



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 4 Mathematics

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

- Sample 1 Number Lucy's birthday
- Sample 2 Number Multiplication
- Sample 3 Geometry Quadrilaterals
- Sample 4 Number Odd and even
- Sample 5 Number Bingo
- Sample 6 Geometry Symmetry
- Sample 7 Number Sentences
- Sample 8 Number Fractions and decimals
- Sample 9 Measurement Cinema timetable
- Sample 10 Number Giving change
- Sample 11 Statistics Collect, display, interpret

This portfolio of student work shows the drawing of different quadrilaterals with the same area (WS3) and the student applying strategies to solve problems using knowledge of patterning, odd and even numbers and multiplication and division facts up to 10 x 10 (WS1, WS2, WS5). The student added consecutive numbers to demonstrate understanding of odd and even numbers (WS4). The student creates four sided shapes with and without symmetry (WS6) they converted time from minutes to hours and demonstrated understanding of digital, analogue and 24 hour time (WS9). The student constructed addition and subtraction number sentences to solve written problems (WS7) and identified equivalent fractions and decimals, located them on a number line and represented them pictorially (WS8). The student solved problems to determine the cost of items and calculated change (WS10) and interpreted tables to construct an appropriate data display (WS11).





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:

- interpret information contained in maps
- describe different methods for data collection
- identify dependent and independent events
- classify angles in relation to a right angle
- list the probabilities of everyday events.





Number – Lucy's birthday

Relevant parts of the achievement standard

By the end of Year 4, students choose appropriate strategies for calculations involving multiplication and division. They recognise common equivalent fractions in familiar contexts and make connections between fraction and decimal notations up to two decimal places. Students solve simple purchasing problems. They identify unknown quantities in number sentences. They describe number patterns resulting from multiplication. Students compare areas of regular and irregular shapes using informal units. They solve problems involving time duration. They interpret information contained in maps. Students identify dependent and independent events. They describe different methods for data collection and representation, and evaluate their effectiveness.

Students use the properties of odd and even numbers. They recall multiplication facts to 10 x 10 and related division facts. Students locate familiar fractions on a number line. They continue number sequences involving multiples of single digit numbers. Students use scaled instruments to measure temperatures, lengths, shapes and objects. They convert between units of time. Students create symmetrical shapes and patterns. They classify angles in relation to a right angle. Students list the probabilities of everyday events. They construct data displays from given or collected data.

Summary of task

Students had been working with patterns and number sequences. Students were given this task to complete in a half hour time period in class:

Lucy was arranging some candles on her birthday cake. When she placed them in 2 equal rows, there was 1 left over. When she placed them in 3 equal rows, there were 2 left over. How old could Lucy be turning?





Number – Lucy's birthday



Annotations

Shows a calculation that has two equal rows and leaves a remainder of one.

Shows a calculation that has three equal rows and has a remainder of two.

Draws a conclusion based on their calculations in order to solve a number sentence problem.

Gives one solution to the problem posed.

Acknowledgement





Number – Multiplication

Relevant parts of the achievement standard

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Summary of task

Students had been working with patterns formed when looking at number sequences involving multiplication. Students were given this task to complete in a half hour time period in class.





Number – Multiplication

Can you creux ... includes the number 60? 4,8,12,16,20,24,28,32,36 Can you create a multiplication number pattern that 40,44,48/52,56 MY 20 term is 78 to work this out I badded 5 More Fours because I had 5 more terms arready. the Numbers that Would be in Minny the Number That Would bein Minny 10 tern is 4000 because 40 is the 10 times it by 100 icini 100. a Number the wouldn't be in the 4 times is Zaay because 7 doesn't Jointo 4 even 17. 4002 because 42 is Not in the 4times table imes table is the 6 times

Annotations

Creates a multiplication number pattern that includes the number 60.

Attempts to explain the pattern.

Attempts to justify terms in the sequence and terms not in the sequence.

Acknowledgement





Geometry – Quadrilaterals

Relevant parts of the achievement standard

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Summary of task

Students had completed a unit of work on two dimensional shapes, their properties and their area.

