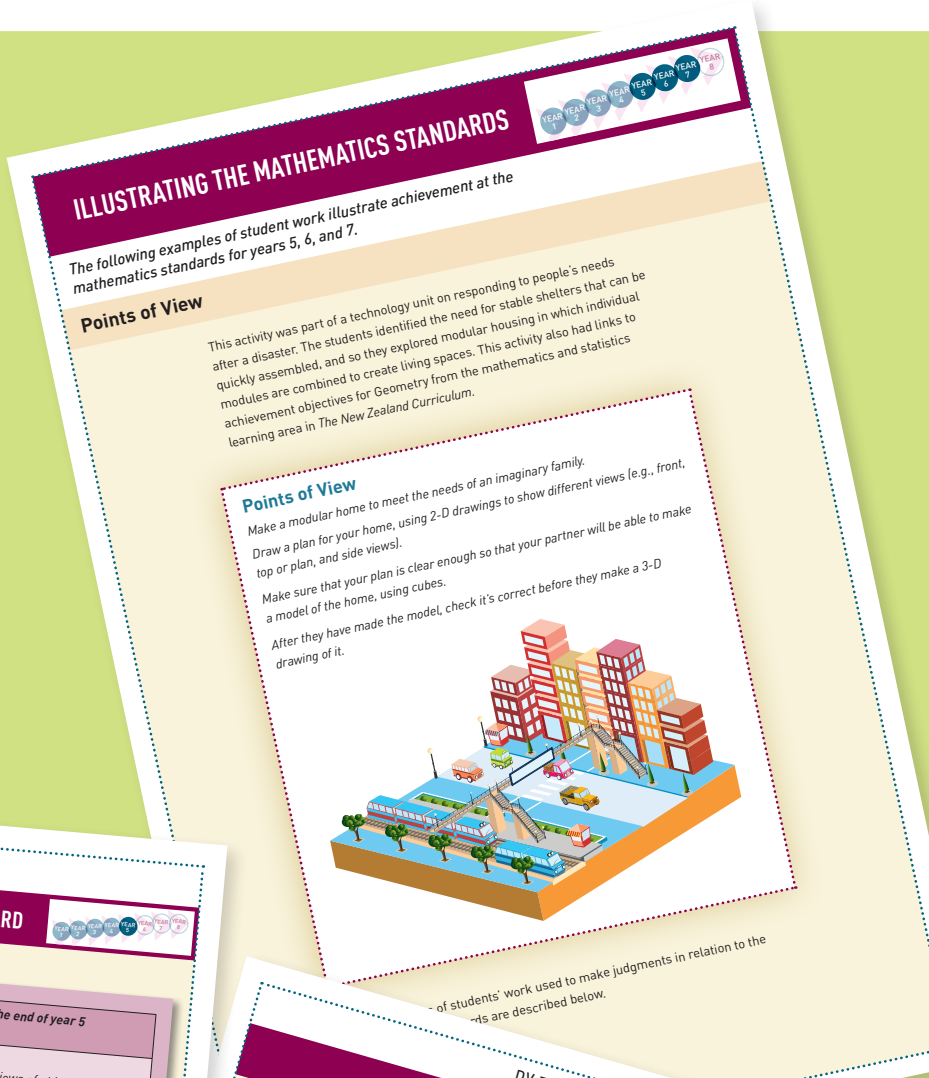
Some features of students' work used to make judgments in relation to the mathematics standards are described below.

› EXAMPLE

By the end of year 5 and year 6: Points of View

The task gives the context (a technology unit, with links to geometry) in which students identified a need for modular housing. These two illustrations are linked, in that students Theo and Peter are working together on the task, one planning a model and the other constructing it.

The illustrations show parts of each student's response to the task, including Theo's notes and a comment made by Peter. There are also annotations, which make explicit what each student is doing (independently of the teacher). The discussion paragraph identifies how Theo is achieving at the year 5 standard and Peter at the year 6 standard.



ILLUSTRATING THE MATHEMATICS STANDARDS

The following examples of student work illustrate achievement at the mathematics standards for years 5, 6, and 7.

Points of View

This activity was part of a technology unit on responding to people's needs after a disaster. The students identified the need for stable shelters that can be quickly assembled, and so they explored modular housing in which individual modules are combined to create living spaces. This activity also had links to achievement objectives for Geometry from the mathematics and statistics learning area in The New Zealand Curriculum.

