Mathematics

Year 2
Above 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	Number - Number and money
Sample 6	Number - Tooth fairy
Sample 7	Number - Block of chocolate
Sample 8	Number - Partial array
Sample 9	Geometry - Flip, slide, turn
Sample 10	Statistics - Graph audit

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 or a block of chocolate to create equal groups and demonstrates an understanding of the connection between the group and its fraction of a whole (WS4, WS7). The student measures objects using informal units of area (WS3). The student calculates how an amount of money could be calculated using different combinations of Australian coins (WS5, WS6). The student divides a given number into equal groups and performs simple addition and subtraction calculations using a range of strategies (WS7, WS8). The student collects data, creates lists, tables and picture graphs and makes sense of the data collected (WS10). The student flips, slides and turns an object (WS9).

Mathematics

Year 2
Above 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 three-dimensional objects
- interpret simple maps of familiar locations
- use a calendar to identify the date and the months including the seasons
- describe the outcomes of everyday events.

Mathematics

Year 2

Above 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.

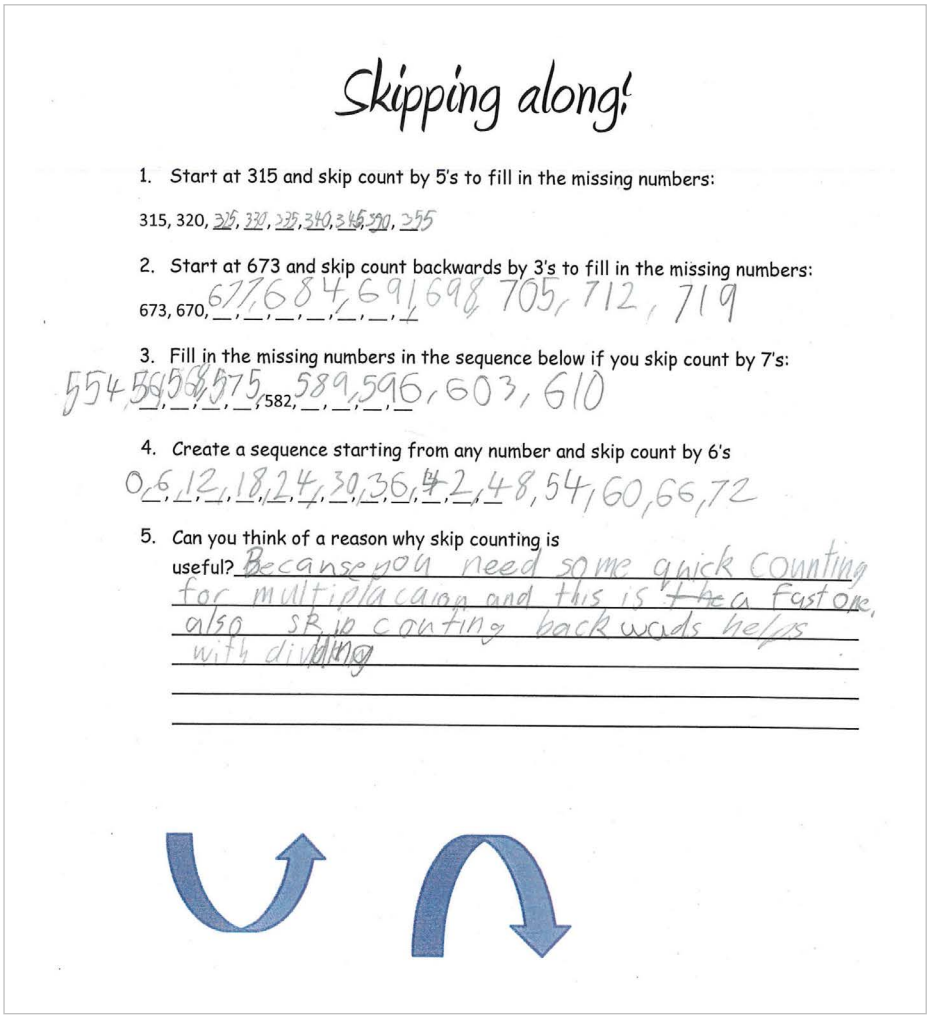
Summary of task

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
Above 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, 335, 340, 345, 350, 355

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

673, 670, 667, 664, 661, 658, 655, 652, 649

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

554, 561, 568, 575, 582, 589, 596, 603, 610

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

0, 6, 12, 18, 24, 30, 36, 42, 48, 54, 60, 66, 72

5. Can you think of a reason why skip counting is useful? Because you need some quick counting for multiplacaion and this is the a fast one, also skip counting backwards helps with diving

Annotations

Counts accurately forwards by 5s.

Counts accurately forwards and backwards by 7s.

