

Mathematics

Year 6
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 6 Mathematics

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

Sample 1	Number – Power
Sample 2	Number – How tall
Sample 3	Number – Abstract design
Sample 4	Number – My number line
Sample 5	Number – Fifth term
Sample 6	Geometry – Area
Sample 7	Number – Calculations
Sample 8	Geometry – 3D structure
Sample 9	Number – Percentages
Sample10	Geometry – Sam's square
Sample 11	Probability / Statistics – Spinner mania

This portfolio of student work demonstrates multiplying and dividing decimals by the power of 10 (WS1) and solving problems involving length and area using decimals (WS 2, WS 6). The student represents the same number as a fraction, decimal and percentage and locates fractions, decimals and percentages on number lines, calculates a fraction of a quantity and describes the use of fractions in everyday life (WS 3, WS 4). The student creates a sequence using whole numbers and fractions and explains the rule (WS 5), they calculate number sentences using whole numbers and decimals using all four operations involving brackets and order of operations (WS 7). The student draws nets and constructs a prism and a pyramid (WS 8) and plots a square on a Cartesian plane (WS10). The student uses reasoning to report probability using fractions, percentages and decimals (WS11) and calculates percentages of sale items (WS9).

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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 properties of prime, composite, square and triangular numbers*
- *make connections between capacity and volume*
- *interpret timetables*
- *describe combinations of transformations*
- *solve problems using the properties of angles*
- *evaluate secondary data displayed in the media.*

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Number – Power

Relevant parts of the achievement standard

By the end of Year 6, students recognise the properties of prime, composite, square and triangular numbers. They describe the use of integers in everyday contexts. They solve problems involving all four operations with whole numbers. Students connect fractions, decimals and percentages as different representations of the same number. They solve problems involving the addition and subtraction of related fractions. Students make connections between the powers of 10 and the multiplication and division of decimals. They describe rules used in sequences involving whole numbers, fractions and decimals. Students connect decimal representations to the metric system and choose appropriate units of measurement to perform a calculation. They make connections between capacity and volume. They solve problems involving length and area. They interpret timetables. Students describe combinations of transformations. They solve problems using the properties of angles. Students compare observed and expected frequencies. They interpret and compare a variety of data displays including those displays for two categorical variables. They evaluate secondary data displayed in the media.

Students locate fractions and integers on a number line. They calculate a simple fraction of a quantity. They add, subtract and multiply decimals and divide decimals where the result is rational. Students calculate common percentage discounts on sale items. They write correct number sentences using brackets and order of operations. Students locate an ordered pair in any one of the four quadrants on the Cartesian plane. They construct simple prisms and pyramids. Students list and communicate probabilities using simple fractions, decimals and percentages.

Summary of task

Students had completed a unit of work on number involving multiplying decimals by multiples of powers of ten. Students were given an open ended task to relate their reasoning skills to answer the posed problem. Students were given one class lesson to complete the task.

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Number – Power

Annotations

Sam says that when you multiply 7.32×100 , the answer is 73 200 because you add 2 zeros.

Will says that can't be right and that the answer is 732 because the decimal place moves.

Is anybody correct?

yes, will is correct

How do you know who is right?

Because before you add zero's you must move the decimal place to the right when multiplying

Can you try and multiply other decimals by 10, 100 and 1000 and find a pattern with the answers?

With each of the zeros on the number you are multiplying with (10, 100 etc) the first number will become a digit (before the decimal place) longer.

What is the rule for multiplying decimals by powers of 10?

move the decimal place one space to the right.

Why does this rule work?

Because instead of adding a zero you move the decimal place.

Demonstrates an understanding of place value when multiplying decimals by a multiple of 10.

Explains simply how to multiply decimals by multiples of 10.

Acknowledgement

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Number – Power

Annotations

Can you prove that the rule works for any decimals?

yes

$$87.967523901769 \times 100000 = 8796752.3401769$$

What do you think might happen when you divide decimals by powers of 10?

you move the decimal place to the
LEFT.

Is there a rule for dividing decimals by powers of 10?

How ever many zeros there are that's
many spaces (to the left) you need to
move the decimal point.

