



WORK SAMPLE PORTFOLIO

The 2012 portfolios are a resource to support teachers in planning and implementation of the Foundation to Year 10 Australian Curriculum in the learning area. Each portfolio comprises a collection of student work illustrating evidence of student learning in relation to the achievement standard. At every year level there are three portfolios illustrating satisfactory, above satisfactory and below satisfactory achievement in relation to the standard.

Each portfolio comprises a collection of different student work selected by state and territory nominees, and annotated and reviewed by classroom teachers and other curriculum experts. Each work sample in the portfolio varies in terms of how much time was available to complete the task and/or the degree of scaffolding provided by the teacher.

There is no pre-determined number of student work samples in a portfolio nor are they sequenced in any particular order. Together as a portfolio, the samples provide evidence of all aspects of the achievement standard unless otherwise specified.

As the Australian Curriculum is progressively implemented in schools, the portfolios will continue to be reviewed and enhanced in relation to their comprehensiveness in coverage of the achievement standard and their representation of the diversity of student work that can be used to highlight evidence of student learning.

THIS PORTFOLIO - Year 2 Mathematics

This portfolio comprises a number of work samples drawn from a range of assessment tasks, namely:

Sample 1	Statistics - Graph audit
Sample 2	Number - Number and money
Sample 3	Number - Tooth fairy
Sample 4	Measurement - Patterns in time
Sample 5	Number - Block of chocolate
Sample 6	Number - Partial array
Sample 7	Number - Skipping along
Sample 8	Geometry - Flip, slide, turn
Sample 9	Measurement - Bike track
Sample 10	Measurement - Objects longer than my thumb
Sample 11	Number - My coins
Sample 12	Geometry - Features of three-dimensional objects
Sample 13	Geometry - Shapes

This portfolio of student work demonstrates the recognition of increasing and decreasing number sequences involving 2s, 3s, 5s and 6s and counting to and from 1000 (WS2, WS6, WS7). The student draws two-dimensional shapes and orders them using informal units of length or area (WS13). The student divides a group of coins or a block of chocolate to create equal groups and demonstrates an understanding of the connection between the group and its fraction (WS11, WS5). The student calculates how an amount of money could be calculated using different combinations of Australian coins (WS2, WS3). The student divides a given number into equal groups and performs

December 2012 Page 1 of 31



Year 2
Satisfactory

simple addition and subtraction calculations using a range of strategies (WS6, WS2). The student tells the time to the quarter hour (WS4) and flips, slides and turns an object (WS8). The student recognises features of three-dimensional objects (WS12) and draws and interprets simple maps of familiar locations (WS9). The student collects data, creates lists, tables and picture graphs and makes sense of the data collected (WS1).

The annotated samples in this portfolio provide evidence of most (but not necessarily all) aspects of the achievement standard. The following aspects of the achievement standard are not evident in this portfolio:

- use a calendar to identify the date and the months including the seasons
- describes the outcomes of everyday events.

December 2012 Page 2 of 31





Statistics - Graph audit

Relevant parts of the achievement standard

By the end of Year 2, students recognise increasing and decreasing number sequences involving 2s, 3s and 5s. They represent multiplication and division by grouping into sets. They associate collections of Australian coins with their value. Students identify the missing element in a number sequence. Students recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. They explain the effects of one-step transformations. Students make sense of collected information.

Students count to and from 1000. They perform simple addition and subtraction calculations using a range of strategies. They divide collections and shapes into halves, quarters and eighths. Students order shapes and objects using informal units. They tell time to the quarter hour and use a calendar to identify the date and the months included in seasons. They draw two- dimensional shapes. They describe outcomes for everyday events. Students collect data from relevant questions to create lists, tables and picture graphs.

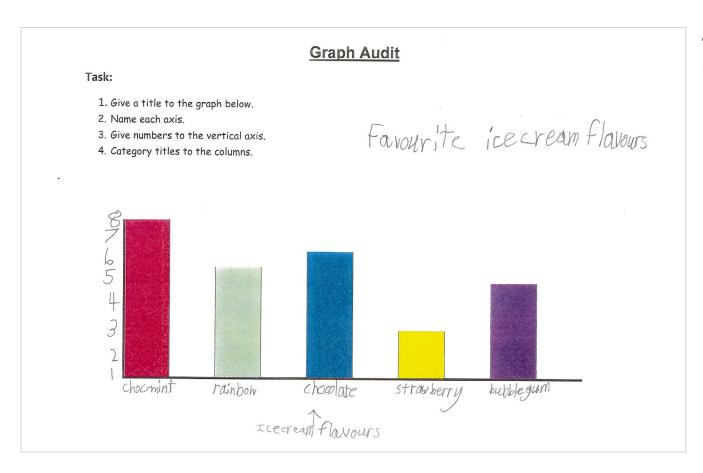
Summary of task

Students discussed different ways to display information that they had collected during some class activities. During class time they were asked to display information and interpret data displays.