Points of View

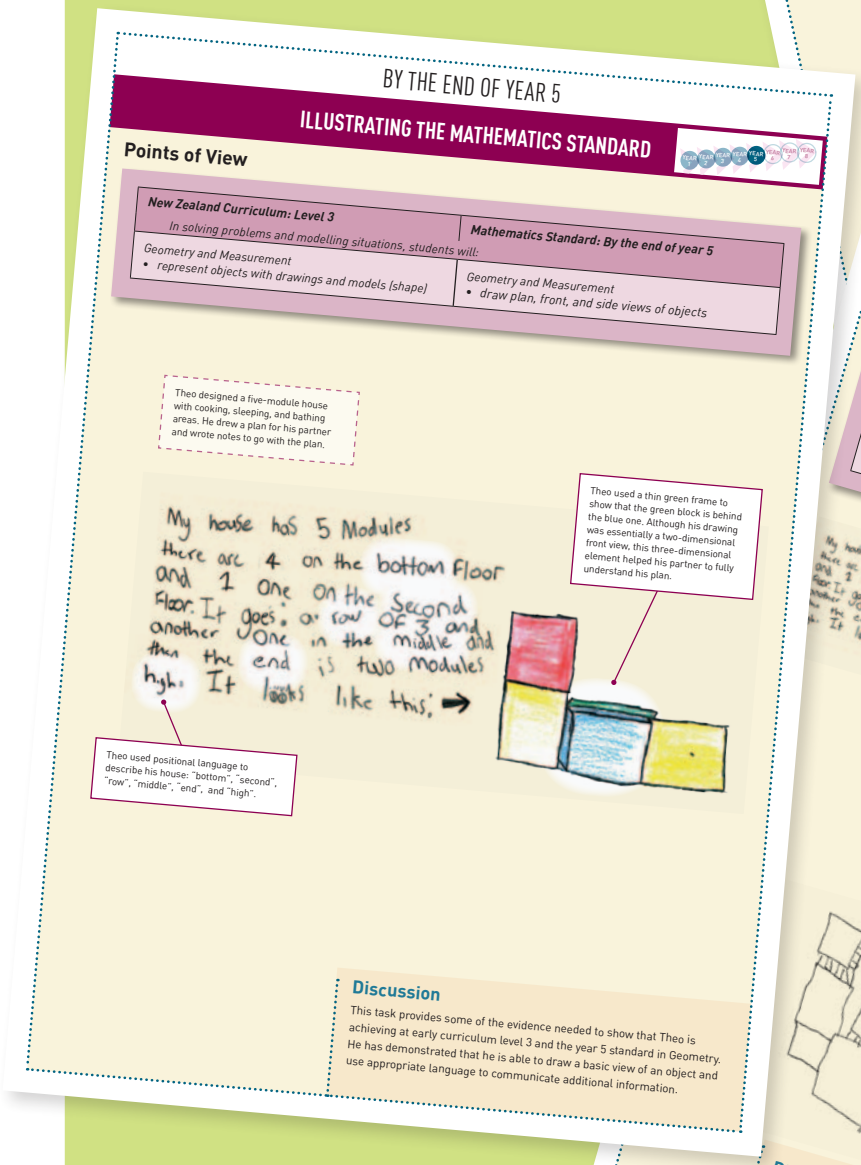
Make a modular home to meet the needs of an imaginary family.

Draw a plan for your home, using 2-D drawings to show different views (e.g., front, top or plan, and side views).

Make sure that your plan is clear enough so that your partner will be able to make a model of the home, using cubes.

After they have made the model, check it's correct before they make a 3-D drawing of it.

of students' work used to make judgments in relation to the ds are described below.



BY THE END OF YEAR 5

ILLUSTRATING THE MATHEMATICS STANDARD

Points of View

New Zealand Curriculum: Level 3 In solving problems and modelling situations, students will:	Mathematics Standard: By the end of year 5
Geometry and Measurement • represent objects with drawings and models (shape)	Geometry and Measurement • draw plan, front, and side views of objects

Theo designed a five-module house with cooking, sleeping, and bathing areas. He drew a plan for his partner and wrote notes to go with the plan.

