Mathematics

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 1 Mathematics

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

Sample 1   Number – Count to 100 - Skip counting
Sample 2   Numbers – One half
Sample 3   Geometry - Shapes
Sample 4   Statistics – Data and graphs - Our fruit today
Sample 5   Numbers – Addition and subtraction - I dropped my counters
Sample 6   Numbers – Growing patterns
Sample 7   Statistics - Familiar events
Sample 8   Measurement - Direction

This portfolio of student work shows an ability to draw and describe pictures using shapes (WS3), represent addition and subtraction (WS5) and skip count (WS1). The student models and compares representations of a half (WS2). The student uses concrete objects to describe locations (WS8) and position and to continue a pattern (WS6). The student describes, collects and displays data (WS4 and WS7).

The following aspects of the achievement standard are not evident in this portfolio:

- recognise Australian coins according to their value
- explain time durations   partition numbers using place value
- orders objects based on lengths and capacities using informal units
- tell time to the half hour.

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Year 1
Above Satisfactory

Count to 100 - Skip counting

Relevant parts of the achievement standard

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.

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Count to 100 - Skip counting

2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50

(hands labelled) 0, 5, 10, 20, 25, 30, 35, 40, 45, 50

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

0, 10, 20, 30, 40, 50.

3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 50

Annotations

Skip counts by 2's, 3's, 5's and 10's.

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Fractions and Decimals

Relevant parts of the achievement standard

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Summary of task:

Students were given a number of different shapes and were asked to show how they would use the shape to demonstrate a half.

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Fractions and Decimals
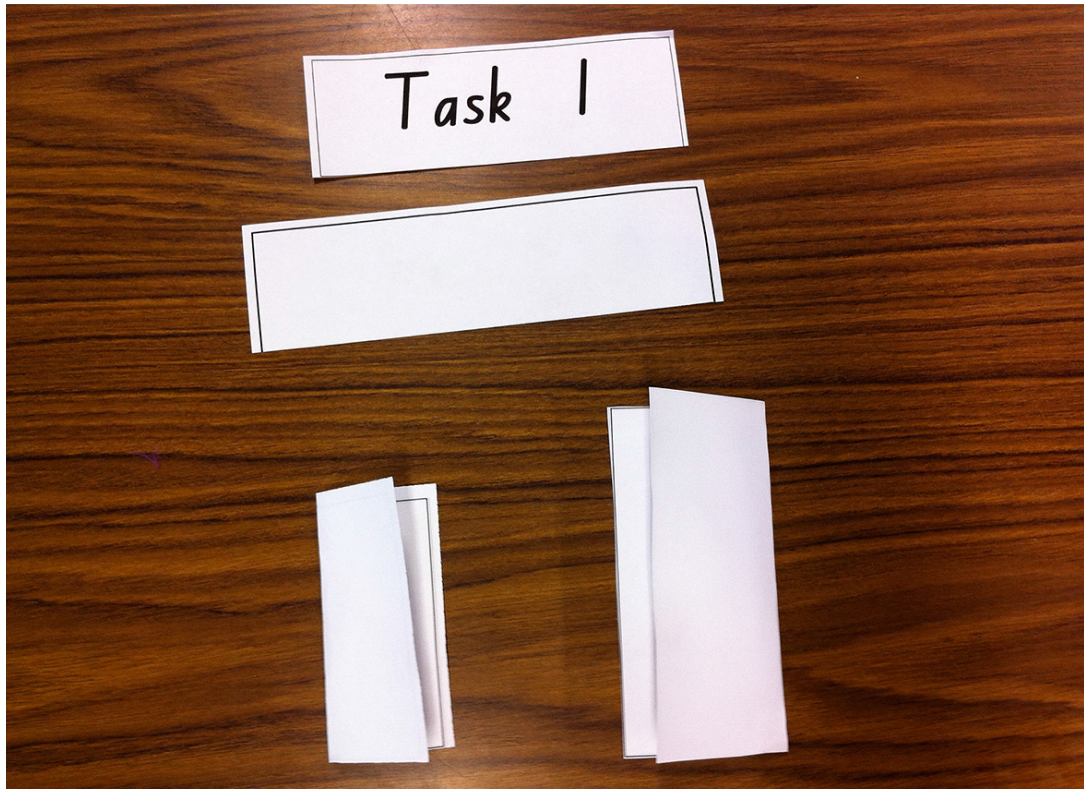
Annotations

Folds a two-dimensional object to model half.