December 2012 Page 3 of 31



Statistics - Graph audit



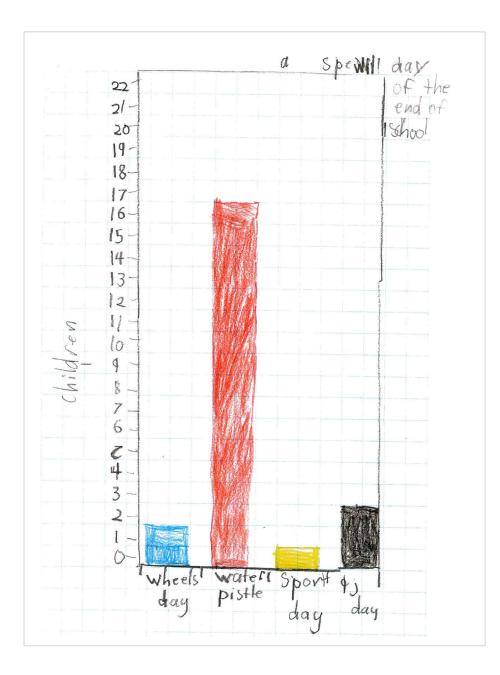
ACARA acknowledges the contribution of Australian teachers and education authorities in providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

Annotations

Notes

Acknowledgement

Statistics - Graph audit



Annotations

Draws graph but does not reflect the correct information.

Acknowledgement

ACARA acknowledges the contribution of Australian teachers and education authorities in providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

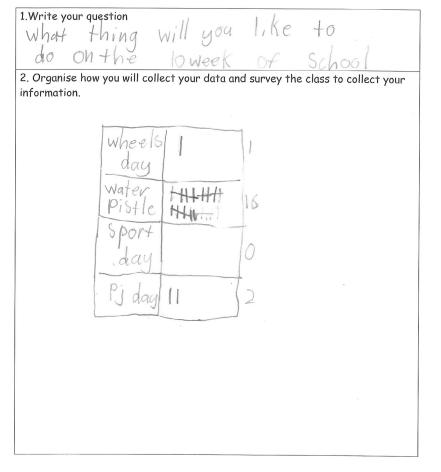
December 2012 Page 5 of 31



Statistics - Graph audit

Data Collection and Graphing

<u>TASK:</u> Collect and graph data on what activity students in our class would like to take part in on the last week of school to celebrate the end of year.



Annotations

Matches the tally marks to the totals in the frequency table.

Acknowledgement

ACARA acknowledges the contribution of Australian teachers and education authorities in providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

December 2012 Page 6 of 31





Number - Number and money

Relevant parts of the achievement standard

By the end of Year 2, students recognise increasing and decreasing number sequences involving 2s, 3s and 5s. They represent multiplication and division by grouping into sets. They associate collections of Australian coins with their value. Students identify the missing element in a number sequence. Students recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. They explain the effects of one-step transformations. Students make sense of collected information.

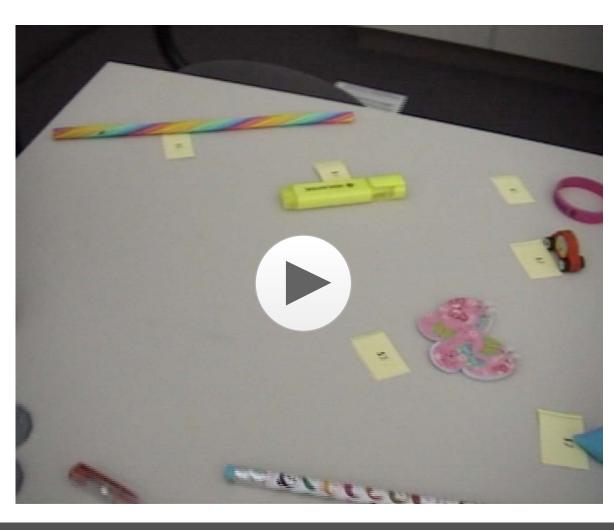
Students count to and from 1000. They perform simple addition and subtraction calculations using a range of strategies. They divide collections and shapes into halves, quarters and eighths. Students order shapes and objects using informal units. They tell time to the quarter hour and use a calendar to identify the date and the months included in seasons. They draw two-dimensional shapes. They describe outcomes for everyday events. Students collect data from relevant questions to create lists, tables and picture graphs.

