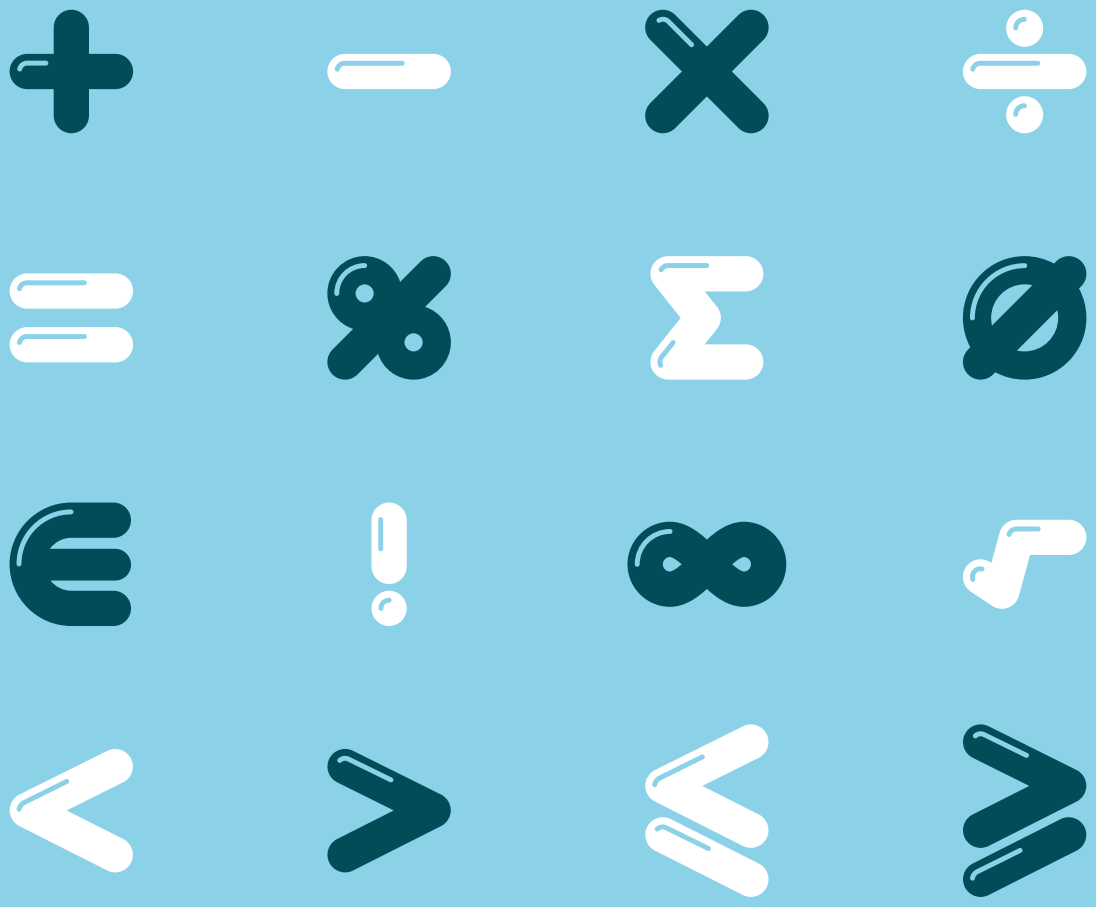
NSW GOVERNMENT Education

Learning and teaching directorate – Primary education



Mathematics Stage 2

Diagnostic tasks

June 2018

Key Ideas from the Mathematics K-10 Syllabus

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Mathematics Stage 2 diagnostic tasks

Introduction

In NSW, students in Stage 2 work towards the achievement of outcomes from the NSW Mathematics K–10 Syllabus. Mathematics Stage 2 Diagnostic Tasks can be used by teachers to generate a snapshot of student learning aligned to syllabus expectations at Stage 2. This information may assist teachers in tailoring teaching and learning experiences to more effectively meet students' needs.

Using this resource

Tasks in this resource have been designed for flexible use. Each question focuses on key ideas from substrands of the syllabus. A substrand section could form a pre-assessment task. Alternatively, teachers may decide to use particular questions to gather evidence about a student's or group of students' knowledge, skills and understanding of key ideas in mathematics.

Working mathematically components have been included for some questions. This facilitates examination of students' "working out", thereby assisting teachers to assess the efficiency of strategies used by students as they apply their knowledge and skills of mathematical concepts.

This resource is not intended to provide a comprehensive assessment. Additional evidence should be drawn from other sources such as teacher observations, interviews, student work samples and/or anecdotal records. Together, these sources of evidence support teachers in making professional judgements about students' progress towards achievement of Stage 2 syllabus outcomes.

Supporting students

Adjustments can be made for students with individual learning needs. These may include the use of large print papers, extra time, rest breaks, small group or individual supervision, use of a reader or writer and the use of computer/assistive technologies.

Additional support should also be provided to students who are learning English as an additional language.

Where possible, Web Content Accessibility Guidelines (WCAG) 2.0AA requirements have been met.

Task considerations

To support teachers' ease of use, the following considerations should be noted.

- A hand icon identifies practical tasks. 
- A ruler icon identifies tasks requiring use of a ruler. 
- Do not 'scale' worksheets. Print at 100% on A4 paper.

Table of contents

Stage 2 – Whole numbers

Name: _____ Class: _____ Date: _____

Stage 2 – Whole numbers

Question 1 – reading, writing and ordering numbers	Key ideas
Write the number before and after the following numbers. a) _____ 159 _____ b) _____ 799 _____ c) _____ 1263 _____ d) _____ 13 400 _____	Read, write and order numbers of up to five-digits
Count **forwards** by 10 each time starting at: e) 321 _____ _____ _____ _____ _____ _____ f) 1280 _____ _____ _____ _____ _____ _____	Count forwards and backwards by tens and hundreds from any starting point
Count **forwards** by 100 each time starting at: g) 765 _____ _____ _____ _____ _____ _____ Count **backwards** by 10 each time starting at: h) 478 _____ _____ _____ _____ _____ _____ i) 2026 _____ _____ _____ _____ _____ _____	
Count **backwards** by 100 each time starting at: j) 2588 _____ _____ _____ _____ _____ _____	

Name: _____ Class: _____ Date: _____

Stage 2 – Whole numbers

Question 2 – relationship between numbers

Key ideas

Use the **greater than** > or **less than** < symbol to make these statements true.

Read, write and order numbers of up to five-digits

a) 636 ☐ 889

b) 985 ☐ 410

c) 1009 ☐ 10 009

d) 808 ☐ 880

e) Rearrange the digits in 6795 to make the largest number.

____ ____ ____ ____

f) Rearrange the digits in 8937 to make the smallest number.

____ ____ ____ ____

g) Write three thousand and fifty-four in numerals. _____

h) Write 9208 in words. _____

_____

Name: _____ Class: _____ Date: _____

Stage 2 – Whole numbers

Question 3 – understanding place value

a) Partition 3540 into its place value parts.

3540 = _____ + _____ + _____ + _____

b) Partition 3540 in another way.

3540 = _____

c) Partition 16 907 into its place value parts.

16 907 = _____ + _____ + _____ + _____ + _____

What is the place value of the **4** in the following numbers?

d) 59 647 _____

e) 3004 _____

f) 450 _____

g) 4013 _____

Key ideas

Record numbers of up to five-digits using expanded notation

Related key idea – addition and subtraction

Use and record a range of mental strategies for addition and subtraction of two-, three-, four- and five-digit numbers

Name: _____ Class: _____ Date: _____

Stage 2 – Whole numbers

Question 4 – ordering and rounding numbers	**Key ideas**
a) Arrange the following numbers in **ascending** order: 409, 94, 904, 4049, 4009 _____ _____ _____ _____ _____	Read, write and order numbers of up to four-digits
b) Arrange the following numbers in **descending** order: 72, 782, 827, 8072, 7208 _____ _____ _____ _____ _____	
c) Round 56 to the nearest **ten**. _____	State the place value of digits in numbers of up to five-digits
d) Round 245 to the nearest **hundred**. _____	
e) Round 4368 to the nearest **thousand**. _____	
f) Round 34 679 to the nearest **ten thousand**. _____	
g) Round 5756 to the nearest **hundred**. _____	

Name: _____ Class: _____ Date: _____

Stage 2 – Whole numbers

Question 5 – extending understanding of numbers

Key ideas

a) Rearrange the digits in 38 127 to make the **largest** 5 digit number.

_____ _____ _____ _____ _____

b) Rearrange the digits in 26 795 to make the **largest** 5 digit number.

_____ _____ _____ _____ _____

c) Rearrange the digits in 81 937 to make the **smallest** 5 digit number.

_____ _____ _____ _____ _____

d) Rearrange the digits in 97 201 to make the **smallest** 5 digit number.

_____ _____ _____ _____ _____

e) Rearrange the digits in 97 201 to make the **second smallest** number.

_____ _____ _____ _____ _____

State the place value of digits in numbers of up to five-digits

Read, write and order numbers of up to five-digits

Stage 2 – Addition and subtraction

Name: _____ Class: _____ Date: _____

Stage 2 – Addition and subtraction

Question 1 – addition	Key ideas
Complete the following questions using 2 different strategies. Show your working out.	Use and record a range of mental strategies for addition and subtraction of two-, three-, four- and five-digit numbers
a) 46 + 23 =	
Strategy 1 working out:	
Strategy 2 working out:	
b) 16 + 8 + 4 =	
Strategy 1 working out:	
Strategy 2 working out:	

Name: _____ Class: _____ Date: _____

Stage 2 – Addition and subtraction

c) 347 + 58 =

Strategy 1 working out:

Strategy 2 working out:

d) 12 600 + 5670 =

Strategy 1 working out:

Strategy 2 working out:

Key ideas

Use and record a range of mental strategies for addition and subtraction of two-, three-, four- and five-digit numbers

Name: _____ Class: _____ Date: _____

Stage 2 – Addition and subtraction

Question 2 – problem solving with addition and subtraction

Solve the following problems. Show and explain your strategy.

a) What is the total cost of the following amounts: $4.50, $12.25 and $20.15? Show your strategy:

Explain your strategy:

b) I purchased a book for $15.60. How much change will I get from $20? Show your strategy:

Explain your strategy:

Key ideas

Use and record a range of mental strategies for addition and subtraction of two-, three-, four- and five-digit numbers

Perform calculations with money, including calculating equivalent amounts using different denominations

Solve word problems, including those involving money

Name: _____ Class: _____ Date: _____

Stage 2 – Addition and subtraction

c) I walked 1265m on the first day, 979m on the second day and 2013m on the third day. How far did I walk in total? Show your strategy:

Explain your strategy:

_____

_____

_____

_____

d) Erica is buying an icecream that costs $1.50. Show 3 different combinations of the coins she might have. Show your strategy:

Explain your strategy:

_____

_____

_____

_____

Key ideas

Related key idea – length

Record lengths using the abbreviations m, cm and mm

Use and record a range of mental strategies for addition and subtraction of two-, three-, four- and five-digit numbers

Perform calculations with money, including calculating equivalent amounts using different denominations

Solve word problems, including those involving money

Name: _____ Class: _____ Date: _____

Stage 2 – Addition and subtraction

Question 3 – associative property for addition

Key ideas

Model and apply the associative property for addition

Decide whether the following are true or false and explain your thinking.

a) 9 + 9 = 10 + 8

Circle the correct answer: true / false

Explain your thinking.

b) 15 + 10 = 20 + 7

Circle the correct answer: true / false

Explain your thinking.

c) 39 – 11 = 15 + 11

Circle the correct answer: true / false

Explain your thinking.

Name: _____ Class: _____ Date: _____

Stage 2 – Addition and subtraction

Question 4 – equivalence		**Key ideas**
Complete the following number sentences. Show your working out.		Use the equals sign to record equivalent number sentences
a) 22 – 6 = 8 + _____ Working out:	b) 30 – 15 = _____ + _____ Working out:	
c) 28 + 12 = _____ + 10 Working out:	d) 50 – 20 = 15 + _____ + _____ Working out:	
e) 27 + 6 = _____ + _____ Working out:	f) 300 + 100 = ___ + ___ + ___ Working out:	

Name: _____ Class: _____ Date: _____

Stage 2 – Addition and subtraction

Question 5 – the formal algorithm for addition

Key ideas

A student has made some errors with his calculations.
Explain the errors and show the correct solutions.