Can you prove that your rule works for any decimals?

yes.

$$\text{eg. } 79670521.3 \div 1000 = 79670.5213$$

$$45621.23 \div 1000 = 45.62132$$

How can you check if you are right?

Count the zeros and make sure you
calculate properly. You could also
use a sum.

Explains the rule for dividing decimals by
multiples of 10.

Calculates division of a decimal by a
power of 10.

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Number – How tall

Relevant parts of the achievement standard

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Summary of task

Students had completed a unit of work on decimals and their connection to the metric system. They had solved problems involving length and area using decimals. Students were asked to use their reasoning skills combined with their mathematical knowledge to solve several problems. They were given one lesson to complete the task as an assessment at the end of the unit.

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Number – How tall

Annotations

Rachel is taller than 140 cm and shorter than 150 cm.


Daniel is 22 cm taller than Rachel.

Adam is $5\frac{1}{2}$ cm shorter than Daniel.

How tall could each of the three friends be in metres?

141, 142, 143, 144, 145, 146, 147, 148, 149


Rachel
145 cm



Daniel
167



Adam
 $161\frac{1}{2} = 0.5$



Rachel
1.45 m

Daniel
1.67 m

Adam
1.615 m

Are there any other possibilities?

Yes

Calculates height in metres after considering given information.

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Number – How tall

Task 3(b)

The area of a rectangle is 30.75 cm^2 .

What could the side lengths be?

$$A = L \times W$$

$$30.75 = 1 \times 30.75$$

- Are there any other possibilities?

Yes

$$30.75 = 3 \times 10.25$$

And some more

- How do you know you are right?

because I multiplied and
got the area.

Annotations

Calculates two sets of possible dimensions of a rectangle from a given answer.

Explains one step of the process of solving a problem.

Acknowledgement

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Number – Abstract design

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Summary of task

Students had completed a unit of work on equivalent fractions, decimals and percentages. Students were asked to create an abstract design, dividing it into percentage parts and demonstrating a connection with fractions and decimals. Questions were written for the students to help them direct their mathematical thinking.

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Number – Abstract design

Can you create an abstract design that is 50% blue, 25% green, 15% purple and 10% pink?

0.50
↑
 $\frac{50}{100}$

What shape might be best for your design?
Can you express your percentages as fractions and decimals?
How do you know that you are right?
Can you try and design another mural using a different shaped canvas?

$\frac{25}{100} \rightarrow 0.25$
 $\frac{15}{100} \rightarrow 0.15$
 $\frac{10}{100} \rightarrow 0.10$

Blue
Green
Pink
Purple

How did you know how to separate 10% and 15%?
I know because half of 50% is 25%. Then take ten away then you have 15% and 10%.

Annotations

Represents percentages as fractions and decimals.

Represents percentages in different two-dimensional shapes.

Compares the value of percentages.

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Number – My number line

Relevant parts of the achievement standard

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Summary of task

Students completed a unit of work on fractions, decimals, percentages and their connection and positive and negative numbers in every day contexts.

Students were given two tasks at the culmination of the unit to assess their understanding. The students were also asked to reflect on fractions and to explain how to calculate a fraction of a quantity.

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Number – My number line

Select 3 positive integers and 3 negative integers and place them all on a number line.
Can you use $<$, $>$ and $=$ to create some true sentences using some of your integers?
(Eg. $3 > -2$)

1. How do you know where to place your numbers on the number line?
2. Why does 0 hold a place on a number line?
3. When do we use negative integers in real life? Can you describe what some of these mean?

Integers.

$-3 < 5$ 5 is bigger than -3
 $-5 < 1$ 1 is bigger than -5
 $-4 < 2$ 2 is bigger than -4
 $1 < 1$

$-4 > -3$ -4 is bigger than -3
 $-2 > -1$ -2 is bigger than -1
 $-3 < -5$ -5 is bigger than -3

2. it holds a place on the number line because it goes from 10 down on right and then to 0 then it keeps going down to negative 0 is bigger than -1.

3. When we are in dept, computers, bank, when you are in dept say you have negative \$26. In computers because like in the snow it goes minus degrees.