Summary of task

Students had set up a class shop with items at different prices. After working with each other purchasing, selling and calculating total prices and change given, students were assessed by their teacher. The teacher directed the transaction to assess multiple parts of the achievement standard.

December 2012 Page 7 of 31

Number - Number and money



Annotations

Acknowledgement
ACARA acknowledges the contribution of Australian teachers and education authorities in
providing the tasks and work samples. The annotations are referenced to the Australian Curriculum

achievement standards.





Number - Tooth fairy

Relevant parts of the achievement standard

By the end of Year 2, students recognise increasing and decreasing number sequences involving 2s, 3s and 5s. They represent multiplication and division by grouping into sets. They associate collections of Australian coins with their value. Students identify the missing element in a number sequence. Students recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. They explain the effects of one-step transformations. Students make sense of collected information.

Students count to and from 1000. They perform simple addition and subtraction calculations using a range of strategies. They divide collections and shapes into halves, quarters and eighths. Students order shapes and objects using informal units. They tell time to the quarter hour and use a calendar to identify the date and the months included in seasons. They draw two-dimensional shapes. They describe outcomes for everyday events. Students collect data from relevant questions to create lists, tables and picture graphs.

Summary of task

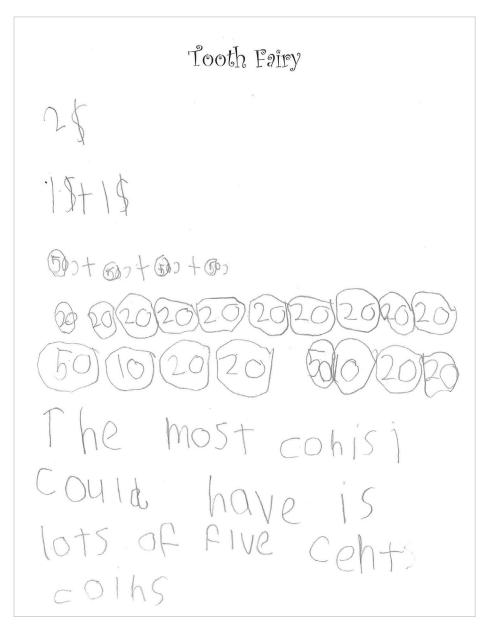
Students had been studying array and grouping. They were asked to solve a problem by using grouping and arrays.

December 2012 Page 9 of 31



Year 2
Satisfactory

Number - Tooth fairy



Annotations

Demonstrates equivalent amounts of money using different coin denominations.

Accurately uses an addition symbol when adding coins.

Accurately calculates \$2 using combinations of different coins.

Recognises that 5 cents is the smallest coin and would require the most coins to make \$2.

Acknowledgement

ACARA acknowledges the contribution of Australian teachers and education authorities in providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

December 2012 Page 10 of 31





Units of measurement - Patterns in time

Relevant parts of the achievement standard

By the end of Year 2, students recognise increasing and decreasing number sequences involving 2s, 3s and 5s. They represent multiplication and division by grouping into sets. They associate collections of Australian coins with their value. Students identify the missing element in a number sequence. Students recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. They explain the effects of one-step transformations. Students make sense of collected information.

Students count to and from 1000. They perform simple addition and subtraction calculations using a range of strategies. They divide collections and shapes into halves, quarters and eighths. Students order shapes and objects using informal units. They tell time to the quarter hour and use a calendar to identify the date and the months included in seasons. They draw two-dimensional shapes. They list outcomes for everyday events. Students collect data from relevant questions to create lists, tables and picture graphs.