Use the formal written algorithm for addition and subtraction

a)
$$\begin{array}{r} {}^{1}5{}^{1}648 \\ +\ \ 799 \\ \hline 13738 \end{array}$$

Explain the errors:

Show the correct solution:

b)
$$\begin{array}{r} 6074 \\ +\ 4351 \\ \hline 10325 \end{array}$$

Explain the errors:

Show the correct solution:

Name: _____ Class: _____ Date: _____

Stage 2 – Addition and subtraction

Question 6 – subtraction	Key ideas
Complete the following questions using 2 different strategies. Show your working out.	Use and record a range of mental strategies for addition and subtraction of two-, three-, four- and five-digit numbers
a) 40 – 24 =	
Strategy 1 working out:	
Strategy 2 working out:	
b) 342 – 43 =	
Strategy 1 working out:	
Strategy 2 working out:	

Name: _____ Class: _____ Date: _____

Stage 2 – Addition and subtraction

c) Subtract 1060 from 2650

Strategy 1 working out:

Strategy 2 working out:

d) Subtract 15 000 from 36 000

Strategy 1 working out:

Strategy 2 working out:

Key ideas

Use and record a range of mental strategies for addition and subtraction of two-, three-, four- and five-digit numbers

Name: _____ Class: _____ Date: _____

Stage 2 – Addition and subtraction

Question 7 – problem solving with addition and subtraction

Solve the following problems. Show and explain your strategy for each.

a) What is the difference between 39 and 97? Show your working out:

Explain your strategy:

_____

_____

_____

b) What is the difference between 72 and 54? Show your working out:

Explain your strategy:

_____

_____

_____

_____

Key ideas

Use and record a range of mental strategies for addition and subtraction of two-, three-, four- and five-digit numbers

Solve word problems, including those involving money

Name: _____ Class: _____ Date: _____

Stage 2 – Addition and subtraction

c) How much change would I get from $50 if I spent $26.50?
Show your working out:

Explain your strategy:

_____

_____

_____

d) One sausage sandwich costs $4.50 but I only have $1.75.
How much more money do I need to buy a sausage sandwich?
Show your working out:

Explain your strategy:

_____

_____

_____

Key ideas

Use and record a range of mental strategies for addition and subtraction of two-, three-, four- and five-digit numbers

Solve word problems, including those involving money

Perform calculations with money, including calculating equivalent amounts using different denominations

Name: _____ Class: _____ Date: _____

Stage 2 – Addition and subtraction

Question 8 – using the inverse operation for subtraction

Key ideas

Use the inverse operation to check addition and subtraction calculations

Complete the following number sentences.

a) 56 – 7 = ____ so,

7 + ____ = 56

b) 64 – 8 = ____ so,

____ + ____ = ____

c) 30 – 13 = ____ so,

____ + ____ = ____

d) 54 – 32 = ____ so,

____ + ____ = ____

Question 9 – the formal algorithm for subtraction

Key ideas

Use the formal written algorithm for addition and subtraction

A student has made some errors with her calculations.
Explain the errors and show the correct solutions.

a)
$$\begin{array}{r} 9^{1}045 \\ -\ 1242 \\ \hline 8803 \end{array}$$

b)
$$\begin{array}{r} 9645 \\ -\ 1078 \\ \hline 8633 \end{array}$$

Explain the errors:

Explain the errors:

Show the correct solution:

Show the correct solution:

Stage 2 – Multiplication and division

Name: _____ Class: _____ Date: _____

Stage 2 – Multiplication and division

Question 1 – multiplication and division – arrays

Key ideas

Complete the following.

a) Draw an array to show **3 rows of 6**.

b) What is the total for this array?

_____

c) Write a multiplication number sentence to match your array.

_____

d) Write a division number sentence to match your array.

_____

e) Draw an array to show **8 rows of 4**.

f) What is the total for this array?

_____

g) Write a multiplication number sentence to match your array.

_____

h) Write a division number sentence to match your array.

_____

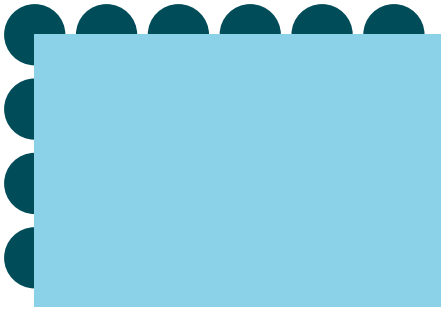
Link multiplication and division using arrays

Recognise and use the symbols × and ÷

Name: _____ Class: _____ Date: _____

Stage 2 – Multiplication and division

i) Looking at the covered array, how many dots are there altogether, if all of the dots are in equal rows and columns?



_____

Explain how you worked it out.

_____

_____

_____

_____

Key ideas

Link multiplication and division using arrays

Recognise and use the symbols × and ÷

Question 2 – linking multiplication and division

Solve these multiplication questions. Then write their division facts.

a) 2 × 7 = _____ _____ ÷ _____ = 7

7 × 2 = _____ _____ ÷ _____ = 2

b) 5 × 9 = _____ _____ ÷ _____ = _____

_____ × _____ = _____ _____ ÷ _____ = _____

c) Write your own related multiplication facts. Then write the inverse division facts.

_____ × _____ = _____ _____ ÷ _____ = _____

_____ × _____ = _____ _____ ÷ _____ = _____

Key ideas

Recall multiplication facts for twos, threes, fives and tens

Model and apply to commutative property for multiplication

Relate multiplication facts to their inverse division facts

Name: _____ Class: _____ Date: _____

Stage 2 – Multiplication and division

Question 3 – equivalence

Decide whether the following are true or false and explain your thinking.

a) $4 \times 4 = 2 \times 8$

Circle the correct answer:

true ☐ false ☐

Explain your thinking.

b) $12 \times 2 = 5 \times 5$

Circle the correct answer:

true ☐ false ☐

Explain your thinking.

Key ideas

Use the equals sign to record equivalent number relationships involving multiplication

Related key idea – multiplication and division

Use and record a range of mental strategies for multiplication of two single-digit numbers

Name: _____ Class: _____ Date: _____

Stage 2 – Multiplication and division

Question 4 – mental strategies for multiplication		**Key ideas**
Complete the following questions. Show your working out. Then use another strategy to check your answer.		Recall and use multiplication facts up to 10 × 10 with automaticity Use and record a range of mental strategies for multiplication of two single-digit numbers Use and record a range of mental and informal written strategies for multiplication and division of two-digit numbers by a one digit operator Use mental strategies to multiply one-digit numbers by multiples of 10
a) 7 × 8 =		
Working out:	Show **another** strategy to check answer:	
b) 5 × 30 =		
Working out:	Show **another** strategy to check answer:	

Name: _____ Class: _____ Date: _____

Stage 2 – Multiplication and division

c) 4 × 25 =

Working out:	Show **another** strategy to check answer:

d) 6 × 27 =

Working out:	Show **another** strategy to check answer:

Key ideas

Recall and use multiplication facts up to 10 × 10 with automaticity

Use and record a range of mental strategies for multiplication of two single-digit numbers

Use and record a range of mental and informal written strategies for multiplication and division of two-digit numbers by a one digit operator

Use mental strategies to multiply one-digit numbers by multiples of 10

Name: _____ Class: _____ Date: _____

Stage 2 – Multiplication and division

Question 5 – mental strategies for division		**Key ideas**
Complete the following questions. Show your working out. Then use another strategy to check your answer.		Use and record a range of mental and informal written strategies for multiplication and division of two-digit numbers by a one digit operator
a) 24 ÷ 4 =		
Working out:	Show **another** strategy to check answer:	
b) 27 ÷ 6 =		
Working out:	Show **another** strategy to check answer:	

Name: _____ Class: _____ Date: _____

Stage 2 – Multiplication and division

Question 6 – problem solving using multiplication and division

Complete the following questions. Show your working out. Then use another strategy to check your answer.

a) If I shared 18 chocolates equally between 6 friends, how many would each friend get?

Working out:	Show **another** strategy to check answer:

b) Show your calculations for how you could share 30 lollies equally among 5 children.

Working out:	Show **another** strategy to check answer:

Key ideas

Use mental strategies and informal recording methods for division with remainders

Related key idea – multiplication and division

Relate multiplication facts to their inverse division facts

Name: _____ Class: _____ Date: _____

Stage 2 – Multiplication and division

c) The netball gala day had 72 children participating. Each team had 8 players. How many teams were there?

Working out:	Show **another** strategy to check answer:

d) The hens laid a total of 28 eggs. If an egg carton holds 6 eggs, how many cartons would I need to pack all the eggs laid?

Working out:	Show **another** strategy to check answer:

Key ideas

Use mental strategies and informal recording methods for division with remainders

Related key idea – multiplication and division

Relate multiplication facts to their inverse division facts

Name: _____ Class: _____ Date: _____

Stage 2 – Multiplication and division

Question 7 – factors and multiples

Key ideas

Determine multiples and factors of whole numbers

Complete the following.

a) Circle all the factors of **16**.

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16				

b) Circle all the factors of **24**.

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	

c) Circle all the factors of **30**.

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30

d) Write the **multiples** for 6 up to 60. _____

e) Write the **multiples** for 8 up to 80. _____

f) Choose your own 2-digit number and write all the **factors** of the number.

_____

g) Choose a number between 10 and 20. Write all the **multiples** of your number up to 100.

_____

Stage 2 – Fractions and decimals

Name: _____ Class: _____ Date: _____

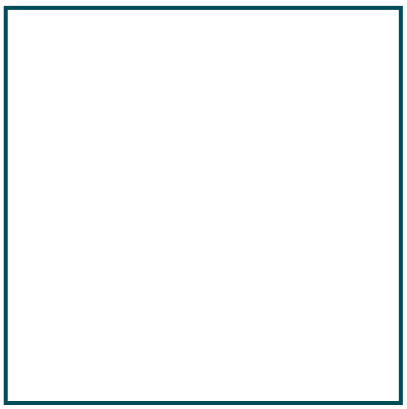
Stage 2 – Fractions and decimals

Question 1 – representing fractions with denominators 2, 3, 4, 5, and 8

Key ideas

For each of the following diagrams draw:

a) quarters



b) thirds

c) eighths

d) fifths

Model and represent fractions with denominators 2, 3, 4, 5 and 8

Name: _____ Class: _____ Date: _____

Stage 2 – Fractions and decimals

Question 2 – representing fractions and equivalence

Key ideas

a) Draw a line where $\frac{3}{8}$ would be.

Model and represent fractions with denominators 2, 3, 4, 5 and 8

b) What fraction is represented by each part? _____

c) Write 2 equivalent fractions for three-quarters.

$$\frac{3}{4} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$$

d) Explain why the fractions you chose are equivalent to $\frac{3}{4}$.

Model and find equivalence between fractions with denominators 2, 4 and 8; 3 and 6; and 5, 10 and 100

Name: _____ Class: _____ Date: _____

Stage 2 – Fractions and decimals

Question 3 – representing fractions on a number line

Write the following numbers and fractions in order on the number line below.

$\frac{1}{2}$ $\frac{3}{4}$ 0 $1\frac{2}{8}$ $\frac{1}{4}$ $1\frac{3}{4}$ $1\frac{1}{2}$ 1

Key ideas

Represent fractions on number lines, including number lines that extend beyond 1

Count by halves, quarters and thirds, including with mixed numerals

Question 4 – counting fractions

a) Fill in the missing fraction in this number pattern.

$\frac{1}{3}$, $\frac{2}{3}$, $\square$, $1\frac{1}{3}$, $1\frac{2}{3}$, 2

b) Complete the following number sentence.

$\frac{3}{4} + \frac{1}{4} =$

c) Draw a diagram to show how you know your answer is correct.

Key ideas

Count by halves, quarters and thirds, including with mixed numerals

Related key idea – fractions and decimals

Model and represent fractions with denominators 2, 3, 4, 5 and 8

Name: _____ Class: _____ Date: _____

Stage 2 – Fractions and decimals

Question 5 – modelling equivalence

Key ideas

Represent equivalent fractions using the 2 rectangles.

Model and find equivalence between fractions with denominators 2, 4 and 8; 3 and 6; and 5, 10 and 100

Question 6 – finding equivalence

Key ideas

Use the rectangles below to show:

a) $\frac{1}{2}$

b) $\frac{2}{4}$

c) $\frac{4}{8}$

Model and find equivalence between fractions with denominators 2, 4 and 8; 3 and 6; and 5, 10 and 100

d) Are these equivalent fractions? Yes or No

Explain your answer.

_____

_____

_____

_____

Name: _____ Class: _____ Date: _____

Stage 2 – Fractions and decimals

Question 7 – connecting fractions and decimals

Write the following fractions as decimals.

a) $\frac{1}{4}$ = _____

b) $\frac{64}{100}$ = _____

c) $4\frac{2}{10}$ = _____

d) $1\frac{1}{2}$ = _____

Write the following decimals as fractions.

e) 0.7 = _____

f) 0.9 = _____

g) 0.04 = _____

h) 0.64 = _____

Key ideas

Make connections between fractions and decimal notation

Related key idea – fractions and decimals

Apply the place value system to represent tenths and hundredths as decimals

Name: _____ Class: _____ Date: _____

Stage 2 – Fractions and decimals

Question 8 – representing decimals

a) Represent $\frac{6}{10}$ as a decimal. _____

b) Represent $\frac{4}{100}$ as a decimal. _____

c) What is the value of the **6** in 0.63? _____

d) What is the value of the **3** in 1.35? _____

Key ideas

Apply the place value system to represent tenths and hundredths as decimals

Model, compare and represent decimals with one and two decimal places

Related key idea – fractions and decimals

Apply the place value system to represent tenths and hundredths as decimals

Question 9 – representing decimals on a number line

Write the following decimals in order on the number line.

1.5 0.5 0.1 0.8 1.8 0 1.2

Key ideas

Represent decimals on number lines

Stage 2 – Patterns and algebra

Name: _____ Class: _____ Date: _____

Stage 2 – Patterns and algebra

Question 1 – increasing and decreasing patterns

Complete the following number patterns:

a) 4, 8, 12, 16, _____ _____ _____ _____ _____

Describe the pattern _____

_____

b) 360, 350, 340, 330, _____ _____ _____ _____ _____

Describe the pattern _____

_____

c) Make an increasing number pattern that starts at 5 and goes **up** by an **odd** number.

_____

c) Make an decreasing number pattern that starts at 90 and goes **down** by an **even** number.

