

Mathematics

Year 1
Satisfactory

WORK SAMPLE PORTFOLIO

Annotated work sample portfolios are provided to support implementation of the Foundation – Year 10 Australian Curriculum.

Each portfolio is an example of evidence of student learning in relation to the achievement standard. Three portfolios are available for each achievement standard, illustrating satisfactory, above satisfactory and below satisfactory student achievement. The set of portfolios assists teachers to make on-balance judgements about the quality of their students' achievement.

Each portfolio comprises a collection of students' work drawn from a range of assessment tasks. There is no pre-determined number of student work samples in a portfolio, nor are they sequenced in any particular order. Each work sample in the portfolio may vary in terms of how much student time was involved in undertaking the task or the degree of support provided by the teacher. The portfolios comprise authentic samples of student work and may contain errors such as spelling mistakes and other inaccuracies. Opinions expressed in student work are those of the student.

The portfolios have been selected, annotated and reviewed by classroom teachers and other curriculum experts. The portfolios will be reviewed over time.

ACARA acknowledges the contribution of Australian teachers in the development of these work sample portfolios.

THIS PORTFOLIO: YEAR 1 MATHEMATICS

This portfolio provides the following student work samples:

| | |
|-----------|-------------------------------|
| Sample 1 | Number: Skip counting |
| Sample 2 | Number: One half |
| Sample 3 | Number: Money mind map |
| Sample 4 | Geometry: 2D |
| Sample 5 | Statistics: Our fruit today |
| Sample 6 | Number: I dropped my counters |
| Sample 7 | Number: What is the number? |
| Sample 8 | Number: Growing patterns |
| Sample 9 | Statistics: Familiar events |
| Sample 10 | Measurement: Time |
| Sample 11 | Geometry: Direction |
| Sample 12 | Measurement: Capacity |

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Mathematics

Year 1
Satisfactory

This portfolio of student work shows an ability to describe the properties of 2D shapes (WS4), represent addition and subtraction (WS4, WS6) and skip count (WS1). The student models and compares representations of a half (WS2) and recognises Australian coins and their value (WS3). The student uses concrete objects to describe locations (WS11) and position, and to continue a pattern (WS8). The student describes, collects and displays data (WS5, WS9). The student uses informal units to order objects based on capacities (WS12) and shows how two-digit numbers can be partitioned (WS7). The student tells the time to the half hour (WS2, WS10).

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Mathematics

Year 1
Satisfactory

Number: Skip counting

Year 1 Mathematics achievement standard

The parts of the achievement standard targeted in the assessment task are highlighted.

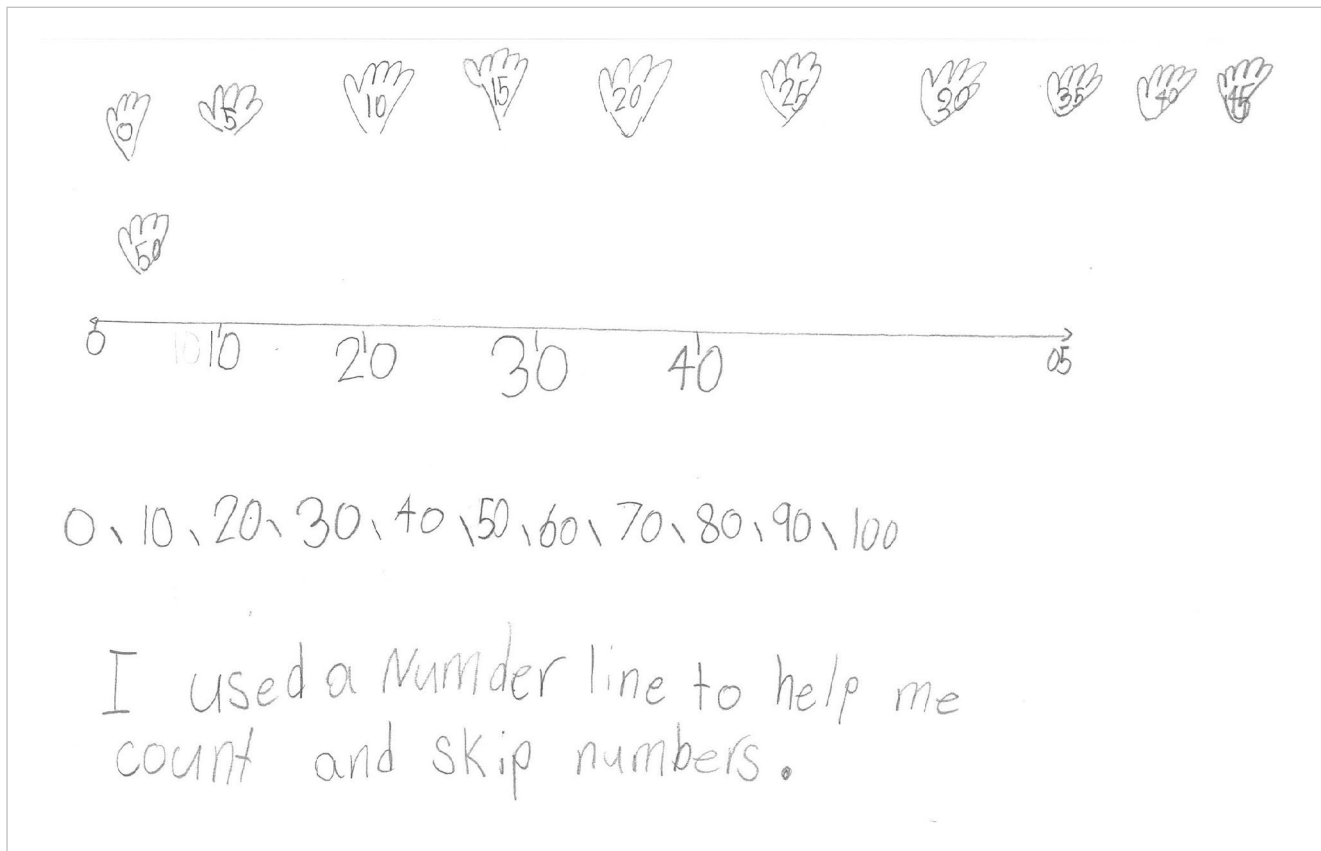
By the end of Year 1, students describe number sequences resulting from skip counting by 2s, 5s and 10s. They identify representations of one half. They recognise Australian coins according to their value. Students explain time durations. They describe two-dimensional shapes and three-dimensional objects. Students describe data displays.