Explains the reasons why skip counting can be helpful when calculating a multiplication or division 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
Above Satisfactory

Geometry - Shapes

Relevant parts of the achievement standard

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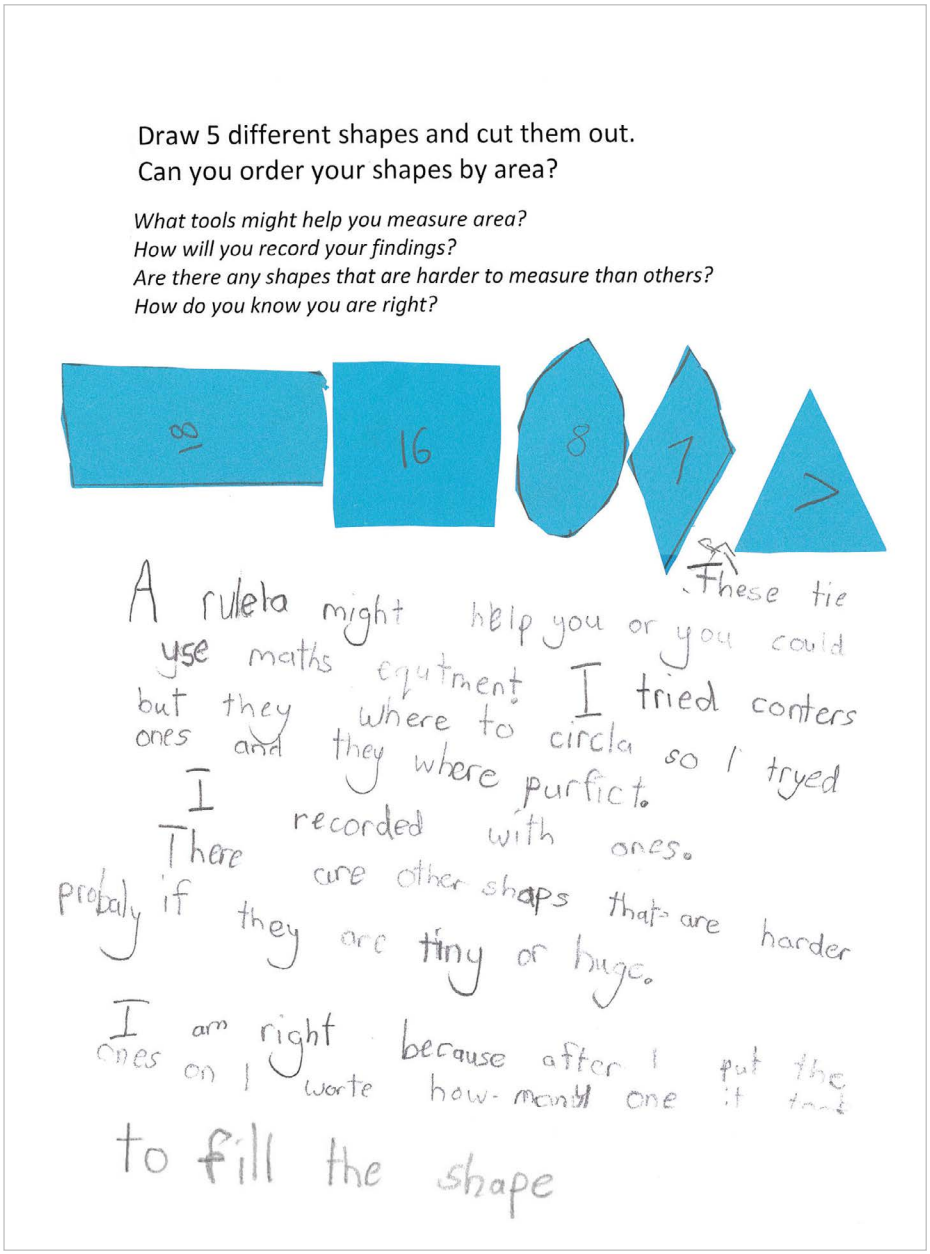
Summary of task

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
Above Satisfactory

Geometry - Shapes



Annotations

Draws two-dimensional shapes and orders them according the their area.

Recognises that different shapes can have the same area.

Explains why it is better to use 'ones' or a ruler to calculate the area of a shape.

