

Mathematics

Year 2

Below Satisfactory

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	Number – Skipping along
Sample 2	Geometry – Shapes
Sample 3	Measurement – Longer than my thumb
Sample 4	Number – My coins
Sample 5	Statistics – Graph audit
Sample 6	Number – Tooth fairy
Sample 7	Number – Block of chocolate
Sample 8	Number – Partial array
Sample 9	Geometry – Flip, slide, turn
Sample 10	Units of measurement – Patterns in time

This portfolio of student work demonstrates the recognition of increasing and decreasing number sequences involving 5s and 6s and the identification of the missing element in a number sequence (WS1). The student draws two-dimensional shapes and orders them using informal units of length or area (WS2). The student divides a group of coins to create equal groups and demonstrates an understanding of the connection between the group and its fraction (WS4). The student measures objects using informal units (WS3). The student calculates how an amount of money could be calculated using different combinations of Australian coins (WS6). The student divides a given number into equal groups and solves written problems (WS7, WS8). The student tells the time (WS10). The student flips, slides and turns an object (WS9). The student collects data, creates lists, tables and picture graphs and makes sense of the data collected (WS5).

Mathematics

Year 2

Below Satisfactory

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:

- *recognise the features of the dimensional objects*
- *interpret simple maps of familiar locations*
- *use a calendar to identify the date and the months including the seasons.*

Mathematics

Year 2

Below Satisfactory

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.

Mathematics

Year 2

Below Satisfactory

Number – Skipping along

Skipping along!

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

315, 320, 325, 330, _____

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

673, 670, 667, 663, _____

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

_____, _____, _____, 582, 588, 595

4. Create a sequence starting from any number and skip count by 6's

0, 6, 12, 18, _____

5. Can you think of a reason why skip counting is useful? _____



Annotations

Counts forward accurately by 5 starting at a number beyond 300 to continue a pattern.

Counts forward accurately by 6 when continuing a pattern to the third term.

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.

Mathematics

Year 2

Below Satisfactory

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 would be the best tools to use to complete the task and how they would go about it before starting. They were given access to mathematical materials.

Mathematics

Year 2

Below Satisfactory

Geometry – Shapes

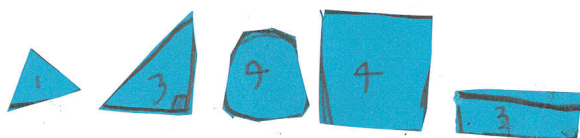
Draw 5 different shapes and cut them out.
Can you order your shapes by area?

What tools might help you measure area?

How will you record your findings?

Are there any shapes that are harder to measure than others?

How do you know you are right?



I leaded the shaps on each other

Annotations

Draws two-dimensional shapes.

Organises some shapes in order from smallest to largest using informal measurements.

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.

Mathematics

Year 2

Below Satisfactory

Measurement – 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.

Mathematics

Year 2

Below Satisfactory

Measurement – 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?

My pencil is
19 Metres
long. I ysed a
ruler.

Annotations

Measures the pencil with an error in the stated units.

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.

Mathematics

Year 2

Below Satisfactory

Measurement – Longer than my thumb

Annotations

My objects is
a sharpener
and the sharpener
is bigger then
my thumb.
my thumb
is bigger
sharpener.

Identifies and compares the length of an object using an informal measuring device.

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.

Mathematics

Year 2

Below Satisfactory

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.

Mathematics

Year 2

Below Satisfactory

Number – My coins

Tim divided these 16 coins into equal groups.



Can you describe each group as a fraction?

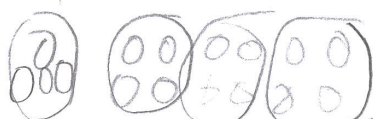
$$4 \times 4 = 16$$

What number sentences could help you record your findings?

Are there any other possibilities?

Could you still describe the groups as fractions if they were not equal? Why or why not?

What if there were 24 coins?



4 quarters of 4 = 16

1 quarter of sixteen = 4



1 quarter of sixteen = 8

They are not fractions if these are not equal

Annotations

Illustrates equal groups to form a total of 16.