Students count to and from 100 and locate numbers on a number line. They carry out simple additions and subtractions using counting strategies. They partition numbers using place value. They continue simple patterns involving numbers and objects. Students order objects based on lengths and capacities using informal units. They tell time to the half hour. They use the language of direction to move from place to place. Students classify outcomes of simple familiar events. They collect data by asking questions and draw simple data displays.

Summary of task

Students were given a number line. They chose a number to start and then demonstrated how they would skip count to reach another number.

Number: Skip counting



0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

I used a number line to help me count and skip numbers.

Annotations

Demonstrates skip counting by 5s and 10s.

Describes a number sequence using skip counting by 5s.

Uses a number line to demonstrate skip counting by 10s.

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Mathematics

Year 1
Satisfactory

Number: One half

Year 1 Mathematics achievement standard

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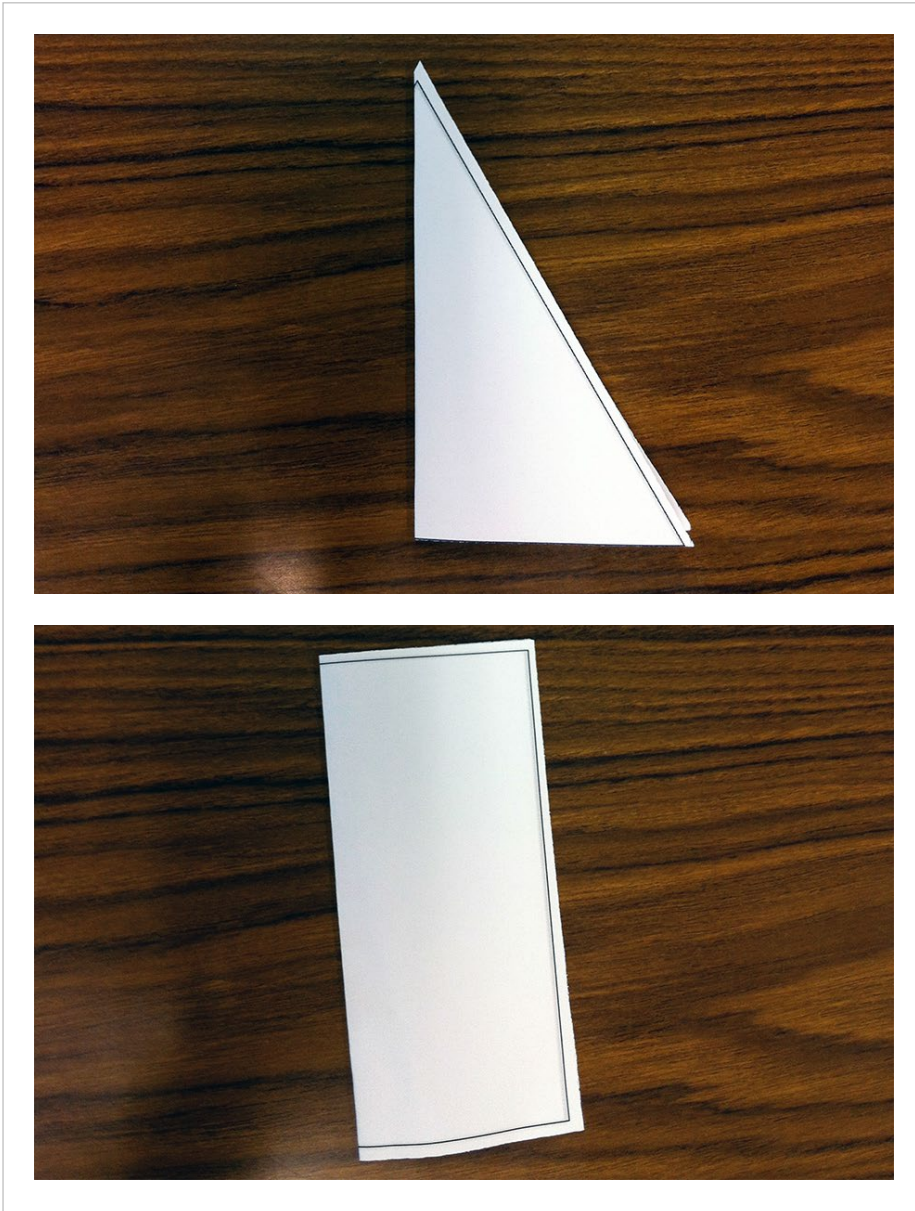
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Summary of task