Acknowledgement
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Mathematics

Year 2

Above Satisfactory

Measurement - Longer than my thumb

Relevant parts of the achievement standard

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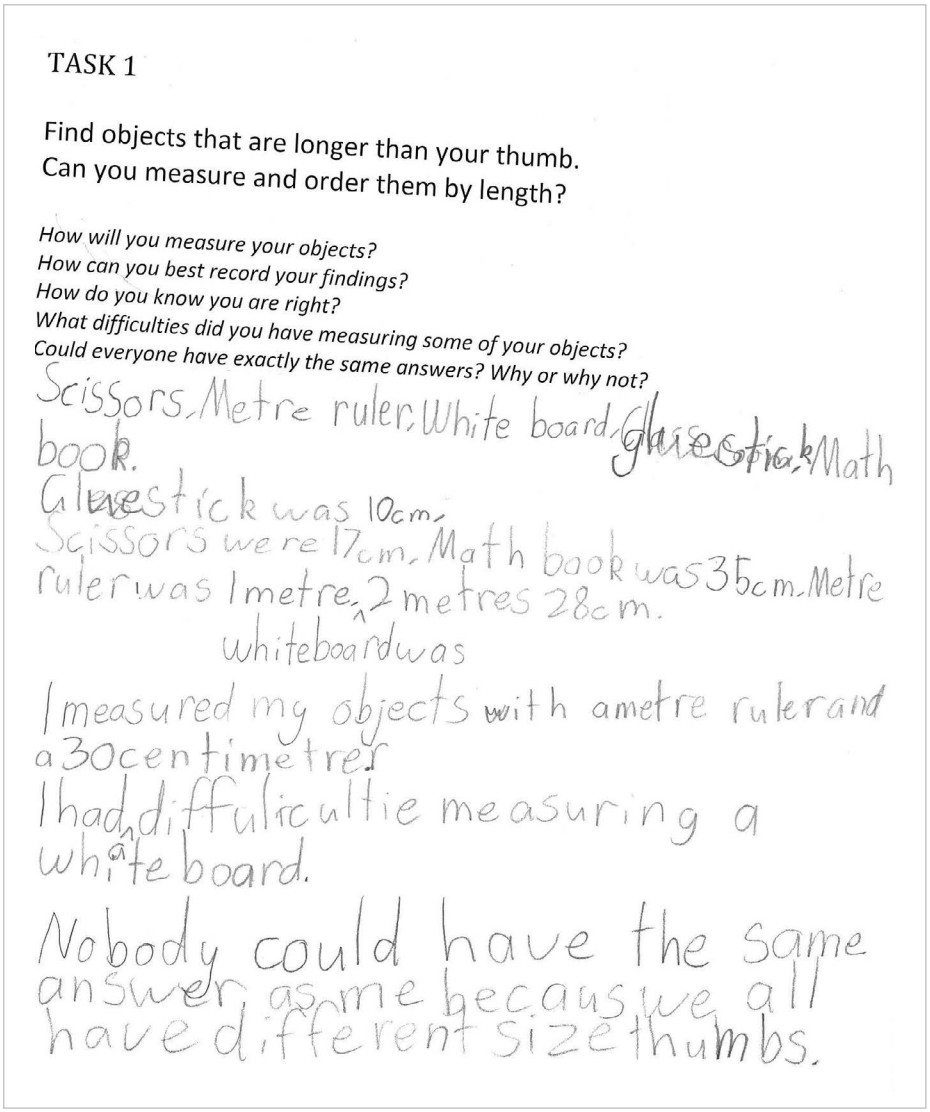
Summary of task

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
Above Satisfactory

Measurement - Longer than my thumb



TASK 1

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?

Scissors, Metre ruler, White board, glue stick, Math book.
Glue stick was 10cm.
Scissors were 17cm. Math book was 35cm. Metre ruler was 1 metre, 2 metres 28cm.
whiteboard was
I measured my objects with a metre ruler and a 30 centimetre.
I had diffulicultie measuring a whiteboard.
Nobody could have the same answer as me because we all have different size thumbs.

Annotations

Uses format units to measure objects longer that a thumb.

Demonstrates an understanding that different thumbs have different lengths and the measurement could be inaccurate.