Explains one quarter of 16.

Illustrates one half of a group.

Clarifies their understanding of fractions.

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.

Mathematics

Year 2

Below Satisfactory

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.

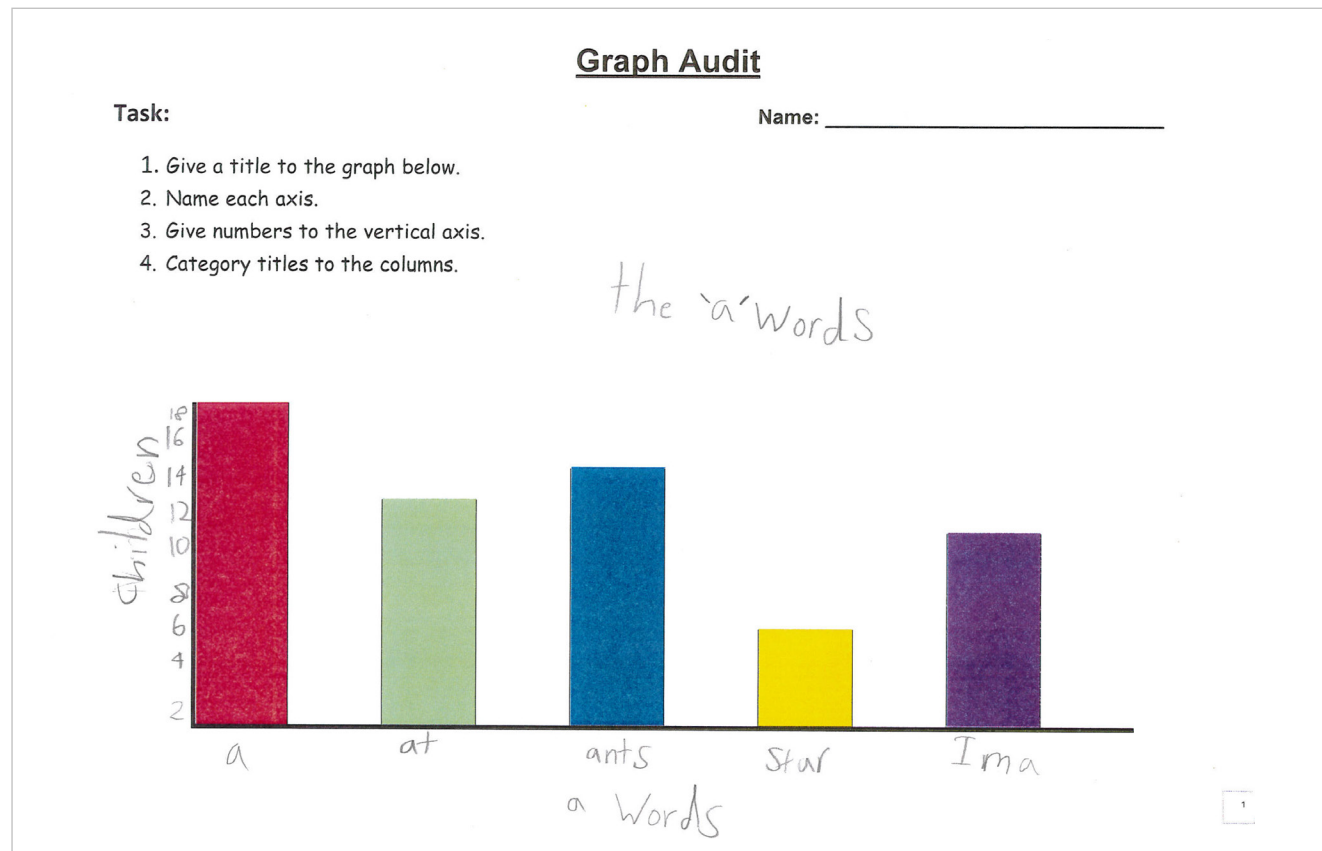
Summary of task

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

Mathematics

Year 2
Below Satisfactory

Statistics – Graph audit



Annotations

Shows numbers on vertical axis but not to scale.