Summary of task

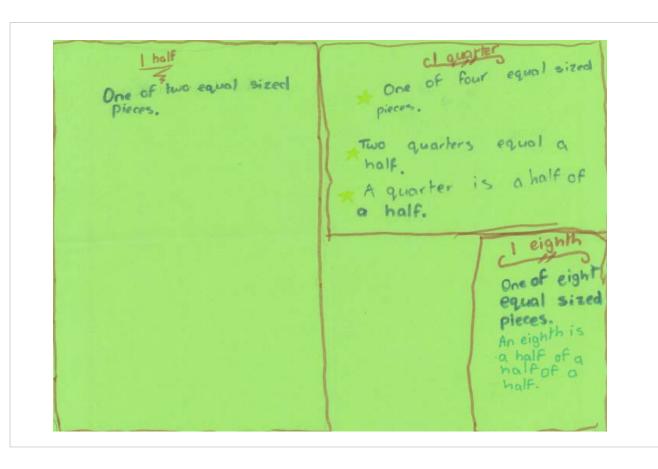
Students wrote the minutes around an analogue clock and described the number patterns created e.g. 5, 10, 15...

Students divided the clock into quarters and highlighted numbers related to 'half past', 'quarter to' and 'quarter past'.

December 2012 Page 11 of 31



Units of measurement – Patterns in time



Annotations

Describes and demonstrates their understanding of one half, one quarter and one eighth.

Acknowledgement

ACARA acknowledges the contribution of Australian teachers and education authorities in providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

December 2012 Page 12 of 31





Number - Block of chocolate

Relevant parts of the achievement standard

By the end of Year 2, students recognise increasing and decreasing number sequences involving 2s, 3s and 5s. They represent multiplication and division by grouping into sets. They associate collections of Australian coins with their value. Students identify the missing element in a number sequence. Students recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. They explain the effects of one-step transformations. Students make sense of collected information.

Students count to and from 1000. They perform simple addition and subtraction calculations using a range of strategies. They divide collections and shapes into halves, quarters and eighths. Students order shapes and objects using informal units. They tell time to the quarter hour and use a calendar to identify the date and the months included in seasons. They draw two-dimensional shapes. They describe outcomes for everyday events. Students collect data from relevant questions to create lists, tables and picture graphs.

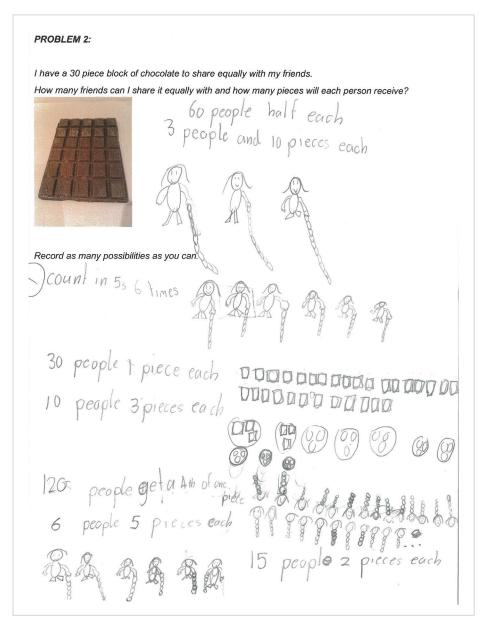
Summary of task

Students were asked to divide a block of chocolate into different groups to accommodate different possibilities of division of the block of chocolate.

December 2012 Page 13 of 31



Number - Block of chocolate



Annotations

Creates number sentences and pictures to show multiple solutions to a question.

Recognises that when dividing, numbers can be smaller than a whole.

Represents division by making equal groups.

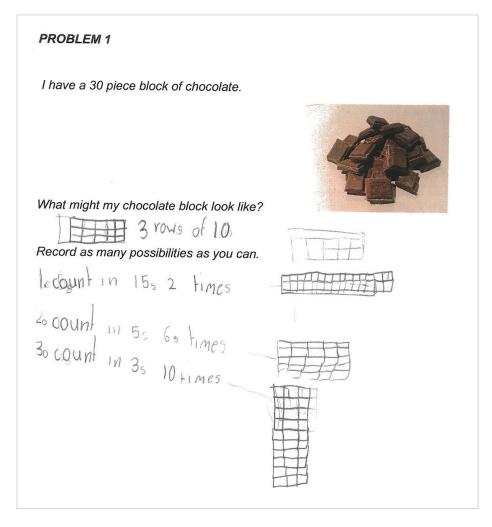
Acknowledgement

ACARA acknowledges the contribution of Australian teachers and education authorities in providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

December 2012 Page 14 of 31



Number - Block of chocolate



Annotations

Represents multiplication in an array.

Count by 3s and 5s to a given number.