Acknowledgement
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Mathematics

Year 2

Above Satisfactory

Number - My coins

Relevant parts of the achievement standard

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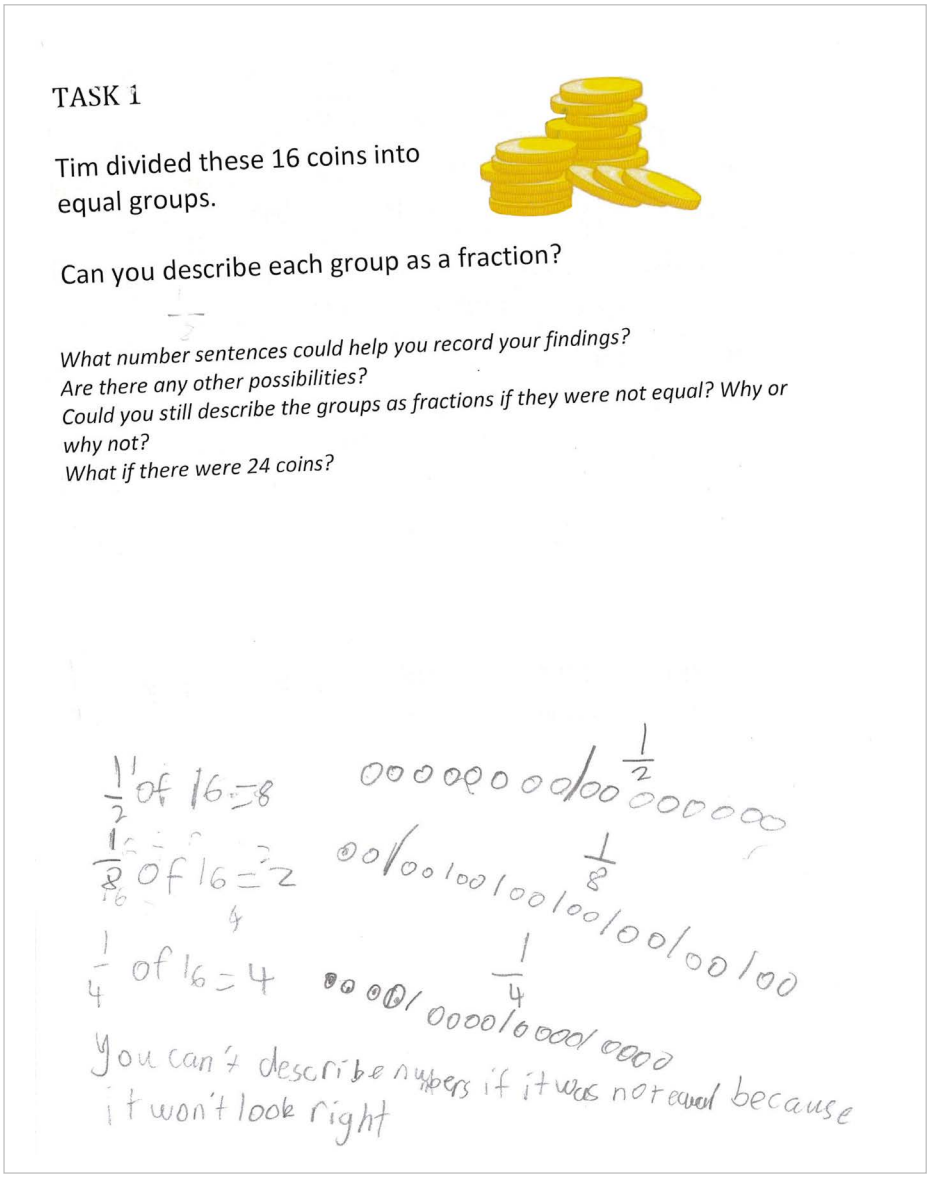
Summary of task

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
Above Satisfactory

Number - My coins



Annotations

Demonstrates that 16 can be partitioned into different groups to demonstrate fractions.

Demonstrates an understanding of fractions by drawing groups and writing number sentences.

Acknowledgement
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Year 2
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Number - Number and money

Relevant parts of the achievement standard

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Summary of task

Students 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.

Mathematics

Year 2
Above Satisfactory

Number - Number and money

Annotations

Acknowledgement
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Mathematics

Year 2
Above Satisfactory

Number - Tooth fairy

Relevant parts of the achievement standard

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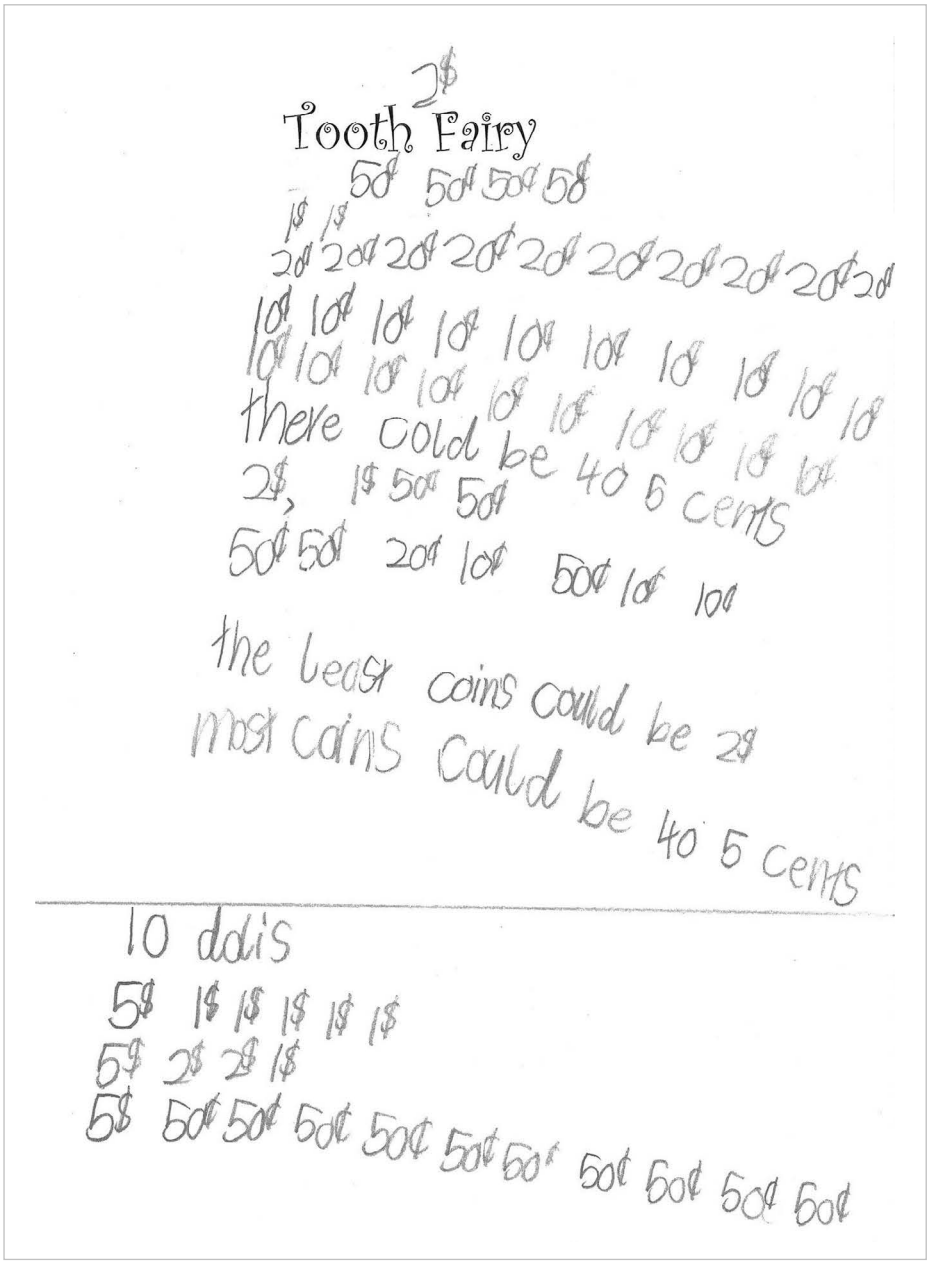
Summary of task