_____

Key ideas

Identify, continue, create, describe and record increasing and decreasing number patterns

Investigate and use the properties of odd and even numbers

Related key idea – addition and subtraction

Use and record a range of mental strategies for addition and subtraction of two-, three-, four- and five-digit numbers

Name: _____ Class: _____ Date: _____

Stage 2 – Patterns and algebra

Question 2 – equivalent number sentences

Fill in the missing numbers to complete these number sentences.

a) 4 + _____ = 10

b) _____ – 12 = 16

c) _____ + _____ = 120

d) 3 + _____ = 10 + 5

e) _____ – _____ – _____ = _____

f) 80 = _____ + 35

g) 42 – _____ = 8

h) 13 + _____ = 65 – _____

i) _____ – _____ = 150

j) _____ = _____ + _____ + _____

Key ideas

Find missing numbers in number sentences involving addition or subtraction on one or both sides of the equals sign

Related key ideas – addition and subtraction

Use and record a range of mental strategies for addition and subtraction of two-, three-, four- and five-digit numbers

Question 3 – odd and even number properties

Give an example of:

a) a 2-digit **even** number. _____

b) a 3-digit **even** number. _____

c) a 4-digit **even** number. _____

d) a 2-digit **odd** number. _____

e) a 3-digit **odd** number. _____

f) a 4-digit **odd** number. _____

Key ideas

Identify odd and even numbers of up to four-digits

Name: _____ Class: _____ Date: _____

Stage 2 – Patterns and algebra

Question 4 – odd and even number properties

a) An odd number is _____

b) An even number is _____

c) If two even numbers are **added** together, will the answer be an odd number or an even number? Give an example to explain your answer.

d) If two odd numbers are **added** together, will the answer be even or odd? Give an example to explain your answer.

Key ideas

Investigate and use the properties of odd and even numbers

Related key ideas – addition and subtraction

Use and record a range of mental strategies for addition and subtraction of two-, three-, four-and five-digit numbers

Name: _____ Class: _____ Date: _____

Stage 2 – Patterns and algebra

e) If an odd number and an even number are **multiplied** together, will the answer be an odd or even number? Give an example to explain your answer.

_____

_____

_____

_____

Key ideas

Investigate and use the properties of odd and even numbers

Related key ideas – multiplication and division

Use and record a range of mental strategies for multiplication of two single-digit numbers

Question 5 – number relationships in multiplication and division

Key ideas

Complete the following number patterns and then describe the pattern.

a) 5, 10, 20, _____ _____ _____ _____

Describe the pattern _____

_____

b) 4, 12, 36, _____ _____

Describe the pattern _____

_____

Recognise, continue and describe number patterns resulting from performing multiplication

Related key idea – multiplication and division

Use and record a range of mental strategies for multiplication of two single-digit numbers

Name: _____ Class: _____ Date: _____

Stage 2 – Patterns and algebra

Question 6 – equivalent number sentences

Fill in the missing numbers to complete these number sentences.

a) 5 × ____ = 55

b) ____ × 4 = 32

c) ____ × ____ = 90

d) 3 × ____ = 10 × 6

e) ____ = ____ × ____

f) 24 ÷ ____ = 6

g) 49 ÷ ____ = ____

h) ____ ÷ 2 = 18

i) ____ ÷ ____ = 15

j) ____ ÷ ____ = ____

Key ideas

Find missing numbers in number sentences involving one operation of multiplication or division

Related key idea – multiplication and division

Relate multiplication facts to their inverse division facts

Stage 2 – Length

Name: _____ Class: _____ Date: _____

Stage 2 – Length

Question 1 – units of measuring length

Key ideas

Use metres, centimetres and millimetres to measure, compare, order and estimate lengths

Record lengths using the abbreviations m, cm and mm

Estimate the following lengths of these lines to the centimetre. Then, use a ruler to measure the line.

Estimate	Line	Measured length
a)		a)
b)		b)
c)		c)
d)		d)
e)		e)
f)		f)

Question 2 – units of measuring length

Key ideas

Use metres, centimetres and millimetres to measure, compare, order and estimate lengths

Order the above lengths from **shortest** to **longest**.

1) _____ 4) _____

2) _____ 5) _____

3) _____ 6) _____

Name: _____ Class: _____ Date: _____

Stage 2 – Length

Question 3 – units of measuring length	**Key ideas**
Use a ruler to draw a line to match the following measurements.  a) 36mm b) 7.5cm c) 90mm d) 5.4cm e) 66mm f) 3.1cm g) 0.6cm	Use metres, centimetres and millimetres to measure, compare, order and estimate lengths

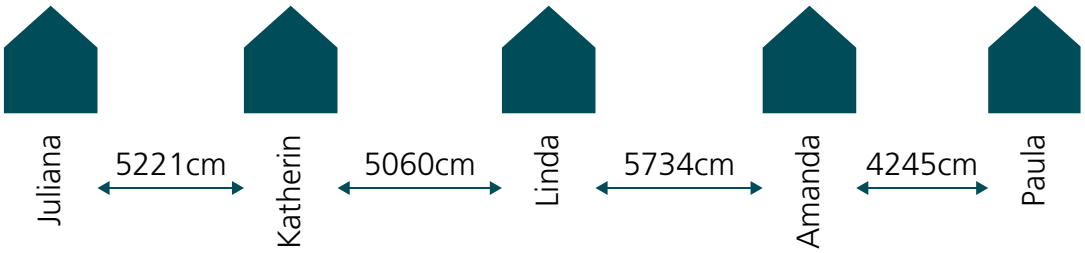
Question 4 – selecting appropriate scaled instruments and units of measurement	**Key ideas**
What would you measure with the following instruments and what would the unit of measurement be? a) I would use **a ruler** to measure _____ and record the length in _____. b) I would use **a trundle wheel** to measure _____ and record the length in _____.	Select and use appropriate scaled instruments and units to measure and compare lengths

Name: _____ Class: _____ Date: _____

Stage 2 – Length

Question 5 – calculating length

The picture below shows the distances from one student's house to another.



Use the picture to answer the following questions.

Note: images not to scale

a) How far does Juliana need to travel to get from her house to Linda's?

Record the distance in **centimetres**.

_____

Record in **metres to 2 decimal places**.

_____

b) How far does Katherin need to travel to get from her house to Paula's? Record in **metres to 2 decimal places**.

_____

Key ideas

Record lengths and distances using decimal notation to two decimal places

Related key ideas – length

Convert between metres, centimetres and millimetres

Related key ideas – addition and subtraction

Use and record a range of mental strategies for addition and subtraction of two-, three- and four-digit numbers

Name: _____ Class: _____ Date: _____

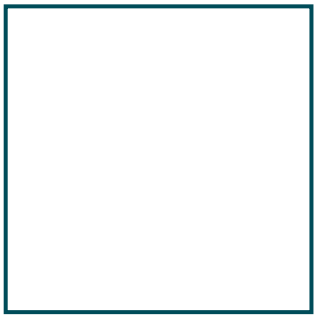
Stage 2 – Length

Question 6 – calculating perimeter

Use a ruler to measure the perimeter of each shape.

a)

b)



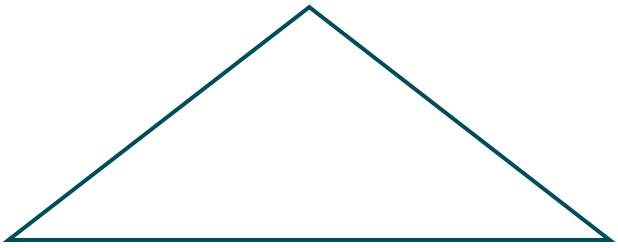
Estimated perimeter a) _____

Estimated perimeter b) _____

Perimeter a) _____

Perimeter b) _____

c)



Estimated perimeter c) _____

Perimeter c) _____

Key ideas

Estimate and measure perimeters of two dimensional shapes

Related key idea – addition and subtraction

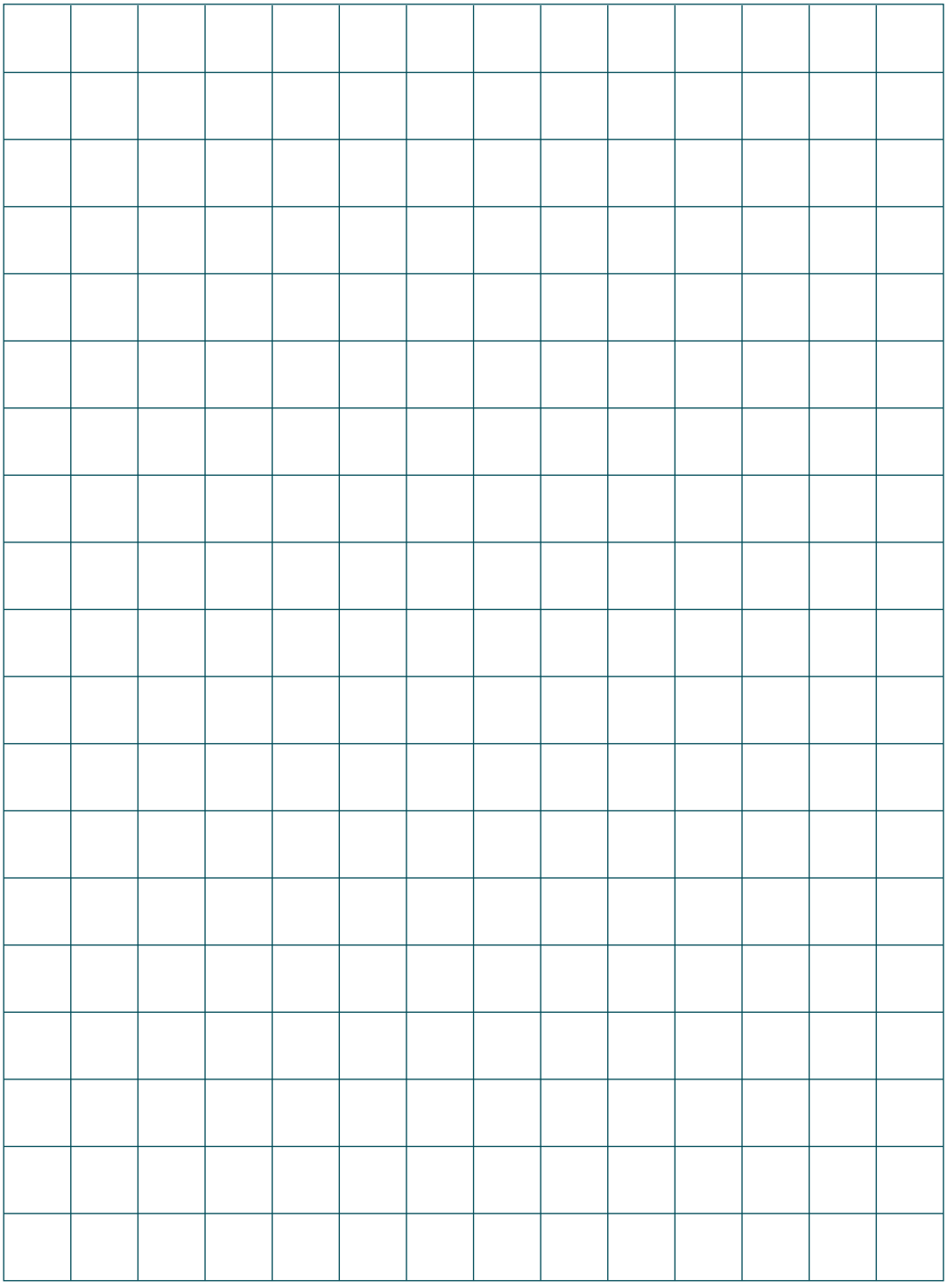
Use and record a range of mental strategies for addition and subtraction of two-, three- and four-digit numbers

Name: _____ Class: _____ Date: _____

Stage 2 – Length

Question 7 – understanding perimeter

Draw 3 different shapes (regular or irregular) with a total perimeter of exactly 24cm. Use the 1cm grid paper to draw the shapes. Label the length measurements for each side.



Key ideas

Estimate and measure perimeters of two dimensional shapes

Related key idea – addition and subtraction

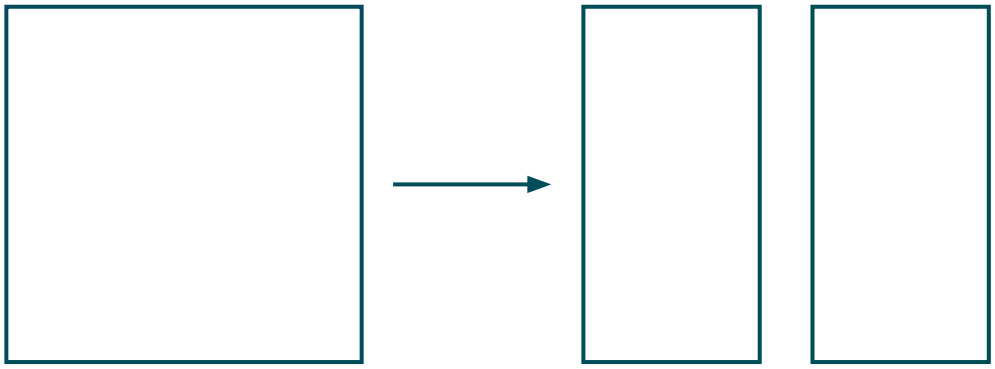
Use and record a range of mental strategies for addition and subtraction of two-, three- and four-digit numbers

Name: _____ Class: _____ Date: _____

Stage 2 – Length

Question 8 – calculating perimeter

The perimeter of a square is 32cm. When it is cut in half, we get two identical rectangles.



Note: image not to scale

What is the perimeter of one rectangle?