Students were given a number of different items and were asked to show how they would use them to demonstrate one half. They were asked to relate their knowledge of 'half' to half-hour time on an analog clock.

Number: One half



Annotations

Folds a triangular object to model one half.

Folds a rectangular object to model half.

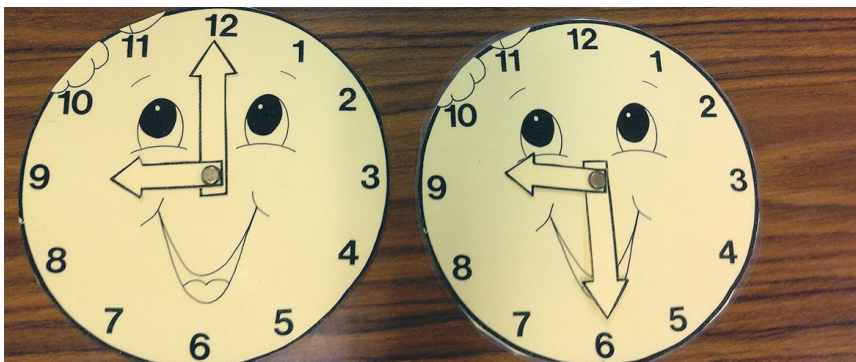
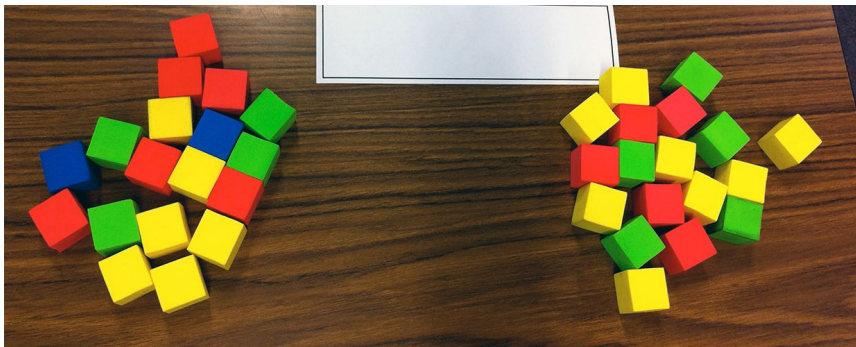
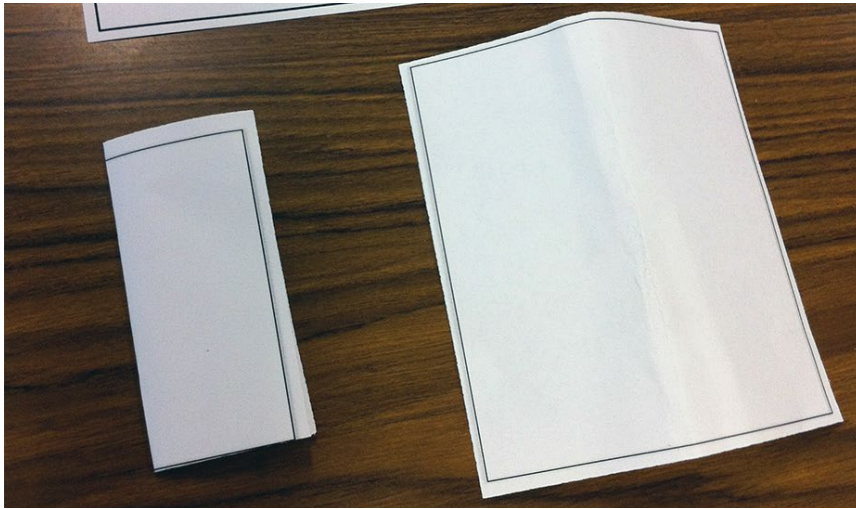
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Mathematics

Year 1
Satisfactory

Number: One half



Annotations

Demonstrates how folding a whole can create two equal parts or two halves.

Demonstrates understanding of the concept of one half using length to compare parts directly by placing one on top of the other and aligning the ends.

Shares a collection of objects into two equal parts or halves.