Creates categories for each column.

Acknowledgement

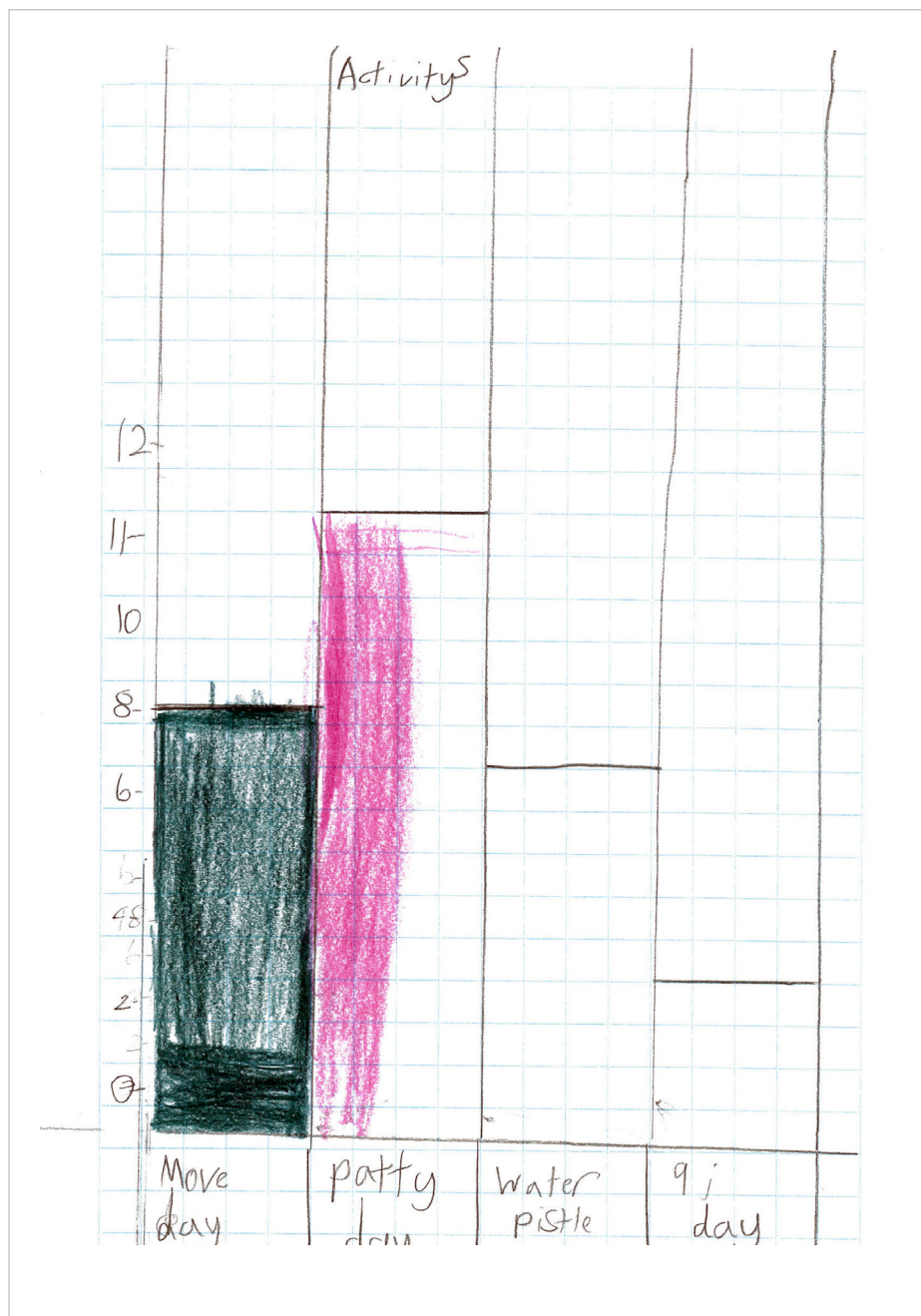
ACARA acknowledges the contribution of Australian teachers and education authorities in providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

Mathematics

Year 2

Below Satisfactory

Statistics – Graph audit



Annotations

Scale on vertical axis is accurate up to 10.