_____

Show your working out.

Key ideas

Estimate and measure perimeters of two dimensional shapes

Related key idea – addition and subtraction

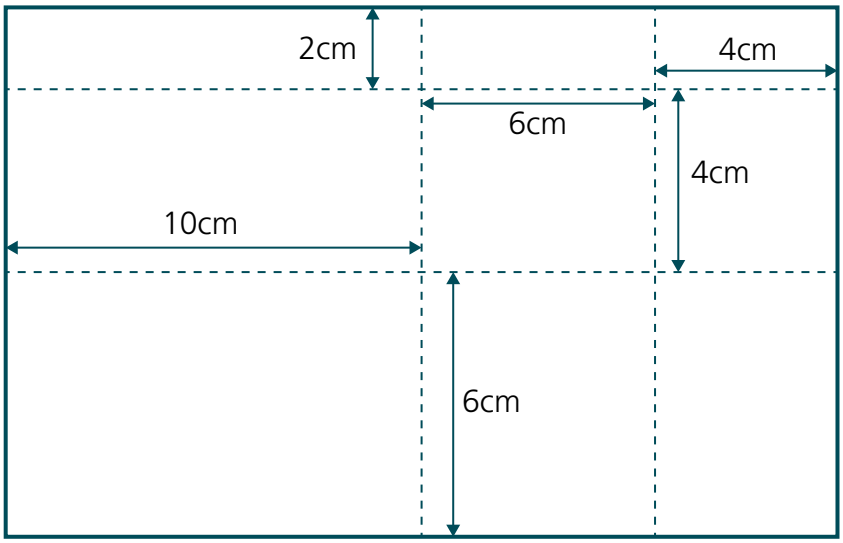
Use and record a range of mental strategies for addition and subtraction of two-, three- and four-digit numbers

Name: _____ Class: _____ Date: _____

Stage 2 – Length

Question 9 – calculating perimeter

Use the measurements to find the perimeter of this rectangle.



Note: image not to scale

Perimeter = _____

Show all your working out.

Key ideas

Estimate and measure perimeters of two dimensional shapes

Name: _____ Class: _____ Date: _____

Stage 2 – Length

Question 10 – converting between units of measurement

Answer the following.

a) How many centimetres in a metre? _____

b) How many millimetres in a centimetre? _____

c) How many mm in 70cm? _____

d) How many cm in 4.5m? _____

Key ideas

Convert between metres, centimetres and millimetres

Related key idea – multiplication and division

Use and record a range of mental and informal written strategies for multiplication and division of two-digit numbers by a one digit operator

Name: _____ Class: _____ Date: _____

Stage 2 – Length

Question 11 – converting units of measurement

Covert the following units of measurement. Use decimal notation if required.

a) 14cm and 6mm = _____ cm

b) 3m and 55cm = _____ m

c) 7cm and 9mm = _____ cm

d) 15m and 10cm = _____ cm

e) 152mm = _____ cm

f) 305cm = _____ m

Key ideas

Record lengths and distances using decimal notation to two decimal places

Convert between metres, centimetres and millimetres

Related key idea – multiplication and division

Use and record a range of mental and informal written strategies for multiplication and division of two-digit numbers by a one digit operator

Name: _____ Class: _____ Date: _____

Stage 2 – Length

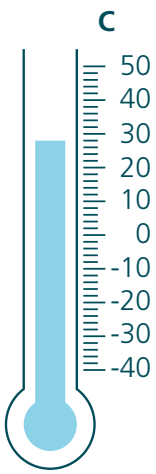
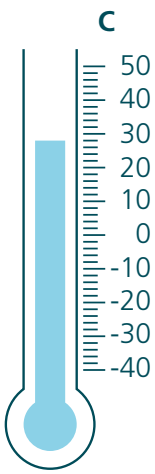
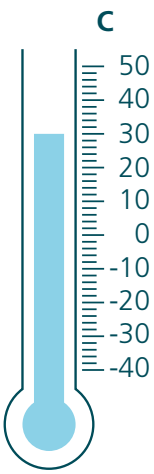
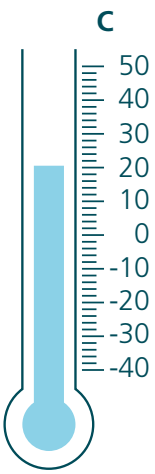
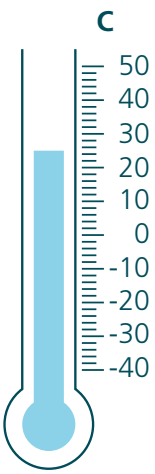
Question 12 – measuring and comparing temperatures

Key ideas

Use a scaled instrument to measure and compare temperatures

Record temperatures using the symbol for degrees

The thermometers below show the temperature over five days. Record the temperatures shown on each thermometer.

Monday	Tuesday	Wednesday	Thursday	Friday
				
a)	b)	c)	d)	e)

f) Write 3 sentences comparing the daily temperatures.

1. _____

_____

2. _____

_____

3. _____

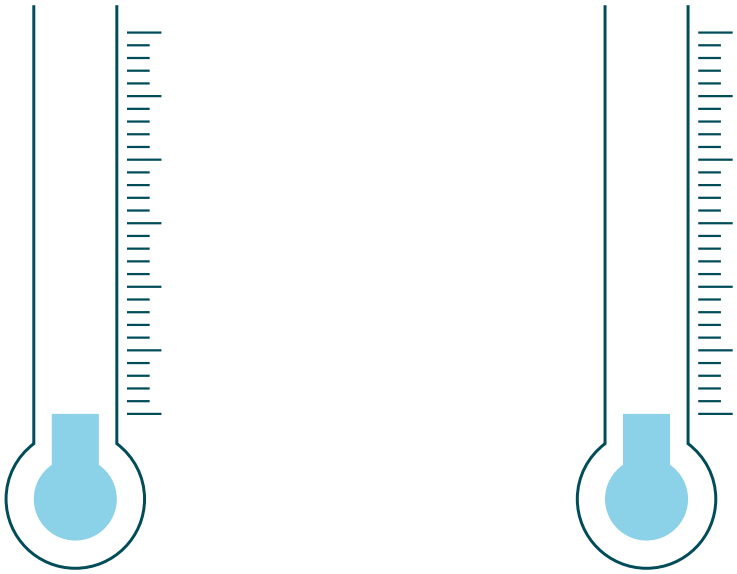
_____

Name: _____ Class: _____ Date: _____

Stage 2 – Length

Question 13 – recording temperatures

Record 2 temperatures at different times in your classroom on the thermometers below.



Write the temperatures in degrees.

a) _____

b) _____

c) Write a sentence to compare the temperatures.

_____

_____

_____

_____

Key ideas

Use a scaled instrument to measure and compare temperatures

Record temperatures using the symbol for degrees

Stage 2 – Area

Name: _____ Class: _____ Date: _____

Stage 2 – Area

Question 1 – formal units for measuring area	Key ideas
Give an example of when you would need to use **square metres** to measure an area of space. Explain why. _____ _____ _____ _____ _____ _____	Recognise the need for formal units to measure area

Name: _____ Class: _____ Date: _____

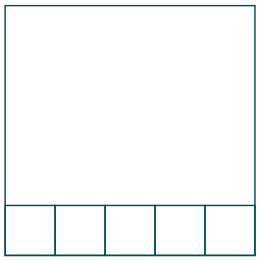
Stage 2 – Area

Question 2 – using square centimetres and metres to measure area

Estimate and record the area of the shapes below.

Note: images are not to scale.

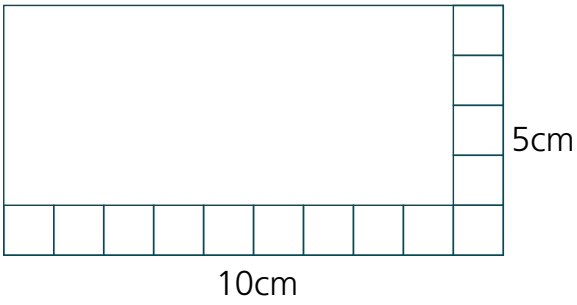
a)



Estimate = _____

Area = _____

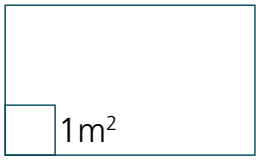
b)



Estimate = _____

Area = _____

c)



Estimate = _____

Area = _____

Key ideas

Use square centimetres and square metres to measure and estimate rectangular (and square) areas

Record areas using the abbreviations cm^2 and m^2

Related key ideas – multiplication and division

Link multiplication and division using arrays

Use and record a range of mental strategies for multiplication of two single-digit numbers

Name: _____ Class: _____ Date: _____

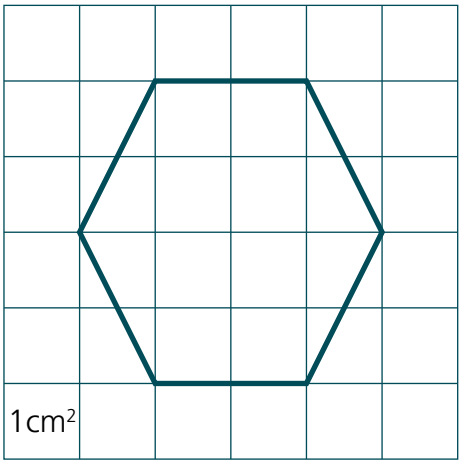
Stage 2 – Area

Question 3 – measuring the area of regular and irregular shapes

Key ideas

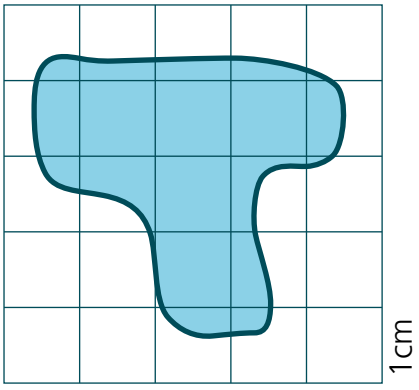
Calculate the area of these shapes to the nearest cm². Show all working out.

a)



Area = _____

b)



Area = _____

Measure and compare the areas of regular and irregular shapes using a square centimetre grid

Name: _____ Class: _____ Date: _____

Stage 2 – Area

Question 4 – comparing areas

Practical activity 

Find 2 rectangles in your classroom such as book cover, door, whiteboard or paper.

a) Compare the 2 areas of the rectangles you have found. Explain which rectangle you estimate has the greatest area and why.

_____

_____

_____

_____

_____

Now, measure the area of the 2 rectangles and record your working out below.

b) Area of rectangle 1 = _____

c) Area of rectangle 2 = _____

Key ideas

Compare areas measured in square centimetres and square metres

Related key ideas – multiplication and division

Link multiplication and division using arrays

Use and record a range of mental strategies for multiplication of two single-digit numbers

Stage 2 – Volume and capacity

Name: _____ Class: _____ Date: _____

Stage 2 – Volume and capacity

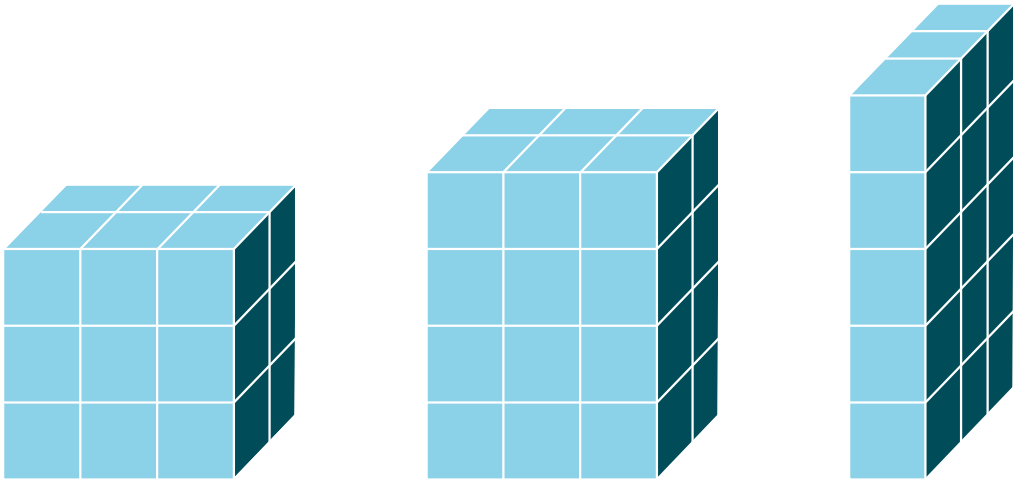
Question 1 – formal units of measuring volume and capacity	Key ideas
a) Give an example of when you would need to measure volume using cubic centimetres or cubic metres. _____ Draw a diagram to help explain your answer. b) Give an example of when you would need to measure capacity using millilitres or litres. _____ Draw a diagram to help explain your answer.	Recognise the need for formal units to measure capacity and volume

Name: _____ Class: _____ Date: _____

Stage 2 – Volume and capacity

Question 2 – measuring and comparing volumes

Circle the prism that has the largest volume.



Explain or draw how you worked out your answer.

Key ideas

Use cubic centimetres to measure and compare volumes

Related key idea – multiplication and division

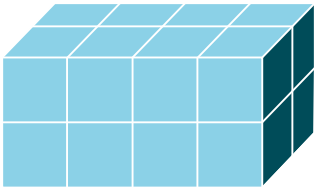
Use and record a range of mental and informal written strategies for multiplication and division of two-digit numbers by a one digit operator

Name: _____ Class: _____ Date: _____

Stage 2 – Volume and capacity

Question 3 – using cubic centimetres

What is the volume of this prism?