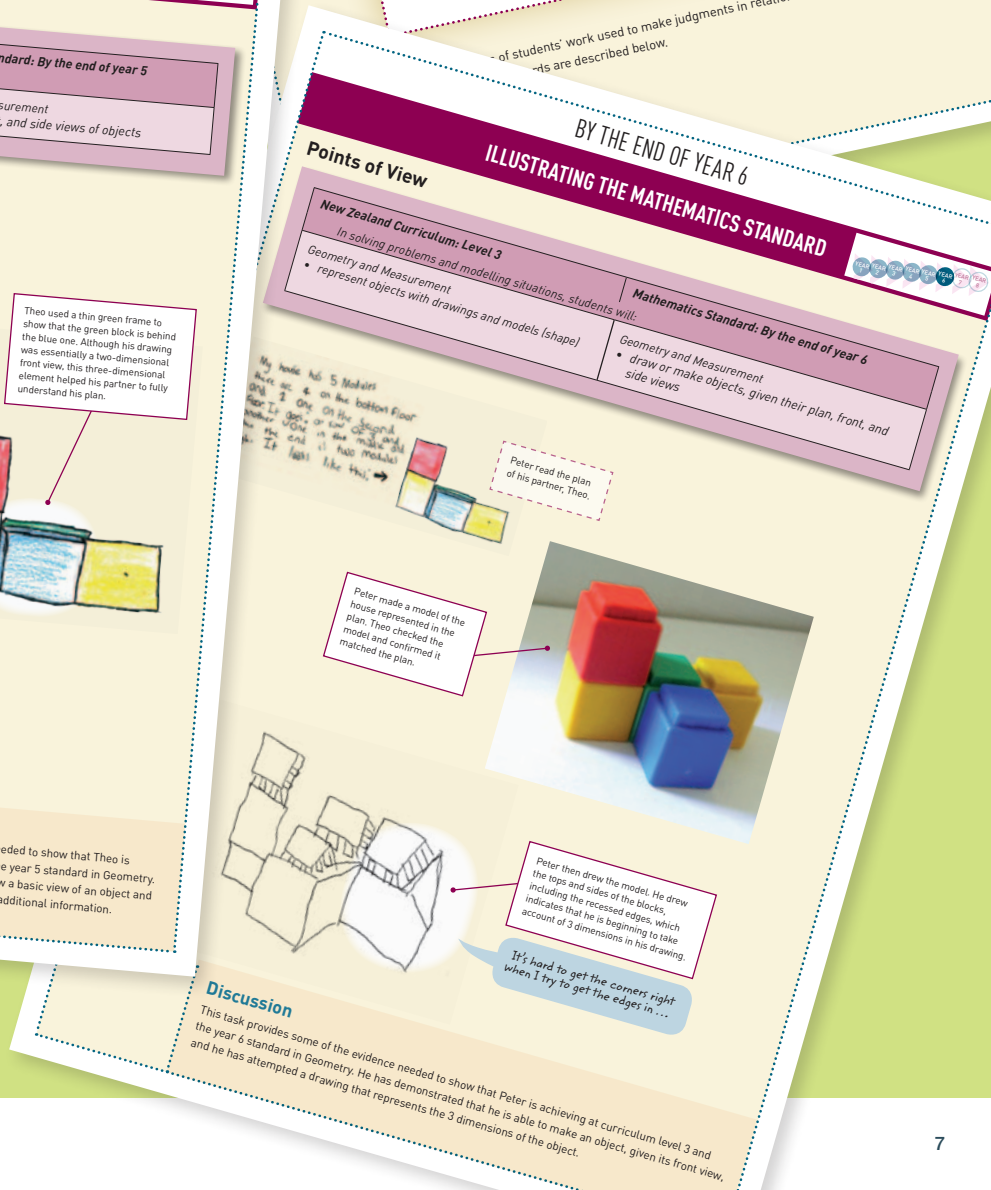
My house has 5 Modules there are 4 on the bottom Floor and 1 one on the second Floor. It goes: a row of 3 and another one in the middle and then the end is two modules high. It looks like this: →

Theo used a thin green frame to show that the green block is behind the blue one. Although his drawing was essentially a two-dimensional front view, this three-dimensional element helped his partner to fully understand his plan.

Theo used positional language to describe his house: "bottom", "second", "row", "middle", "end", and "high".

Discussion

This task provides some of the evidence needed to show that Theo is achieving at early curriculum level 3 and the year 5 standard in Geometry. He has demonstrated that he is able to draw a basic view of an object and use appropriate language to communicate additional information.



BY THE END OF YEAR 6

ILLUSTRATING THE MATHEMATICS STANDARD

Points of View

New Zealand Curriculum: Level 3 In solving problems and modelling situations, students will:	Mathematics Standard: By the end of year 6
Geometry and Measurement • represent objects with drawings and models (shape)	Geometry and Measurement • draw or make objects, given their plan, front, and side views

Peter read the plan of his partner, Theo.

Peter made a model of the house represented in the plan. Theo checked the model and confirmed it matched the plan.

Peter then drew the model. He drew the tops and sides of the blocks, including the recessed edges, which indicates that he is beginning to take account of 3 dimensions in his drawing.

It's hard to get the corners right when I try to get the edges in ...

Discussion

This task provides some of the evidence needed to show that Peter is achieving at curriculum level 3 and the year 6 standard in Geometry. He has demonstrated that he is able to make an object, given its front view, and he has attempted a drawing that represents the 3 dimensions of the object.

Key points

The main purpose of the illustrations is to show how a task and a student's response can demonstrate what it means to meet some aspects of a specific standard. The initial sets of illustrations are in the two National Standards books, and further illustrations at a range of year levels are being developed and placed online.