Demonstrates an understanding that 3 rows of 10 looks different to 10 rows of 3 but equals the same amount.

Acknowledgement

ACARA acknowledges the contribution of Australian teachers and education authorities in providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

December 2012 Page 15 of 31





Number - Partial array

Relevant parts of the achievement standard

By the end of Year 2, students recognise increasing and decreasing number sequences involving 2s, 3s and 5s. They represent multiplication and division by grouping into sets. They associate collections of Australian coins with their value. Students identify the missing element in a number sequence. Students recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. They explain the effects of one-step transformations. Students make sense of collected information.

Students count to and from 1000. They perform simple addition and subtraction calculations using a range of strategies. They divide collections and shapes into halves, quarters and eighths. Students order shapes and objects using informal units. They tell time to the quarter hour and use a calendar to identify the date and the months included in seasons. They draw two-dimensional shapes. They describe outcomes for everyday events. Students collect data from relevant questions to create lists, tables and picture graphs.

Summary of task

Students had been studying arrays and grouping. They were asked to solve a problem by using grouping and arrays.

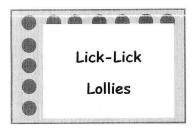
December 2012 Page 16 of 31



Number - Partial array

I have a packet of lollies in an array.

The trouble is some of the lollies are covered by the label.



How many lollies are there altogether in the packet? 35

Show how you worked it out?

I counted in 5's in my head. I had to counted 5's 7 times.

I chose 5's because there is columns, of 5's

Are there any other ways of working out the total amount of lollies in the packet?

1. counting in 7's 2. count in 2's and when you get to last row count in l's s

Annotations

Articulates strategies used to find a solution.

Recognises that is is easier to count in 5s rather than in 7s.

Demonstrates alternative ways to solve the problem.

ACARA acknowledges the contribution of Australian teachers and education authorities in providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

December 2012 Page 17 of 31





Number - Skipping along

Relevant parts of the achievement standard

By the end of Year 2, students recognise increasing and decreasing number sequences involving 2s, 3s and 5s. They represent multiplication and division by grouping into sets. They associate collections of Australian coins with their value. Students identify the missing element in a number sequence. Students recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. They explain the effects of one-step transformations. Students make sense of collected information.

Students count to and from 1000. They perform simple addition and subtraction calculations using a range of strategies. They divide collections and shapes into halves, quarters and eighths. Students order shapes and objects using informal units. They tell time to the quarter hour and use a calendar to identify the date and the months included in seasons. They draw two-dimensional shapes. They describe outcomes for everyday events. Students collect data from relevant questions to create lists, tables and picture graphs.

Summary of task

Throughout the year students have engaged in many activities counting forwards and backwards to and from 1000 starting at given points, initially counting by 2s, 3s, 5s and 10s and then other sequences. Students were encouraged to use strategies to help them complete the number patterns such as using a hundreds chart and an empty number line.

December 2012 Page 18 of 31



Year 2
Satisfactory

Number - Skipping along

Skipping along!

1.	Start at	315 and skip	count by 5's to	fill in the	missing numbers:
----	----------	--------------	-----------------	-------------	------------------

315, 320, 225, 320, 335, 350 35, 260, 365.

2. Start at 673 and skip count backwards by 3's to fill in the missing numbers:

673, 670, 669, 666, 663, 659, 666, 665, 659

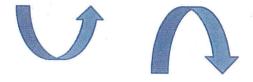
3. Fill in the missing numbers in the sequence below if you skip count by 7's:

552, 659, 566, 574, 582, 59, 59, 531, 538

4. Create a sequence starting from any number and skip count by $6\ensuremath{^\prime s}$

7,13,20,27,34,41,48,55,62,69,16,83

5.	Can you think of a reason why skip counting is
	useful? for my to bles.
	No.
	T X
	(And the second



Annotations

Starts at a number above 300 and skip counts by 5s.

Demonstrates skip counting using 3's and decreasing the number sequence.

Demonstrates skip counting by 5s, 6s and 7s and an increasing number sequence.

Explains one use of skip counting.

Acknowledgement

ACARA acknowledges the contribution of Australian teachers and education authorities in providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

December 2012 Page 19 of 31





Transformation - Flip, slide, turn

Relevant parts of the achievement standard

By the end of Year 2, students recognise increasing and decreasing number sequences involving 2s, 3s and 5s. They represent multiplication and division by grouping into sets. They associate collections of Australian coins with their value. Students identify the missing element in a number sequence. Students recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. They explain the effects of one-step transformations. Students make sense of collected information.