_____

Explain or draw how you worked out your answer.

Key ideas

Use cubic centimetres to measure and compare volumes

Record capacities and volumes using the abbreviations L and cm^3

Related key idea – multiplication and division

Use and record a range of mental and informal written strategies for multiplication and division of two-digit numbers by a one digit operator

Name: _____ Class: _____ Date: _____

Stage 2 – Volume and capacity

Question 4 – measuring volume

Key ideas

Use cubic centimetres to measure and compare volumes

Practical activity 

a) Use cubic-centimetre blocks to make an object with a volume of 24 blocks. Draw a diagram to show what you made.

b) Make another object with a volume of 24 blocks. Draw a diagram to show what you made.

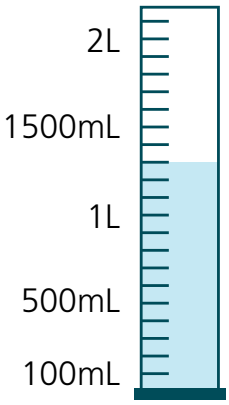
Name: _____ Class: _____ Date: _____

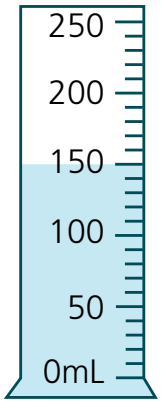
Stage 2 – Volume and capacity

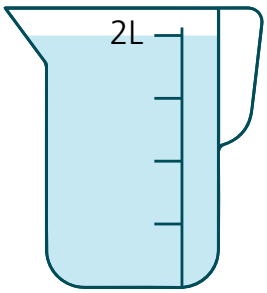
Question 5 – using litres and millilitres

a) Record the amount of liquid in the following containers. Answer in litres or millilitres.

Note: these images are not to scale.

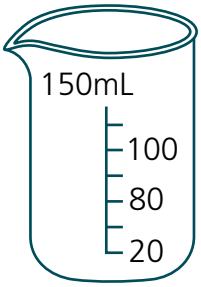






_____ _____ _____

b) A recipe requires 600mL of milk. Explain or draw how you could use this jug to measure the amount of milk required.



c) Can you think of another way to measure 600mL of milk using the same jug? If so, explain how it could be done.

_____

_____

_____

Key ideas

Use litres and millilitres to measure, compare and estimate capacities and volumes

Record capacities and volumes using the abbreviations L and mL

Related key idea – addition and subtraction

Use and record a range of mental strategies for addition and subtraction of two-, three- and four-digit numbers

Name: _____ Class: _____ Date: _____

Stage 2 – Volume and capacity

Question 6 – converting units of measure

Convert the following units to litres or millilitres.

a) 1350mL = _____ L _____ mL

b) _____ mL = 9L

c) 2400mL = _____ L _____ mL

d) _____ mL = 6L 500mL

e) _____ mL = 2L 40mL

Key ideas

Convert between litres and millilitres

Related key idea – multiplication and division

Use and record a range of mental and informal written strategies for multiplication and division of two-digit numbers by a one digit operator

Name: _____ Class: _____ Date: _____

Stage 2 – Volume and capacity

Question 7 – comparing volumes

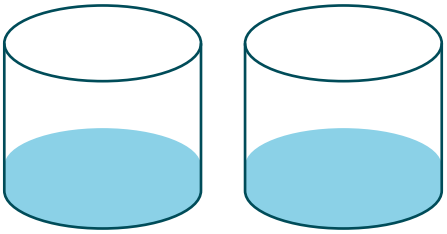
Key ideas

Compare volumes of objects by submerging each in water

Teachers may like to conduct this as a practical task.

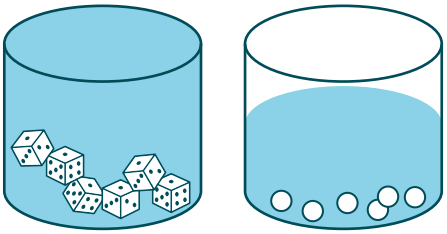
Two containers had the same amount of water in them.

Before



Dice and marbles were then placed into the containers.

After



a) Circle which objects have the greater total volume.

marbles ☐ dice ☐

Explain your answer.

_____

_____

_____

Stage 2 – Mass

Name: _____ Class: _____ Date: _____

Stage 2 – Mass

Question 1 – formal units for measuring mass	Key ideas
a) What does mass mean? _____ b) Draw a picture of how you measure the mass of an everyday object. c) Name an object you might measure in grams. _____ d) Name an object you might measure in kilograms. _____	Recognise the need for formal units to measure mass

Name: _____ Class: _____ Date: _____

Stage 2 – Mass

Question 2 – understanding mass

This bag of flour weighs 1kg. 

a) Name three items that would weigh **more than** the bag of flour.

_____ _____ _____

b) Name three items that would weigh **less than** the bag of flour.

_____ _____ _____

c) Estimate the mass, in kilograms, of:

your weight: _____

an empty school bag: _____

a chair: _____

a laptop: _____

d) Order the items from question c) from lightest to heaviest.

lightest

_____

_____

_____

_____

heaviest

Key ideas

Use kilograms to measure, compare, order and estimate masses

Record masses using the abbreviation kg

Name: _____ Class: _____ Date: _____

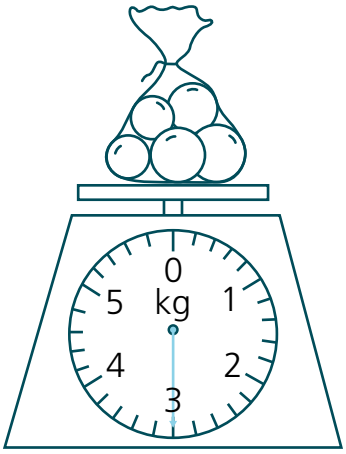
Stage 2 – Mass

Question 3 – recording mass

Record the mass of the following objects in both kilograms and grams.

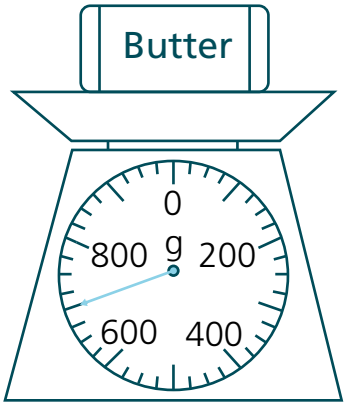
_____

_____



_____

_____



_____

_____

Key ideas

Use kilograms and grams to measure and compare masses using a scaled instrument

Record masses using the abbreviations kg and g

Related key idea – multiplication and division

Use and record a range of mental and informal written strategies for multiplication and division of two-digit numbers by a one-digit operator

Stage 2 – Time

Name: _____ Class: _____ Date: _____

Stage 2 – Time

Question 1 – analog time | **Key ideas**

Record the times for the following analog clocks.

a) _____

b) _____

c) _____

Recognise the coordinated movements of the hands on a clock

Question 2 – analog time | **Key ideas**

a) How long will it take the **hour hand** to move from the 5 to the 7?

_____

b) How long will it take the **minute hand** to move from the 3 to the 4?

_____

c) How long will it take for the **minute hand** to move from the 12 to the 9?

_____

Recognise the coordinated movements of the hands on a clock

Name: _____ Class: _____ Date: _____

Stage 2 – Time

Question 3 – analog time

Key ideas

Read and record time to the minute, using digital notation and the terms 'past' and 'to'

Draw the time on the analog clock to represent the following digital times.

a) 8:40 am

b) 4:45 pm

c) 7:36 am

Question 4 – digital time

Key ideas

Read and record time to the minute, using digital notation and the terms 'past' and 'to'

Write the time shown on the following digital clocks.

a) _____ past _____

b) _____ past _____

c) _____ to _____

Question 5 – digital time

Key ideas

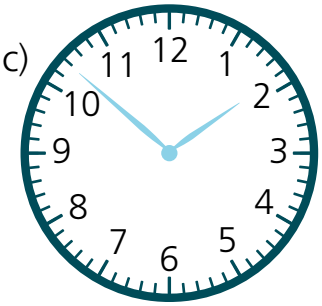
Read and record time to the minute, using digital notation and the terms 'past' and 'to'

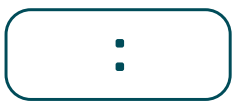
Record the digital time to represent the following times.

a) twenty past three

b) ten minutes to five

c)





Name: _____ Class: _____ Date: _____

Stage 2 – Time

Question 6 – converting between units of time

Key ideas

Convert between seconds, minutes, hours and days

Convert the following units of time.

a) 1 minute = _____ seconds

b) 2 hours = _____ minutes

c) 2 days = _____ hours

d) 1 fortnight = _____ days

e) 1 year = _____ days

f) 180 minutes = _____ hours

g) 48 hours = _____ days

h) 1 week = _____ days

i) half an hour = _____ minutes

j) 2 years = _____ weeks

Name: _____ Class: _____ Date: _____

Stage 2 – Time

Question 7 – understanding am and pm

Key ideas

Write 3 activities you do at the following times of the day.

am	**pm**
1)	1)
2)	2)
3)	3)

Use and interpret am and pm notation

Name: _____ Class: _____ Date: _____

Stage 2 – Time

Question 8 – understanding am and pm

Key ideas

Use and interpret am and pm notation

Add am or pm to the following times to match the description.

a) bed time 8:00 _____

b) dinner 8:00 _____

c) get ready for school 7:30 _____

d) school starts 9:00 _____

e) soccer training 4:30 _____ to 5:30 _____

f) wake up in the morning 7:00 _____

Name: _____ Class: _____ Date: _____

Stage 2 – Time

Question 9 – reading and interpreting calendars

Key ideas

Read and interpret simple timetables, timelines and calendars

Use the calendar to answer the following questions.

January						
S	**M**	**T**	**W**	**T**	**F**	**S**
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

a) Sam plays soccer on Sundays. How many games will Sam play in January?

_____

b) Sam trains on Tuesdays and Thursdays. How many training sessions will Sam have in January?

_____

c) Sam's birthday is on Thursday 3 January. His friend Ben's birthday is 2 weeks after Sam's. What date is Ben's birthday?

_____

Name: _____ Class: _____ Date: _____

Stage 2 – Time

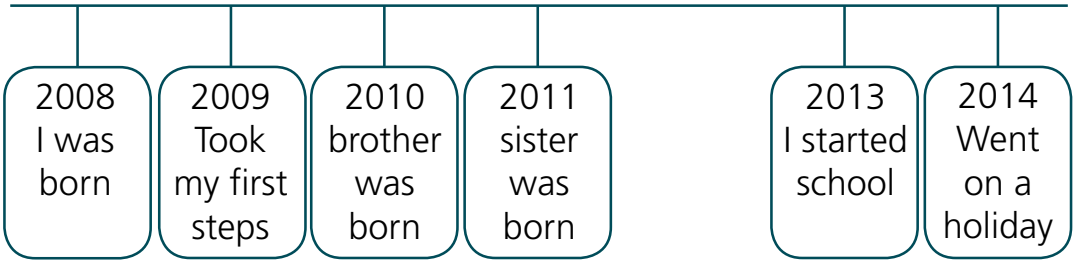
Question 10 – reading and interpreting timelines

Key ideas

Read and interpret simple timetables, timelines and calendars

Use the timeline to answer the following questions.

My timeline by Zara



a) In what year was Zara born?

_____

b) How old was Zara when she started school?

_____

c) How old was Zara's sister when they went on a holiday?

_____

Name: _____ Class: _____ Date: _____

Stage 2 – Time

Question 11 – reading and interpreting timetables

Use the timetable to answer the following questions.

Year 4 swimming timetable

Time	4G	4B	4L	4F
9:00-10:15am	Lesson	Lesson	Individual laps	Individual laps
10:15-11:00am	Safety lesson	Free play	Safety lesson	Free play
11:00-11:45am	Free play	Safety lesson	Free play	Safety lesson
Lunch				
12:45-2:00pm	Individual laps	Individual laps	Lesson	Lesson
2:00-3:00pm	Bus back to school	Bus back to school	Bus back to school	Bus back to school

a) How long is a safety lesson? _____

b) What time does 4B start their individual laps? _____

c) How much more time does 4L spend on individual laps than their safety lesson?

_____

d) What time does lunch start and finish? _____

Key ideas

Read and interpret simple timetables, timelines and calendars

Related key idea – addition and subtraction

Use and record a range of mental strategies for addition and subtraction of two-, three- and four-digit numbers

Stage 2 – Three-dimensional space

Name: _____ Class: _____ Date: _____

Stage 2 – Three-dimensional space

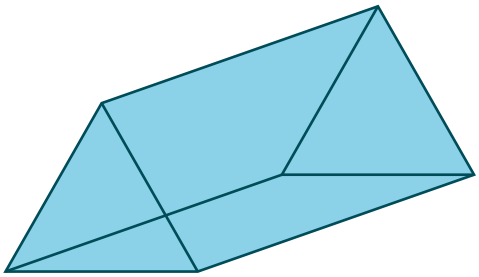
Question 1 – understanding features of 3D objects

Key ideas

Identify, describe and compare features of prisms, pyramids, cylinders, cones and spheres

Name and describe the following 3D objects.

a)



Name:

Description: _____

_____

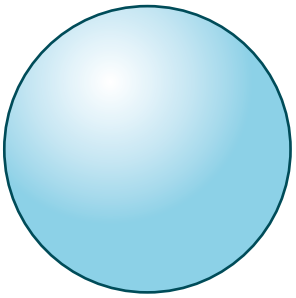
_____

_____

_____

_____

b)



Name:

Description: _____

_____

_____

_____

_____

_____

Name: _____ Class: _____ Date: _____

Stage 2 – Three-dimensional space

c) Describe what is similar and different about a cube  and a square-based pyramid. 