Number line: -20 -19 -18 -17 -16 -15 -14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

5 - 10 = -5 14 - 17 = -3 -5 + 9 = 4 -2 + 3 = 1
 6 - 12 = -6 8 - 15 = -7 -20 + 30 = 10 -6 + 13 = 7
 10 - 23 = -13 12 - 19 = -6 -10 + 12 = 2 -9 + 10 = 1
 11 - 19 = -8 15 - 18 = -3 ✓ -6 + 8 = 2 -11 + 20 = 9
 17 - 100 = -93 37 - 40 = -3 -4 + 10 = 6 -15 + 22 = 7
 9 - 12 = -3 -1 + 15 = 14 -19 + 24 = 5

Annotations

Identifies positive integers as being bigger than negative integers.

Describes the place of 0 in a number line with positive and negative integers.

Describes how negative integers are used in everyday contexts.

Locates integers on a number line.

Writes number sentences.

Acknowledgement

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Number – My number line

Select 2 fractions with different denominators and a numerator which is greater than 1.

(Eg. $\frac{3}{4}$ and $\frac{4}{6}$)

Which is larger?

How can you prove you are right?

Can you rename any of your fractions as decimals and/or percentages?

Repeat a number of times.

Can you order all of your fractions, decimals and percentages on a number line?

$$\frac{3}{4} \quad \frac{4}{6} \quad \frac{3}{4} = 75\% \quad \frac{2}{3} \quad \frac{4}{6} = 66.6\%$$

$$0.75$$

$$3/4 > 4/6$$



$$\frac{3}{12} \quad \frac{3}{7}$$

$$3/12 = 1/4 = 0.25 \quad 3/7 = 42.6\%$$

$$25\%$$

$$3/7 > 3/12$$

$$\frac{4}{11} \quad \frac{5}{15}$$

$$4/11 = 36.4\% \quad 5/15 = 30.1\%$$

$$4/11 > 5/15$$

Annotations

Simplifies fractions.

Represents fractions as percentages and decimals.

Compares fractions using diagrams and mathematical symbols.

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Number – My number line

To calculate a fraction of a number
you just get a fraction $\frac{1}{6}$ and
then a number you know will
work like 36 (I use my tables)
 $\frac{1}{6} \times 36 = 6$

Annotations

Explains how to calculate a fraction of a number using multiplication facts.

Acknowledgement

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Number – Fifth term

Relevant parts of the achievement standard

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Summary of task

Throughout the term students had completed several units of work, one on the addition and subtraction of fractions with different denominators and another on creating and identifying patterns in number sequences. Students were given the following question as an assessment of concepts at the end of both units of work.

Kate created a subtraction pattern using fractions with different denominators.

If the fifth term in Kate's pattern was 1, what could her pattern look like?

The teacher asked the following questions to guide students through their thinking and working –

What is the rule for your pattern? How did you work it out? What other patterns can you create where 1 is the fifth term? Can you convert any of your fractions to decimals?

Mathematics

Year 6
Satisfactory

Number – Fifth term

$$\begin{array}{l} 15\frac{2}{4} - \frac{9}{12} = 4\frac{3}{4} \\ 24\frac{3}{4} - \frac{9}{12} = 3\frac{1}{4} \\ 33\frac{1}{4} - \frac{9}{12} = 2\frac{2}{4} \\ 42\frac{3}{4} - \frac{9}{12} = 1\frac{3}{4} \\ 51\frac{3}{4} - \frac{9}{12} = 1 \end{array}$$

The fifth term equaled 1

my patten was $\frac{3}{4}$

$$\frac{3}{4} = \frac{9}{12} \quad 3 \times 3 = 9$$

$$4 \times 3 = 12 \quad \frac{3}{4} = \frac{9}{12}$$

Annotations

Creates a subtraction pattern using two equivalent fractions.

Explains pattern used to create the fifth term of 1.

Demonstrates an understanding of equivalent fractions.