Constructs columns with some degree of accuracy.

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.

Mathematics

Year 2

Below Satisfactory

Statistics – Graph audit

Annotations

Data Collection and Graphing

TASK: 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.

1. Write your question

What will you choose from these activities

2. Organise how you will collect your data and survey the class to collect your information.

more day	patty day	water pistle	PJ day
<div> <div> </div> <div> </div> <div> 8</div> </div>	<div> <div> </div> <div> </div> <div> 11</div> </div>	<div> <div> </div> <div> </div> <div> </div> <div>7</div> </div>	<div> <div>PJ</div> <div>day</div> <div> </div> <div>3</div> </div>

3. Display your data using graph paper

Constructs a frequency distribution table with errors in the totals of the tally marks.

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.

Mathematics

Year 2

Below Satisfactory

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

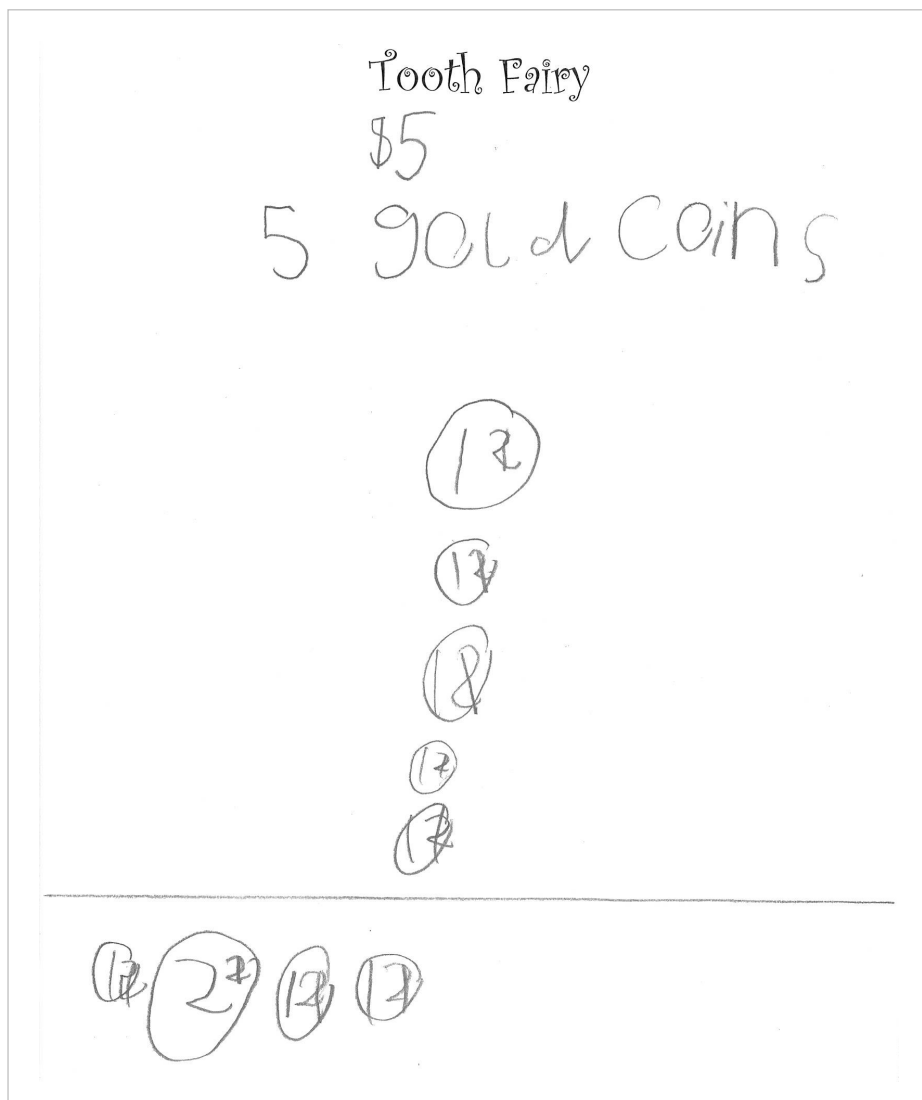
Students had been studying array and grouping. They were asked to solve a problem by using grouping and arrays.