Mathematics

Fractions and Decimals
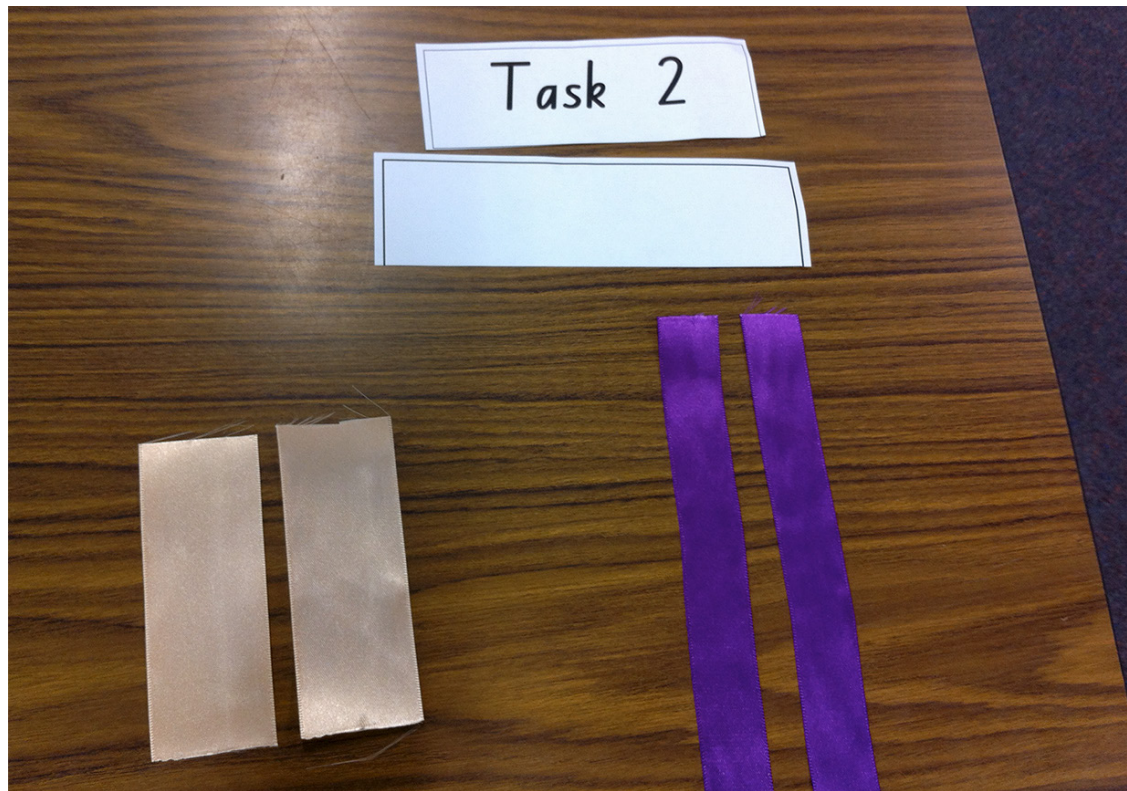
Annotations

Compares fractional parts based on length.