Students were asked to draw quadrilaterals with the same area as the given diagram.





Geometry – Quadrilaterals



Annotations

Draws two rectangles with whole number side lengths which give the same area as the irregular shape.

Acknowledgement





Number – Odd and even

Relevant parts of the achievement standard

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Summary of task

Students had completed a unit of work on addition and subtraction of numbers investigating combinations of odd and even numbers.

Students were given one lesson to complete this task.





Number – Odd and even

	Anno
Anna added three consecutive numbers together and the answer was an odd number. What numbers might they have been?	
6+7+8=21	
36 3+3+3=9	Demons meaning
+31 add the	Calcula partition
111 then the	Calcula three co answer.
odd numbers dont answer	
have a partner or III	
Partners do have	A 44
you can't do oll 3 consecutive Dumbers	Allempl
because even odd even makes	Demons odd and
If you times an even by an even	
you get an even its you times	
when you times odd you get odd	Demons
you not an add and even	

tions

tes an understanding of the consecutive numbers.

addition algorithm using

one example of the addition of ecutive numbers to give an odd

generalise the result.

es simple understanding of en numbers.

tes wider thinking of the

Acknowledgement





Number – Bingo

Relevant parts of the achievement standard

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Summary of task

Students had been practising their multiplication facts. Students were given this task to complete in a half hour time period in class.





Number – Bingo

Annotations Bingo Assessment Task Design your own 4x4 grid in order to maximise your chances of achieving a bingo - 4 numbers in a row - diagonally, horizontally, vertically or the four corners. The aim of the game is to achieve a bingo in as few moves (multiplication facts) as possible. Identifies common products for 36 14 1/ 6 multiplication facts. 42 28 0 4 61 10 37 8) 6 Select 4 numbers from your grid and explain why you included them. I have chosen 36, 16, 12, 72 because they appear Justifies reasons for choosing more few times. common products. Choose 2 numbers you didn't include on your grid and write why you didn't choose them. I've chosen 79 and O because they don't appear Justifies why less common products were once. not chosen.

Acknowledgement





Geometry – Symmetry

Relevant parts of the achievement standard

By the end of Year 4, students choose appropriate strategies for calculations involving multiplication and division. They recognise common equivalent fractions in familiar contexts and make connections between fraction and decimal notations up to two decimal places. Students solve simple purchasing problems. They identify unknown quantities in number sentences. They describe number patterns resulting from multiplication. Students compare areas of regular and irregular shapes using informal units. They solve problems involving time duration. They interpret information contained in maps. Students identify dependent and independent events. They describe different methods for data collection and representation, and evaluate their effectiveness.

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Summary of task

Students had completed a unit of work on two dimensional shapes and their properties including symmetry.

Students were asked to draw shapes with more than four sides that had at least one line of symmetry and to create quadrilaterals that didn't have any lines of symmetry.





Geometry – Symmetry

types of angles. apes that are symmetrical.
lines of symmetry of shapes.
why shapes are symmetrical.
S

Acknowledgement





Geometry – Symmetry

TASK 2 What different quadrilaterals can you create on a virtual geoboard that have NO lines of symmetry? I don't think My shales have names I know they are 4 sided Shales and 10 symmetry which are Quadrilateras. E Know they aren't SY Menetrical becay there not even on both sides.

Annotations

Creates asymmetrical shapes.

Acknowledgement





Number – Sentences

Relevant parts of the achievement standard

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Summary of task

Students had completed a unit of work on addition, subtraction and identification of unknown quantities in number sentences.

Students were asked to complete a series of problems showing their visual representations to solve the problem and a number sentence with an answer.





Number – Sentences

The problem	Representat	Calculator number sentence. Include your answer.	
Peter has 14 cats eye marbles and 7 pearly marbles. How many marbles does he have altogether?	14+7=21)	144 7 2/	14-+7=12
Sarah sorted out her pencils and threw out 12 old pencils. She ended up with 17 pencils. How many did she have to start with?	•	17 <12 51	17=12=5
The teddy bear weighs 25 grams. The toy car weighs 10 grams more than the teddy. How heavy is the car?		25 10 35	25+10=35
The farmer had some cattle. She sold 8 of her cattle and she had 21 cattle left on the farm. How many cattle did she have to start with?		8 21	∂+2 <i>l=</i> 29
Harry had some money saved for a new bike. He was given \$15 for his birthday and then had \$30. How much money did he have to start with?		<u>45</u> <u>45</u>	15+30=45

Annotations

Creates number sentences using addition and subtraction to solve a written problem.