Acknowledgement

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Mathematics

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Geometry – Area

Relevant parts of the achievement standard

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Summary of task

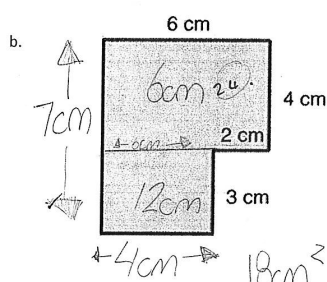
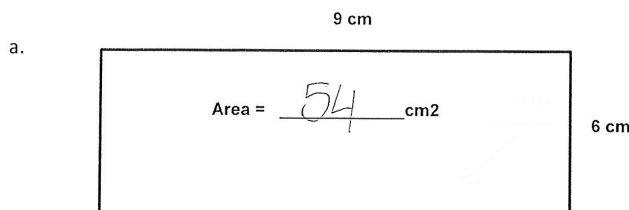
Students had completed a unit of work on area of rectangles and compound shapes. The task was a mini assessment next phase of teaching for the students for the unit of work. The students were required to calculate the area of rectangles and explain their thinking when calculating the area of a compound shape. The students were asked to complete the task in 20 minutes.

Mathematics

Year 6
Satisfactory

Geometry – Area

- Calculate the area of the following shapes.



Working Space.

Explain how you solved the problem above.

I figured out the missing spaces by adding/subtracting the numbers on the other side. Then I made the shape two smaller shapes. After that I found the numbers together. Finally I added the numbers together to equal 18.

Annotations

Calculates area of simple shapes.

Describes process for calculating the area of compound shapes.

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Number – Calculations

Relevant parts of the achievement standard

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Summary of task

Students had completed several units of work involving problem solving of addition, subtraction, multiplication and division of whole numbers and decimals. Students on this occasion were given a formal pen and paper test that covered many of the concepts in the unit. They were required to estimate answers and demonstrate their thinking, using addition, subtraction, multiplication and division in single and multi-step problems.

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Number – Calculations

PART A KNOWLEDGE AND UNDERSTANDING

Solve these problems.

Addition

a.
$$\begin{array}{r} 47.20 \\ + 26.07 \\ \hline 73.27 \end{array}$$

b.
$$\begin{array}{r} 45.78 \\ + 36.55 \\ \hline 82.33 \end{array}$$

Subtraction

a.
$$\begin{array}{r} 42.5 \\ - 34.4 \\ \hline 08.1 \end{array}$$

b.
$$\begin{array}{r} 86.12 \\ - 34.6 \\ \hline 51.6 \end{array}$$

Multiplication

a.
$$\begin{array}{r} 2 \\ \times 3.7 \\ \hline 14.8 \end{array}$$

b.
$$\begin{array}{r} 3 \\ \times 24.5 \\ \hline 151.0 \end{array}$$

Division

a.
$$\begin{array}{r} 10.7 \\ 8 \overline{) 85.6} \end{array}$$

b.
$$\begin{array}{r} 9.4 \\ 5 \overline{) 47.0} \end{array}$$

Multiply these decimals by 10, 100 and 1000. Estimate first.

	$\times 10$	$\times 100$	$\times 1000$
0.5	5	50	500
0.25	2.5	25	250
0.37	3.7	37	370
1.2	12	120	1200
7.34	73.4	734	7340

Divide these numbers by 10, 100 and 1000. Estimate first.

	$\div 10$	$\div 100$	$\div 1000$
50	5	0.5	0.05
25	2.5	0.25	0.025
37.2	3.72	0.372	0.0372
48.5	4.85	0.485	0.0485
542	54.2	5.42	0.542

Annotations

Calculates addition and subtraction problems with decimals.

Calculates with some accuracy multiplication problems of decimals with whole numbers.

Calculates division problems of decimals using whole numbers.

Uses knowledge of power of 10 to multiply and divide decimals.

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Number – Calculations

For the following operations you are required to complete three steps.

1. Estimate an answer and explain how you arrived at your estimate.
2. Calculate an answer.
3. Comment on whether your answer appears reasonable.

Addition

a.