Tells time to the hour on an analog clock.

Places the minute hand in the correct position to show half-hour time on an analog clock but incorrectly positions the hour hand.

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Mathematics

Year 1
Satisfactory

Number: Money mind map

Year 1 Mathematics achievement standard

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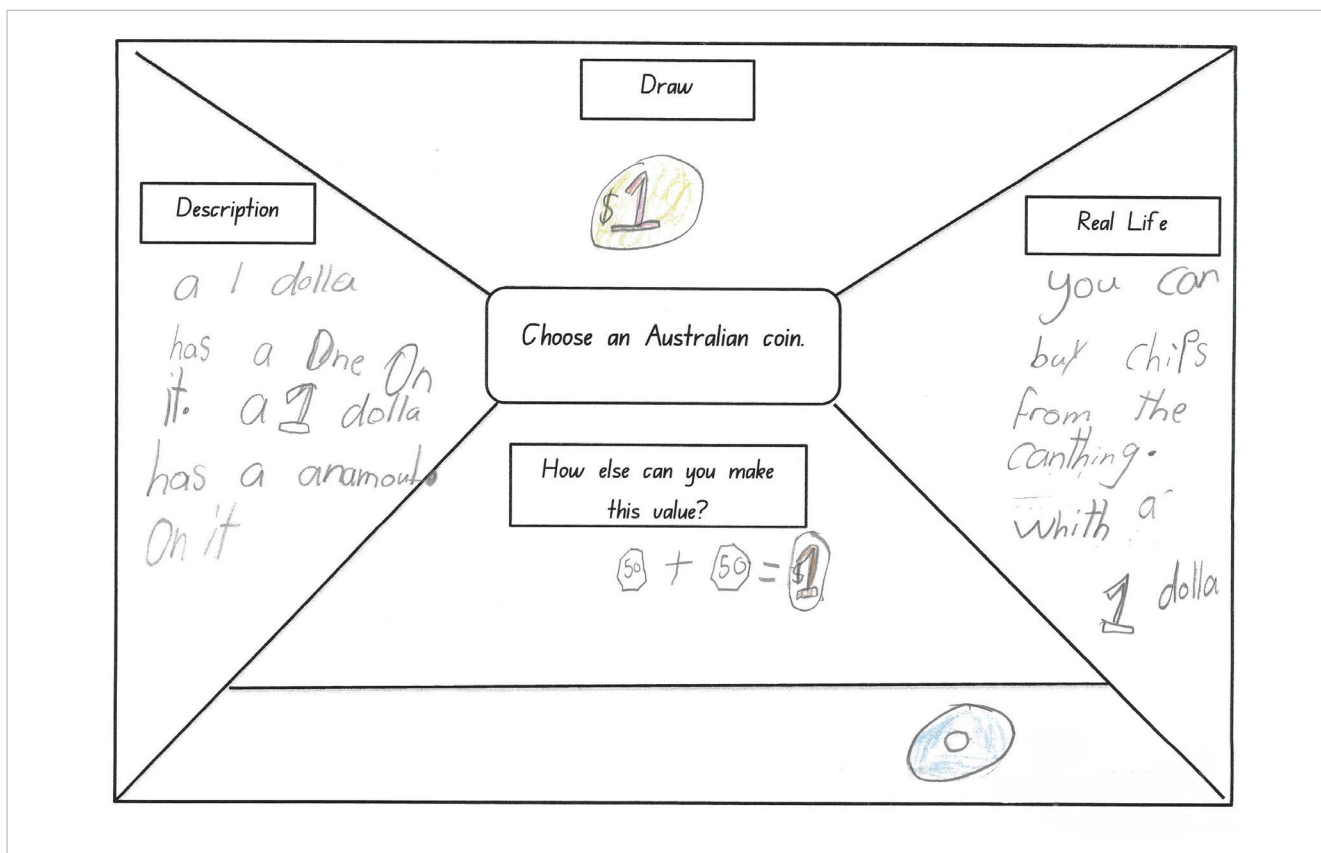
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Summary of task

A unit on money and financial mathematics was taught for a period of two weeks in conjunction with number and place value. Students had experienced mind maps and a class shop in other learning areas.

Students selected an Australian coin, described it and identified what could be bought with it. For the second part of the task students were given \$1.00 to spend at the class shop and had to calculate as many different combinations of items they could buy as possible.

Number: Money mind map



Annotations

Draws a representation of an Australian coin.

Describes a feature of coins that makes it possible to identify them.

Recognises a real-life example of a purchase equivalent to the value of a coin.

Recognises that total amounts can be made using different denominations.

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Mathematics

Year 1
Satisfactory

Number: Money mind map

Task 3: You have \$1 to spend at the class shop. Show as many different ways you could spend your \$1.

Pizza \$1.00c
 6 30c
 1. 95c
 2. 70c
 3. 1.00
 4. 80c
 5. 20c
 7. 90c
 8. 50c
 9. 60c
 10. 40c
 11. 5c

Annotations

Identifies three combinations of items that can be purchased for one dollar.