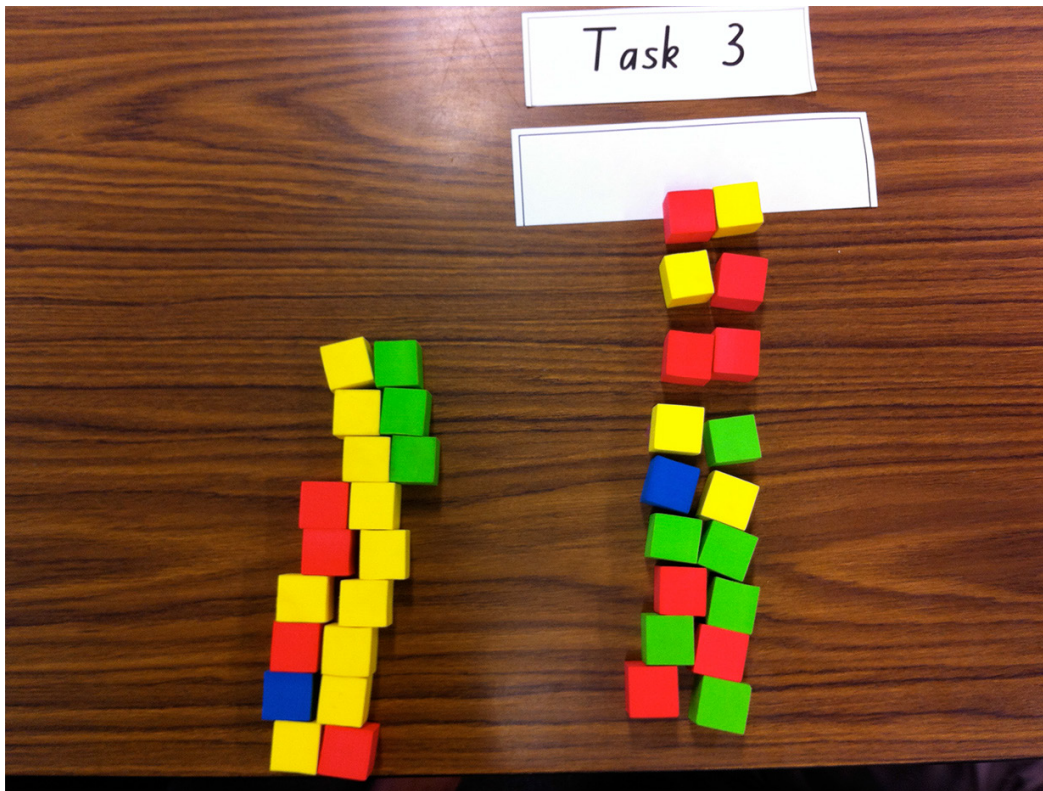*Compares objects directly by placing one against another and aligning ends.*

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Fractions and Decimals

Annotations

Shares a collection of objects into 2 equal portions or halves.
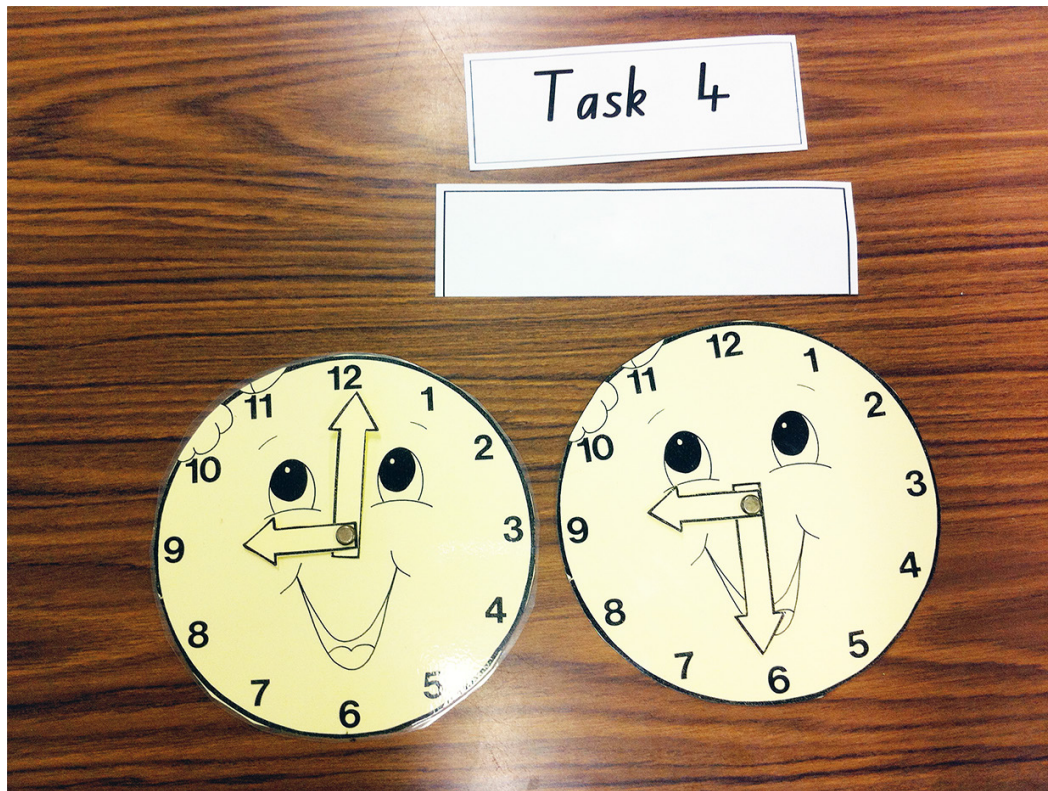
Orders each portion of the collection into 9 rows of 2.