Acknowledgement



Year 4 Below Satisfactory

Number – Sentences



Acknowledgement





Number – Fractions and decimals

Relevant parts of the achievement standard

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Summary of task

Students had completed a unit of work on fractions looking at haves, quarters thirds, sixths, fifths, eighths and tenths both of collections and a whole.

Students were asked to choose two fractions that are equivalent and fill in the appropriate information on a think board. They also had to cut a length of string and create a blank number line, marking their fractions and decimals on it.





Number – Fractions and decimals



Acknowledgement



Year 4 Below Satisfactory

Number – Fractions and decimals



Annotations

Locates some equivalent fractions on a number line.

Acknowledgement





Measurement – Cinema timetable

Relevant parts of the achievement standard

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Summary of task

Students were asked to create a cinema timetable using their choice of movies from a list. On their timetable, students were asked to include the start time of the movie in analogue, digital and 24 hour time and use am and pm. They were asked to convert the length of the movie into hours and minutes.





Measurement – Cinema timetable

 The start time 24 hour time The name of e The duration of 	e of each movie in ar each of your chosen i of each movie in mini	nalogue time and dig movies utes and then in ho	gital time, try to use urs and minutes
need to make su The start time	ıre: e is clearly written c	n the timetable	
No movie star	ts before the previo	ous movie has ended	F
Start time	Movie	Movie Duration	
7:00 M	Brave	100 min	Ihr 40min.
8:400 m	rotal recuit	130min	2hr 10min
8:400 m	Je and		

Annotations

Represents time to the nearest minute on both analogue and digital clocks.

Acknowledgement





Measurement – Cinema timetable

Start time	Movie	Duration		
12:		Minutes	Hours and Minutes	
12:16 p.M	Kind dog and	qumin	lhr 34mi	
$ \begin{array}{c} 11 \\ 12 \\ $	Koth and Koth and	85min	lhr24min	
2:53	AN INTERPO	124min	2hr 4mir	
$\frac{11}{4} + \frac{12}{57} + \frac{12}{7} + \frac{12}{2} + \frac{12}{2} + \frac{12}{3} + \frac{12}{3}$	watch	110 min	Ihr 50min	
	Hungenes	142min	2hr 22n	

Annotations

Converts time from minutes to hours and minutes.

Acknowledgement





Number – Giving change

Relevant parts of the achievement standard

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Summary of task

Students had completed a unit on money and financial mathematics. During the unit the students played games with a focus on recognising coins and notes.

Students had to calculate the change for given items and show the change that would be given. They also had to solve written money problems. The students were asked to work individually to complete the task.





Number – Giving change

Giving Change	с. П	Annotations
ins or notes you would get as change:		
Paid Change		Represents money amounts using the least possible number of
		coins. Calculates change to the nearest five cents.
20 2		
		Rounds off money amounts to the incorrect five cents.
at 3 packets of Iollies for \$1.00 each. I paid the shop keeper \$5.00 in cash. How much change would I get? $\$/00$		Solves written money problems.
at 5 pencils for 25cents each. I paid \$2.00 in coins. How much change would I get? $fo.75$		
It a painting for \$19.99. I paid with my EFTPOS bank card. How much does the picture cost me? $\int 20.00$		
	Giving Change rs or notes you would get as change: Paid Change Image: Ima	bing Change re or notes you would get as change: Paid

Acknowledgement





Statistics – Collect, display, interpret

Relevant parts of the achievement standard

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Summary of task

Students had completed a unit of work of data collection and displays.

Students were asked to construct a data display that would best show the data in the table supplied and justify their choice.





Statistics - Collect, display, interpret



Acknowledgement