Mathematics

Year 1
Satisfactory

Geometry: 2D

Year 1 Mathematics achievement standard

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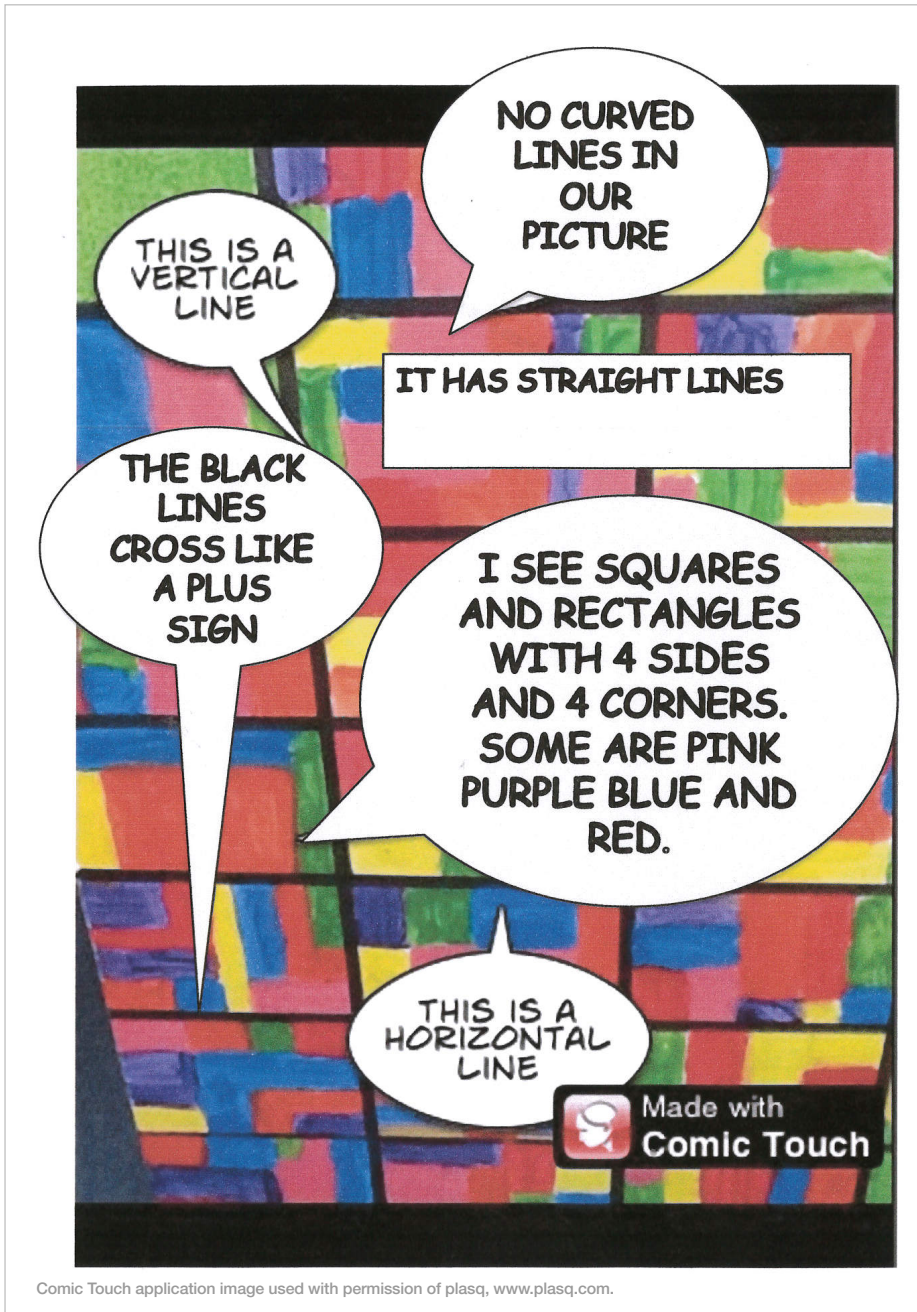
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Summary of task

The students had completed a unit of work on two-dimensional shapes and had been taught how to use the photograph application Comic Touch to apply special effects. Students had completed an artwork for their school art show and they were given a photograph of the artwork and asked to use Comic Touch to record as many things about the 2D shapes and lines that they could. Students were given approximately 30 minutes to complete the task.

Geometry: 2D



Comic Touch application image used with permission of plasq, www.plasq.com.

Annotations

Demonstrates an understanding of straight and curved lines.

Describes features of two-dimensional shapes using the terms 'sides' and 'corners'.

Identifies vertical and horizontal lines.

Mathematics

Year 1
Satisfactory

Statistics: Our fruit today

Year 1 Mathematics achievement standard

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Summary of task

Students discussed what fruit they had brought to school. They looked at different ways of showing how to describe all of the fruit and were asked to draw the displays.