Mathematics

Year 2

Below Satisfactory

Number – Tooth fairy



Annotations

Demonstrates equivalent amounts of money using different coin denominations.

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.

Mathematics

Year 2

Below Satisfactory

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.

Mathematics

Year 2

Below Satisfactory

Number – Block of chocolate

PROBLEM 2:

I have a 30 piece block of chocolate to share equally with my friends.

How many friends can I share it equally with and how many pieces will each person receive?



Record as many possibilities as you can.

30 people 1 pieces
6 people 6 pieces
6 people 4 pieces
27 pieces 3 people

Annotations

Demonstrates two combinations to make 30.

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.

Mathematics

Year 2

Below Satisfactory

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.

Mathematics

Year 2

Below Satisfactory

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 pointed and counted the lollies with my fingers. I chose this strategy because it is easy to count. I also counted the hidden dots.

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

Counting 2s. Count in 5s.

Annotations

Counts the number of hidden dots in an array.

Describes one correct strategy to solve the problem.

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.

Mathematics

Year 2

Below Satisfactory

Geometry – 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

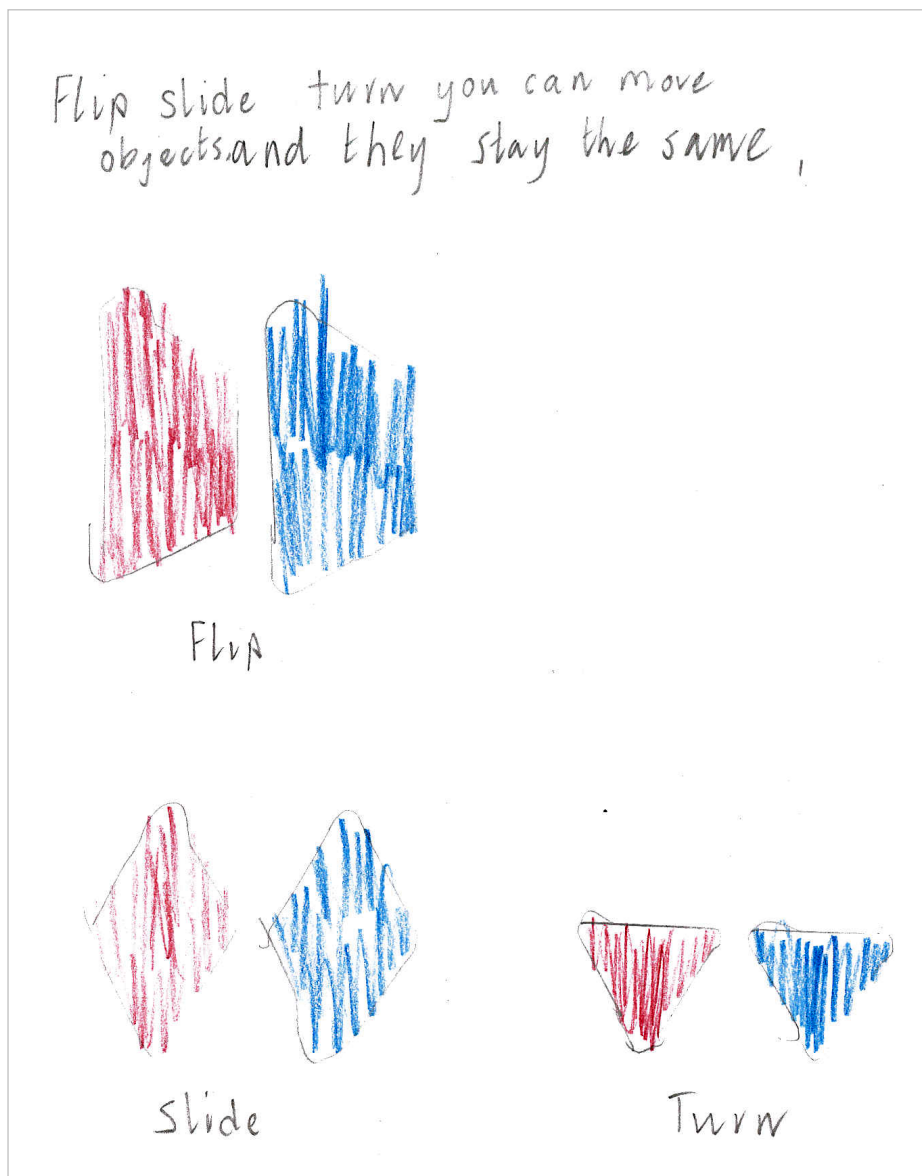
Students were asked to describe a transformation by using diagrams and words.

