

Mathletics

for the New Zealand
Curriculum

4

Mathematics



A 3P Learning Product

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Mathletics Student Book

New Zealand Curriculum Alignment

This edition fully aligns each student page with the refreshed New Zealand Curriculum: Mathematics and Statistics Years 0–8, 2025. The New Zealand Curriculum teaching sequence statements appear on each student page.



Fractions of a group TERM 1 Week 1

To find a fraction of a group, divide by the denominator.
To find $\frac{1}{4}$ of 8, divide 8 by 4.

$\frac{2}{4}$ of 8 = 2

1 What is one-quarter of:
a 8 mangoes? b 12 peas? c 16 macarons?

2 What is one-fifth of:
a 5 children? b 10 oranges? c 15 pumpkins?

3 Draw:
a $\frac{1}{4}$ of 10 bananas b $\frac{3}{4}$ of 24 cherries c $\frac{2}{5}$ of 8 apples

4 a $\frac{1}{2}$ of a bunch of grapes = 10. 1 whole bunch of grapes =
b $\frac{1}{3}$ of a dozen eggs = 4. 1 whole dozen eggs =
c $\frac{1}{4}$ of a bag of sweets = 2. 1 whole bag of sweets =
d $\frac{1}{5}$ of a box of plants = 6. 1 whole box of plants =
e $\frac{1}{6}$ of a packet of biscuits = 9. 1 whole packet of biscuits =

Mastery Checklist
I can: ☐ represent and represent fractions in shape, word and fraction notation ☐ not fractions in order compare fractions ☐ represent and order with fractions ☐ work out fractions of a group

Repeated addition TERM 1 Week 2

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AA AB AC AD AE AF AG AH AI AJ AK AL AM AN AO AP AQ AR AS AT AU AV AW AX AY AZ BA BB BC BD BE BF BG BH BI BJ BK BL BM BN BO BP BQ BR BS BT BU BV BW BX BY BZ CA CB CC CD CE CF CG CH CI CJ CK CL CM CN CO CP CQ CR CS CT CU CV CW CX CY CZ DA DB DC DD DE DF DG DH DI DJ DK DL DM DN DO DP DQ DR DS DT DU DV DW DX DY DZ EA EB EC ED EE EF EG EH EI EJ EK EL EM EN EO EP EQ ER ES ET EU EV EW EX EY EZ FA FB FC FD FE FF FG FH FI FJ FK FL FM FN FO FP FQ FR FS FT FU FV FW FX FY FZ GA GB GC GD GE GF GG GH GI GJ GK GL GM GN GO GP GQ GR GS GT GU GV GW GX GY GZ HA HB HC HD HE HF HG HH HI HJ HK HL HM HN HO HP HQ HR HS HT HU HV HW HX HY HZ IA IB IC ID IE IF IG IH II IJ IK IL IM IN IO IP IQ IR IS IT IU IV IW IX IY IZ JA JB JC JD JE JF JG JH JI JJ JK JL JM JN JO JP JQ JR JS JT JU JV JW JX JY JZ KA KB KC KD KE KF KG KH KI KJ KK KL KM KN KO KP KQ KR KS KT KU KV KW KX KY KZ LA LB LC LD LE LF LG LH LI LJ LK LL LM LN LO LP LQ LR LS LT LU LV LW LX LY LZ MA MB MC MD ME MF MG MH MI MJ MK ML MM MN MO MP MQ MR MS MT MU MV MW MX MY MZ NA NB NC ND NE NF NG NH NI NJ NK NL NM NN NO NP NQ NR NS NT NU NV NW NX NY NZ OA OB OC OD OE OF OG OH OI OJ OK OL OM ON OO OP OQ OR OS OT OU OV OW OX OY OZ PA PB PC PD PE PF PG PH PI PJ PK PL PM PN PO PP PQ PR PS PT PU PV PW PX PY PZ QA QB QC QD QE QF QG QH QI QJ QK QL QM QN QO QP QQ QR QS QT QU QV QW QX QY QZ RA RB RC RD RE RF RG RH RI RJ RK RL RM RN RO RP RQ RR RS RT RU RV RW RX RY RZ SA SB SC SD SE SF SG SH SI SJ SK SL SM SN SO SP SQ SR SS ST SU SV SW SX SY SZ TA TB TC TD TE TF TG TH TI TJ TK TL TM TN TO TP TQ TR TS TT TU TV TW TX TY TZ UA UB UC UD UE UF UG UH UI UJ UK UL UM UN UO UP UQ UR US UT UY UZ VA VB VC VD VE VF VG VH VI VJ VK VL VM VN VO VP VQ VR VS VT VY VZ WA WB WC WD WE WF WG WH WI WJ WK WL WM WN WO WP WQ WR WS WT WY WZ XA XB XC XD XE XF XG XH XI XJ XK XL XM XN XO XP XQ XR XS XT XY XZ YA YB YC YD YE YF YG YH YI YJ YK YL YM YN YO YP YQ YR YS YT YY YZ ZA ZB ZC ZD ZE ZF ZG ZH ZI ZJ ZK ZL ZM ZN ZO ZP ZQ ZR ZS ZT ZY ZZ AA AB AC AD AE AF AG AH AI AJ AK AL AM AN AO AP AQ AR AS AT AU AV AW AX AY AZ BA BB BC BD BE BF BG BH BI BJ BK BL BM BN BO BP BQ BR BS BT BU

Year 4 Knowledge and Practices

The New Zealand Curriculum Mathematics and Statistics 2025

Knowledge	Practices	Pages
Number — Number structures		
Whole numbers can be represented in the base 10 number system, where each digit has a place value 10 times that of the digit on the right. Each digit's value depends both on its position (e.g. the tens position) and the numeral in the position. Zero is used as a placeholder.	Reading, writing, comparing and ordering whole numbers up to 10,000 and representing them using base 10 structure	2, 3, 4, 5, 7, 9, 10, 11
Rounding can support predicting or estimating the result of a calculation. Rounding is based on identifying the nearest place value or unit (ten, hundred, thousand) for a given number; a number line supports this.	Rounding whole numbers to the nearest thousand, hundred, or ten	2, 7, 8
	Rounding tenths to the nearest whole number	101
	Counting forwards and backwards in 2s, 3s, 4s, 5s, 6s, 7s, 8s, 9s, 25s and 50s from multiples of the counting unit	6, 25, 65, 66, 67, 68, 69, 109, 110, 119, 120
	Counting in 10s, 100s and 1,000s from any whole number up to 10,000	3, 69, 119
Number — Operations		
Addition and subtraction can be carried out mentally, using known facts, place value and partitioning, or column methods. Standard written algorithms (e.g. column addition, column subtraction) rely on place value, regrouping and renaming.	Adding and subtracting up to four-digit numbers	2, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 28, 29, 30, 31, 32, 34, 35, 36, 37, 73, 150, 160, 186
Multiplication can be represented as repeated addition, scaling, or arrays, and larger numbers can be multiplied using an area model or column multiplication.	Memorising multiplication and corresponding division facts for 2s to 10s	60, 61, 64, 65, 66, 67, 68, 69, 73, 81, 84, 108, 109, 110, 111, 112, 113, 114, 146, 186
	Using place value and known and derived facts to multiply and divide mentally, including multiplying by 0 and 1 and dividing by 1	62, 63, 65, 66, 67, 68, 69, 81, 82, 83, 84, 85, 86, 88, 90, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 148, 149, 150, 151, 154, 155
	Multiplying two-digit and three-digit numbers by a one-digit number	66, 67, 68, 85, 109, 110, 111, 112, 115, 147, 148, 149, 152, 153
	Dividing up to a three-digit whole number by a one-digit divisor, with no remainder	62, 63, 87, 88, 90, 117, 154, 155
Number — Rational Numbers		
The base 10 number system continues past the ones column, to the right, to create decimals such as tenths. Decimals are fractions that have powers of 10 as their denominators, and they can be written as numbers using a decimal point. A decimal point marks the column immediately to the right of the ones column as the tenths column. Tenths can be created by dividing whole numbers by 10 and can be expressed as fractions or decimals.	Reading, writing and representing tenths as fractions and decimals	51, 98, 99, 100, 103, 104
	Comparing and ordering tenths as fractions and decimals	99, 100, 102, 104
	Memorising and using the decimal equivalent of $\frac{1}{2}$ and fractions with denominators of 10	99, 100, 102
	Dividing one- and two-digit whole numbers by 10 to make decimals and identify tenths	103, 104
	Multiplying decimal tenths by 10	104
	Comparing and ordering fractions with the same numerator or same denominator	50, 52, 54, 55, 56
Improper fractions and mixed numbers are different representations of the same quantity.	Relating fractions, improper fractions and mixed numbers to their position on a number line	57, 58, 107
	Identifying when two fractions are equivalent, using representations	55, 56
Addition and subtraction of fractions with the same denominator follow the same principles as whole numbers and can result in improper fractions or whole numbers.	Adding and subtracting fractions with the same denominators, including beyond a whole	106, 107
	Adding and subtracting decimals to one decimal place	105
Scaling changes quantities proportionally, using multiplication and division.	Using known multiplication and division facts to scale a quantity (e.g. to double or halve a recipe)	59
	Finding a unit fraction of a whole number, using multiplication and division facts and where the answer is a whole number	53, 54, 62, 89
	Finding the whole set or amount when given a unit fraction, using multiplication and division facts	53, 89
Number — Financial mathematics		
New Zealand currency is a decimal system of dollars made up of 100 cents.	Calculating the total cost of several items costing whole-dollar amounts and with different prices, or of multiples of the same item, including giving change	2, 28, 33, 86, 156, 158, 159, 160, 186
	Representing amounts of currency using different combinations of denominations	28, 157, 158, 159, 160
Algebra — Equations and relationships		
Numbers can be compared using "greater than" ($>$), "less than" ($<$), and equals ($=$). Applying the same operation to both sides of a number sentence preserves the balance.	Checking the truth of number sentences and completing open number sentences involving addition and subtraction	9, 17, 34, 105, 150
	Checking the truth of number sentences and completing open number sentences involving multiplication and division	65, 87, 89, 116, 150
Growing patterns can increase or decrease by the addition or subtraction of a constant (arithmetically) or multiplication or division by a constant (geometrically).	Recognising, continuing, creating and describing growing patterns (including numerical and non-numerical patterns) that change by adding, subtracting, or multiplying by a constant whole number	22, 23, 24, 25, 31, 70, 71, 72, 73, 118, 119, 120, 121, 150

Year 4 Knowledge and Practices

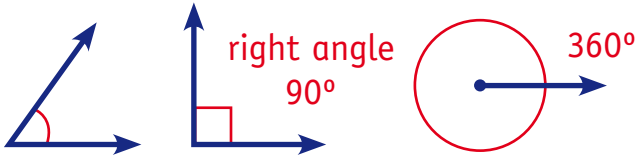
The New Zealand Curriculum Mathematics and Statistics 2025

Knowledge	Practices	Pages
Measurement — Measuring		
Different measurement tools and scales use different-sized units; the unit must be recorded with the measurement amount.	Using familiar objects and experiences to create estimation benchmarks	43, 44, 45, 47, 78, 177, 180, 182, 183, 184, 185
	Using the appropriate tool for measuring length, mass (weight), and capacity in mixed units	46, 76, 77, 79, 80, 102, 177, 178, 179, 181, 183
	Measuring temperature in degrees Celsius	187
	Measuring the perimeter of polygons using metric units (mm, cm, and m)	140, 143
The areas of rectangles (including squares) can be calculated by multiplication of side lengths.	Measuring the areas of irregular shapes covered with squares and half squares	139, 140, 141
	Calculating the areas of rectangular figures (including squares) using multiplication of side lengths	142, 143
Volume is a measure of regions in three-dimensional space.	Measuring the volumes of rectangular prisms (cuboids) by filling them with identical 3D blocks	166, 167, 168, 169
Angles are a measure of turn and can be measured using the unit of degrees; a full turn is 360 degrees, a half turn is 180 degrees and a quarter turn is 90 degrees. Rectangles and squares have four right angles.	Estimating the size of angles by comparing them to 90, 180, and 360 degrees	131, 132, 133, 136
A point in time is typically measured in hours and minutes past midnight. Clocks relate seconds to minutes and minutes to hours according to a system based on 60.	Telling the time on analogue and digital clocks to the nearest minute	124, 125, 126, 127, 128, 130
	Measuring duration in hours, minutes and seconds, including mixed time units	42, 128, 129, 130
	Finding equivalent durations of time using different units	129
Geometry — Shapes		
A regular polygon is a two-dimensional shape with all sides of equal length and all interior angles of equal measure.	Identifying, classifying and describing the attributes of regular and irregular polygons of up to 12 sides, using edges, vertices and angles	135, 136
Circles have an infinite number of lines of symmetry.	Identifying the number of lines of symmetry in 2D shapes	134
Geometry — Spatial reasoning		
Shapes may appear different when viewed from a different perspective.	Visualising 3D shapes and connecting them with 2D diagrams, verbal descriptions and the same shapes drawn from different perspectives	38, 39, 40, 41, 42
A reflection is when a shape is flipped over a line, creating a mirror image. A translation is when a shape is slid from one place to another without being turned. A rotation is when a shape is turned around a fixed point.	Performing one-step transformations (reflections, translations, rotations) on 2D shapes	137, 138
Geometry — Pathways		
An alphanumeric grid reference is a system that divides a map into labelled rows (letters) and columns (numbers), so that each square can be identified by combining a letter and a number (e.g. A1, B2).	Use alphanumeric and general grid references to identify regions and plot positions on a grid map	91, 92, 93, 94, 95
Statistics — Developing knowledge from data		
A variable is an attribute or measurement of the people or objects being studied: categorical variables classify objects or individuals into groups, discrete numerical variables are counted, continuous numerical variables are measured.	Collecting numerical data, and, if needed, rounding to an appropriate unit or part of a unit, based on the context	165, 172, 181
Statistics — Visualisation of data		
Data visualisations are representations of all available values for a variable showing the frequency for each value. Data visualisations show patterns, trends and variations. Numerical data can be visualised with dot plots or bar graphs. A good data visualisation includes, where appropriate: a title that gives the purpose of the visualisation, variable(s) (e.g. labelled on the axis), the group the data is from, units for a numerical variable, values or categories, frequency, with the scale starting at 0.	Creating dot-plot or bar-graph data visualisations	161, 164, 165, 172, 173, 175, 176
Statistics — Interpretation of data		
Interpreting a data visualisation includes describing its variables and their units, the context for the data, and the visualisation's key features: its shape (e.g. the number of peaks), its middle group(s) (where the middle of the data lies), its spread (how spread the data is from the minimum (lowest) value to the maximum (highest) value).	Answering questions about the frequency of a particular value in dot plots	163, 164
	Answering questions about individual values in a dot plot, while referring to the context	163, 164
	Interpreting data visualisations	161, 162, 164, 173, 174, 175, 176, 181
	Distinguishing between when to use a particular value or the frequency for a given value when answering questions about dot plots	163, 164