Statistics: Our fruit today

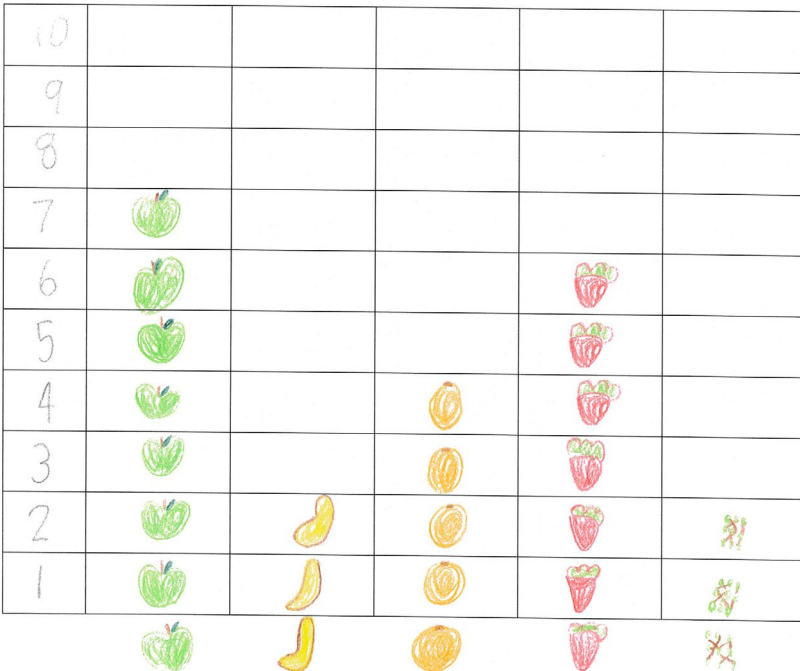
Data and Graphs

1. Investigate which fruits were brought to school today by our class for recess. Show this using tally marks in the table below.

| Fruit | Tally Marks | Total |
|---|-------------|-------|
|  | | 7 |
|  | | 2 |
|  | | 4 |
|  | | 6 |
|  | | 2 |

2. Show your data on a picture graph. Make sure you include all the information you need.

Our Fruit Today



Annotations

Gathers data.

Tracks data using tally marks.

Records data in a table and correctly totals the tally marks.

Transfers data from a table into a picture graph using one-to-one correspondence where one picture represents one data value.

Number: I dropped my counters

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Summary of task

Students were given a bundle of counters to hold in their hand. They were asked to drop some of the counters and then figure out how many were on the floor and how many were still in their hand. They described their results both numerically and with a picture. Some prompts were given to those students who were unable to use any strategies to describe the number of counters they had in mathematical terms.

Number: I dropped my counters

$6 + 9 = 15$ I drop six and I have nine in my hand.
 $5 + 10 = 15$ I drop five and I have ten in my hand.
 $4 + 3 = 7$ I drop four and I have three in my hand.
 $10 + 9 = 19$ I drop ten and I have nine in my hand.
 $10 + 4 = 14$ I drop three and I have six in my hand.

Annotations

Represents and solves addition and subtraction problems using diagrams.

Recognises that together the number of counters dropped plus the number of counters in their hand gives the starting number of counters.

Writes number sentences to match the problems and their diagrams but with a minor error.

Mathematics

Year 1
Satisfactory

Number: What is the number?

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Summary of task

The unit number and place value was taught in semester one and two. Students had experienced open-ended problems. Students had experienced this problem previously and understood the language of 'more', 'two-digit' and 'pattern'. Students were given the open-ended problem: 'A two-digit number has more tens than ones; what could the number be?'

Students had concrete material on the table to access if required. The teacher explained and modelled the task to the students. Students were given 20 minutes to complete the task.

Number: What is the number???

What is the NUMBER???

A two digit number has more tens than ones.

What could the number be?

Show how you know your number is correct.

Can you think of other two digit numbers that have more tens than ones?

Show how you know your numbers are correct.

Can you find a pattern?

Handwritten student work showing place value analysis for numbers 64, 72, 53, 21, and 42. The student identifies tens and ones for each number and compares their values to determine if the number has more tens than ones.

64
|
↓
6 tens 4 ones
6 is more than 4.

72
|
↓
7 tens 2 ones
7 is more than the 2.

53
|
↓
5 tens 3 ones
5 is more than 3.

21
|
↓
2 tens 1 ones
2 is more than one

42
|
↓
4 tens 2 ones

Annotations

Understands partitioning of numbers using place value.

Justifies an answer.

States the place value of digits in two-digit numbers.

Chooses an appropriate strategy to solve the problem but does not generalise to describe the pattern.