Similarities	Differences

Key ideas

Identify, describe and compare features of prisms, pyramids, cylinders, cones and spheres

Name: _____ Class: _____ Date: _____

Stage 2 – Three-dimensional space

Question 2 – making models of 3D objects	**Key ideas**
Practical activity  Use materials your teacher has provided to make a models of a 3D object. Possible extension of task: draw your model showing depth and draw it from different views.	Make models of three-dimensional objects

Question 3 – making models of 3D objects	**Key ideas**
Practical activity  Deconstruct an everyday package of a prism to create a net. Draw your net below.	Create nets from everyday packages

Name: _____ Class: _____ Date: _____

Stage 2 – Three-dimensional space

Question 4 – representing 3D objects

Choose a pyramid or prism. Sketch your chosen 3D object below and then draw it from different views.

Name of 3D object	Sketch objects

Top view	Front view	Side view

Key ideas

Represent three-dimensional objects in drawings showing depth

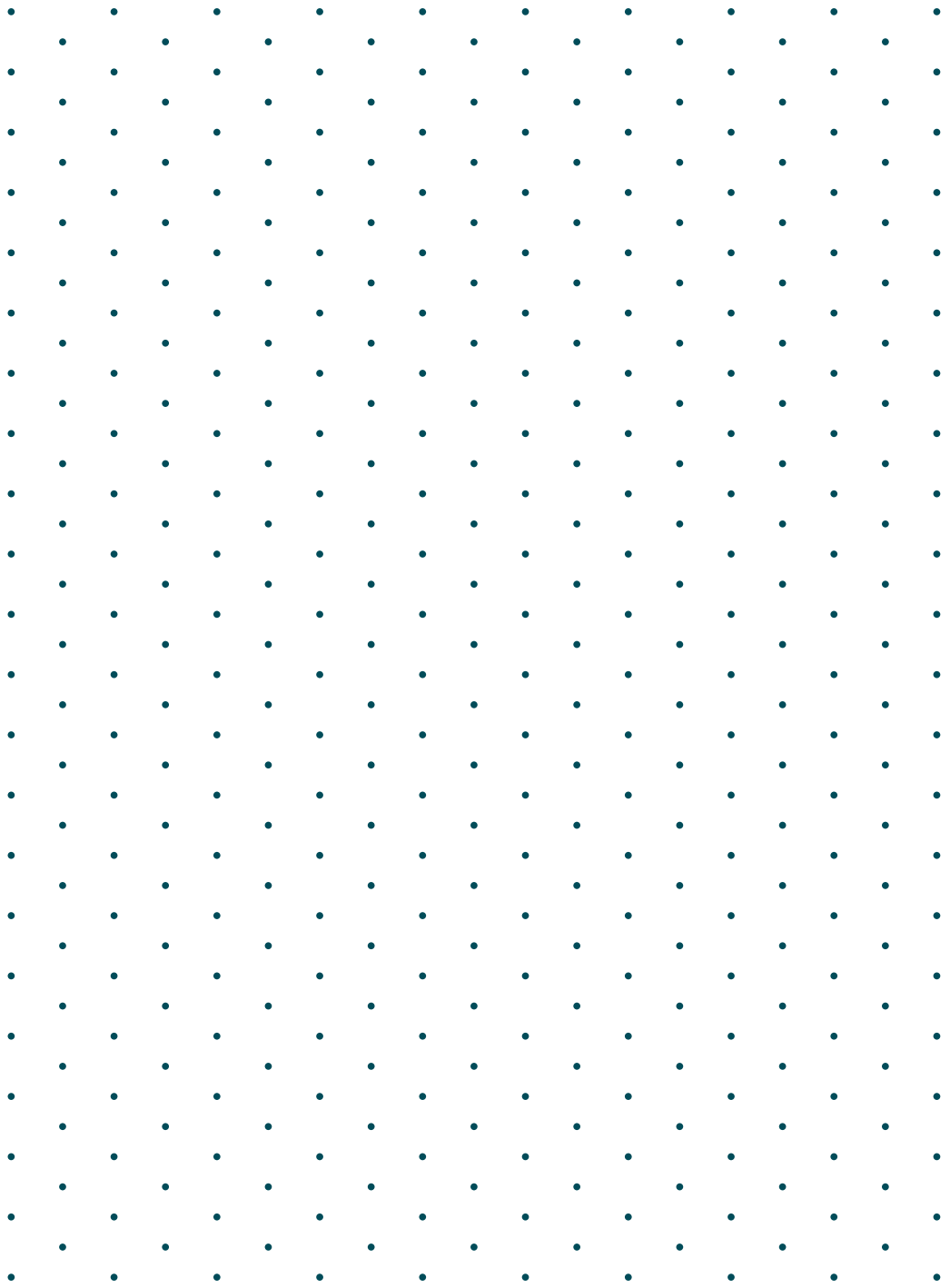
Sketch three-dimensional objects from different views

Name: _____ Class: _____ Date: _____

Stage 2 – Three-dimensional space

Question 5 – drawing objects on isometric paper

Draw two 3D objects on the isometric paper below.



Key ideas

Interpret and make drawings of objects on isometric grid paper

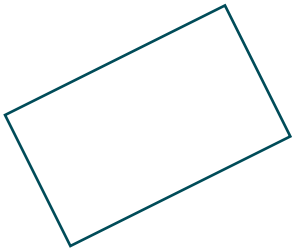
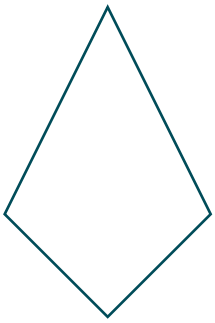
Stage 2 – Two-dimensional space

Name: _____ Class: _____ Date: _____

Stage 2 – Two-dimensional space

Question 1 – quadrilaterals

Name the following quadrilaterals and describe their features.

Quadrilateral	Name	Description
a) 		
b) 		

Key ideas

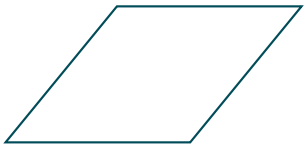
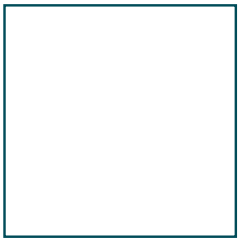
Identify and name the special quadrilaterals presented in different orientations

Related key idea – angles

Identify 'perpendicular' lines and 'right angles'

Name: _____ Class: _____ Date: _____

Stage 2 – Two-dimensional space

Quadrilateral	Name	Description
c) 		
d) 		
e) 		

Key ideas

Identify and name the special quadrilaterals presented in different orientations

Related key idea – angles

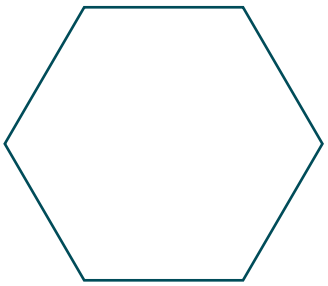
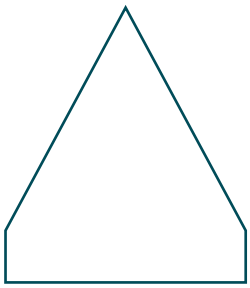
Identify 'perpendicular' lines and 'right angles'

Name: _____ Class: _____ Date: _____

Stage 2 – Two-dimensional space

Question 2 – regular and irregular 2D shapes

Circle the correct word to describe the following 2D shapes as 'regular' or 'irregular' and explain your reasoning.

Regular or irregular?	Reasoning
a)  Circle correct answer: regular ☐ irregular ☐	
b)  Circle correct answer: regular ☐ irregular ☐	

Key ideas

Identify and describe shapes as 'regular' or 'irregular'

Describe and compare features if shapes, including the special quadrilaterals

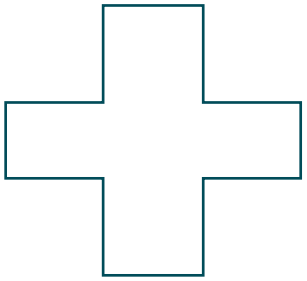
Name: _____ Class: _____ Date: _____

Stage 2 – Two-dimensional space

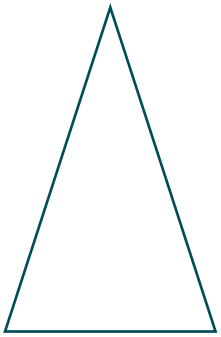
Question 3 – line symmetry

Draw lines of symmetry on the following shapes.

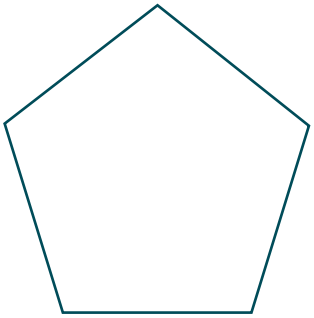
a)



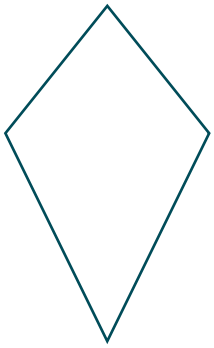
b)



c)



d)



e)

Key ideas

Identify and draw lines of symmetry on shapes

Name: _____ Class: _____ Date: _____

Stage 2 – Two-dimensional space

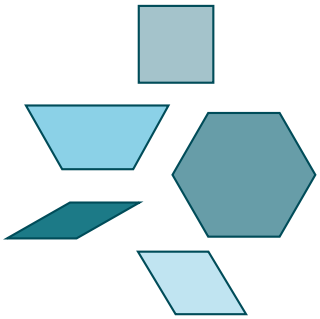
Question 4 – combining 2D shapes

Key ideas

Combine common shapes to form other shapes and record the arrangement

Practical activity

Combine 2 or more pattern blocks to create a new 2D shape.



a) Draw your new shape.

b) Describe the shapes you used and the new shape you have created.

_____

_____

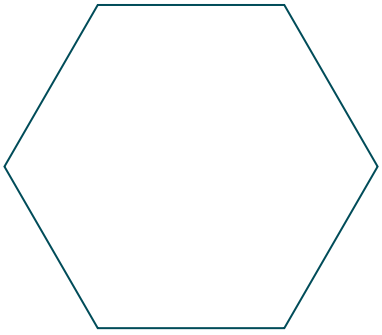
_____

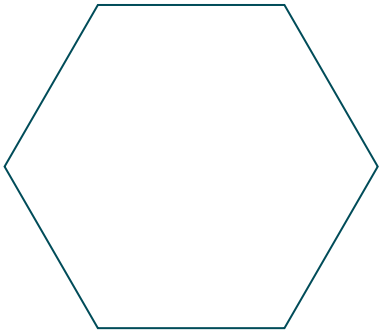
Question 5 – splitting 2D shapes

Key ideas

Split common shapes into other shapes and record the result

Draw lines to split these hexagons into smaller 2D shapes in different ways.





Name: _____ Class: _____ Date: _____

Stage 2 – Two-dimensional space

Question 6 – transformations

Key ideas

Use transformations to create and describe symmetrical designs

a) Use this shape to draw a symmetrical design by reflecting, translating or rotating.

b) Describe what you did to create your design.

_____

_____

_____

Question 7 – tessellating designs

Key ideas

Create and record tessellating designs

Choose a 2D shape and create a tessellating design.

Stage 2 – Angles

Name: _____ Class: _____ Date: _____

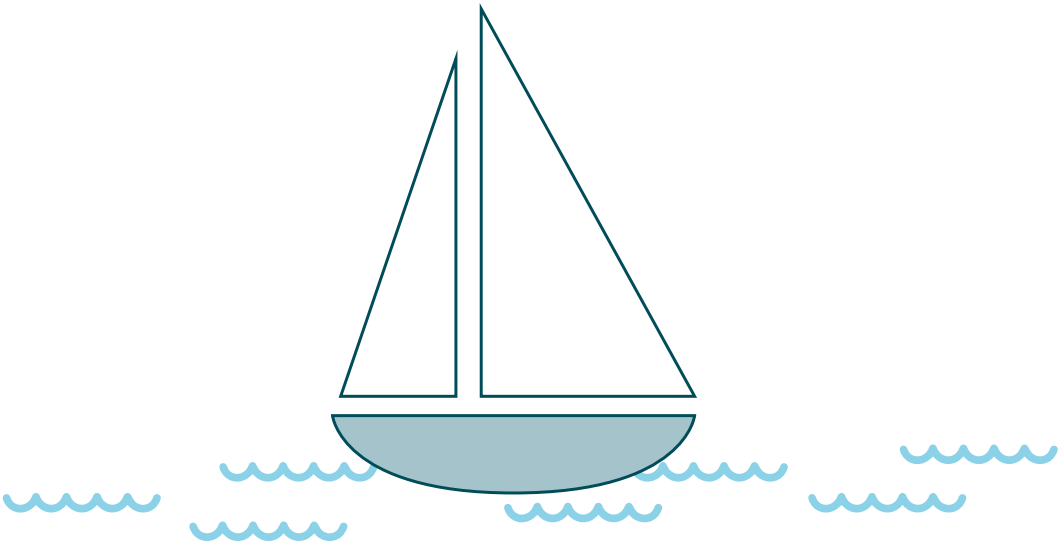
Stage 2 – Angles

Question 1 – describing angles

Key ideas

Identify and describe angles as measures of turn

a) Use a coloured pencil or highlighter to show angles in the picture.



b) Describe what an angle is.