Dictionary

angle

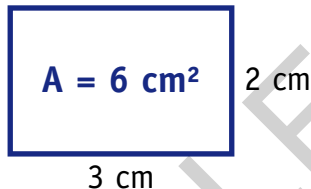
The amount of turning between two lines that meet at a point
Measured in degrees



area

1 cm 1 cm
The size of a surface
Measured in squares
1 square centimetre = 1 cm²
 $A = 1 \text{ cm}^2$

Rectangular area
= length $\times$ width
 $A = L \times W$



ascending order

In order from smallest to largest
67, 804, 1,007, 5,475, 7,862

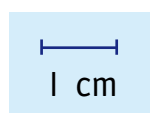
capacity

The amount a container can hold
Measured in cups, litres (L)
and millilitres (mL)



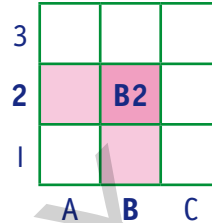
centimetre (cm)

A unit of length
10 mm = 1 cm
100 cm = 1 m



coordinates

Position on a grid using letters and numbers for the rows and columns



data

A collection of information
Can be recorded in tally marks

Favourite sports		
Sport	Tallies	Total
Soccer		12
Netball		6
Rugby		8
Chess		11

decimal number

A number that has a decimal point
e.g. 0.3, 75.1

descending order

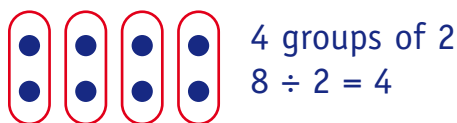
In order from largest to smallest
3,927, 1,423, 875, 610, 40

digit

The numerals that are used to write numbers: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9

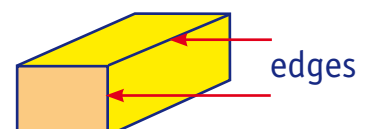
division (÷)

Sharing into equal groups



edge

Where two surfaces meet



Dictionary

equation

Number sentence

$$3 + 2 = 5$$

equivalent

Of equal value

$$\frac{1}{2} = \frac{2}{4} \quad 1 + 4 = 2 + 3$$

estimate

Make a good guess



Around 20

$$21 + 38 = \text{about } 20 + 40 = \text{around } 60$$

face

A flat surface of a solid shape



factor

A number that divides into another number exactly

A number to be multiplied
factor $\times$ factor = product

$$3 \times 4 = 12 \quad 12 \div 4 = 3$$

3 and 4 are factors of 12

fraction

A part of a whole or a group



$$\frac{1}{2} \rightarrow \text{numerator}$$

$$2 \rightarrow \text{denominator}$$

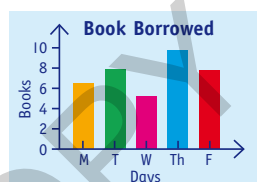
grams (g)

A unit of mass (weight)

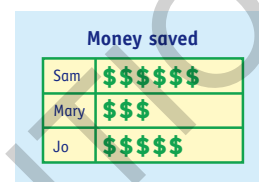
$$1,000 \text{ g} = 1 \text{ kg}$$

graph

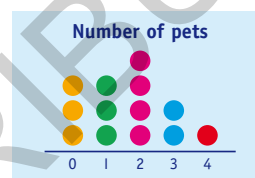
A diagram that shows a collection of data



bar graph



picture graph



dot plot

improper fraction

A fraction greater than 1

The numerator is larger $\rightarrow \frac{7}{4}$
than the denominator $\rightarrow$

kilogram (kg)

A unit of mass for weighing things

$$1 \text{ kilogram} = 1,000 \text{ grams}$$

$$1,000 \text{ kilograms} = 1 \text{ tonne}$$

litre (L)

A unit of capacity

$$1 \text{ L} = 1,000 \text{ millilitres (mL)}$$

mass (weight)

The amount of material that makes up an object. Measured in grams, kilograms and tonnes

metre (m)

A unit of length

$$1 \text{ m} = 100 \text{ cm} \quad 1,000 \text{ m} = 1 \text{ km}$$

Dictionary

millilitre (mL)

A unit of capacity

$$1,000 \text{ mL} = 1 \text{ L}$$

millimetre (mm)

A unit of length

$$10 \text{ mm} = 1 \text{ cm}$$

mixed numbers

A whole number with a fraction $1\frac{1}{4}$

multiple

The product (answer) when you multiply a given number by another

Multiples of 3 are 6, 9, 12, 15, 18, 21...

multiplication (×)

Find the total of a number of equal groups or equal rows



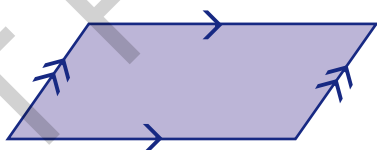
$$5 \times 4 = 20$$

$$6 \times 35 =$$

6	$6 \times 30 = 180$	$6 \times 5 = 30$
	30	5

parallelogram

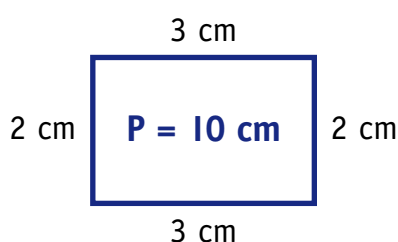
A quadrilateral with opposite sides parallel



perimeter

Distance around the outside

Add side lengths: $3 + 3 + 2 + 2 = 10 \text{ cm}$



place value

The value of a numeral depending on its position in a number

$$396 = 300 + 90 + 6$$

$$754 = 7 \text{ hundreds} + 5 \text{ tens} + 4 \text{ ones}$$

$$8.57 = 8 \text{ ones} + 5 \text{ tenths} + 7 \text{ hundredths}$$

polygon

A closed shape with 3 or more straight sides

e.g.



polygons – regular

2D shapes with all sides the same length and all angles the same size



polygons – irregular

2D shapes with sides and angles of different sizes are **irregular** polygons



prism

A 3D shape with identical ends. All other faces are rectangles. The ends give a prism its name.



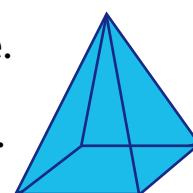
triangular prism

product

When numbers are multiplied, the answer is called the product.

pyramid

A 3D object with one flat base. All other faces are triangles coming to a point at the apex. The base shape gives a pyramid its name.



square pyramid

Dictionary

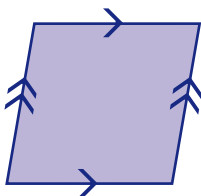
quadrilateral

A 2D shape with 4 straight sides

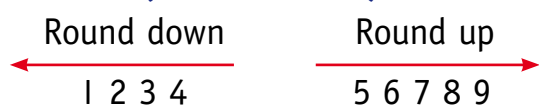


rhombus

A quadrilateral with all sides equal and opposite sides parallel. It is a special parallelogram.



rounding (to nearest 10)



e.g. 675 $\rightarrow$ 700

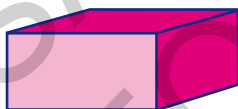
(rounded to the nearest 100)

4,492 $\rightarrow$ 4,000

(rounded to the nearest 1,000)

three-dimensional objects (3D)

Solid shapes that have length, width and height



time



analogue



digital

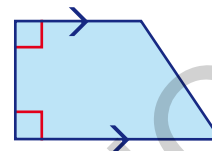
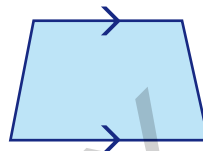
1 hour = 60 minutes

1 minute = 60 seconds

trapezium

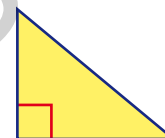
A quadrilateral that has one pair of parallel sides

Some have 2 right angles



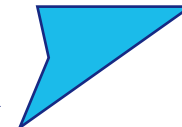
triangle

A 2D shape with 3 straight sides



two-dimensional shapes (2D)

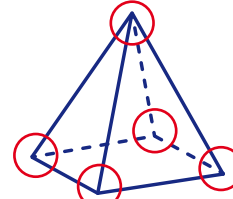
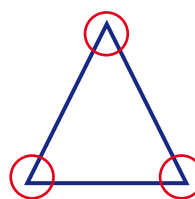
Shapes that only have length and width



vertex

2D: where 2 straight lines meet

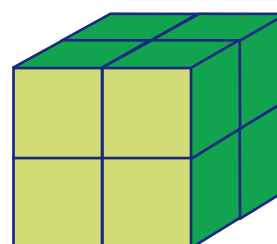
3D: where 3 or more edges meet



1 vertex, 3 vertices

volume

The amount of space a solid object takes up



8 cm³



- Which wallet holds the most money? _____
- Which wallet holds the least money? _____
- Order the wallets from holds least to holds most.

--	--	--	--	--	--	--

- Add \$10 to:

a B _____ b C _____ c D _____ d G _____ e A _____

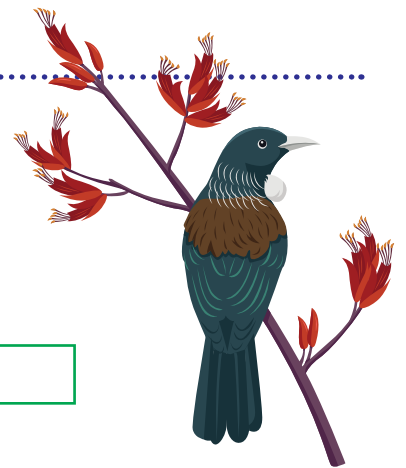
- Take \$100 from:

a A _____ b C _____ c F _____ d G _____ e E _____

- Which wallet holds: a closest to \$100? _____ b closest to \$1,000? _____

- A TV costs \$980. Which wallets could you use? _____

Why? _____





1 Write the number 1,000 more than:

a 2,000 _____ b 5,000 _____ c 7,000 _____ d 3,000 _____

2 Write the number 1,000 less than:

a 10,000 _____ b 5,000 _____ c 9,000 _____ d 2,000 _____

3 What number is halfway between:

a 0 and 1,000? _____ b 6,000 and 7,000? _____
c 3,000 and 4,000? _____ d 9,000 and 10,000? _____
e 1,000 and 2,000? _____ f 8,000 and 9,000? _____

4 Add.

	Add 1		Add 10		Add 100
a 99	100	→	110	→	210
b 109		→		→	
c 199		→		→	
d 1,009		→		→	
e 1,099		→		→	
f 1,999		→		→	

5 Write the number for:

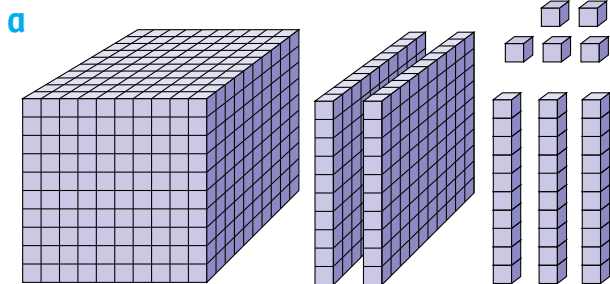
a two hundred and forty-eight. _____ b eight hundred and eleven. _____
c four hundred and fifty. _____ d seven hundred and nine. _____
e one thousand, three hundred and sixty-five. _____
f two thousand, one hundred and ninety-seven. _____
g four thousand, five hundred and eighteen. _____
h seven thousand, six hundred and twenty. _____

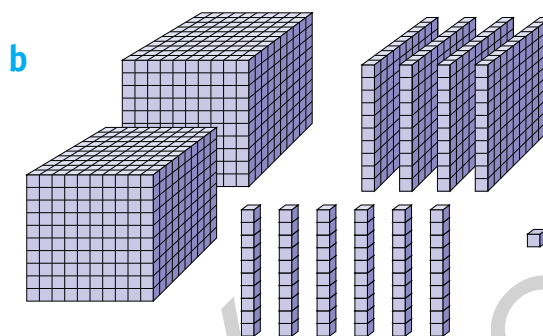
Challenge! What is my number?