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Fractions and Decimals

Annotations

Tells time to the hour on an analogue clock.

Demonstrates the correct position of the minute hand on an analog clock when showing half past but incorrectly positions the hour hand.

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Shapes

Relevant parts of the achievement standard

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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.
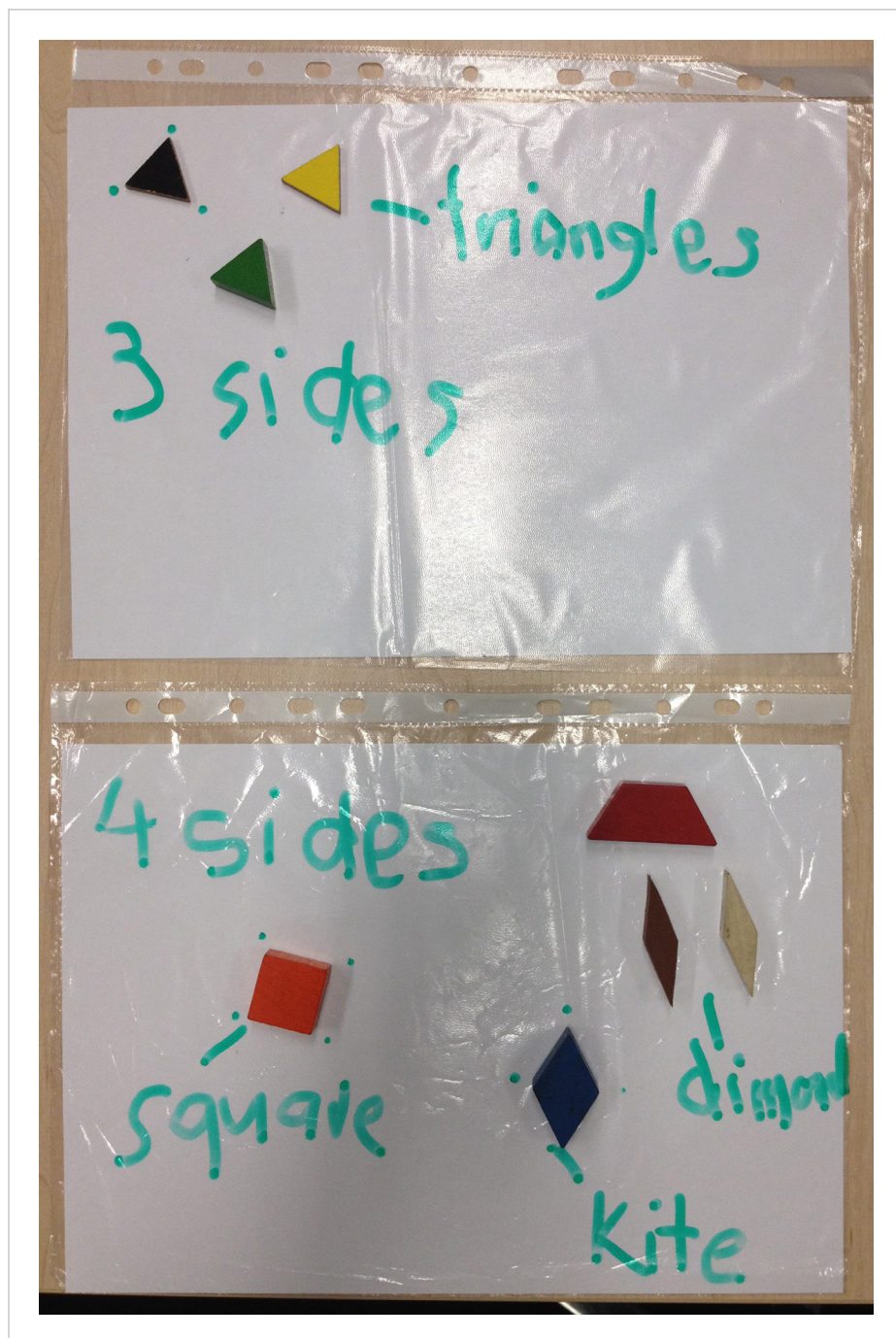
Summary of task:

Students were given a number of different shapes and were asked to show how they would group them together by different characteristics. They were asked to describe the different features of each shape.

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Shapes

Annotations

Groups most shapes according to the number of sides.

Uses mathematical language to describe shapes.

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Our Fruit Today

Relevant parts of the 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 the fruit and were asked to draw the displays.

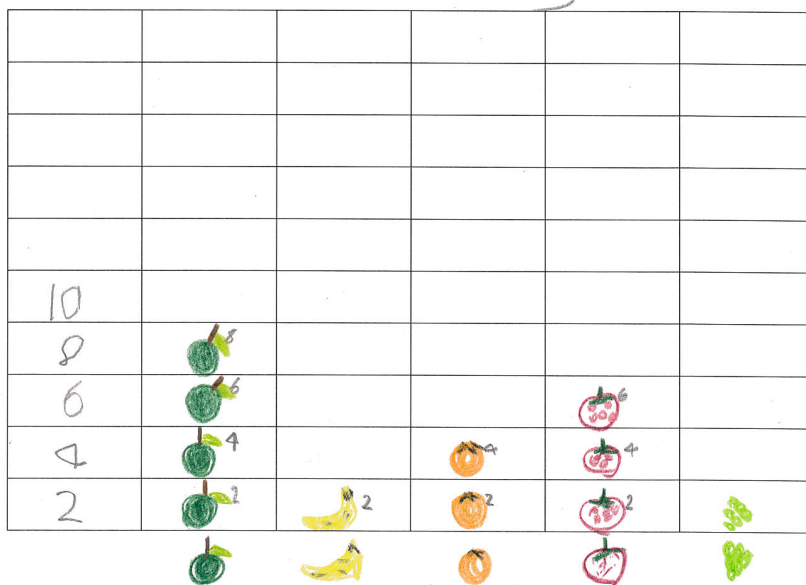# Mathematics

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
(apple)	‖‖ ‖‖ ‖‖	8
(banana)	‖	2
(orange)	‖‖‖	4
(strawberry)	‖‖‖ ‖	6
(grapes)	‖	2

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

Our fruit today

Annotations

Collects data by asking questions.

Totals in columns reflect the number of tally marks.

Graph demonstrates skip counting in 2's on vertical axis and that each picture of a piece of fruit represents two actual pieces.

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I dropped my counters

Relevant parts of the achievement standard

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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.
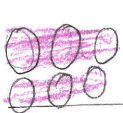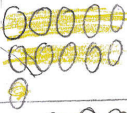
Mathematics

I dropped my counters

I dropped six I still have ealeven in my hand.

+ = 17

+ = 20

I dropped six I still have fourtein in my hand.

+ = 19

I dropped six I still have ten in my hand.

19 + 18 = 37

19   18

Annotations

Demonstrates an understanding of the problem and uses reasoning to solve the problem visually and with a correct number sentence.