1 cola.....	\$2.80
1 lime milkshake.....	\$3.25
4 dim sims.....	\$4.80
3 crab cakes.....	\$2.60
Total	\$13.45

My estimate is \$11
How did you get your estimate?

$$2 + 3 + 4 + 2$$

Is your answer reasonable? Explain

I find my answer reasonable because it is only \$2.45 away from my Estimate

Subtraction

- b. What is the difference between 3.4 and 7.171?

$$\begin{array}{r} 4.371 \\ - 7.171 \\ \hline 0.371 \end{array}$$

My estimate is 4
How did you get your estimate?

$$3 - 7$$

Is your answer reasonable? Explain

I say that my answer is reasonable because my answer was only 371 away from my Estimate.

Annotations

Provides estimations when calculating with whole numbers.

Demonstrates strategy used in estimating the calculation of decimals.

Calculates the addition of numerous decimals.

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Number – Calculations

PART B: APPLICATION

You and your friends are going to the movies and it's your shout. Look at the price list below and use a multiplication strategy of your choice to answer the following questions. Show your thinking:

- a How much will it cost you for 4 "Under 13" tickets?

$$\begin{array}{r} \$10.50 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} \$42.00 \\ \hline \end{array}$$

- b Two of your friends each want a large drink and a medium popcorn. What will that cost you?

$$\begin{array}{r} 3.50 \\ \times 2 \\ \hline \$7.00 \end{array}$$

Ticket prices	
Under 13	\$10.50
Adult	\$14.50
Refreshments	
Popcorn	S \$2.50
	M \$3.50
	L \$4.50
Drink	S \$2.50
	M \$3.00
	L \$3.50
Chocolate bar	\$1.95
Choc top	\$3.25
Water	\$1.95
Chips/Crisps	\$2.95

- c You and your other friend want a choc top and a large drink each. What will that cost?

$$\begin{array}{r} 3.25 \\ \times 2 \\ \hline 6.50 \end{array}$$

$$\begin{array}{r} 6.50 \\ + 7.00 \\ \hline 13.50 \end{array}$$

- d Halfway through the movie, you are all dying of thirst and you go out and buy 4 bottles of water. You pay for them with a \$20 note. How much change do you receive?

$$\begin{array}{r} 1.95 \\ \times 4 \\ \hline 7.80 \end{array}$$

$$\begin{array}{r} 20.00 \\ - 7.80 \\ \hline 12.20 \end{array}$$

Annotations

Solves everyday multiplication problems involving decimals.

Solves written problems using multiple steps and operations.

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Mathematics

Year 6
Satisfactory

Number – Calculations

c. Multiplication

$$\begin{array}{r} 6 \cdot \\ 18.35 \\ \times 7 \\ \hline 129.25 \\ \uparrow \quad \times \\ 3 \end{array}$$

$$\begin{array}{r} 58 \\ \times 7 \\ \hline 406 \end{array}$$

My estimate is 126
How did you get your estimate?

$$18 \times 7$$

Is your answer reasonable? Explain.

I believe that my answer is unreasonable because my answer is \$25.25 away from my estimate which was 126

d. Division

$$\begin{array}{r} 258.5 \\ 8 \overline{) 2070.0} \\ \underline{160} \\ 470 \\ \underline{400} \\ 700 \\ \underline{560} \\ 1400 \\ \underline{1120} \\ 2800 \\ \underline{2240} \\ 5600 \\ \underline{5120} \\ 4800 \\ \underline{4480} \\ 3200 \\ \underline{2560} \\ 6400 \\ \underline{6400} \\ 0 \end{array}$$

My estimate is 25.85
How did you get your estimate?

$$\begin{array}{r} 8 \div 207 \\ 02585 \\ 8 \overline{) 207.000} \end{array}$$

Is your answer reasonable? Explain.

my answer was unreasonable because I was \$23265 away from my estimate which was 25.85.

Annotations

Estimates using whole numbers.

Multiplies decimals by a single digit with errors.

Compares estimation and calculated answer and states the reasonableness of estimation.

Divides a four digit number by a single digit number with errors.