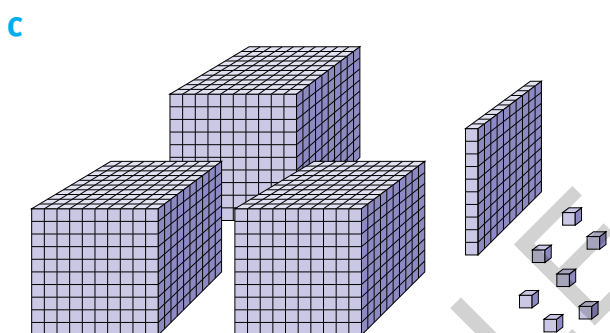
My ones digit is 4, my hundreds digit is 7,
my tens digit is 5 and my thousands digit is 9.

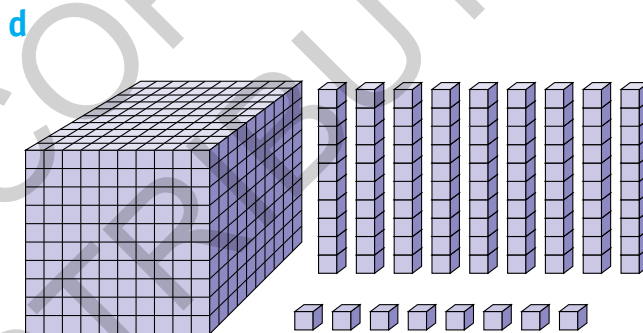


1 Write the number shown.









2 Write the numbers from question 1 in words.

a _____

b _____

c _____

d _____

3 Circle the larger number.

a 690 609

b 937 793

c 2,985 2,002

d 4,157 5,147

e 8,061 6,810

f 2,594 2,954

4 Join the numeral to its name.

1,010

1,001

one thousand and one

one thousand, one hundred and ten

one thousand and ten

one thousand one hundred

1,100

1,110

1 Complete.

- a $9,526 = 9,000 + 500 + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$
- b $3,749 = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$
- c $5,618 = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$
- d $7,293 = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$
- e $6,054 = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

3,648

$3,000 + 600 + 40 + 8$

The value

of the 3 is 3,000

of the 6 is 600

of the 4 is 40

of the 8 is 8

2 Write the number.

- a $2,000 + 800 + 10 + 7 = \underline{\hspace{2cm}}$
- b $8,000 + 400 + 60 + 1 = \underline{\hspace{2cm}}$
- c $4,000 + 900 + 70 + 2 = \underline{\hspace{2cm}}$
- d $1,000 + 300 + 80 + 5 = \underline{\hspace{2cm}}$
- e $3,000 + 40 + 8 = \underline{\hspace{2cm}}$
- f $7,000 + 200 + 6 = \underline{\hspace{2cm}}$

3 What is the value of the underlined numeral?

- a $2,6\underline{1}8$ $\underline{\hspace{2cm}}$ b $1,5\underline{8}4$ $\underline{\hspace{2cm}}$ c $\underline{6},372$ $\underline{\hspace{2cm}}$ d $9,49\underline{3}$ $\underline{\hspace{2cm}}$
- e $\underline{3},265$ $\underline{\hspace{2cm}}$ f $\underline{7},726$ $\underline{\hspace{2cm}}$ g $1,\underline{5}96$ $\underline{\hspace{2cm}}$ h $5,0\underline{8}7$ $\underline{\hspace{2cm}}$
- i $4,\underline{9}03$ $\underline{\hspace{2cm}}$ j $2,\underline{6}00$ $\underline{\hspace{2cm}}$ k $\underline{7},008$ $\underline{\hspace{2cm}}$ l $30\underline{4}$ $\underline{\hspace{2cm}}$

4 Write these in ascending order.

- a 8,420 2,048 3,915 $\underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$
- b 7,506 983 9,375 $\underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$
- c 5,130 5,301 5,013 $\underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$
- d 4,142 1,244 4,214 $\underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$
- e 8,080 8,800 8,008 $\underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$ $\underline{\hspace{2cm}}$

Challenge!

Use these numerals to write as many different four-digit numbers as you can.

How many could you find? $\underline{\hspace{2cm}}$

2

9

0

3

Mastery Checklist I can: ☐ add 10 and 100 to 4-digit numbers

☐ order 4-digit numbers

☐ add 1,000 to 4-digit numbers

☐ find the number halfway between

☐ recognise numbers in place value blocks

☐ expand 4-digit numbers to show place value

Count by 25s and 50s

- 1 Harry earns \$25 an hour. Count by 25s to find out how many hours Harry worked to make \$500.



- 2 Sally gets 50c each time she helps mum with the bins. If she does this once a fortnight, that's 26 times in a year. Count by 50s to find out how much Sally earns in a year.



- 3 How could you do these calculations faster?

I can solve problems by:

☐ counting by 25s ☐ counting by 50s

A 9,254

B 5,061

C 1,995

D 3,470

E 4,109

F 4,091

G 5,106

1 Write each number in words.

A

B

C

D

E

F

G

2 Write the numbers in ascending order.

--	--	--	--	--	--	--

3 Which number is:

a closest to 4,000? _____ **b** closest to 6,000? _____

4 Which number comes:

a after 1,995? _____ **b** before 4,091? _____

c before 5,061? _____ **d** after 4,109? _____

1 Round to the nearest ten.

- | | | | |
|------|-------|------|-------|
| a 74 | _____ | b 81 | _____ |
| c 25 | _____ | d 67 | _____ |
| e 12 | _____ | f 40 | _____ |
| g 89 | _____ | h 36 | _____ |
| i 93 | _____ | j 58 | _____ |

2 Round to the nearest hundred.

- | | | | |
|-------|-------|-------|-------|
| a 654 | _____ | b 463 | _____ |
| c 871 | _____ | d 202 | _____ |
| e 108 | _____ | f 961 | _____ |
| g 235 | _____ | h 579 | _____ |
| i 96 | _____ | j 310 | _____ |

3 Round to the nearest thousand.

- | | | | |
|---------|-------|---------|-------|
| a 7,398 | _____ | b 5,650 | _____ |
| c 1,427 | _____ | d 1,901 | _____ |
| e 5,006 | _____ | f 9,433 | _____ |
| g 2,192 | _____ | h 3,198 | _____ |
| i 945 | _____ | j 8,072 | _____ |

Remember:

1, 2, 3, 4 go down
5, 6, 7, 8, 9 go up.

To round to the nearest ten, look at the **ones** place.

82 → 80

To round to the nearest hundred, look at the **tens** place.

168 → 200

To round to the nearest thousand, look at the **hundreds** place.

3,248 → 3,000



4 Round and add to estimate answers.

	Round to nearest 10	Round to nearest 100	Round to nearest 1,000
a 1,342 + 3,453			
b 6,431 + 6,956			
c 7,360 + 4,493			
d 8,255 + 2,873			
e 1,046 + 3,097			

Work backwards

What number am I?

My thousands digit is 2 more than my tens digit.

My tens digit is 3 less than my hundreds digit.

My hundreds digit is 4 more than my ones digit which is 2.



1 Use the symbols $>$ or $<$ to make the statements true.

- a 764 _____ 674 b 991 _____ 919
c 538 _____ 583 d 1,465 _____ 1,456
e 2,091 _____ 2,109 f 8,691 _____ 8,961

2 Choose numbers from page 8 to fill in the blanks.

- a _____ is less than _____ b _____ is less than _____
c _____ is less than _____ d _____ is more than _____
e _____ is more than _____ f _____ is more than _____

3 Write the value of the 9 in:

- a 9,254 _____ b 1,975 _____ c 4,109 _____ d 4,091 _____

4 Write the value of the 4 in:

- a 9,254 _____ b 3,470 _____ c 4,109 _____ d 4,091 _____

- 5 a $9,254 = 9,000 + 200 + \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$ b $1,995 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$
c $3,470 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$ d $5,106 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$
e $5,061 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$ f $4,091 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$

6 True or false?

- a There were about 9,000 people at the cinema. _____
b There are about 5,000 children in our school. _____
c In our class there are less than 2,000 toes. _____
d There are 1,000 cents in \$10. _____
e A large bottle can hold 2,000 mL. _____
f There are 6,914 birds sitting on the window sill. _____
g Grandma read 3,011 books last week. _____
h There are more than 2,000 words in this book. _____



Challenge!

If you turn a calculator upside down, some numbers look like letters, e.g. $1 = i$, $7 = L$, $4 = h$ etc. $7,714 = \text{hill}$

What numbers make these words?

sell

lose

shoe

goes

legs



Using numeral expanders

TERM 1
Week 2

1 Write these numbers.

a	7	Thousands	6	Hundreds	2	Tens	9	Ones	
b	9	Thousands	4	Hundreds	5	Tens	2	Ones	
c	4	Thousands	7	Hundreds	0	Tens	3	Ones	
d	1	Thousands	0	Hundreds	8	Tens	6	Ones	
e	6	Thousands	3	Hundreds	5	Tens	0	Ones	

These are
expanded
numbers.



2 Complete these numeral expanders.

a 5,218

b 3,964

	Thousands		Hundreds		Tens		Ones
--	-----------	--	----------	--	------	--	------

	Thousands		Hundreds		Tens		Ones
--	-----------	--	----------	--	------	--	------

		Hundreds		Tens		Ones
--	--	----------	--	------	--	------

		Hundreds		Tens		Ones
--	--	----------	--	------	--	------

			Tens		Ones
--	--	--	------	--	------

			Tens		Ones
--	--	--	------	--	------

			Ones
--	--	--	------

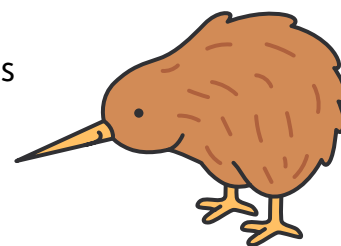
			Ones
--	--	--	------

3 Use the numeral expanders above to express:

a 5,218 as _____ thousands, _____ tens, _____ ones

b 5,218 as _____ hundreds, _____ tens, _____ ones

c 5,218 as _____ tens, _____ ones



4 How many thousands in:

a 5,679? _____ b 1,935? _____ c 3,198? _____ d 8,721? _____

5 How many hundreds in:

a 7,450? _____ b 6,307? _____ c 2,094? _____ d 8,813? _____

6 How many tens in:

a 1,638? _____ b 5,920? _____ c 4,107? _____ d 9,022? _____

7 How many ones in:

a 7,004? _____ b 2,500? _____ c 1,234? _____ d 9,990? _____

1 Write the numbers.

- | | | |
|-----------------|------------------|--------------------|
| a iwa _____ | b ono _____ | c toru _____ |
| d tahi _____ | e whitu _____ | f rua _____ |
| g whā _____ | h kore _____ | i rima _____ |
| j waru _____ | k tekau _____ | l kotahi rau _____ |
| m iwa rau _____ | n rima rau _____ | |

2 Colour the words to match.

1	10	100	1,000
tekau	kotahi mano	tahi	kotahi rau

3 What is the word for 'thousand'? _____

4 Complete the place value table.

	thousands	hundreds	tens	ones
a 3,456	mano	rau	tekau	
b 7,612				
c 9,831				
d 5,925				
e 4,278				

5 Write the numbers.

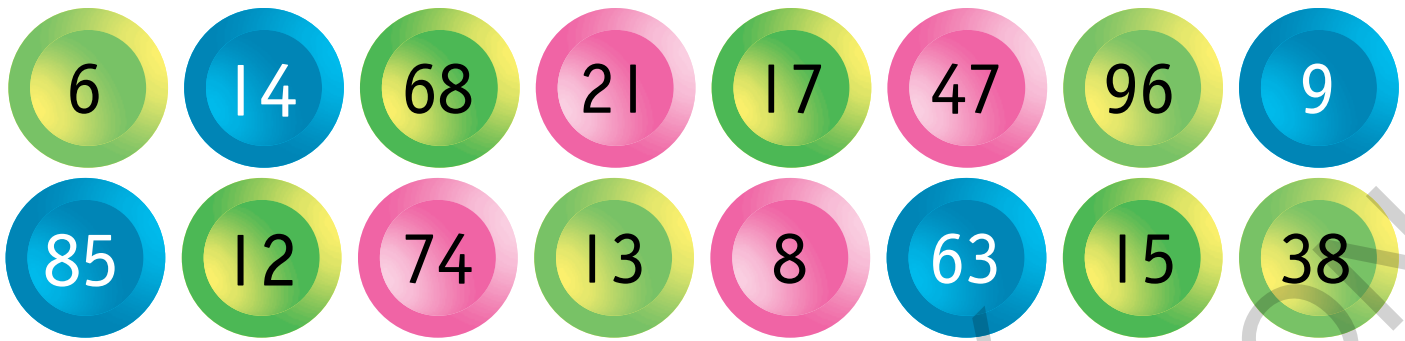
- a rua mano, kotahi rau toru tekau mā rua _____
- b kotahi mano, ono rau iwa tekau mā rima _____
- c ono mano, whitu rau rima tekau mā iwa _____

Write 4-digit numbers in place value order:
thousands, hundreds, tens and ones

6 Write in te reo Māori.

- a 2,746 _____
- b 5,183 _____
- c 9,321 _____

- Mastery Checklist** I can: ☐ write and compare 4-digit numbers
☐ round numbers
☐ round and add to estimate
☐ understand place value to thousands
☐ know numbers over 1,000 in te reo Māori



What do we know about the answer if we add:

- 1 74 and 96? **Round to estimate:** 96 is near 100 so it will be around 174.
Make a ten: 4 plus 6 = 10 so it will end in zero.
- 2 74 and 21? **Compensation:** Move the 1 to 74 and make it 75 + 20.
- 3 17 and 47? **Round to estimate:** It is around 50 plus 17.
Addition facts: 7 plus 7 = 14 so it will end in 4.
- 4 68 and 13? **Compensation:** Move 2 from 13 to 68 and make it 70 + 11.
- 5 What could the ones digits be if two numbers total 43?
Addition facts: To end in 3, add numbers with ones digits of 2 and 1, 3 and 0, 4 and 9, 5 and 8, or 6 and 7.