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Growing Patterns

Relevant parts of the achievement standard

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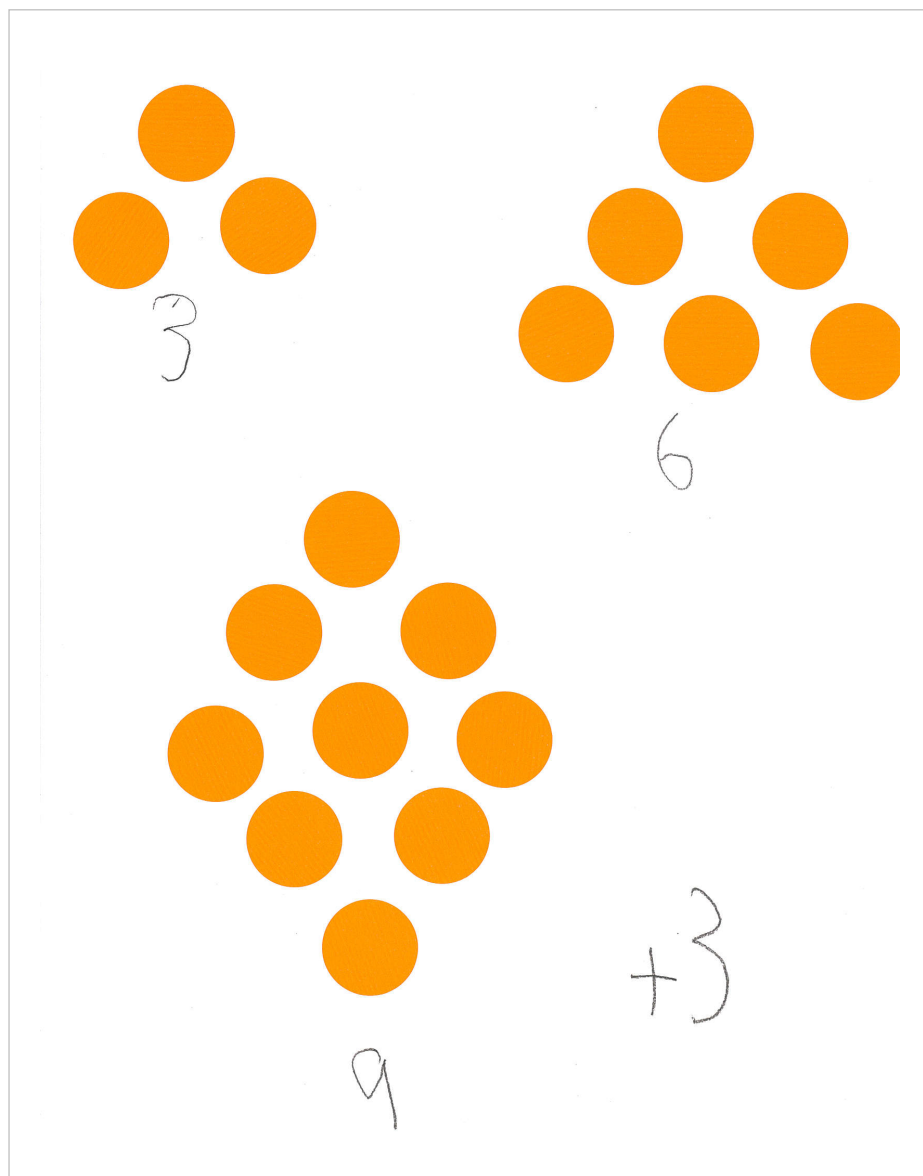
Summary of task:

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

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Growing Patterns

Annotations

Continues a pattern using objects to count by 3's.

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Familiar Events

Relevant parts of the achievement standard

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Summary of task:

Students had discussed things which are familiar events in their day-to-day lives. They were asked to complete a worksheet linking familiar events to display their information.

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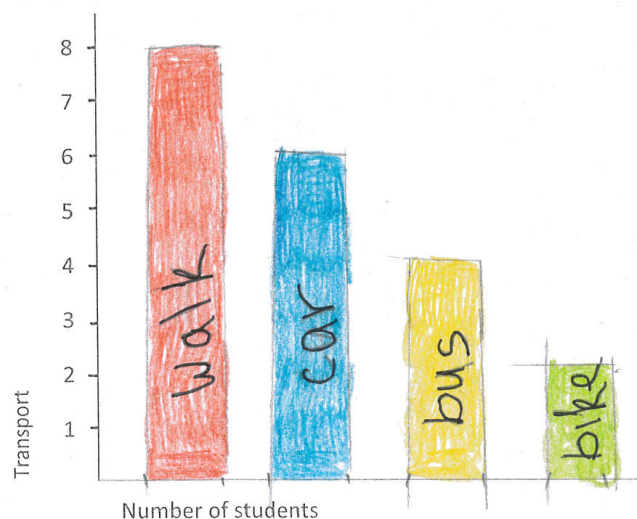## Familiar Events

Annotations

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 and car_

    WALK   CAR   BUS   BIKE

4. What time do you have dinner? _7pm_
5. What time do you go to bed? _8:30 pm_

Recognises that even when travelling by car there is still some walking to be done to get from the car to the school.