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 6
Satisfactory

Geometry – 3D structure

Relevant parts of the achievement standard

By the end of Year 6, students recognise the properties of prime, composite, square and triangular numbers. They describe the use of integers in everyday contexts. They solve problems involving all four operations with whole numbers. Students connect fractions, decimals and percentages as different representations of the same number. They solve problems involving the addition and subtraction of related fractions. Students make connections between the powers of 10 and the multiplication and division of decimals. They describe rules used in sequences involving whole numbers, fractions and decimals. Students connect decimal representations to the metric system and choose appropriate units of measurement to perform a calculation. They make connections between capacity and volume. They solve problems involving length and area. They interpret timetables. Students describe combinations of transformations. They solve problems using the properties of angles. Students compare observed and expected frequencies. They interpret and compare a variety of data displays including those displays for two categorical variables. They evaluate secondary data displayed in the media.

Students locate fractions and integers on a number line. They calculate a simple fraction of a quantity. They add, subtract and multiply decimals and divide decimals where the result is rational. Students calculate common percentage discounts on sale items. They write correct number sentences using brackets and order of operations. Students locate an ordered pair in any one of the four quadrants on the Cartesian plane. They construct simple prisms and pyramids. Students list and communicate probabilities using simple fractions, decimals and percentages.

Summary of task

Students had completed a unit of work on shape that involved constructing nets, three-dimensional shapes and identifying two-dimensional shapes within a three-dimensional shape. The task was given to the students a week after they had finished the unit of work to assess their knowledge of three-dimensional shapes. Students were asked to construct the net of a prism and a pyramid and create the object using straws. This task took several class lessons to complete.

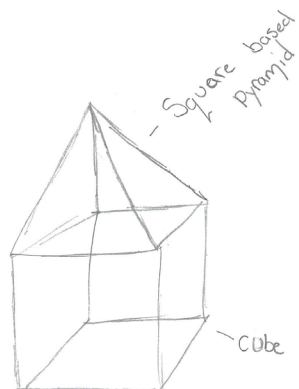
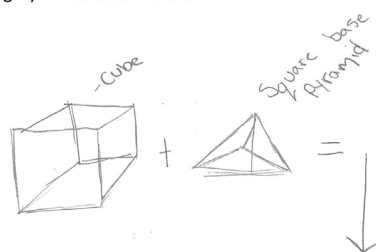
Mathematics

Year 6
Satisfactory

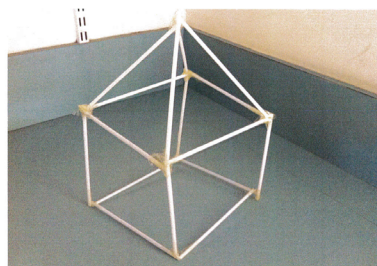
Geometry – 3D structure

Design and build a three dimensional structure

Design your structure here



Add a photo of your completed structure here



Describe the design features of your structure here

my structure is a three dimensional
house, with a cube and a
square based pyramid. my cube has
8 vertices and my square based
pyramid has 5 vertices. my structure
is made out of 16 straws and
sticky tape.

Annotations

Identifies three-dimensional shapes.

Constructs a three-dimensional object using a prism and a pyramid.

Identifies some features of the three-dimensional object.

Draws a three-dimensional representation of a design.

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Mathematics

Year 6
Satisfactory

Number – Percentages

Relevant parts of the achievement standard

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Summary of task

Students had completed several units of work on fractions, decimals and percentages. One component was to calculate percentages of whole numbers, typically using shopping items on sale. Students were given the task to complete during a class lesson.

Mathematics






Year 6
Satisfactory

Number – Percentages

6. Explain how you would calculate 20% of 250.

I would convert 20% to a common fraction $\frac{1}{5}$.
Next I would divide the bottom Number of the fraction
by 250. $\frac{50}{250} = 50$

7. Calculate the discounted prices for these items.

a	10% off  \$300	b	25% off  \$200	c	75% off  \$120	d	20% off  \$50	e	50% off  \$60
	\$ 30		\$ 50 $\frac{1}{2}$		\$ 30		\$ 10 $\frac{1}{2}$		\$ 30
	\$270 $\frac{1}{2}$		\$150				\$40		

Annotations

Explains how to calculate a common percentage of a quantity using mathematical language and equations.

Calculates the amount of sale discount using common percentages.