1 Use compensation strategies plus your addition facts to answer these questions.

- | | | |
|---------------------------------|----------------------------------|---------------------------------|
| a $74 + \underline{\quad} = 83$ | b $\underline{\quad} + 47 = 64$ | c $63 + \underline{\quad} = 88$ |
| d $\underline{\quad} + 47 = 59$ | e $96 + \underline{\quad} = 105$ | f $15 + \underline{\quad} = 53$ |

2 Find two numbers that total:

- | | | |
|--|--|--|
| a $24 = \underline{\quad} + \underline{\quad}$ | b $55 = \underline{\quad} + \underline{\quad}$ | c $91 = \underline{\quad} + \underline{\quad}$ |
| d $25 = \underline{\quad} + \underline{\quad}$ | e $90 = \underline{\quad} + \underline{\quad}$ | f $99 = \underline{\quad} + \underline{\quad}$ |
| g $26 = \underline{\quad} + \underline{\quad}$ | h $62 = \underline{\quad} + \underline{\quad}$ | i $78 = \underline{\quad} + \underline{\quad}$ |

3 Find three numbers that total:

- | | |
|---|--|
| a $144 = \underline{\quad} + \underline{\quad} + \underline{\quad}$ | b $86 = \underline{\quad} + \underline{\quad} + \underline{\quad}$ |
|---|--|

4 What strategies and facts helped you in question 3?

1 Partition numbers and use the split strategy.

a $58 + 14 = 50 + 10 + 8 + 4 = \underline{\hspace{2cm}}$

b $75 + 45 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$

c $46 + 86 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$

d $93 + 75 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$

e $127 + 67 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$

f $155 + 36 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$

g $137 + 43 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$



2 Partition numbers to add.

a $48 + 15 = \underline{\hspace{2cm}}$

b $66 + 35 = \underline{\hspace{2cm}}$

c $54 + 27 = \underline{\hspace{2cm}}$

d $87 + 36 = \underline{\hspace{2cm}}$

e $33 + 49 = \underline{\hspace{2cm}}$

f $68 + 83 = \underline{\hspace{2cm}}$

g $124 + 35 = \underline{\hspace{2cm}}$

h $118 + 67 = \underline{\hspace{2cm}}$

i $136 + 49 = \underline{\hspace{2cm}}$

3 Partition numbers and use the compensation strategy.

a $42 + 39 = 42 + 40 - 1 = \underline{\hspace{2cm}}$

b $63 + 38 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$

c $18 + 78 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$

d $54 + 19 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$

e $146 + 59 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$

f $316 + 68 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$



4 Double these numbers.

11	12	13	14	15	16	17	18	19	20

5 Use doubles to help.

a $14 + 15 = \underline{\hspace{2cm}}$

b $16 + 15 = \underline{\hspace{2cm}}$

c $11 + 12 = \underline{\hspace{2cm}}$

d $20 + 19 = \underline{\hspace{2cm}}$

e $57 + 58 = \underline{\hspace{2cm}}$

f $124 + 123 = \underline{\hspace{2cm}}$

g $109 + 107 = \underline{\hspace{2cm}}$

h $143 + 145 = \underline{\hspace{2cm}}$

i $217 + 216 = \underline{\hspace{2cm}}$

Challenge! Add these mentally!

a $53 + 59$

b $237 + 212$

c $408 + 353$

d $294 + 106$

e $556 + 147$

f $527 + 495$

Addition using a number line

TERM 1
Week 3

1 What must be added to make 100? Count on tens first, then ones.

a 63 _____ b 46 _____ c 28 _____ d 55 _____ e 71 _____

2 What must be added to make \$1? Count on.

a 12c _____ b 39c _____ c 65c _____ d 46c _____

e 82c _____ f 97c _____ g 23c _____ h 71c _____



3 Use the number lines for these.

a $143 + 28 =$ _____



b $256 + 134 =$ _____



c $195 + 266 =$ _____



d $2,318 + 1,274 =$ _____



e $4,534 + 2,128 =$ _____



4 Add the ones first, then the tens, then the hundreds. Use one of your strategies to check your answer.

a $\begin{array}{r} 63 \\ + 24 \\ \hline \end{array}$ b $\begin{array}{r} 85 \\ + 12 \\ \hline \end{array}$ c $\begin{array}{r} 79 \\ + 20 \\ \hline \end{array}$ d $\begin{array}{r} 231 \\ + 356 \\ \hline \end{array}$ e $\begin{array}{r} 410 \\ + 379 \\ \hline \end{array}$ f $\begin{array}{r} 105 \\ + 573 \\ \hline \end{array}$

g $\begin{array}{r} 327 \\ + 512 \\ \hline \end{array}$ h $\begin{array}{r} 282 \\ + 614 \\ \hline \end{array}$ i $\begin{array}{r} 135 \\ + 464 \\ \hline \end{array}$ j $\begin{array}{r} 783 \\ + 105 \\ \hline \end{array}$ k $\begin{array}{r} 416 \\ + 83 \\ \hline \end{array}$ l $\begin{array}{r} 922 \\ + 57 \\ \hline \end{array}$

5 There are 1,231 jelly beans in one bowl and 1,267 in another. How many jelly beans altogether?



+

6 At the fish market Joe sold 782 fish and Jill sold 1,307 fish. How many were sold altogether?



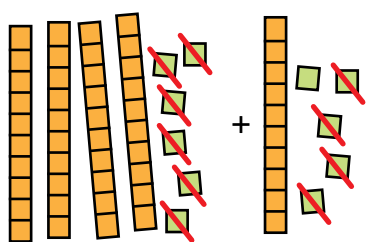
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Addition with trading

TERM 1
Week 3

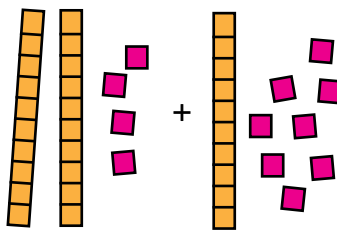
1 Cross off 10 ones and add 1 ten in each diagram.

e.g.



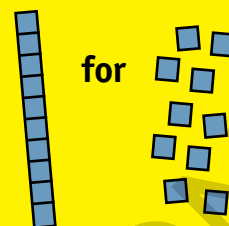
$$46 + 15 = 61$$

a

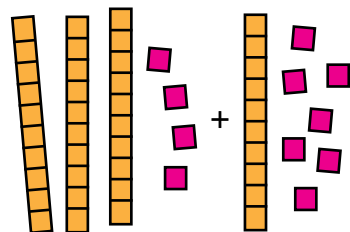


$$\square + \square = \square$$

You can trade

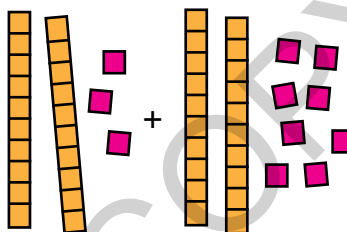


b



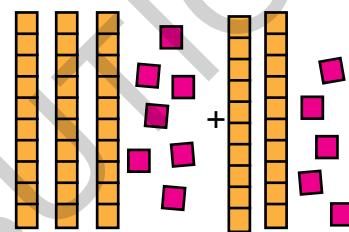
$$\square + \square = \square$$

c



$$\square + \square = \square$$

d



$$\square + \square = \square$$

2 a

Tens	Ones
5	7
+	9

b

Tens	Ones
6	4
+	8

c

Tens	Ones
3	5
+	6

d

Tens	Ones
8	3
+	8

e

Tens	Ones
4	9
+	7

f

Tens	Ones
3	5
+	7

g

Tens	Ones
2	8
+	8

h

Tens	Ones
7	8
+	5

Setting out

Tens	Ones
1	
2	9
+	2 3
5	2

10 ones have been traded for 1 ten.

3 a

H	T	O
	2	6
	4	3
+	1	7

b

H	T	O
	1	4
	3	5
+	5	2

c

H	T	O
	7	6
	3	4
+	6	9

d

H	T	O
	8	1
	2	9
+	4	3

e

H	T	O
	9	7
	1	8
+	3	6

Work backwards

The children have 68 marbles altogether. John has 8 less than Tim. Tim has 3 more than Ali, who has half as many as Von. Von has 28 marbles. How many do John, Tim and Ali have?

Setting out

H	T	O
1	1	
1	3	6
4	7	7
6	1	3

1 a

	H	T	O
	1	6	7
+	3	1	4

b

	H	T	O
	3	3	8
+	4	5	9

c

	H	T	O
	6	7	3
+	2	1	8

d

	H	T	O
	1	8	7
+	7	0	9

e

	H	T	O
	4	6	3
+	2	5	9

f

	H	T	O
	5	7	5
+	1	6	6

g

	H	T	O
	3	9	8
+	1	7	1

h

	H	T	O
	2	8	4
+	6	4	9

i

	H	T	O
	4	5	7
+	3	1	8

j

	H	T	O
	6	2	8
+	1	5	1

k

	H	T	O
	2	5	8
+	5	5	1

l

	H	T	O
	4	6	9
+	2	4	0

m

	H	T	O
	3	0	2
+	6	2	8

n

	H	T	O
	5	3	4
+		7	7

2

a

	Th	H	T	O
	8	4	5	7
+	1	5	3	2

b

	Th	H	T	O
	4	3	8	5
+	4	7	1	3

c

	Th	H	T	O
	1	4	7	0
+	7	2	3	9

d

	Th	H	T	O
	5	3	2	8
+	3	7	9	1

3 Write the algorithms and calculate the answers.

a $298 + 543$

b $615 + 178$

c $380 + 482$

d $6,430 + 2,357$

e $1,843 + 3,728$

	H	T	O
+			

	H	T	O
+			

	H	T	O
+			

	Th	H	T	O
+				

	Th	H	T	O
+				

Challenge!

What is the total of all the tens and ones in question 1 on page 12?



Mastery Checklist

- I can:
- ☐ use various strategies to add
 - ☐ use a number line to add
 - ☐ use a vertical algorithm to add
 - ☐ trade place values when adding
 - ☐ add 2, 3 and 4-digit numbers

Jerry

$$\begin{array}{r} 78 \\ - 23 \\ \hline 45 \end{array}$$

$$\begin{array}{r} 69 \\ - 15 \\ \hline 54 \end{array}$$

$$\begin{array}{r} 85 \\ - 23 \\ \hline 62 \end{array}$$

$$\begin{array}{r} 77 \\ - 45 \\ \hline 42 \end{array}$$

$$\begin{array}{r} 59 \\ - 27 \\ \hline 22 \end{array}$$

$$\begin{array}{r} 48 \\ - 16 \\ \hline 32 \end{array}$$

Mark _____

Josie

$$\begin{array}{r} 64 \\ - 31 \\ \hline 33 \end{array}$$

$$\begin{array}{r} 72 \\ - 30 \\ \hline 40 \end{array}$$

$$\begin{array}{r} 99 \\ - 63 \\ \hline 35 \end{array}$$

$$\begin{array}{r} 59 \\ - 15 \\ \hline 44 \end{array}$$

$$\begin{array}{r} 36 \\ - 15 \\ \hline 21 \end{array}$$

$$\begin{array}{r} 47 \\ - 27 \\ \hline 27 \end{array}$$

Mark _____

- 1 Jerry and Josie finished their maths tests.
- a Mark their work.
 - b Give each of them a mark.
 - c Rewrite the algorithms that are wrong and work out the correct answers.

- 2 Complete these number patterns.