Students count to and from 1000. They perform simple addition and subtraction calculations using a range of strategies. They divide collections and shapes into halves, quarters and eighths. Students order shapes and objects using informal units. They tell time to the quarter hour and use a calendar to identify the date and the months included in seasons. They draw two-dimensional shapes. They list outcomes for everyday events. Students collect data from relevant questions to create lists, tables and picture graphs.

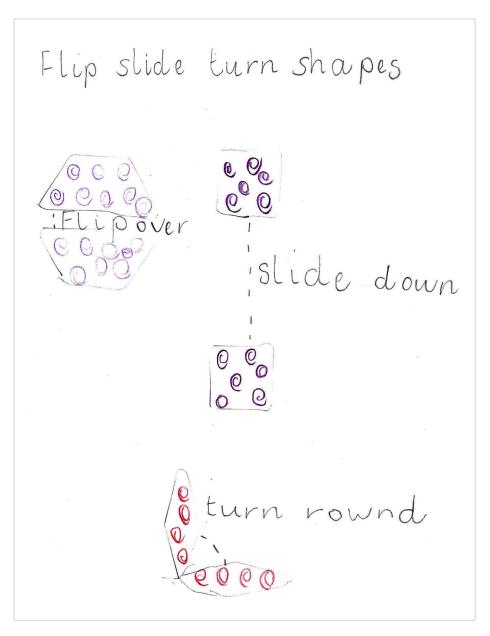
Summary of task

Students were asked to describe a transformation using diagrams and words.

December 2012 Page 20 of 31



Transformation - Flip, slide, turn



Annotations

Flips, slides and turns a two-dimensional shape.

Acknowledgement

ACARA acknowledges the contribution of Australian teachers and education authorities in providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

December 2012 Page 21 of 31





Measurement - Bike track

Relevant parts of the achievement standard

By the end of Year 2, students recognise increasing and decreasing number sequences involving 2s, 3s and 5s. They represent multiplication and division by grouping into sets. They associate collections of Australian coins with their value. Students identify the missing element in a number sequence. Students recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. They explain the effects of one-step transformations. Students make sense of collected information.

Students count to and from 1000. They perform simple addition and subtraction calculations using a range of strategies. They divide collections and shapes into halves, quarters and eighths. Students order shapes and objects using informal units. They tell time to the quarter hour and use a calendar to identify the date and the months included in seasons. They draw two- dimensional shapes. They list outcomes for everyday events. Students collect data from relevant questions to create lists, tables and picture graphs.

Summary of task

Students, in pairs, were provided with grid paper to design a bike track within the school grounds or the local park. Students discussed their layout, such as ensuring the route did not cross itself and provided an entry/exit to the school grounds.

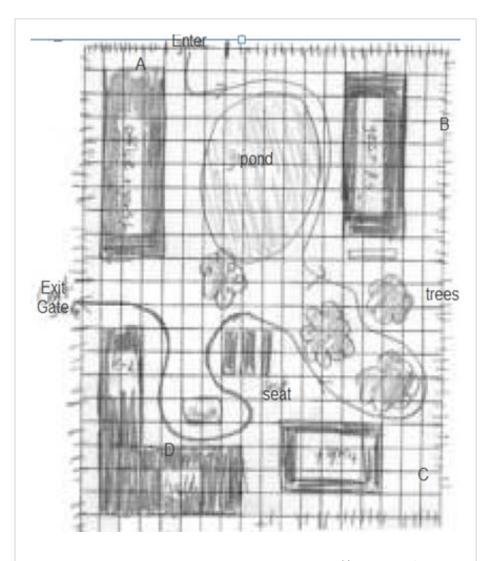
Students drew their map and were asked to describe their bike tracks, using positional language, in relation to other structures or pathways.

Please note the grid paper is not relevant to the task.

December 2012 Page 22 of 31



Measurement - Bike track



Come in the gate. Go left at the pond. Keep going down to the trees and go around the seat and head to building C. Tuin around, go up and out the gark.

Annotations

Designs and positions objects on a map.

Uses positional language to write a description of how to navigate through school grounds.