Mathematics

Year 1
Satisfactory

Number: Growing patterns

Year 1 Mathematics achievement standard

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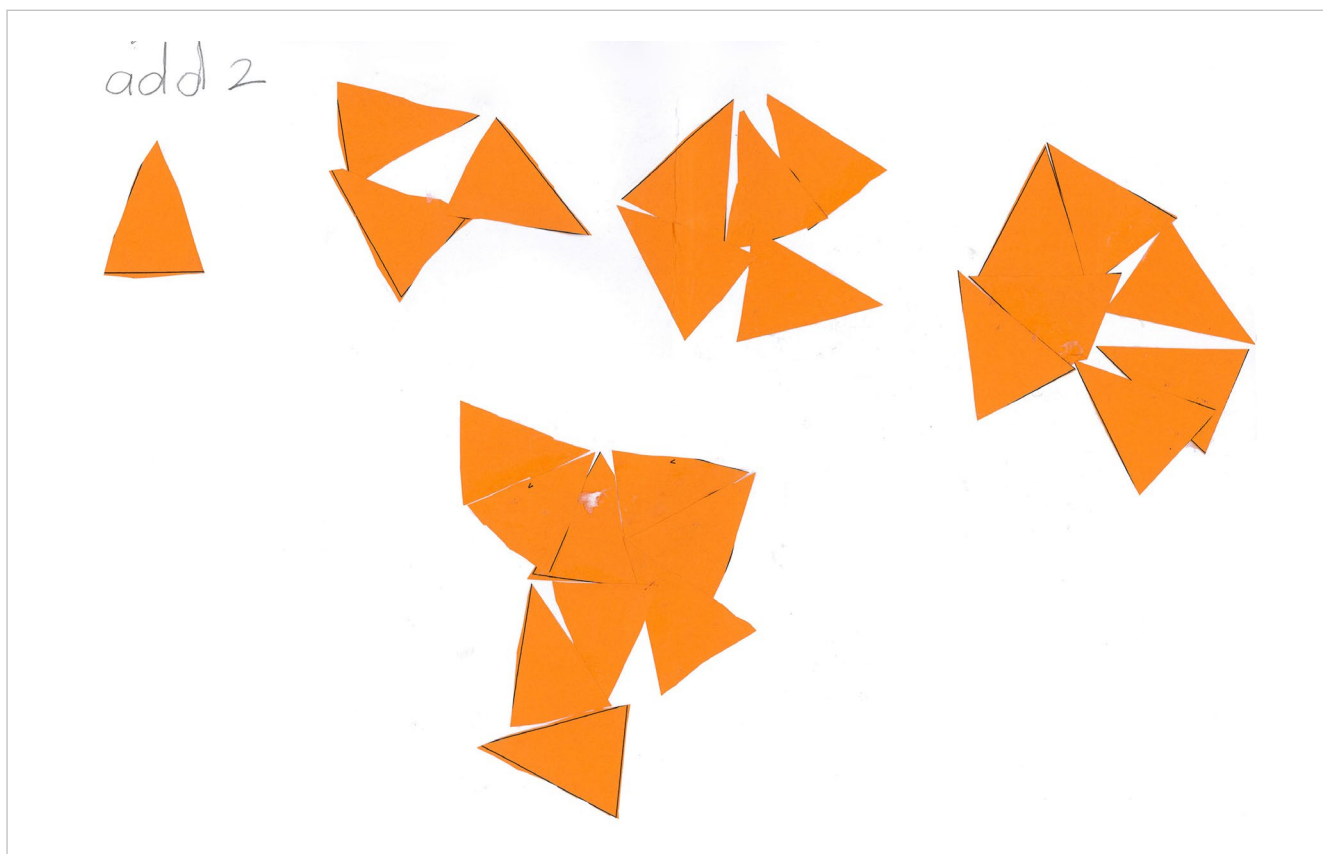
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Summary of task

Students were asked to use objects to continue a given pattern of a number sequence.

Number: Growing patterns



Annotations

Generalises the number sequence using words.

Creates a simple increasing pattern using objects and skip counting by 2s.

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Mathematics

Year 1
Satisfactory

Statistics: Familiar events

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Summary of task

Students had been talking about familiar events in their day-to-day lives. They were asked to complete a worksheet linking familiar events and to display their information.

Statistics: Familiar events

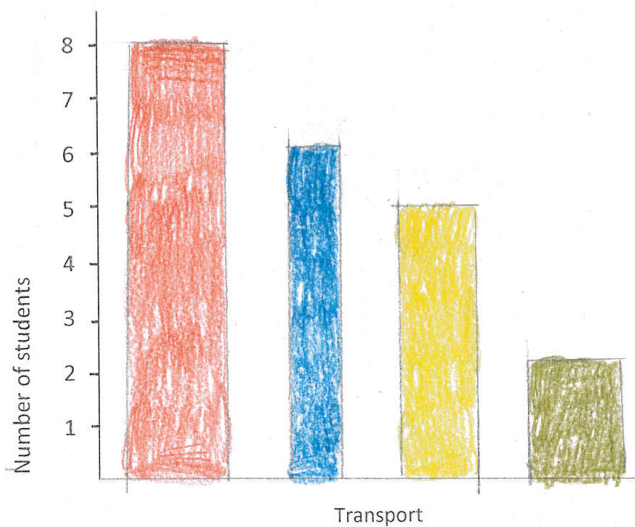
1. What time do you get up on school days? 7am
2. What time do you get up on weekends? 8am
3. What transport do you use to get to school? Walk
 WALK CAR BUS BIKE
4. What time do you have dinner? 6:30 pm
5. What time do you go to bed? 7:30 pm

From the class results below, draw a column graph of the results.

| Transport | Number of students |
|-----------|--------------------|
| WALK | 8 |
| CAR | 6 |
| BUS | 5 |
| BIKE | 2 |

On the diagram colour the columns.