- | | | | |
|---------------------|-------------------------|---------------------------|---------------------------|
| a $7 - 2 =$ _____ | b $9 - 4 =$ _____ | c $8 - 3 =$ _____ | d $9 - 7 =$ _____ |
| $70 - 20 =$ _____ | $90 -$ _____ $=$ _____ | _____ $-$ _____ $=$ _____ | _____ $-$ _____ $=$ _____ |
| $700 - 200 =$ _____ | $900 -$ _____ $=$ _____ | _____ $-$ _____ $=$ _____ | _____ $-$ _____ $=$ _____ |
| e $5 - 2 = 3$ | f $7 - 4 =$ _____ | g $8 - 4 =$ _____ | h $6 - 3 =$ _____ |
| $15 - 2 =$ _____ | $17 - 4 =$ _____ | $18 - 4 =$ _____ | $16 - 3 =$ _____ |
| $25 - 2 =$ _____ | $27 - 4 =$ _____ | $28 - 4 =$ _____ | $26 - 3 =$ _____ |
| $85 - 2 =$ _____ | $67 - 4 =$ _____ | $58 - 4 =$ _____ | $96 - 3 =$ _____ |

Subtraction strategies

TERM 1
Week 4

1 Use strategy A: Compensation strategy.

a $53 - 28 = 53 - 30 + 2$ b $64 - 29 = 64 - \underline{\quad} + \underline{\quad}$
 $= \underline{\quad}$ $= \underline{\quad}$

c $46 - 19 = 46 - \underline{\quad} + \underline{\quad}$ d $85 - 57 = 85 - \underline{\quad} + \underline{\quad}$
 $= \underline{\quad}$ $= \underline{\quad}$

e $97 - 68 = 97 - \underline{\quad} + \underline{\quad}$ f $73 - 36 = 73 - \underline{\quad} + \underline{\quad}$
 $= \underline{\quad}$ $= \underline{\quad}$

Strategy A: Compensation

$64 - 18 =$
 $64 - 20 + 2 = 46$

Strategy B: Partition

$71 - 24 =$
 $71 - 20 - 4 = 47$

24 is 20 and 4.
Take away 20,
then take away
another 4.

Check answers by
counting on.

2 Use strategy B: Partitioning strategy.

a $67 - 43 = 67 - 40 - 3$ b $91 - 52 = 91 - \underline{\quad} - \underline{\quad}$
 $= \underline{\quad}$ $= \underline{\quad}$

c $52 - 24 = 52 - \underline{\quad} - \underline{\quad}$ d $75 - 31 = 75 - \underline{\quad} - \underline{\quad}$
 $= \underline{\quad}$ $= \underline{\quad}$

e $80 - 33 = 80 - \underline{\quad} - \underline{\quad}$ f $41 - 24 = 41 - \underline{\quad} - \underline{\quad}$
 $= \underline{\quad}$ $= \underline{\quad}$

3

	-	56	73	64	49	76	62	81	50
a	27								
b	38								

4

	-	61	91	70	62	87	74	90	83
a	32								
b	53								

5 Farmer Fred had 564 sheep. How many were left when he sold 239?

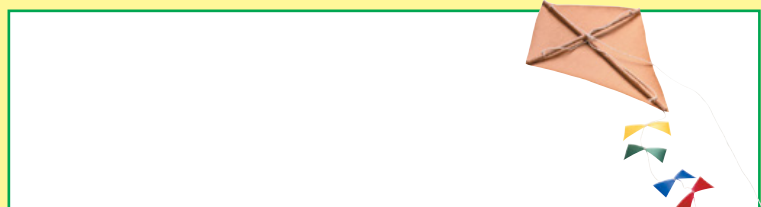


6 Ciara had 880 jelly beans. She ate 132 and felt sick. How many were left?



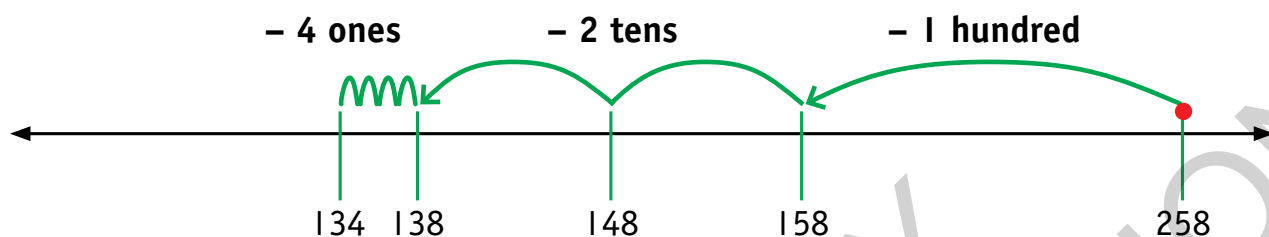
Challenge!

Make up a subtraction problem about kites where the answer is 137.



Look at this subtraction on the number line.

$$258 - 124 = \boxed{}$$



1 Use the number lines to help you find the difference.

a $132 - 117 = \underline{\hspace{2cm}}$

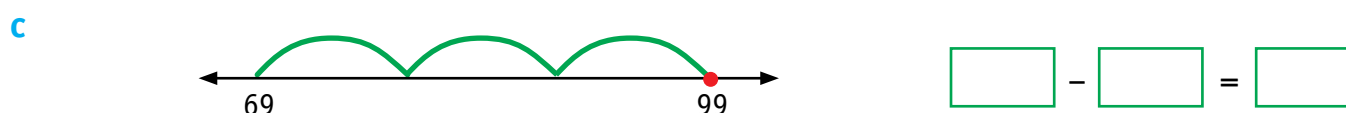
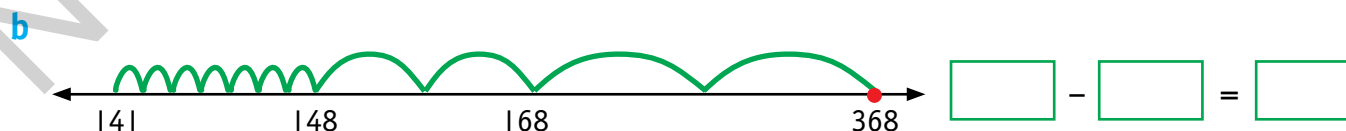
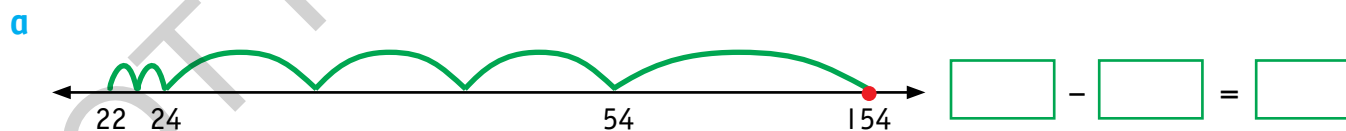
b $348 - 151 = \underline{\hspace{2cm}}$

c $842 - 374 = \underline{\hspace{2cm}}$

d $268 - 132 = \underline{\hspace{2cm}}$

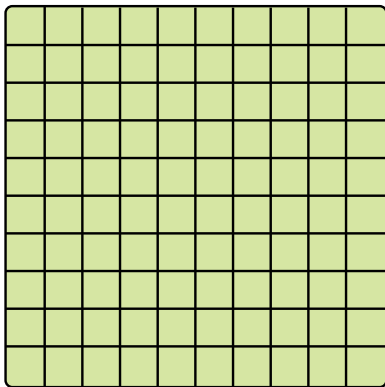
e $473 - 311 = \underline{\hspace{2cm}}$

2 Write an equation for each number line, starting at the red dot.



Subtraction from round numbers

TERM 1
Week 4



1 Use the hundred square to help.

a $100 - 56 = \underline{\hspace{2cm}}$, $56 + \underline{\hspace{2cm}} = 100$

b $100 - 23 = \underline{\hspace{2cm}}$, $23 + \underline{\hspace{2cm}} = 100$

c $100 - 49 = \underline{\hspace{2cm}}$, $49 + \underline{\hspace{2cm}} = 100$

d $100 - 64 = \underline{\hspace{2cm}}$, $64 + \underline{\hspace{2cm}} = 100$

e $100 - 11 = \underline{\hspace{2cm}}$, $11 + \underline{\hspace{2cm}} = 100$

f $100 - 77 = \underline{\hspace{2cm}}$, $77 + \underline{\hspace{2cm}} = 100$

$100 - 64$

Think:

$64 + 36 = 100$

So,

$100 - 64 = 36$

2 Change from \$1?



• 83c

a



• 37c

b



• 45c

c



• 68c

d



• 79c

e

3 Use addition to find the difference.

	Subtraction	Think	Answer
a	$200 - 54$	$54 + \underline{\hspace{2cm}} = 200$	
b	$300 - 126$	$126 + \underline{\hspace{2cm}} = 300$	
c	$500 - 241$	$241 + \underline{\hspace{2cm}} = 500$	
d	$400 - 153$	$153 + \underline{\hspace{2cm}} = 400$	
e	$1,000 - 287$	$287 + \underline{\hspace{2cm}} = 1,000$	
f	$1,000 - 465$	$465 + \underline{\hspace{2cm}} = 1,000$	



Mastery Checklist

- I can: ☐ use various strategies to subtract
☐ use a number line to subtract
☐ subtract 2, 3 and 4-digit numbers

Work backwards

If I subtract 13 from a number, then double the answer, I get 28.

What is the number?



Work backwards

Four children brought home fish for dinner. Tam caught the smallest fish, 25 cm shorter than Grace's. Grace's fish was 10 cm longer than Teddy's. Teddy's fish was 12 cm longer than Harry's fish, which was 25 cm long. How long were the other fish?

Harry → Teddy → Grace → Tam



Harry's fish = 25 cm

Teddy's fish = $25 + 12 =$ _____

Grace's fish = _____

Tam's fish = _____

Check backwards: $22 + 25 -$ _____ $-$ _____ $=$ _____ cm = Harry's fish

- 1 The temperature in Tauranga on Wednesday was 5 degrees higher than in Wellington. Wellington was 8 degrees cooler than Rotorua, which was 2 degrees hotter than Hamilton. Hamilton's temperature was 24 degrees, so what temperatures were reported at the other cities?

Hamilton = _____

Rotorua = _____

Wellington = _____

Tauranga = _____



- 2 In the maths test, Dee gained a better score than last week, but still 10 less than Kay. Kay's score was 5 less than her friend, Len. Len gained 12 more than Rod, who scored 85. Whose mark was highest and what were the others' scores?

- 3 Write your own problem with this ending.

Pete's house is 32 km from school. Who lives farthest from school?

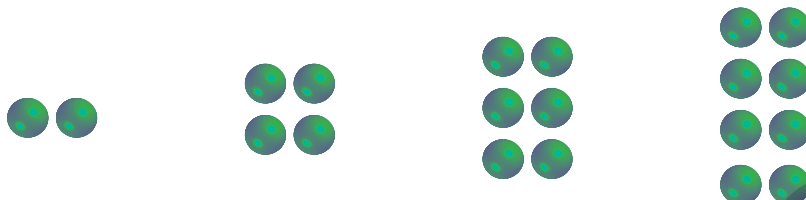
I can solve problems by:

☐ finding unknown amounts ☐ writing algorithms to solve a problem

A

0 4 8 12 16 20

B



C

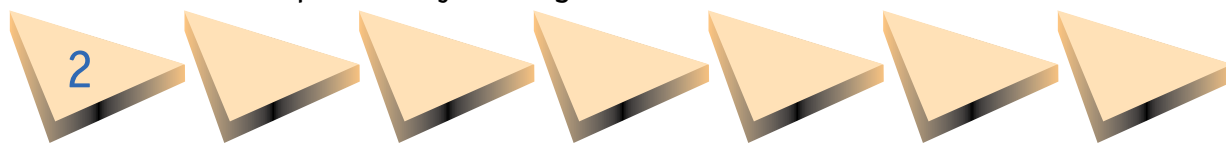
2 5 8 11 14 17

D

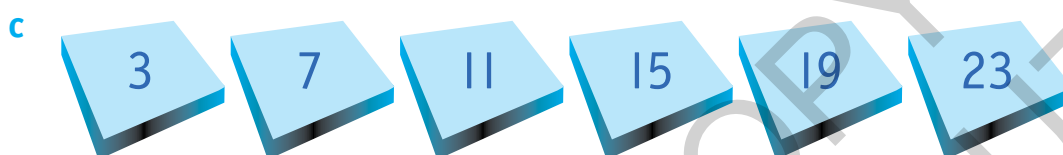


- 1
 - a How is pattern A made? _____
 - b What are the next three numbers? _____
 - c What will the 12th number be? _____
- 2 Draw the next term for B.
- 3
 - a What is the next number in C? _____
 - b What is the rule for C? _____
 - c Will 27 be in C? _____ Why? _____
- 4
 - a How many squares will be in the next two terms for D? _____
 - b Draw them.

- 1 a Start at 2. Make a pattern by adding four.



- b Start at 1. Make a pattern by adding four.



How was this pattern made? _____

- d Each pattern rule is add 4. Why are the patterns different? _____

Look at page 22.

- 2 a What is happening to change the terms in B? _____
 b Write the pattern in numbers. _____
 c How many circles will there be in the 10th term? _____ 14th term? _____
 d Will the numbers always be odd or even? _____

- 3 Investigate Pattern D: a growing pattern.

- a Complete the table.

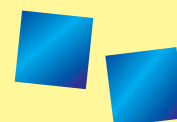
Term	1	2	3	4	5	6
Number of squares	1					

Term 2 grows by 2 squares. Term 3 by 3 squares.

- b Term 4 grows by _____ squares.
 c Term 5 grows by _____ squares.
 d How many squares in the 8th term? _____
 e Explain how you worked it out. _____

Challenge!

How many squares will be in the 10th shape for D?