The writing illustrations and some of the mathematics illustrations show examples of tasks with students' actual work as well as describing what the students have done. The reading illustrations show a specific reading text and describe what students do as they read, think critically, and respond to it.

Because the same task can allow students to demonstrate aspects of the expectations for more than one standard, some of the illustrations compare students' responses to the same task at different year levels.

The illustrations can help teachers to understand the standards and to plan their teaching of the curriculum so that their students will meet all aspects of the relevant standards. They can be a focus for teachers' discussion of the expectations for their students, and they can support teachers in gathering evidence of whether their students' work meets particular standards.

Guiding questions *He pātai*

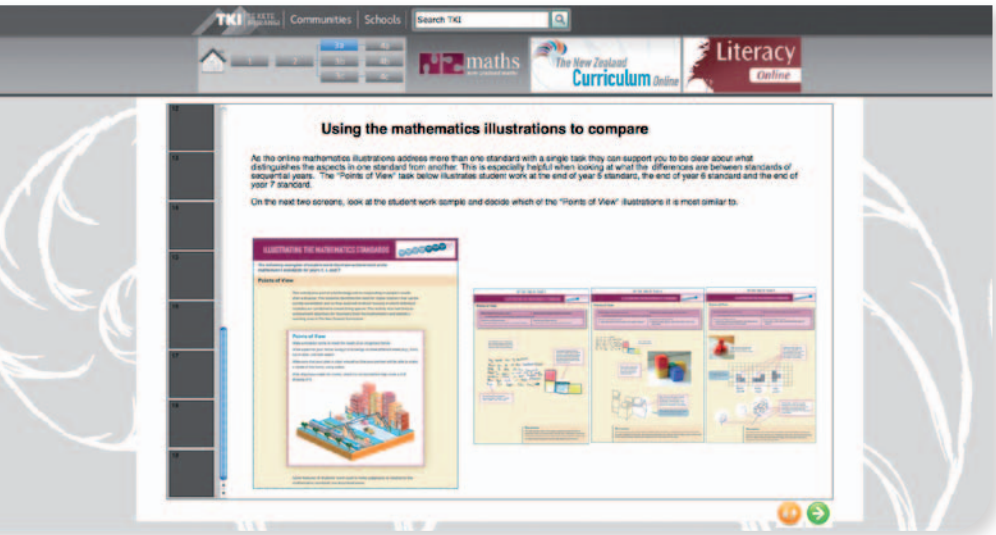
- Am I able to recognise when a student's work meets a particular standard?
- How could our school use the illustrations to ensure that all our teachers are confident in using the National Standards?

Online professional development for teachers

A series of modules have been developed to help teachers and other education professionals work with the National Standards in reading, writing, and mathematics. A key message throughout the modules is that the standards can be integral to effective practice rather than an "extra" task over and above it.

These modules are intended to provide clear, comprehensive, and concise information for teachers and schools working with the standards. They include interactive activities specifically designed to address confusion about the standards that has been highlighted in the implementation to date.

The modules are available from:
www.nationalstandardspld.co.nz



Supporting resources

- **The New Zealand Curriculum**
  Ministry of Education (2007). *The New Zealand Curriculum for English-medium Teaching and Learning in Years 1–13*. Wellington: Learning Media. Available at: http://nzcurriculum.tki.org.nz
- **The Reading and Writing Standards**
  Ministry of Education (2009). *The New Zealand Curriculum Reading and Writing Standards for years 1–8*. Wellington: Learning Media.
- **The Mathematics Standards**
  Ministry of Education (2009). *The New Zealand Curriculum Mathematics Standards for years 1–8*. Wellington: Learning Media.
- **Illustrations that support the National Standards**
  http://nzcurriculum.tki.org.nz/National-Standards
- **Literacy Online**
  www.literacyonline.tki.org.nz
- **The Literacy Learning Progressions**
  Ministry of Education (2010). *The Literacy Learning Progressions*. Wellington: Learning Media.
- **The English Language Learning Progressions**
  Ministry of Education (2008). *The English Language Learning Progressions* Wellington: Learning Media.
- **Mathematics curriculum support website**
  www.nzmaths.co.nz
- **Numeracy Professional Development Projects (2008)**
  http://nzmaths.co.nz/numeracy-development-projects-books
  Book 1: The Number Framework. Wellington: Ministry of Education.
- **Ready to Read teacher support materials**
  www.readytoread.tki.org.nz
- ***Junior Journal* teacher support materials**
  www.juniorjournal.tki.org.nz
- ***School Journal* teacher support materials**
  www.schooljournal.tki.org.nz

We want your feedback!

We'd like to know what you think about Curriculum Updates. If you are willing to be involved in a five-minute online survey, please go to:
www.learningmedia.co.nz
(All responses go into a draw for a $100 book voucher.)

The New Zealand Curriculum
Update

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