Acknowledgement

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Mathematics

Year 6
Satisfactory

Geometry – Sam's square

Relevant parts of the achievement standard

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Summary of task

Students had completed a unit of work on integers and coordinates. At the end of the unit they were given the task to complete during one class lesson.

Mathematics

Year 6
Satisfactory

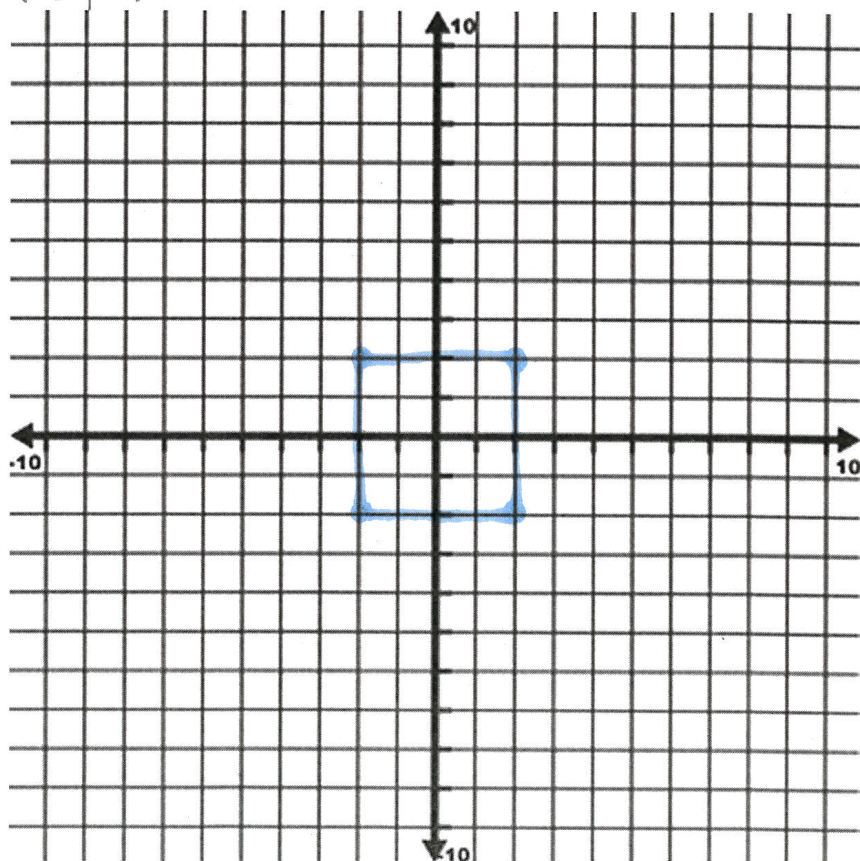
Geometry – Sam's square

Sam plotted one point in each quadrant of a Cartesian plane. When he drew lines joining the points, they formed a square. What could the coordinates be?

$(2, 2)$
 $(2, -2)$
 $(-2, 2)$
 $(-2, -2)$

They make a square.

You could make more squares
as long as you choose the
same numbers



Annotations

Calculates the coordinates for a square on the Cartesian plane.

Explains that there are more possible answers with simple logic.

Plots a square on the Cartesian plane.

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Mathematics

Year 6
Satisfactory

Probability / statistics – Spinner mania

Relevant parts of the achievement standard

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Summary of task

Students had completed lessons on relating probability to fractions, decimals and percentages so they could predict a mathematical chance of an event occurring.

Students had to create a spinner with colours that would give an unfair chance of colours occurring when spun. They had to calculate the mathematical chance of colours being spun and then spin the spinner a number of times and record the actual times colours were spun. Students were asked to graph the expected and actual results and then compare and explain the results.