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

Mathematics

Year 2
Above Satisfactory

Number - Tooth fairy



Annotations

Demonstrates equivalent amounts of money using different coin denominations.

Demonstrates an understanding of the number of coins required to make a $1.

Accurately calculates $2 using combinations of different coins.

Recognises the smallest and largest number of coins that can make $2.

Acknowledgement
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Year 2
Above Satisfactory

Number - Block of chocolate

Relevant parts of the achievement standard

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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
Above Satisfactory

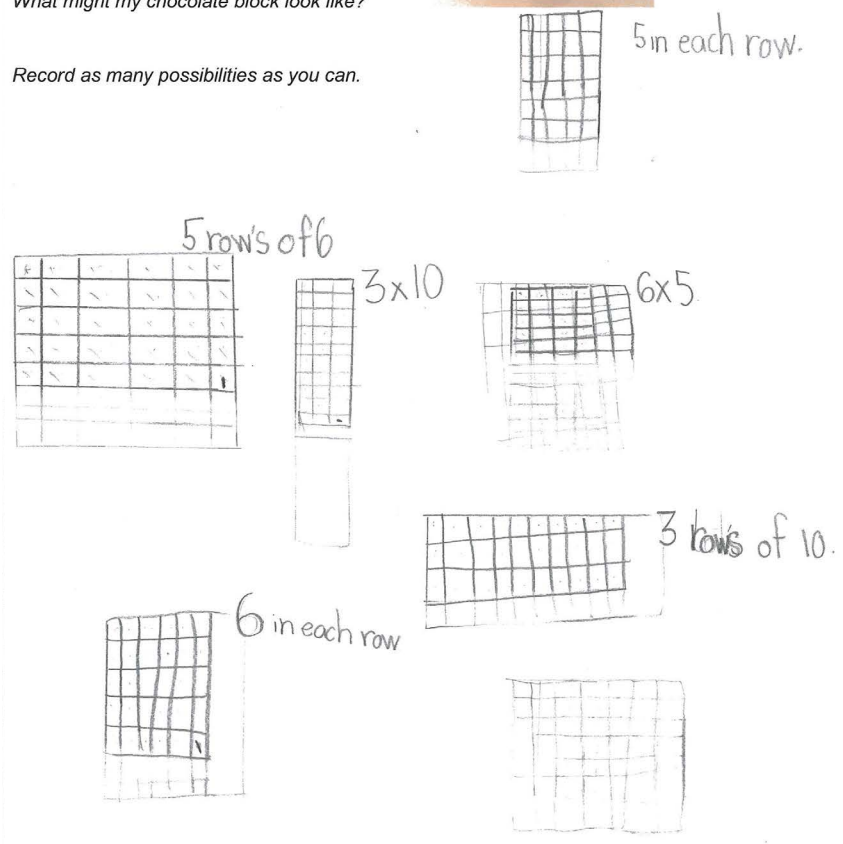
Number - Block of chocolate

PROBLEM 1

I have a 30 piece block of chocolate.