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

From the class results below, draw bar chart of the results. Describe how you compare with the class.

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

Displays data in even columns which match the data in the table. The columns are labelled with the correct information.

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Direction

Relevant parts of the achievement standard

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Summary of task

Students had discussed the language of direction in class. They were asked to demonstrate on a map how they would go from their classroom to the canteen. They described their pathway using the language of direction.

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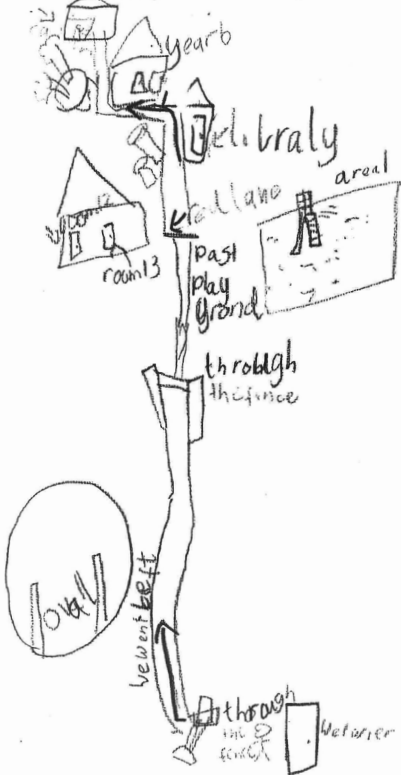## Direction

173 steps

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

Draw a diagram of the way to the canteen.

yeard

libraly

area1

room13

Past
play
grond

throllgh
the fence

oval

we went left

through
the
fence

we turned

Label you diagram to show which way the bus turned.

How many turns are there?

How far is it to the canteen?

Annotations

Identifies the distance travelled using an informal unit of measurement.

Highlights direction of movement using arrows.

Draws a diagram including landmarks to a familiar location.

Describes using everyday language of location and direction the route taken.

Uses the terms 'left' to describe their position in relation to themselves.

Interprets a two-dimensional representation.

Mathematics
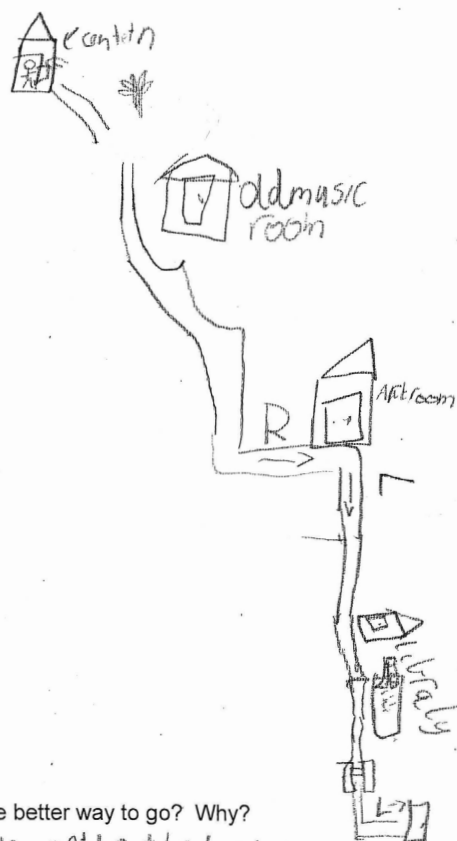
Direction

Can you show another way to get to the canteen?

Which is the better way to go? Why?

When we get to the libuly we can tean right becase it is puicar.

Annotations

Justifies and gives reasons about which is the best route.