Mathematics

Year 6
Satisfactory

Probability / statistics – Spinner mania

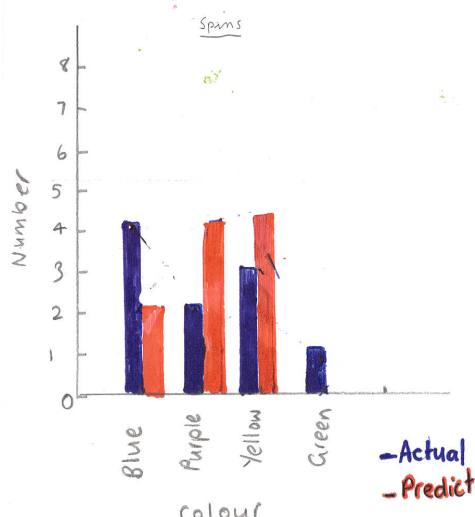
Annotations

I have 10 sections on my spinner

Colour	Number	%	Fraction	Decimal	Actual
Blue	4	40%	$\frac{4}{10}$	0.40	20%
Purple	2	20%	$\frac{2}{10}$	0.20	40%
Yellow	3	30%	$\frac{3}{10}$	0.30	40%
Green	1	10%	$\frac{1}{10}$	0.10	0%

My spinner Tally of 10 spins

Blue II
Purple IIII
Yellow IIII
Green —



my results are different to what I expected. The probability of getting a colour when I spin should equal the number of times the colour is on the spinner. that didn't happen. I think it is because you can't really make chance fair.

Compares expected frequencies with observed frequencies and attempts to explain the results.

Graphs expected and observed spinning results.

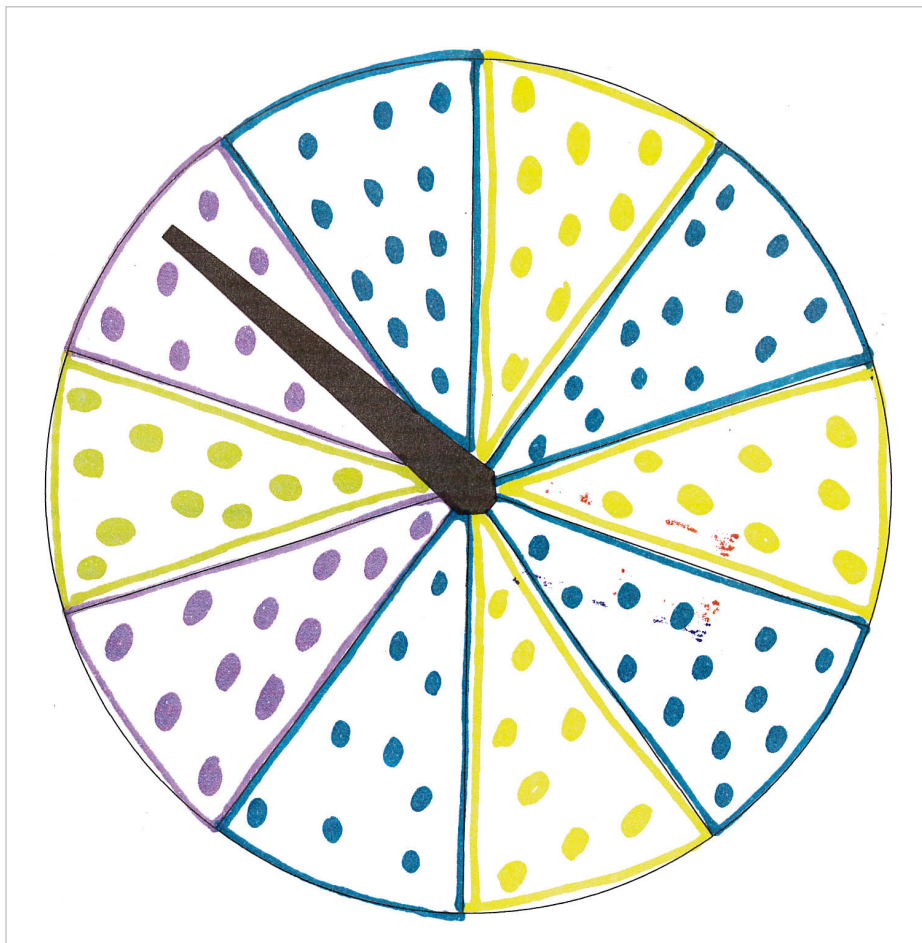
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Mathematics

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Probability / statistics – Spinner mania



Annotations

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