What might my chocolate block look like?

Record as many possibilities as you can.



Annotations

Recognises different ways of constructing a 30 piece block of chocolate.

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Mathematics

Year 2
Above Satisfactory

Number - Block of chocolate

I have a 30 piece block of chocolate to share equally with my friends.
How many fiends can I share it equally with and how many pieces will each person receive?

Record as many possibilies as you can.

1. you could share it with 30 people so evrey one will get 1 each.
2. you could share it with 6 people. Every one will get 5 pieces each.
3. you could share it with 5 people every one will get 6 pieces each.
4. you could share it with 10 people every one will get 3 pieces each.
5. you could share it with 3 people and evrey one will get 10 pieces each.
6. you could share it with people

Annotations

Explains the sharing of the chocolate in several ways.

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Year 2
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Number - Partial array

Relevant parts of the achievement standard

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Summary of task

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

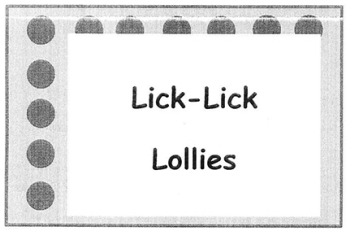
Mathematics

Year 2
Above Satisfactory

Number - Partial array

I have a packet of lollies in an array.

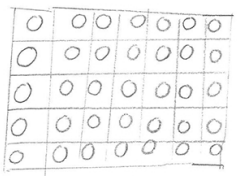
The trouble is some of the lollies are covered by the label.



How many lollies are there altogether in the packet?

Show how you worked it out?

35



This is what I saw in my head. And I counted in 5's

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

1) count in 1's but that would be too slow.
2) double the 5's so they make 10, then add the last 5.
3) count the 2's but leave the bottom row then add the last 7.
4)

Annotations

Explains the reasoning behind the answer of 35.

Explains different strategies for reaching the solution.

Acknowledgement
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Mathematics

Year 2
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Transformation – Flip, slide, turn

Relevant parts of the achievement standard

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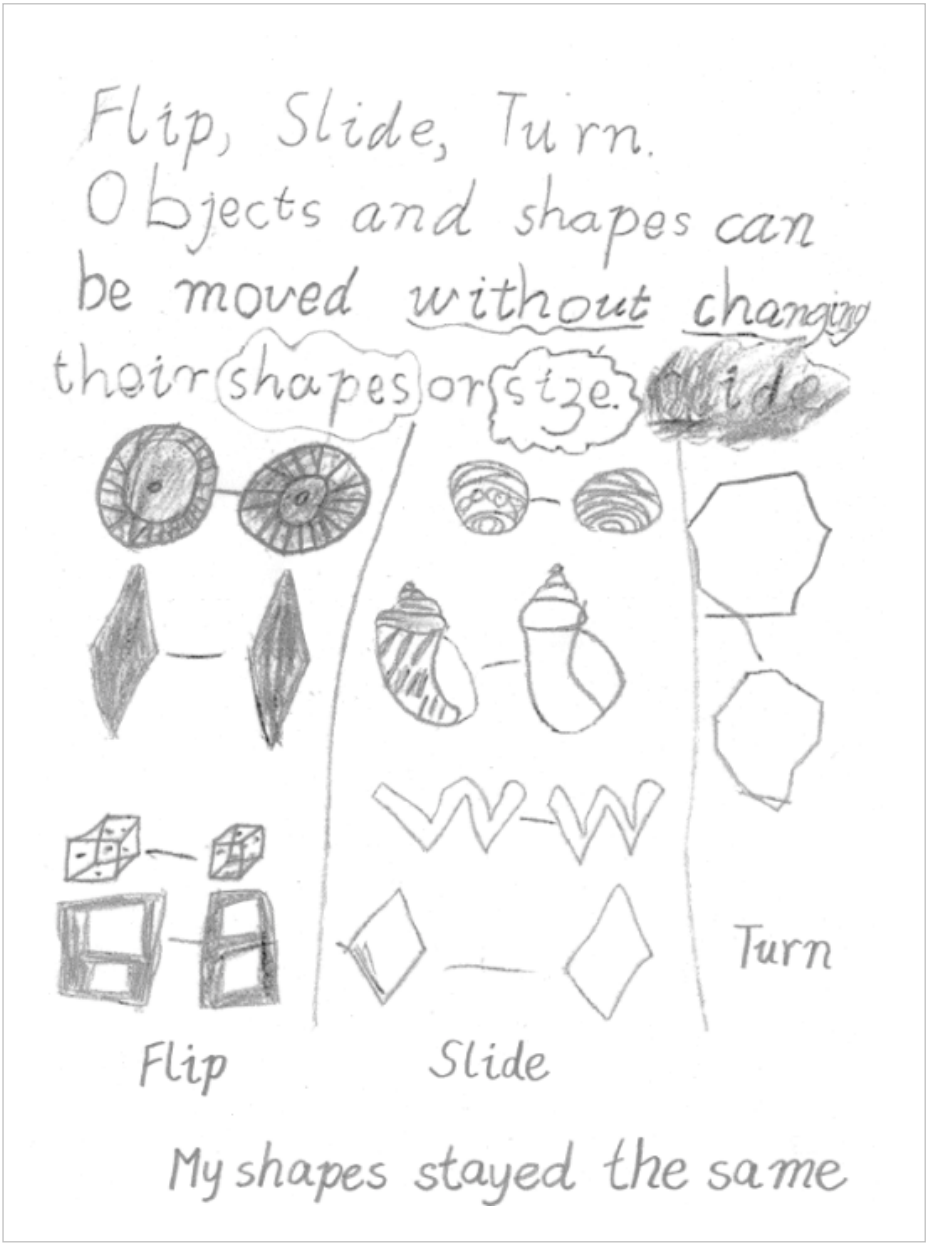
Summary of task