Acknowledgement

ACARA acknowledges the contribution of Australian teachers and education authorities in providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

December 2012 Page 23 of 31





Measurement - Objects longer than my thumb

Relevant parts of the achievement standard

By the end of Year 2, students recognise increasing and decreasing number sequences involving 2s, 3s and 5s. They represent multiplication and division by grouping into sets. They associate collections of Australian coins with their value. Students identify the missing element in a number sequence. Students recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. They explain the effects of one-step transformations. Students make sense of collected information.

Students count to and from 1000. They perform simple addition and subtraction calculations using a range of strategies. They divide collections and shapes into halves, quarters and eighths. Students order shapes and objects using informal units. They tell time to the quarter hour and use a calendar to identify the date and the months included in seasons. They draw two-dimensional shapes. They describe outcomes for everyday events. Students collect data from relevant questions to create lists, tables and picture graphs.

Summary of task

Students were asked to collect objects from the classroom that they could measure using their thumb as a measuring device. They were required to measure the objects and order them according to their length in comparison to their thumb.

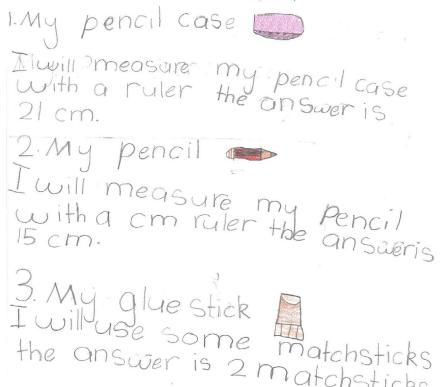
December 2012 Page 24 of 31



Measurement - Objects longer than my thumb

Find objects that are longer than your thumb. Can you measure and order them by length?

How will you measure your objects?
How can you best record your findings?
How do you know you are right?
What difficulties did you have measuring some of your objects?
Could everyone have exactly the same answers? Why or why not?



Annotations

Finds three objects longer than student's thumb: pencil case, pencil and glue stick.

Uses a ruler to accurately measure each item

Measures a glue stick using informal units such as matchsticks.

Acknowledgement

ACARA acknowledges the contribution of Australian teachers and education authorities in providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

December 2012 Page 25 of 31





Number - My coins

Relevant parts of the achievement standard

By the end of Year 2, students recognise increasing and decreasing number sequences involving 2s, 3s and 5s. They represent multiplication and division by grouping into sets. They associate collections of Australian coins with their value. Students identify the missing element in a number sequence. Students recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. They explain the effects of one-step transformations. Students make sense of collected information.

Students count to and from 1000. They perform simple addition and subtraction calculations using a range of strategies. They divide collections and shapes into halves, quarters and eighths. Students order shapes and objects using informal units. They tell time to the quarter hour and use a calendar to identify the date and the months included in seasons. They draw two-dimensional shapes. They describe outcomes for everyday events. Students collect data from relevant questions to create lists, tables and picture graphs.

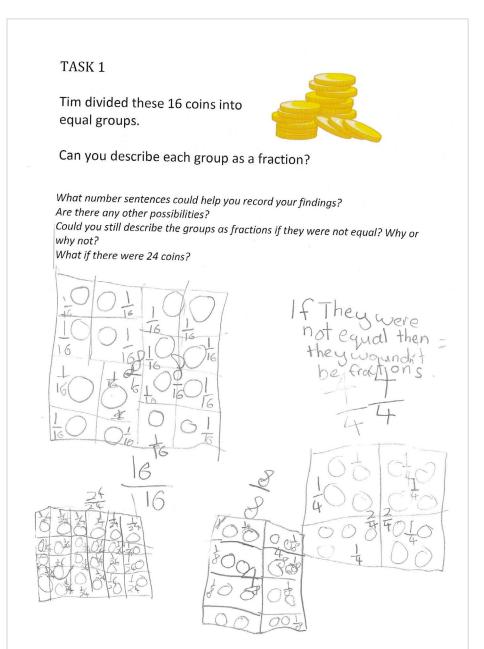
Summary of task

Students were given 16 'coins' and asked to divide them into equal groups and describe each group as a fraction of the original number. Students were asked to use number sentences to record their findings and to think of as many possibilities as they could.

December 2012 Page 26 of 31



Number - My coins



Annotations

Demonstrates an understanding of dividing objects into equal groups allows for equivalent fractions to be written.

Shows that 8/16 is the same as 1/2 of the group.

Shows how each group must have the same number of items in it to represent the fraction as quarters.

Shows that 2/16 is the same as 1/8.