- WALK – RED
- CAR – BLUE
- BUS – YELLOW
- BIKE – GREEN



Annotations

Differentiates between weekends and weekdays.

Differentiates the time of events and tells the time to the half hour.

Represents information in the table as a column graph.

Mathematics

Year 1
Satisfactory

Measurement: Time

Year 1 Mathematics achievement standard

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Summary of task

Students had completed tasks on telling the time. The students were individually questioned and used a clock to demonstrate their understanding of reading and writing time to the half hour.

Mathematics

Year 1
Satisfactory

Measurement: Time



Annotations

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Year 1
Satisfactory

Geometry: Direction

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Summary of task

Students had discussed the language of direction. They were asked to draw a map and indicate a pathway from their classroom to the canteen. They described their pathway using the language of direction.

Geometry: Direction

Take the walking school bus on a tour to the canteen.

Draw a diagram of the way to the canteen.

Label your diagram to show which way the bus turned.

How many turns are there?

How far is it to the canteen?

Annotations

Highlights direction of movement using arrows.

Draws a diagram of a familiar location and labels landmarks.

Geometry: Direction

Can you show another way to get to the canteen?

red line

music room

art room

library

play ground

gat

Which is the better way to go? Why?

The go to the canteen way because is more quicka

Annotations

Draws a diagram, labels landmarks and highlights an alternate path.

Justifies and gives reasons about which is the better route.

Mathematics

Year 1
Satisfactory

Measurement: Capacity

Year 1 Mathematics achievement standard

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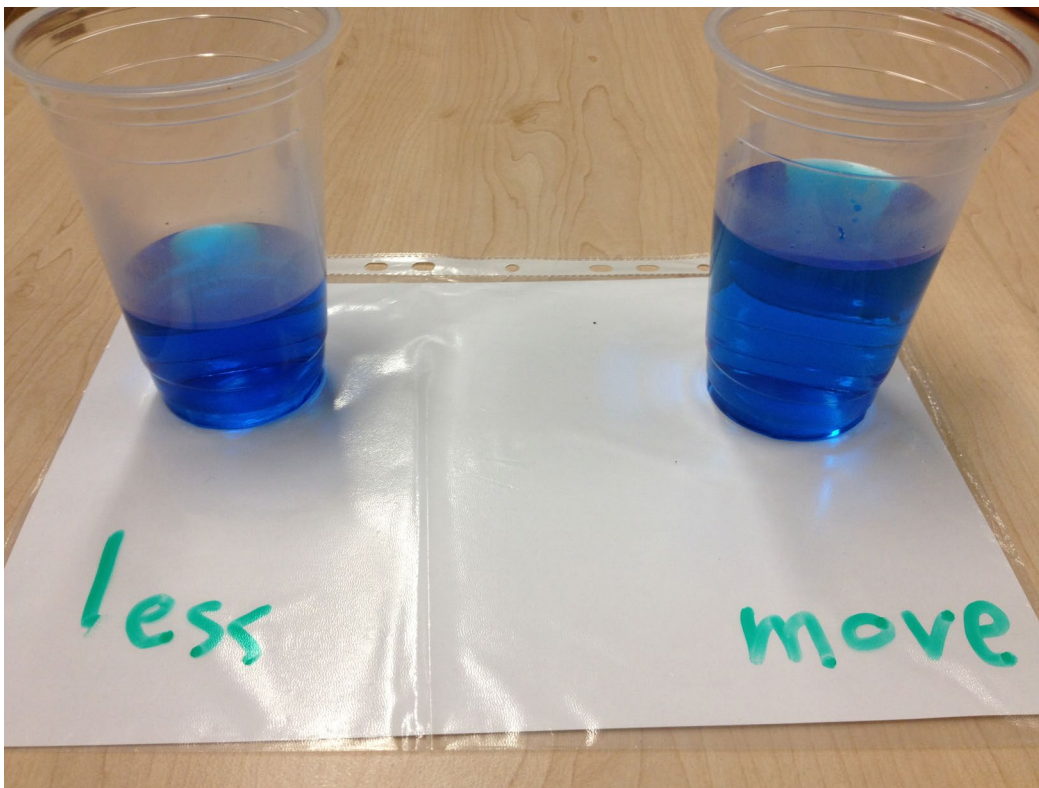
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Summary of task

Students had been comparing the capacity of different containers. They were asked to describe in words a comparison of the capacity of a number of different containers. They were asked to describe in words a comparison of the amount of liquid in two containers of the same size.

Measurement: Capacity



Annotations

Demonstrates understanding of the importance of uniform informal units when comparing quantities by selecting two identical containers.

Pours different amounts of water into each container to enable easy comparison.

Describes the amount of liquid in each container using comparative language of 'less' and 'more'.

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