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

Mathematics

Year 2
Above Satisfactory

Transformation – Flip, slide, turn



Annotations

Demonstrates that after transformations (turn, flip and slide) the object still remains the same size, has the same area and lines are of equal length.

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Mathematics

Year 2

Above Satisfactory

Statistics - Graph audit

Relevant parts of the achievement standard

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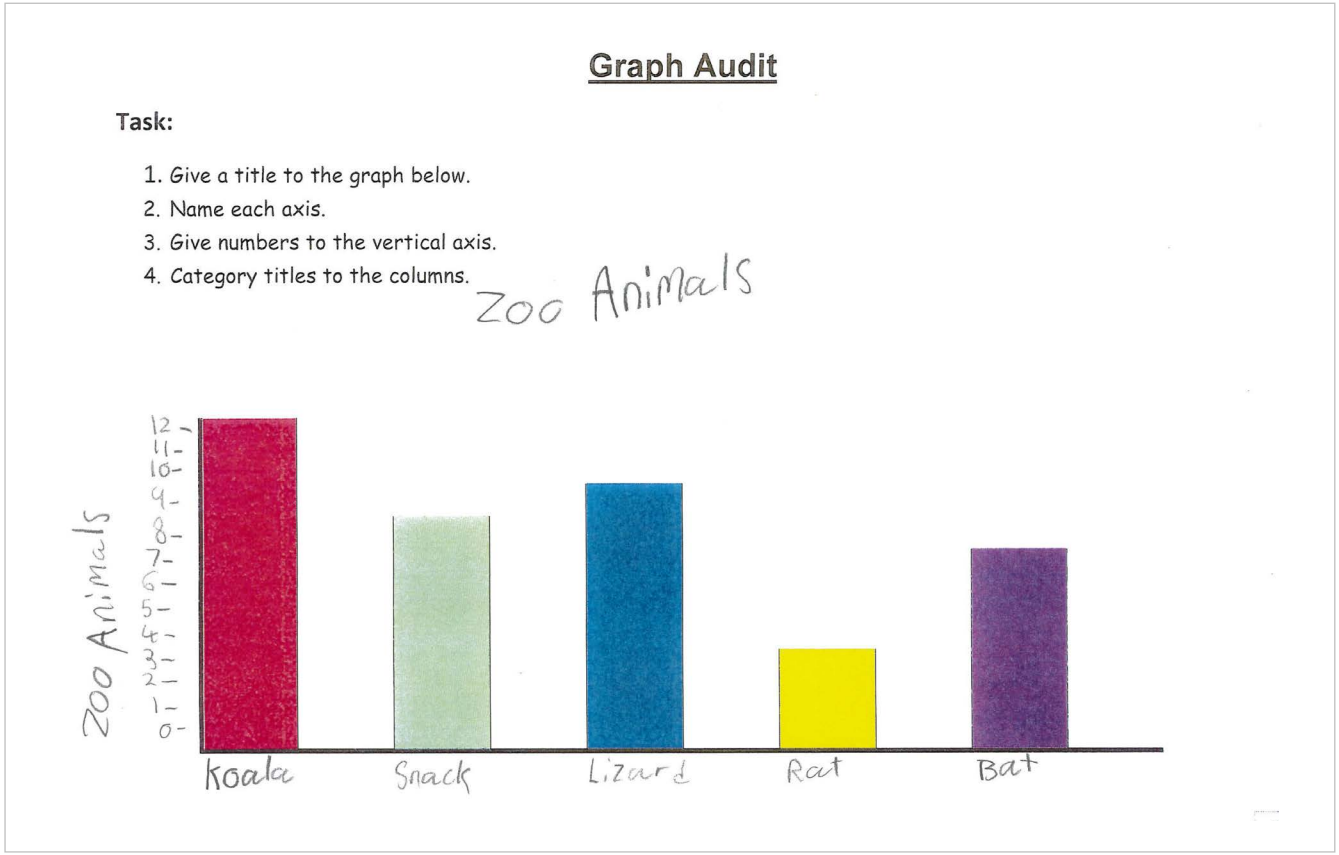
Summary of task

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.