Acknowledgement

ACARA acknowledges the contribution of Australian teachers and education authorities in providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

December 2012 Page 27 of 31





Geometry - Features of three-dimensional objects

Relevant parts of the achievement standard

By the end of Year 2, students recognise increasing and decreasing number sequences involving 2s, 3s and 5s. They represent multiplication and division by grouping into sets. They associate collections of Australian coins with their value. Students identify the missing element in a number sequence. Students recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. They explain the effects of one-step transformations. Students make sense of collected information.

Students count to and from 1000. They perform simple addition and subtraction calculations using a range of strategies. They divide collections and shapes into halves, quarters and eighths. Students order shapes and objects using informal units. They tell time to the quarter hour and use a calendar to identify the date and the months included in seasons. They draw two-dimensional shapes. They list outcomes for everyday events. Students collect data from relevant questions to create lists, tables and picture graphs.

Summary of task

Students have had prior experience with three-dimensional shapes and use of correct terminology. They have used Venn diagrams.

Students were asked to group collections of three-dimensional objects which demonstrated the following features:

- three-dimensional objects that are prisms
- three-dimensional objects without vertices
- three-dimensional objects with curved surfaces
- three-dimensional objects with flat surfaces

December 2012 Page 28 of 31



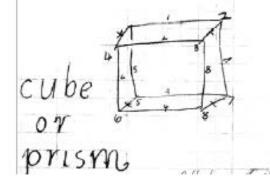
Geometry - Features of three-dimensional objects

What am I?

- 1. I have 4 sids.
- 2. I am a 2d shap.
- 3. I have 4 corner.
- 4.and they r all the sam lath.
- 5. Im like a sqaru but I am on my sid.

I am a diamend

I have & edgens. I have & cornis. What shape am I?



Annotations

Creates and types riddle on a computer.

Constructs a two-dimensional shape using information technology.

Describes some features of a threedimensional object.

Acknowledgement

ACARA acknowledges the contribution of Australian teachers and education authorities in providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

December 2012 Page 29 of 31





Geometry - Shapes

Relevant parts of the achievement standard

By the end of Year 2, students recognise increasing and decreasing number sequences involving 2s, 3s and 5s. They represent multiplication and division by grouping into sets. They associate collections of Australian coins with their value. Students identify the missing element in a number sequence. Students recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. They explain the effects of one-step transformations. Students make sense of collected information.

Students count to and from 1000. They perform simple addition and subtraction calculations using a range of strategies. They divide collections and shapes into halves, quarters and eighths. Students order shapes and objects using informal units. They tell time to the quarter hour and use a calendar to identify the date and the months included in seasons. They draw two-dimensional shapes. They describe outcomes for everyday events. Students collect data from relevant questions to create lists, tables and picture graphs.

Summary of task

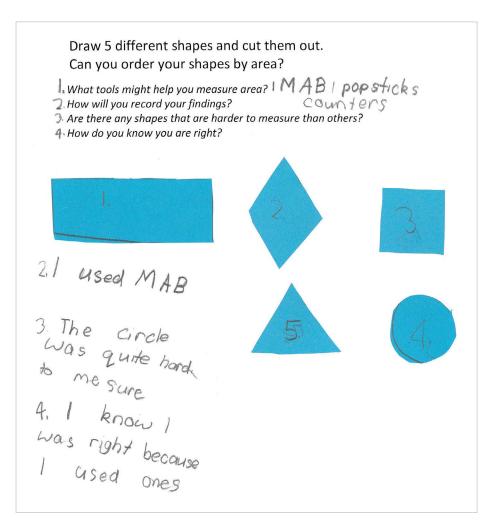
Students had an understanding of two-dimensional shapes and their properties from previous units. They had completed class activities on length and area. They were asked to draw five different two-dimensional shapes of different sizes and then order the shapes according to their area. Students were prompted to think about what tools would be the best to use to complete the task and how they would go about it before starting. They were given access to mathematical materials.

December 2012 Page 30 of 31



Year 2
Satisfactory

Geometry - Shapes



Annotations

Understands that there are various informal units that could be used to compare the areas of each shape.

Draws two-dimensional shapes.

Orders two-dimensional shapes based on their area.

Recognises that measuring the area of a circle is more complicated than that of a 4 sided shape.

Acknowledgement

ACARA acknowledges the contribution of Australian teachers and education authorities in providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

December 2012 Page 31 of 31