_____

_____

_____

_____

Name: _____ Class: _____ Date: _____

Stage 2 – Angles

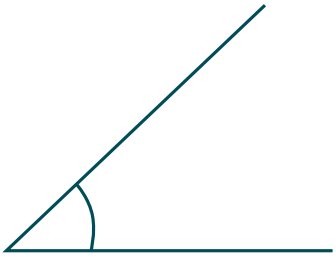
Question 2 – angle size | **Key ideas**

a) Label the parts of an angle on the picture below.

arm

vertex

amount of turn



b) Look at the angle above. If the arms were longer, would the size of the angle change? Justify your answer.

_____

_____

Identify and describe angles as measures of turn

Question 3 – comparing angle sizes | **Key ideas**

Practical activity

a) Find 2 angles in your classroom. Draw the angles.

b) Describe which angle is larger and explain how you know.

_____

_____

_____

Compare angle sizes in everyday situations

Name: _____ Class: _____ Date: _____

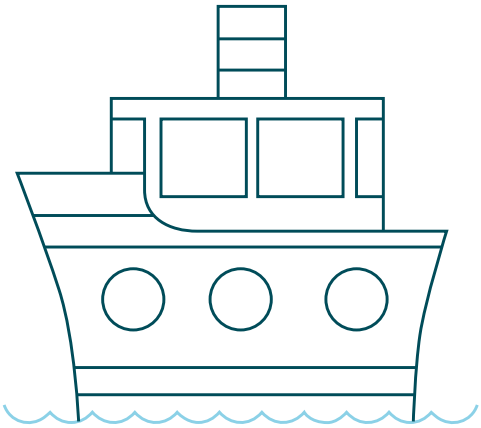
Stage 2 – Angles

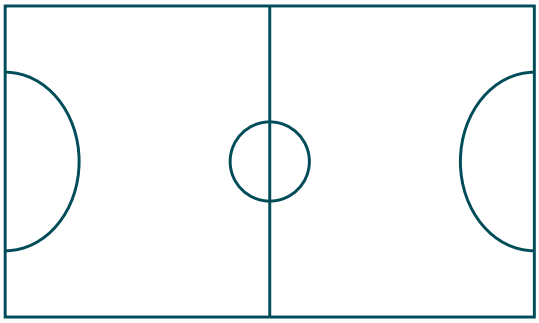
Question 4 – perpendicular lines

Key ideas

Identify 'perpendicular' lines and 'right angles'

a) In the following images, use a coloured pencil or highlighter to trace the perpendicular lines.





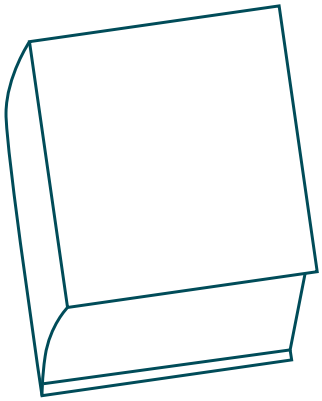
b) Draw a shape and an everyday object that have perpendicular lines. Use a coloured pencil or highlighter to trace the perpendicular lines.

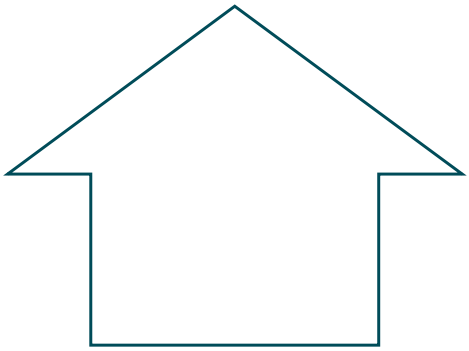
Shape: Everyday object:

Name: _____ Class: _____ Date: _____

Stage 2 – Angles

c) In the following images, use a coloured pencil or highlighter to show the right angles in the pictures.





d) Draw a shape and an everyday object that have right angles.

Shape: Everyday object:

Key ideas

Identify 'perpendicular' lines and 'right angles'

Name: _____ Class: _____ Date: _____

Stage 2 – Angles

Question 5 – drawing angles

Key ideas

Draw and classify angles as acute, obtuse, straight, reflex or a revolution

Draw an example of the following angles:

a) obtuse

b) right

c) revolution

d) acute

e) reflex

f) straight

g) How could you check that your angles are correct?

_____

_____

_____

_____

Stage 2 – Position

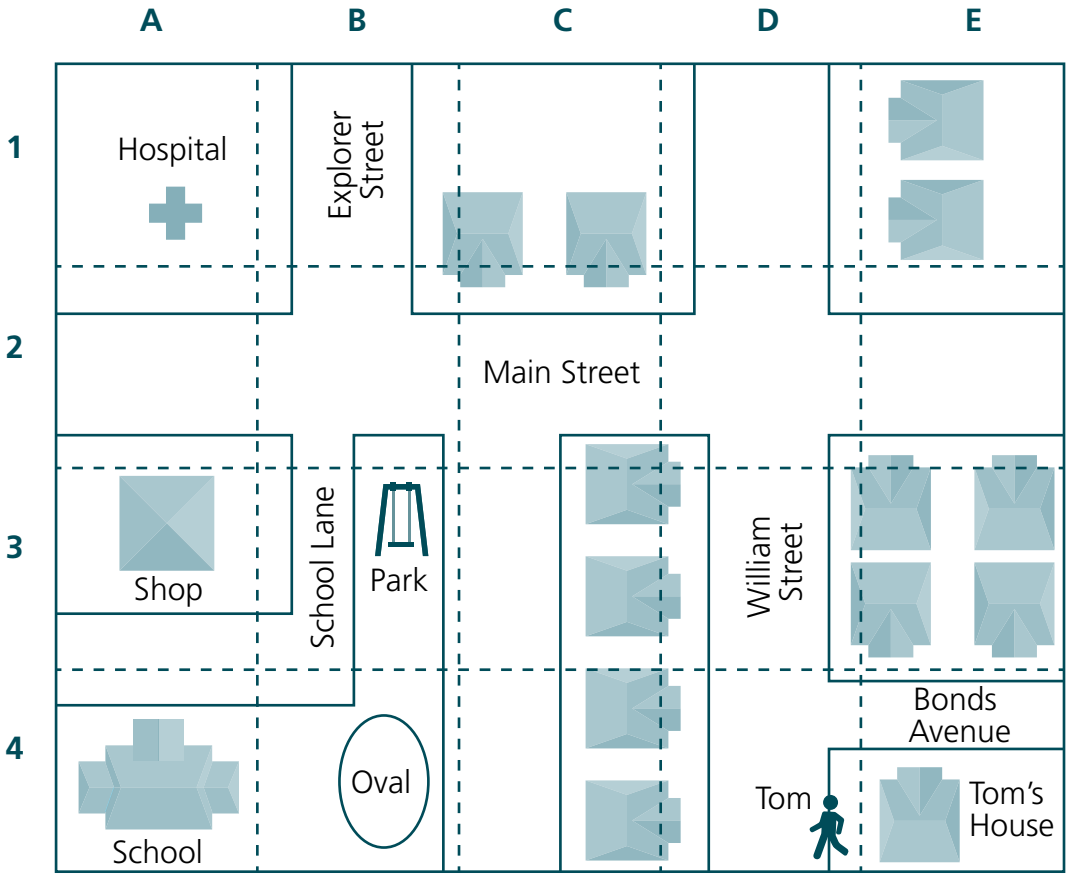
Name: _____ Class: _____ Date: _____

Stage 2 – Position

Question 1 – using grid references

Key ideas

Use the map to answer the questions below about Tom's neighbourhood.



In which grid reference would you find:

a) the school _____ b) Tom's house _____

c) the park _____

Use grid referenced maps to locate and describe position and pathways

Determine directions N, E, S, W and NE, SE, SW and NW

Name: _____ Class: _____ Date: _____

Stage 2 – Position

d) Describe how Tom would walk to the oval using compass directions.

_____

_____

_____

e) Select a landmark on the map and describe its location from the park.

_____

_____

Key ideas

Use grid referenced maps to locate and describe position and pathways

Determine directions N, E, S, W and NE, SE, SW and NW

Name: _____ Class: _____ Date: _____

Stage 2 – Position

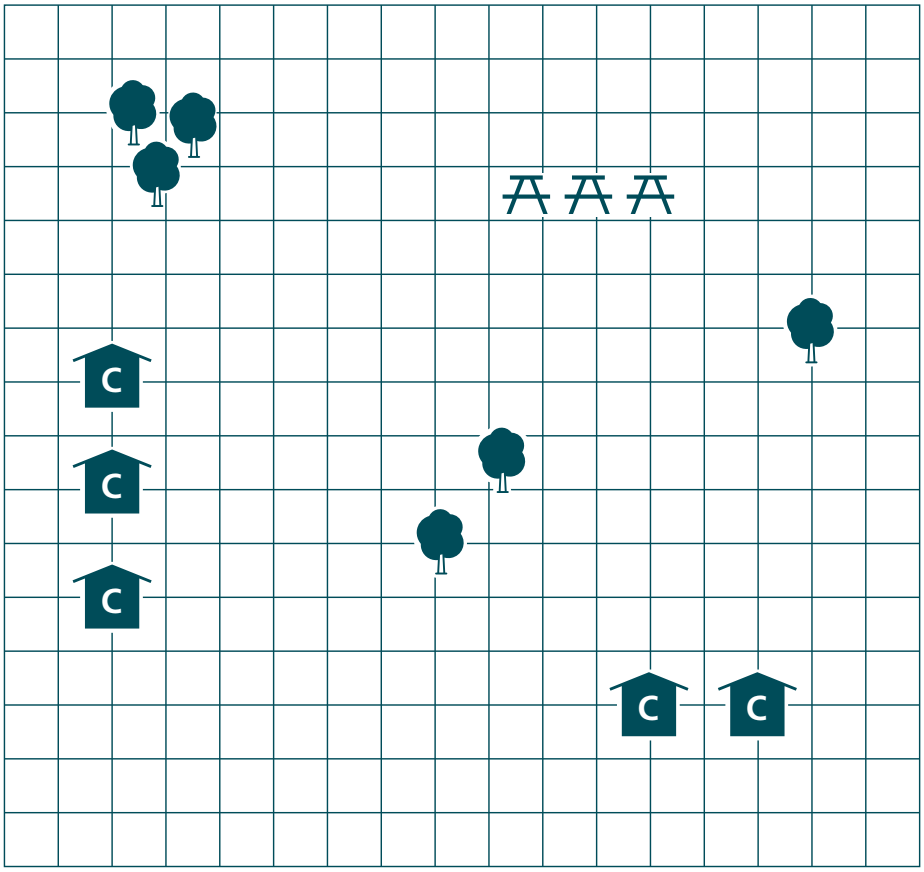
Question 2 – maps and directions

Key ideas

Draw simple maps, with and without a grid reference

Interpret legends and directions on maps

a) Draw a bike track to be marked out within the school grounds. Include a start and finish line for your track and ensure the track does not cross itself.



b) Describe the course including the use of positional language, directions and landmarks (see legend).

_____

_____

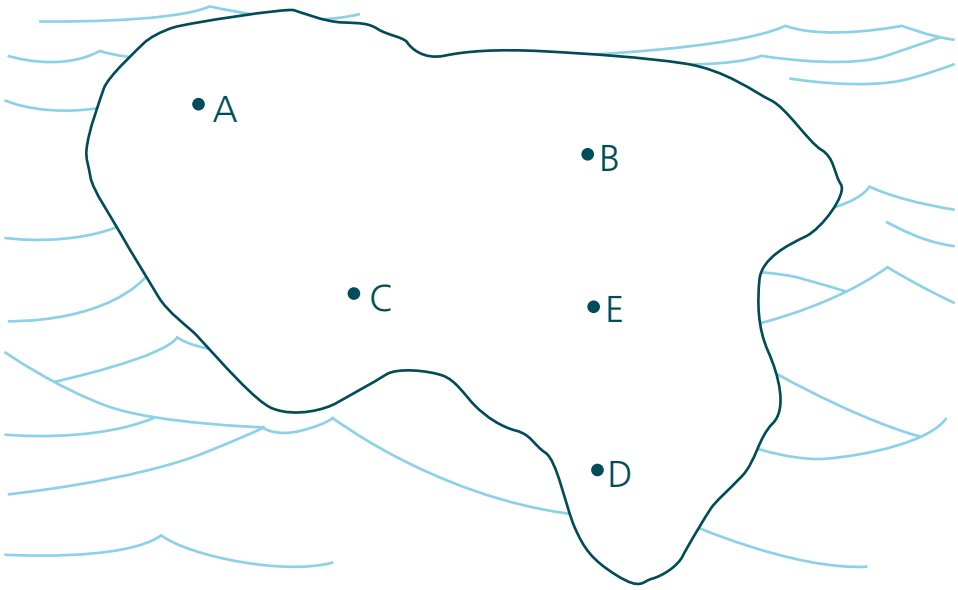
_____

Name: _____ Class: _____ Date: _____

Stage 2 – Position

Question 3 – using a scale on maps

Treasure island



Scale: 1cm = 200m

a) Use the scale provided and a ruler to calculate the distance between C and E in metres. Show your working out.