1 Finish each pattern and write the rule.

- a 2 4 6 8 _____, _____, _____ Rule _____
- b 10 13 16 19 _____, _____, _____ Rule _____
- c 30c 25c 20c 15c _____, _____, _____ Rule _____
- d 20 cm 30 cm 40 cm 50 cm _____, _____, _____ Rule _____
- e 1 10 19 28 _____, _____, _____ Rule _____
- f 1 2 4 8 _____, _____, _____ Rule _____
- g 48 42 36 30 _____, _____, _____ Rule _____
- h 2 9 16 23 _____, _____, _____ Rule _____
- i $\frac{1}{5}$ $\frac{2}{5}$ $\frac{3}{5}$ $\frac{4}{5}$ _____, _____, _____ Rule _____
- j 39 35 31 27 _____, _____, _____ Rule _____

2 a Start with 20. Make a pattern by adding 4.



b Start with 86. Make a pattern by taking away 10.



c Write the rule for this pattern.



Looking for patterns

Finish this pattern. 1, 3, 7, 15,

What did you do?

- Mastery Checklist** I can:
- ☐ work out the rule for a number pattern
 - ☐ continue patterns
 - ☐ follow a rule to make a number pattern

Frog jumps

Froggy jumps by **twos** to visit Ducky. He jumps to lily pad **2**, then **4** and so on until he gets there.

Froggy's jumps: **2**, **4**, _____ How many jumps? _____

Next, Froggy jumps by **fours** from Ducky to the flies for a snack, starting at **12**.

Froggy's jumps: **12** _____ How many jumps? _____

Now Froggy jumps by **fives** from the flies to visit his mum, starting at **5**.

Froggy's jumps: **5** _____ How many jumps? _____

Make up your own pattern for Froggy's next set of jumps.



I can solve problems by:

☐ completing patterns by adding ☐ describing the patterns I see

Checkpoint 1

1 Which number completes the pattern?

Shade one bubble.

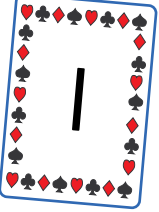
1,278	1,268	1,258	1,248	
1,228	1,282	1,238	1,283	
☐	☐	☐	☐	☐

2

	+ 1	+ 10	+ 100	+ 1,000
7,832				
2,950				
6,104				

3 Using all four cards, what is the smallest number you can make?

Shade one bubble.

			
7,140	4,017	1,047	1,470
☐	☐	☐	☐

4 Which number is closest to 500?

475	520	560	490
☐	☐	☐	☐

5 Fill in 5,479.

	Thousands		Hundreds		Tens		Ones
			Hundreds		Tens		Ones
					Tens		Ones
							Ones

Write your answers in the boxes.

Checkpoint 1

6 Which number is 356 rounded to the closest ten?

Shade one bubble.

360

☐

350

☐

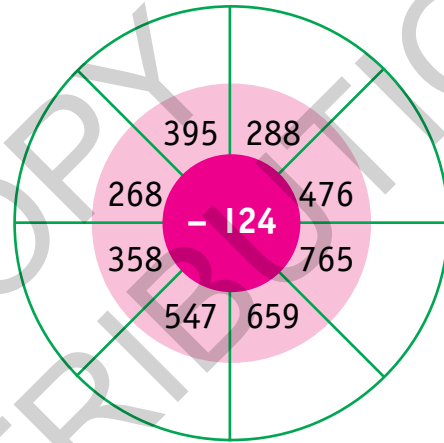
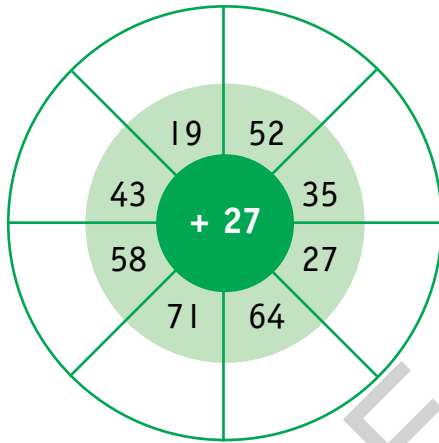
400

☐

355

☐

7



8 Write the algorithm and calculate the answer.

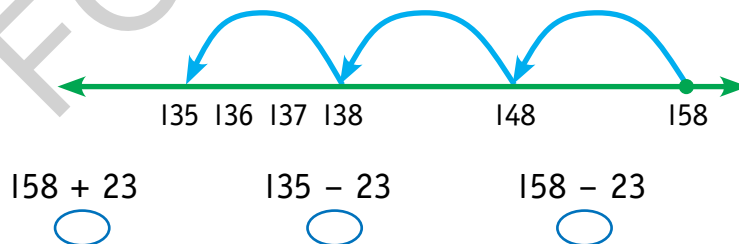
$$7,248 + 1,309$$

Th H T O

+

9 Which operation does this number line show?

Shade one bubble.



10 Write the addition and subtraction facts.

Write your answers in the boxes.



	+		=			+		=	
	-		=			-		=	



Kai has \$1 to spend on a snack at the fun fair. Draw two different combinations of change Kai could get if he buys these things.



Purchase	Change
a candy floss	 or 
b toffee apple	
c donut	
d hot dog	
e drink	
f pretzel	
g ice cream	
h ice block	

1 Subtract.

- a $17 - 9 =$ _____ b $12 - 4 =$ _____ c $10 - 3 =$ _____ d $16 - 7 =$ _____
 e $15 - 8 =$ _____ f $26 - 9 =$ _____ g $18 - 12 =$ _____ h $23 - 5 =$ _____
 i $19 - 7 =$ _____ j $29 - 17 =$ _____ k $15 - 9 =$ _____ l $21 - 7 =$ _____

2 a 15 pencils, 3 broke. How many not broken?

$$\square - \square = \square$$

b 29 jellybeans, 8 eaten. How many left?

$$\square - \square = \square$$

c 36 books, 5 torn. How many not torn?

$$\square - \square = \square$$

d 22 keys, 0 lost. How many keys?

$$\square - \square = \square$$

e 17 cakes, all eaten. How many left?

$$\square - \square = \square$$

f \$48, \$12 spent. How much left?

$$\square - \square = \square$$

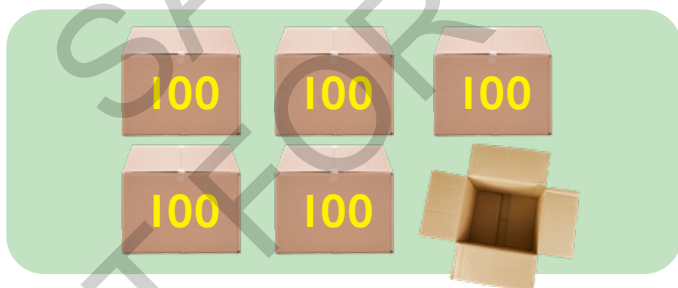
3 Write a problem for each. Then write a number sentence.

a



$$\square - \square = \square$$

b



$$\square - \square = \square$$

4 Subtract.

- a $797 - 80 =$ _____ b $152 - 40 =$ _____ c $170 - 30 =$ _____
 d $316 - 70 =$ _____ e $225 - 8 =$ _____ f $426 - 90 =$ _____
 g $580 - 120 =$ _____ h $723 - 510 =$ _____ i $691 - 270 =$ _____

Challenge! You have 36 lollies.

If you eat 3 every night, how many days will they last?

What if you ate 4 each night?

Or 6 each night?

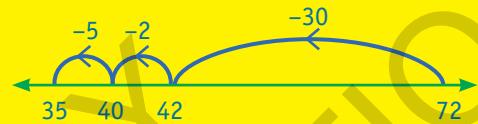
1 Subtract.

- | | | | |
|---|------------------|---|------------------|
| a | $16 - 9 =$ _____ | b | $15 - 8 =$ _____ |
| c | $14 - 6 =$ _____ | d | $12 - 7 =$ _____ |
| e | $11 - 5 =$ _____ | f | $16 - 8 =$ _____ |
| g | $15 - 9 =$ _____ | h | $13 - 6 =$ _____ |
| i | $14 - 5 =$ _____ | j | $17 - 8 =$ _____ |

To use a number line for subtraction, start from the right.

$72 - 37$

You can use little jumps or big jumps.



2 Use the number lines.

- | | | |
|---|-------------------------|----------------|
| a | $53 - 26 =$ _____ | ←-----→
53 |
| b | $71 - 43 =$ _____ | ←-----→
71 |
| c | $264 - 149 =$ _____ | ←-----→
264 |
| d | $376 - 123 =$ _____ | ←-----→ |
| e | $457 - 243 =$ _____ | ←-----→ |
| f | $8,375 - 2,136 =$ _____ | ←-----→ |
| g | $9,842 - 1,248 =$ _____ | ←-----→ |
| h | $7,502 - 3,235 =$ _____ | ←-----→ |

3 Jin loves olives. He had 2,473 jars in the pantry. Thieves broke in and stole 1,247 jars.

- | | |
|---|--|
| a | How many did he have left? _____ |
| b | How did you work out your answer? _____
_____ |
| c | Show another way. _____ |
| d | Which way was best? _____ |
| e | How can you check if you are correct? _____ |



1 a $9 - 4 = 5$
 $90 - 40 = 50$
 $900 - 400 = 500$
 $9,000 - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

b $7 - 3 = \underline{\hspace{2cm}}$
 $70 - 30 = \underline{\hspace{2cm}}$
 $700 - 300 = \underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

Can you see the pattern?

c $5 - 2 = \underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

d $8 - 6 = \underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

e $9 - 8 = \underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

f $6 - 1 = \underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

2 One addition fact tells us 4 things.

e.g. $5 + 3 = 8$ $3 + 5 = 8$ $8 - 5 = 3$ $8 - 3 = 5$

a $7 + 2 = \underline{\hspace{2cm}}$, $\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$, $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$, $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

b $54 + 61 = \underline{\hspace{2cm}}$, $\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$, $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$, $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

c $133 + 254 = \underline{\hspace{2cm}}$, $\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$, $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$, $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

d $7,853 + 1,126 = \underline{\hspace{2cm}}$, $\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$, $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$, $\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

3 Write a problem to go with each equation, then solve the problem.

a $845 - 373 = \underline{\hspace{2cm}}$

b $9,400 - 3,271 = \underline{\hspace{2cm}}$

$\underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}}$

$\underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}}$

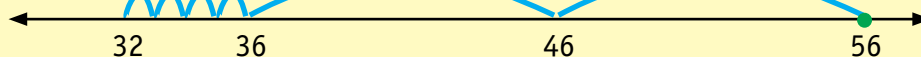
Challenge! Ari had 14 marbles. He gave 2 away and had 16 left.

What is wrong with Ari's story?

How many did Ari give away if he had 2 left?

1 Use a number line.

e.g. $56 - 24 = 32$



a $75 - 31 =$ _____



b $389 - 107 =$ _____



c $6,738 - 4,708 =$ _____



d $2,364 - 1,043 =$ _____



2 a $4,208 - 2,341 =$ _____

4	2	0	8
-	2	3	4

b $6,286 - 3,056 =$ _____

6	2	8	6
-	3	0	5

c $7,035 - 3,652 =$ _____

7	0	3	5
-	3	6	5

d $9,239 - 6,530 =$ _____

9	2	3	9
-	6	5	3

e $5,787 - 1,204 =$ _____

5	7	8	7
-	1	2	0

f $8,703 - 7,730 =$ _____

8	7	0	3
-	7	7	3

3 Jo had 2,138 baby mice. She sold 1,452. How many did she have left?

4 Ali picked 149 apples. He gave 73 to his friend. How many did he keep?

Trial and error

Look at page 28. If you had \$3, what would you buy?

How much change would you get?

Mastery Checklist

- I can:
- ☐ subtract money and calculate change
 - ☐ use a number line to subtract
 - ☐ write subtraction stories and number sentences
 - ☐ use a vertical subtraction method



John spent \$5



Ali spent \$3.50



Ng spent \$4.50



Mary spent \$8.10



1 Which two toys did each child buy?

a John _____

b Ali _____

c Ng _____

2 How much change will they each get from a \$5 note?

a John _____ b Ali _____

c Ng _____

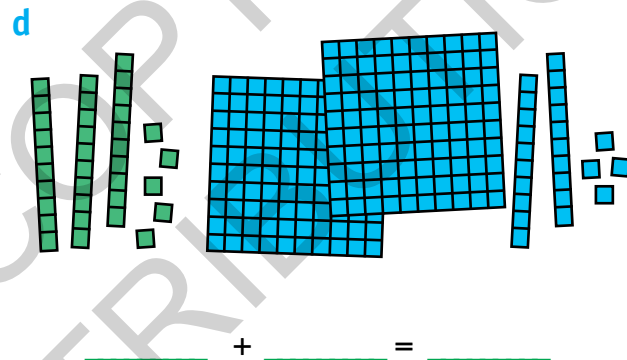
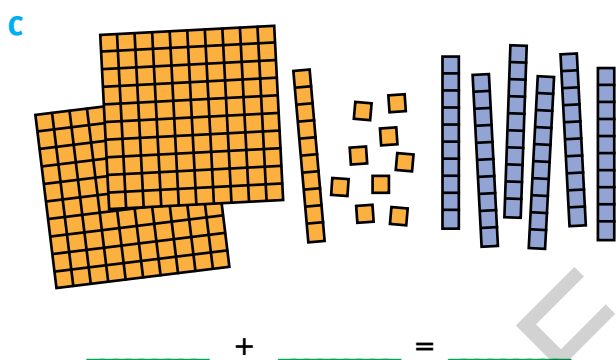
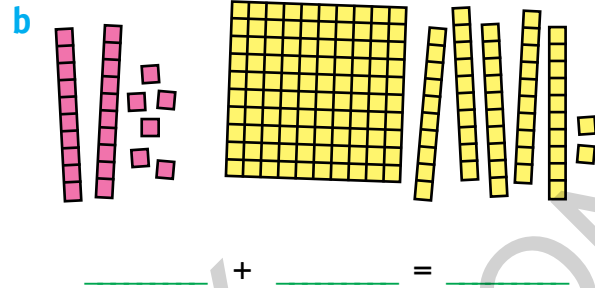
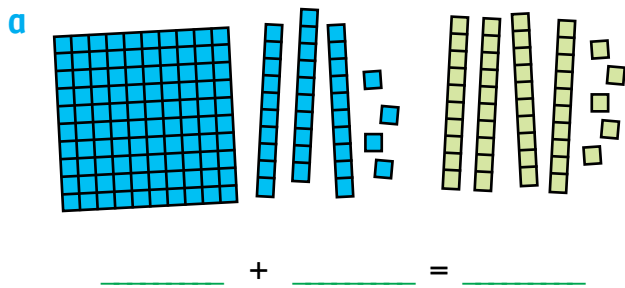
3 Which 3 toys did Mary buy?