Mathematics

Year 2
Above Satisfactory

Statistics - Graph audit



Annotations

Explains the graph using words and a vertical axis scale.

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Year 2
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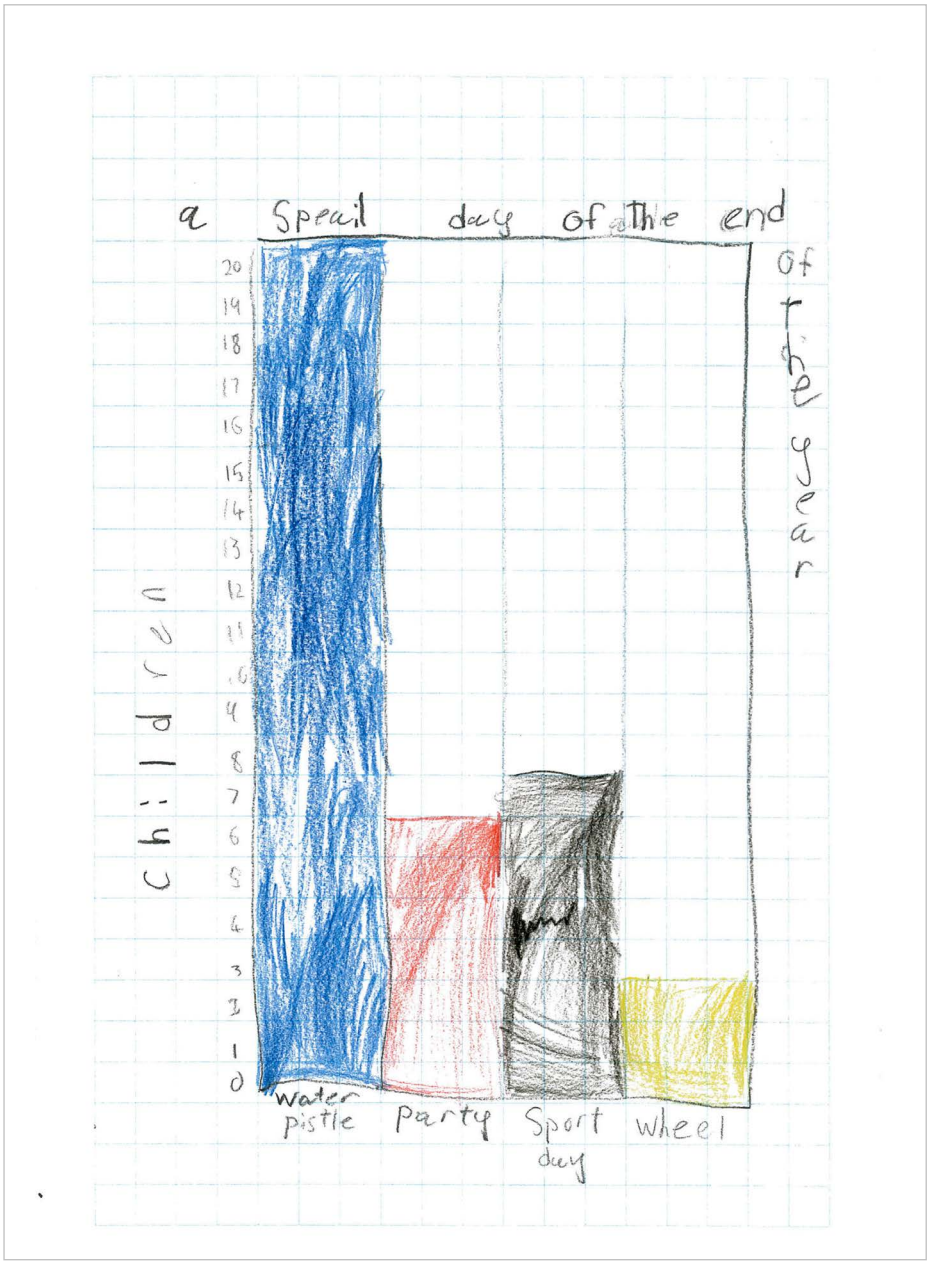
Statistics - Graph audit



Annotations

Labels axes correctly with an appropriate scale.

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Mathematics

Year 2
Above Satisfactory

Statistics - Graph audit

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 thing will you what to do for Speaial days at the End of the year.?

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

Water Pistle day	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 111	22 23
party	𝍸 1	5 6
Sport day	𝍸 11	7
Wheel day	111	3
Pj day	𝍸 𝍸	10

3. Display your data using graph paper

Annotations

Collects data from a developed question. Totals match tally marks in the frequency distribution table.

Acknowledgement
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