Distance = _____

b) Choose 2 other points on the map and measure the distance between them, using the scale. Calculate the distance in metres.

Key ideas

Use the scale to calculate the distance between two points on maps

Related key ideas – length

Use metres, centimetres and millimetres to measure, compare, order and estimate lengths

Record lengths using the abbreviations m, cm and mm

Stage 2 – Data

Name: _____ Class: _____ Date: _____

Stage 2 – Data

Question 1 – planning, collecting and using data to create displays

Key ideas

Practical activity 

Collect data about the number of the following items from your classroom environment.

a) How many student chairs?

_____

b) How many windows?

_____

c) How many student tables?

_____

d) How many computers?

_____

e) Choose another object _____ .

Plan methods for data collection

Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs (one to one correspondence)

Name: _____ Class: _____ Date: _____

Stage 2 – Data

f) Draw a table with the information collected above.

g) Draw a picture or column graph of the data collected about your classroom environment.

Key ideas

Plan methods for data collection

Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs (one to one correspondence)

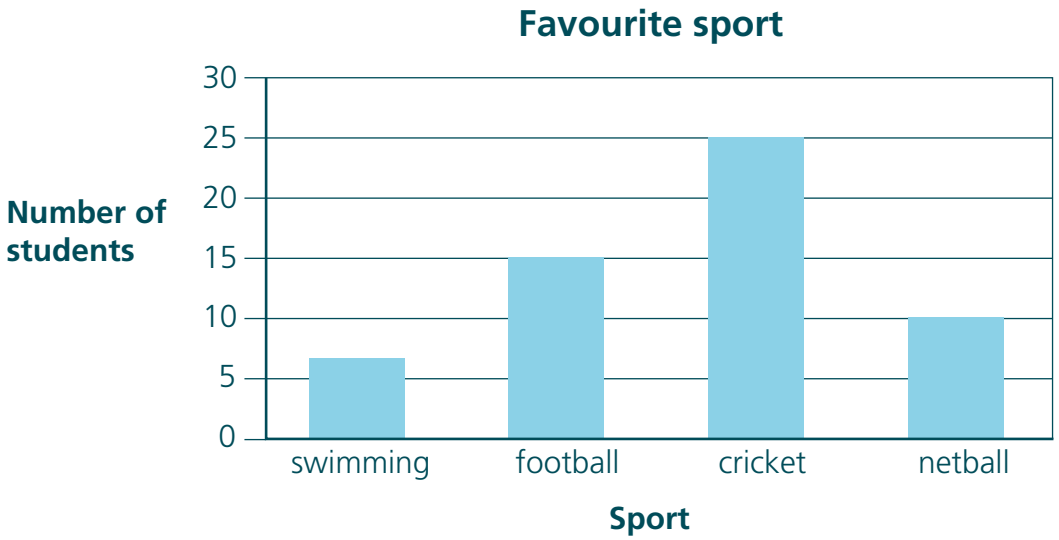
Name: _____ Class: _____ Date: _____

Stage 2 – Data

Question 2 – interpreting graphs

Key ideas

Interpret and compare data displays



a) Write 3 statements about the graph above.

1. _____

_____

_____

2. _____

_____

_____

3. _____

_____

_____

Name: _____ Class: _____ Date: _____

Stage 2 – Data

b) Write 3 statements about the table below.

Animals born at the zoo the last 2 years

Animal	2016	2017
elephant	1	2
red panda	0	2
brown snake	6	7
hippo	1	0

1. _____

_____

_____

2. _____

_____

_____

3. _____

_____

_____

Key ideas

Interpret and compare data displays

Name: _____ Class: _____ Date: _____

Stage 2 – Data

Question 3 – data collection

Key ideas

Practical activity 

a) Create a survey to collect data from your class on a topic of your choice.

Topic of survey: _____

Some questions you may like to use are:
What is your favourite ... ?
How many times ... ?
When do you ... ?

Write your questions below:

Select, trial and refine methods for data collection, including survey questions and recording sheets

Name: _____ Class: _____ Date: _____

Stage 2 – Data

b) Survey 5 of your classmates and record their responses below. You may like to create a table or use tally marks.

Key ideas

Select, trial and refine methods for data collection, including survey questions and recording sheets

After your classmates have completed your survey, answer the following questions.

c) Did you get the responses you were expecting? _____

d) How would you change or improve your survey for next time?

_____

_____

_____

_____

Name: _____ Class: _____ Date: _____

Stage 2 – Data

Question 4 – constructing data displays using a scale

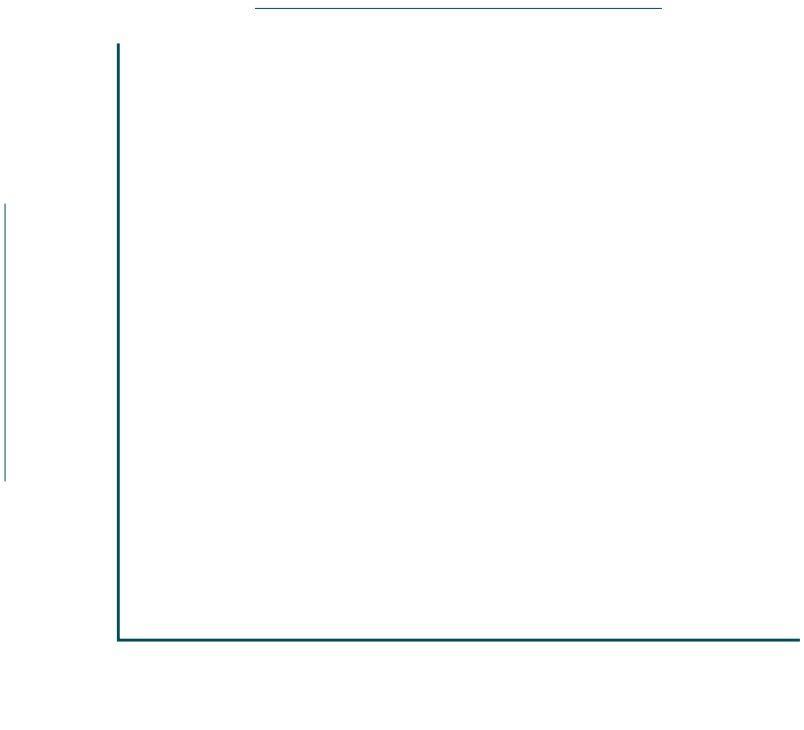
Use the following data collected from 200 students to create a picture graph, use a suitable scale for the key provided.

Favourite ice-cream flavour	Number of students
chocolate	90
vanilla	50
strawberry	45
caramel	15

Picture graph (ensure you label your graph):

Key:

☺ = _____ students



Key ideas

Construct data displays, including tables, and column graphs and picture graphs of many to-one correspondence

Related key idea – multiplication and division

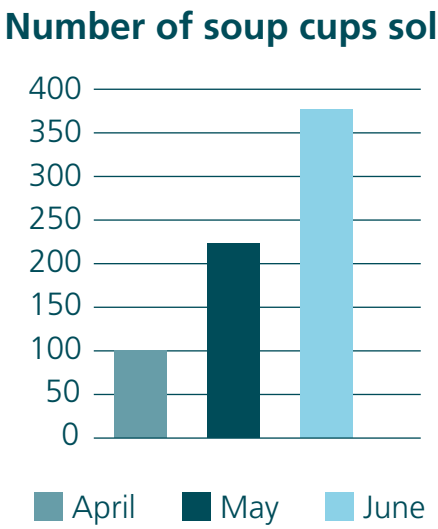
Use and record a range of mental and informal written strategies for multiplication and division of two-digit numbers by a one digit operator

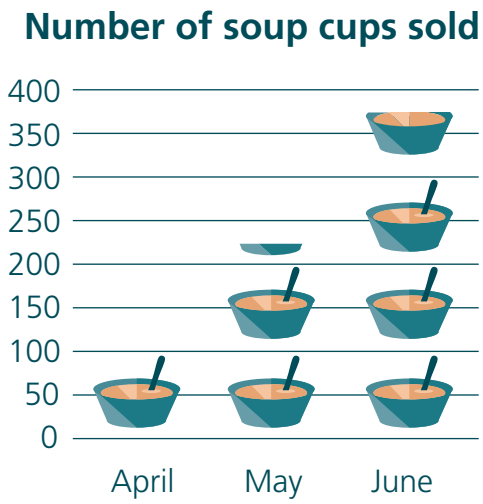
Name: _____ Class: _____ Date: _____

Stage 2 – Data

Question 5 – evaluating the effectiveness of different displays

Both these graphs show how much soup was sold at the school canteen over 3 months.





Which graph is more useful for the canteen manager to use when ordering the correct number of ingredients for July and August? Explain your answer.

Key ideas

Evaluate the effectiveness of different displays

Related key idea – data

Interpret and compare data displays

Stage 2 – Chance

Name: _____ Class: _____ Date: _____

Stage 2 – Chance

Question 1 – identifying possible outcomes

Key ideas

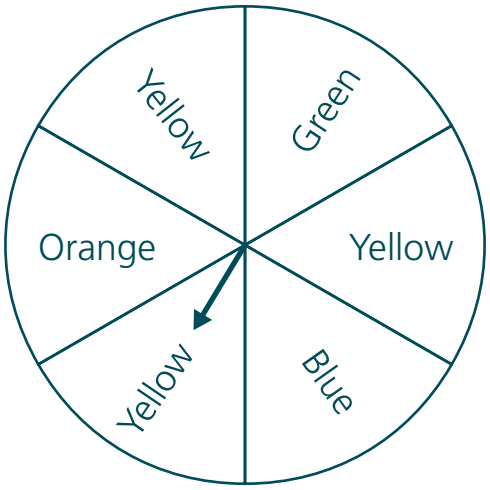
Identify and describe possible 'outcomes' of chance experiments

a) What colours could the arrow land on?

_____

_____

b) What colour would the arrow be more likely to land on than the others? How do you know?



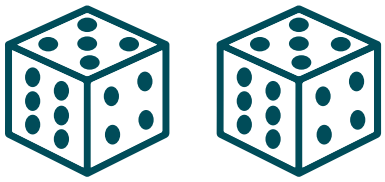
_____

_____

_____

_____

c) You have 2 dice with 6 sides. List some of the possible combinations when you throw them.



Name: _____ Class: _____ Date: _____

Stage 2 – Chance

Question 2 – recording possible combinations

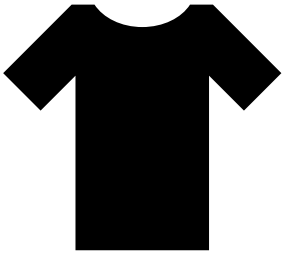
Key ideas

List **all** the possible combinations of uniform you could wear from the choices below. Each combination must have a shirt, shorts and a pair of socks.

Stripe shirt

White shorts

White socks



Black shirt

Black shorts

Striped socks

Predict and record all possible combinations in a chance situation

Name: _____ Class: _____ Date: _____

Stage 2 – Chance

Question 3 – chance experiments

Practical activity

a) **Predict** the number of times it will land on each number when a 6-sided dice is rolled 12 times and record in table below.

Dice lands on	Prediction	Result
		
		
		
		
		
		

b) Roll a dice 12 times and record the **results** in the table above.

c) Compare your predictions and results. Are they similar or different? Why?

_____

_____

Key ideas

Conduct chance experiments and compare predicted with actual results

Related key idea – data

Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs (one to one correspondence)

Name: _____ Class: _____ Date: _____

Stage 2 – Chance

Question 4 – chance experiments

Practical activity

a) **Predict** the number of times a coin lands on each side when flipped 10 times and record in table below.

Coin	Prediction	Result
Heads 		
Tails 		

b) Flip a coin 10 times and record the **results** in the table above.

c) Write a sentence or comment about your experiment.

_____

_____

_____

Key ideas

Conduct chance experiments and compare predicted with actual results

Related key idea – data

Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs (one to one correspondence)

Name: _____ Class: _____ Date: _____

Stage 2 – Chance

Question 5 – language of chance

Key ideas

Describe possible everyday events and order their chances of occurring

a) Describe the chance of the following everyday events occurring as: **unlikely**, **possible** or **likely**.

1. I will go to the bathroom today. _____

2. Someone in my grade will be absent today. _____

3. We will have an elephant at school today. _____

b) Complete these statements with '**more likely**' or '**less likely**'.

1. A pencil tin has 7 blue pencils and 3 red pencils. It is _____ that I will pull out a red pencil.

2. Rolling a 2 on a 6-sided dice is _____ than rolling a 2 on a 10-sided dice.

c) Write an everyday event like those in a) to complete the following sentences.

1. It is likely that _____

   because _____

   _____.

2. It is unlikely that _____

   because _____

   _____.

3. It is certain that _____

   because _____

   _____.

Name: _____ Class: _____ Date: _____

Stage 2 – Chance

Question 6 – identifying event outcomes

Describe an everyday event of your own where one thing cannot happen at the same time as another.

_____

_____

_____

_____

Key ideas

Identify everyday events where one occurring cannot happen if the other happens

Question 7 – events affected by others

a) I rolled a dice and got a 6. Does this affect my chance of rolling a 6 on my next roll? Explain your answer.

_____

_____

_____

_____

b) From a deck of cards I select 5 cards that are all black cards. I don't return them to the deck. Does this affect my chance of selecting a black card again? Explain your answer.

_____

_____

_____

_____

Key ideas

Identify events where the chance of one occurring will not be affected by the occurrence of the other

Notes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