4 How much change did she get from a \$10 note?

Addition to 3 digits

TERM 1
Week 7

1 How many in each group? Find the total.



2 a
$$\begin{array}{r} 173 \\ + 16 \\ \hline \end{array}$$

b
$$\begin{array}{r} 231 \\ + 45 \\ \hline \end{array}$$

c
$$\begin{array}{r} 127 \\ + 150 \\ \hline \end{array}$$

d
$$\begin{array}{r} 284 \\ + 115 \\ \hline \end{array}$$

e
$$\begin{array}{r} 353 \\ + 125 \\ \hline \end{array}$$

f
$$\begin{array}{r} 126 \\ + 472 \\ \hline \end{array}$$

3 a
$$\begin{array}{r} 355 \\ + 2\boxed{6} \\ \hline \boxed{9}1 \end{array}$$

b
$$\begin{array}{r} 2\boxed{7} \\ + 634 \\ \hline \boxed{7}\boxed{7} \end{array}$$

c
$$\begin{array}{r} \boxed{}\boxed{}\boxed{} \\ + 241 \\ \hline 999 \end{array}$$

d
$$\begin{array}{r} 125 \\ + 8\boxed{}\boxed{} \\ \hline 1\boxed{}16 \end{array}$$

4 Match each sum to its answer.

a $172 + 27$

c $35 + 243$

e $41 + 146$

278

199

289

b $283 + 13$

d $333 + 46$

f $49 + 240$

296

379

187

Challenge!

Can you buy all the toys on page 33 with \$20? Use a calculator.

I love a challenge!

Problem	Bar model	Equation						
1 Nullah counted crabs at the beach. He counted 75 crabs on Monday. After he counted some more on Tuesday, he had counted 139 crabs altogether. How many crabs did Nullah count on Tuesday?	<table><tr><td>75</td><td>?</td></tr><tr><td colspan="2">139</td></tr></table> ? = _____	75	?	139		$\begin{array}{r} 75 + \underline{\hspace{2cm}} = \underline{139} \\ 139 - 75 = \underline{\hspace{2cm}} \end{array}$		
75	?							
139								
2 Kylie saw 134 lizards on her hike, before lunch. Then after lunch she saw 127 more. How many lizards did she see altogether?	<table><tr><td>134</td><td>127</td></tr><tr><td colspan="2">?</td></tr></table> ? = _____	134	127	?		$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$		
134	127							
?								
3 Nellie counted 22 tuatara paintings, Kirra counted 36 kea paintings and Maali counted 38 kiwi paintings. How many paintings did they see altogether?	<table><tr><td>22</td><td>36</td><td>38</td></tr><tr><td colspan="3">?</td></tr></table> ? = _____	22	36	38	?			$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$
22	36	38						
?								
4 Kai picked 239 berries on Saturday. He picked more berries on Sunday but forgot to count them. He had 529 berries altogether. How many berries did he pick on Sunday?	<table><tr><td></td><td></td></tr><tr><td colspan="2"></td></tr></table> ? = _____					$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$		
5 Amahau's family made 3,214 pounamu carvings in summer and 4,528 more in winter. How many pounamu did they carve altogether?	<table><tr><td></td><td></td></tr><tr><td colspan="2"></td></tr></table> ? = _____					$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$		

3 and 4-digit addition

TERM 1
Week 7

Write a number sentence and the answer.

+			
a 	$230 + 24 = 254$		
b 			
c 			
d 			

2 a
$$\begin{array}{r} 264 \\ + 124 \\ \hline \end{array}$$

b
$$\begin{array}{r} 417 \\ + 381 \\ \hline \end{array}$$

c
$$\begin{array}{r} 181 \\ + 505 \\ \hline \end{array}$$

d
$$\begin{array}{r} 843 \\ + 150 \\ \hline \end{array}$$

e
$$\begin{array}{r} 7843 \\ + 156 \\ \hline \end{array}$$

f
$$\begin{array}{r} 3278 \\ + 611 \\ \hline \end{array}$$

g
$$\begin{array}{r} 8090 \\ + 103 \\ \hline \end{array}$$

h
$$\begin{array}{r} 5438 \\ + 250 \\ \hline \end{array}$$

i
$$\begin{array}{r} 8043 \\ + 1715 \\ \hline \end{array}$$

j
$$\begin{array}{r} 2842 \\ + 5053 \\ \hline \end{array}$$

k
$$\begin{array}{r} 7051 \\ + 2028 \\ \hline \end{array}$$

l
$$\begin{array}{r} 5602 \\ + 2195 \\ \hline \end{array}$$

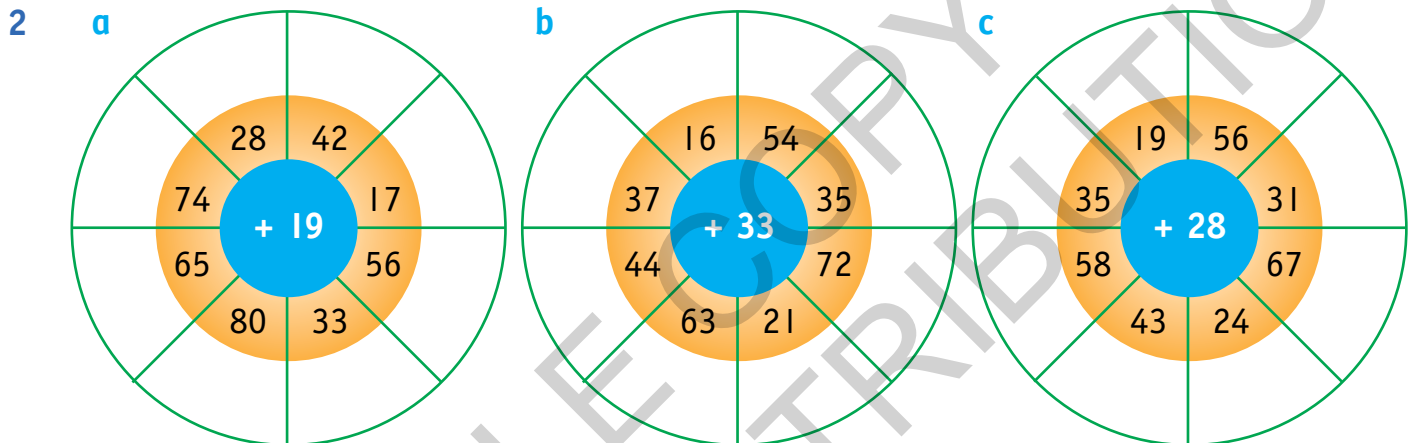
Challenge!

Nikau drove from Auckland to Wellington, 644 km. Then he drove from Picton to Christchurch, 336 km. Finally he drove from Christchurch to Wānaka, 455 km.

How far did Nikau drive altogether from Auckland to Wānaka?

If he drives back the same way, how far did he drive going there and back?

- 1 a $65 + 29 = 65 + 30 - 1 =$ _____ b $38 + 43 = 38 + 40 + 3 =$ _____
 c $43 + 39 =$ _____ = _____ d $59 + 38 =$ _____ = _____
 e $38 + 61 =$ _____ = _____ f $47 + 22 =$ _____ = _____
 g $77 + 13 =$ _____ = _____ h $23 + 49 =$ _____ = _____



3 Estimate first.

	Estimate	Answer
a $17 + 15$		
b $39 + 24$		
c $35 + 63$		

	Estimate	Answer
d $28 + 13$		
e $51 + 37$		
f $46 + 29$		

4 Jon paid 25c for an apple, 30c for an orange and 45c for a banana.

- a How much did he spend? _____
 b How much change from \$2? _____



Work backwards

Look back at the toys on page 33.
 Manaia spent exactly \$7.20.
 Which items did she buy?

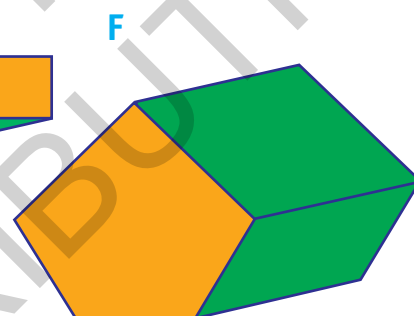
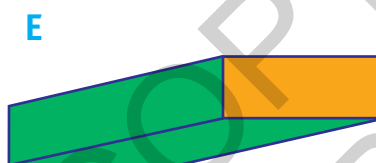
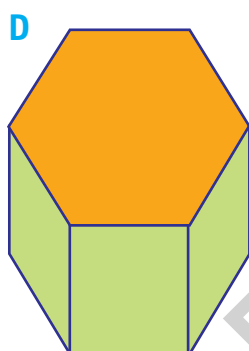
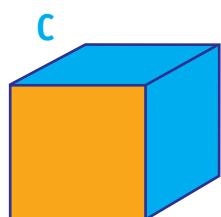
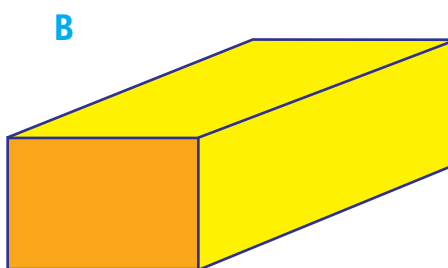
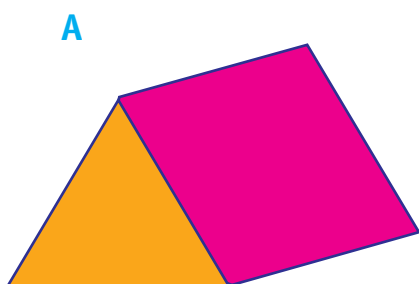
Mastery Checklist

I can:

- ☐ add costs and work out change
- ☐ use place value blocks to add 3-digit numbers
- ☐ use algorithms to add 2, 3 and 4-digit numbers
- ☐ use a bar model to add
- ☐ regroup numbers to add mentally
- ☐ estimate answers to addition

Prisms:

- have two matching ends
- are named by the shape of the matching ends
- all other faces are rectangles.



1 Name the shape of each orange face (end).

A _____ B _____
C _____ D _____
E _____ F _____

2 Use the orange face name (end) to name each prism.

A triangular prism B _____
C _____ D _____
E _____ F _____

3 How many faces does each prism have? Remember that you can't see them all.

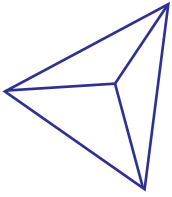
A _____ B _____ C _____
D _____ E _____ F _____

4 What shape are all the faces that aren't ends? _____

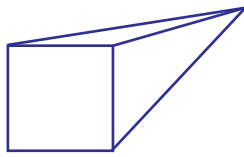
5 What is a prism? _____

1 Name these pyramids.

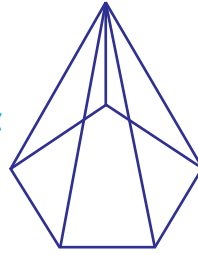
a



b



c

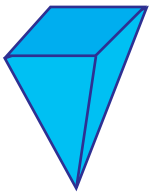


Pyramids:

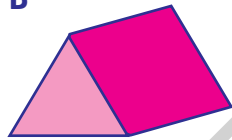
- have one base and all other faces are triangles
- are named by the shape of the base.

2 Circle the pyramids. Draw a square around the prisms.

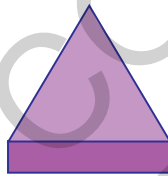
A



B



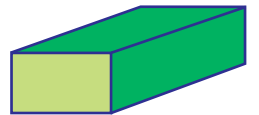
C



D



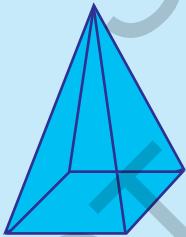
E



- a How many faces has shape D? _____
- b How many faces has shape A? _____
- c Which picture shows a square pyramid? _____
- d Which picture shows a rectangular prism? _____



3 Draw each face.

					
---	--	--	--	--	--

Challenge! How many everyday items can you name that are pyramid-shaped or triangular prisms?