Mathematics

Year 2

Below Satisfactory

Geometry – Flip, slide, turn



Annotations

Slides a two-dimensional 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.

Mathematics

Year 2

Below Satisfactory

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, for example 5, 10, 15...

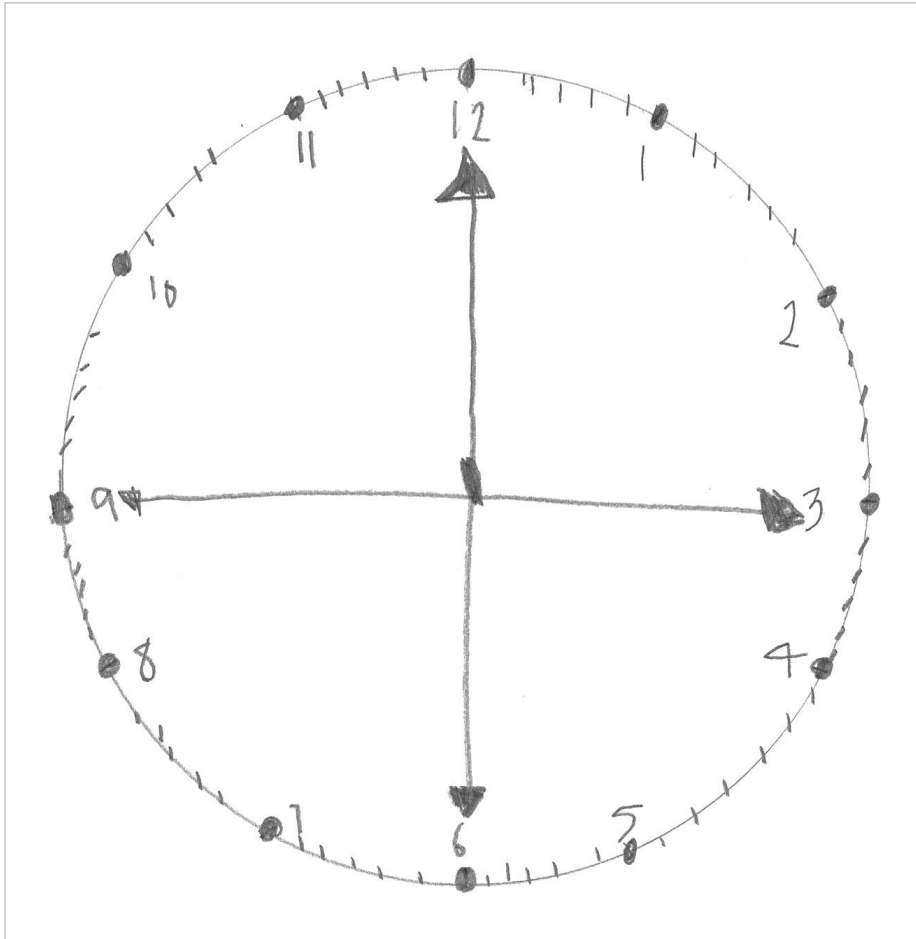
Students divided the clock into quarters and highlighted numbers related to 'half past', 'quarter to' and 'quarter past'.

Mathematics

Year 2

Below Satisfactory

Units of measurement – Patterns in time



Annotations

Demonstrates some understanding of the concept "o'clock"

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.