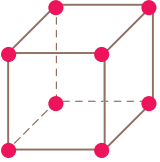
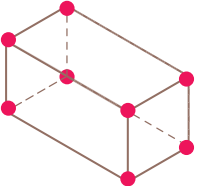
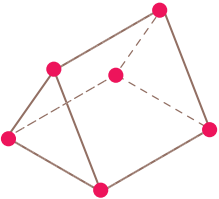
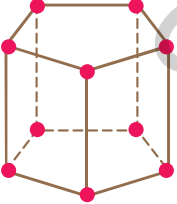
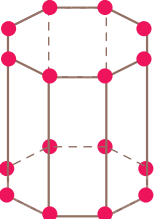


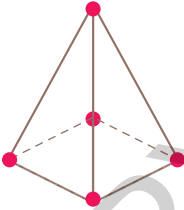
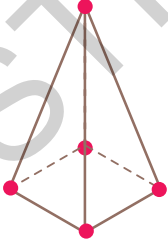
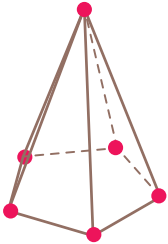
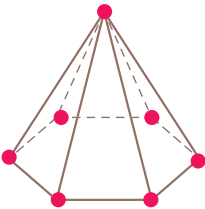
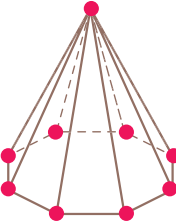
Constructing 3D objects

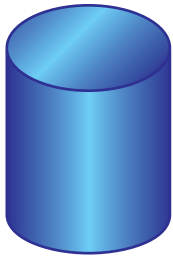
TERM 1
Week 8



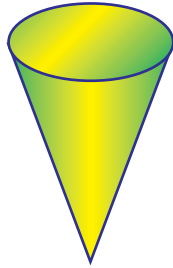
Use clay and small sticks or straws to construct 3D objects.
Then write how many faces, edges and vertices.

Prism	Faces	Edges	Vertices
	6	12	8
			
			
			
			
			

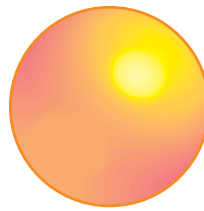
Pyramid	Faces	Edges	Vertices
	5	8	5
			
			
			
			
			



cylinder



cone



sphere



1 Name three things that are cylinders.

a _____ b _____ c _____

2 Name three things that are cones.

a _____ b _____ c _____

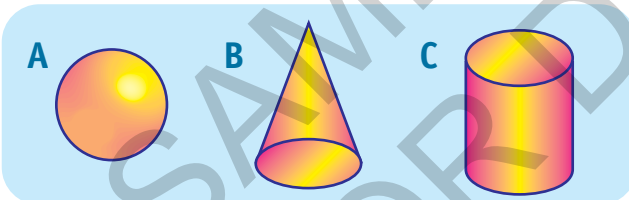
3 Name three things that are spheres.

a _____ b _____ c _____

4 Which object above can be most easily stacked?

Why? _____

5



Am I **A**, **B** or **C**?

a I have 1 curved surface and 1 flat surface. _____

b I have only 1 surface. _____

c I have 2 flat surfaces and 1 curved surface. _____



6 True or false? Write T or F.

a A cylinder has more flat surfaces than a cone. _____

b A sphere can rest on a sloping surface without rolling. _____

c A cylinder has three circular ends. _____

d A cone rolls around its pointy end. _____

Mastery Checklist I can: ☐ describe the features of prisms and pyramids
☐ make prisms and pyramids
☐ describe the features of cones, cylinders and spheres



Investigation

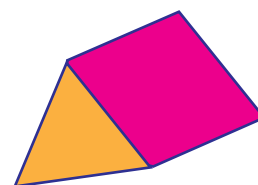
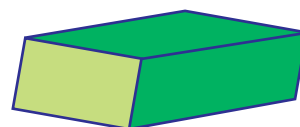
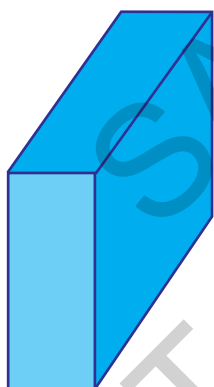
TERM 1
Week 8

How can you make a prism?

- 1 Write the time when you start this page, using 'to' or 'past'. _____
- 2 Make a prism. Choose from the following ways:
 - Use pattern blocks.
 - Use paper or cardboard.
 - Use clay or another solid material.
- 3 Describe what you did and how you did it. Draw it.



- 4 Draw your prism from a different view.

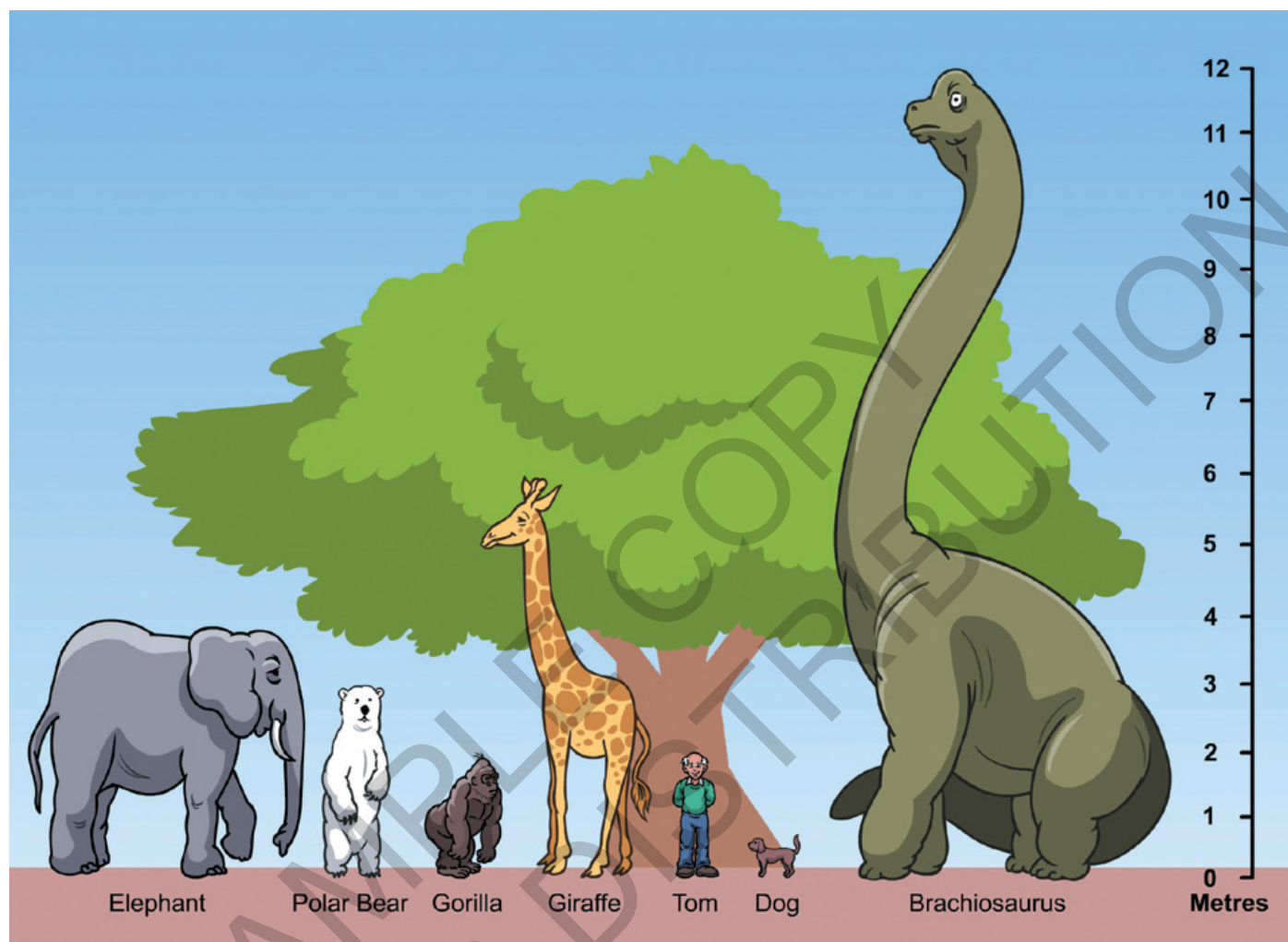


- 5 What did you find out about prisms?

- 6 Write the time when you finished working on this page. _____
How long were you working on this page? _____

I can investigate by:

- ☐ understanding properties of prisms ☐ drawing prisms from different views



- 1 Which animal is the tallest? _____
- 2 Which animal is the shortest? _____
- 3 How tall is the giraffe? _____
- 4 How tall is the elephant? _____
- 5 How much taller is the polar bear than Tom? _____
- 6 How much shorter is the gorilla than the elephant? _____
- 7 If Tom stood on the elephant's back how high would he be? _____
- 8 Are all dogs the same height? _____
- 9 Name a tall breed of dog _____ and a short breed. _____
- 10 Write the animals in order from shortest to tallest.

Measuring in metres and centimetres

TERM 1
Week 9

Estimate and then measure the length of each item.



- 1 a length of your table
- b length of classroom
- c length of school corridor

Estimate	Measure
about _____ m	_____ m
about _____ m	_____ m
about _____ m	_____ m

- 2 a length of this book
- b length of your pencil
- c length of your desk

Estimate	Measure
about _____ cm	_____ cm
about _____ cm	_____ cm
about _____ cm	_____ cm

3



- a What is the longest? _____
- b What is the shortest? _____
- c How long is the pen? _____
- d How long is the paperclip? _____
- e Which two items together are 5 cm? _____
- f The pushpin is _____ cm longer than the die.
- g The paperclip is _____ cm shorter than the scissors.

4 Find something in your classroom that is:

- a 1 m _____
- b 30 cm _____
- c 2 m _____
- d 10 cm _____
- e 50 cm _____
- f 80 cm _____

Measuring and estimating length

TERM 1
Week 9

1 Use the number bank to complete each sentence.

Number Bank

1 2 4 10 30 180

m = metre

cm = centimetre

a



The door is _____ m high.

b



The can is _____ cm high.

c



The man is _____ cm tall.

d



The hen is _____ cm tall.

e



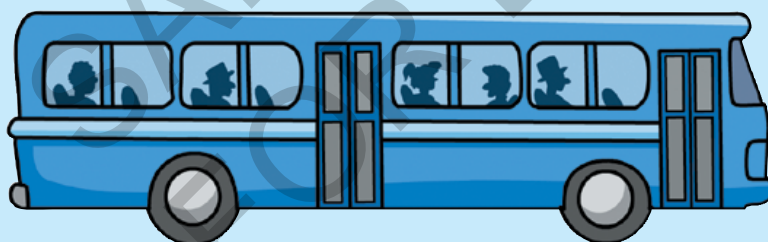
The car is _____ m long.

f



The door is _____ m wide.

2



The bus stop sign is 1 m high.



a How high is the bus? _____

b How long is the bus? _____

3 Use a ruler to measure these lines to the nearest cm.

a



b



c



d



a

b

c

d



measure
cm with
a ruler

There are 100 centimetres in 1 metre.

$$1 \text{ m} = 100 \text{ cm} \quad \frac{1}{2} \text{ m} = 50 \text{ cm}$$

1 If 1 centimetre on this page = 1 metre on the ground, how long is each line?

- a  _____ m
- b  _____ m
- c  _____ m
- d  _____ m

2 Convert the lengths.

- a 3 m = _____ cm b 7 m = _____ cm c $2\frac{1}{2}$ m = _____ cm
- d $1\frac{1}{2}$ m = _____ cm e 10 m = _____ cm f 5 m = _____ cm
- g $9\frac{1}{2}$ m = _____ cm h 9 m = _____ cm i $4\frac{1}{2}$ m = _____ cm
- j 12 m = _____ cm k 15 m = _____ cm l $18\frac{1}{2}$ m = _____ cm

3 m



$3\frac{1}{2}$ m



4 m



$4\frac{1}{2}$ m



3 What is the difference in length between the:

- a pink ribbon and the red ribbon? _____
- b longest and the shortest ribbons? _____
- c yellow ribbon and the red ribbon? _____

Mastery Checklist I can: ☐ compare lengths in metres, centimetres and half metres
☐ find the difference between lengths in m, cm and half metres
☐ estimate and measure lengths in m, cm and half metres
☐ convert lengths between centimetres, metres and half metres

Inenga roa

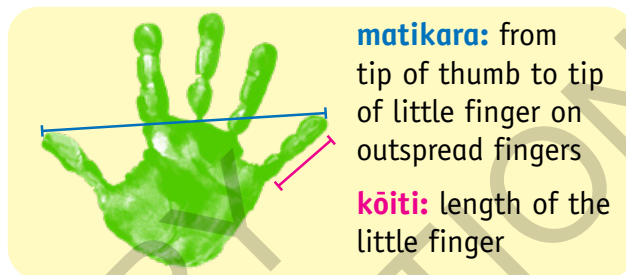
Is it more accurate to estimate using matikara or kōiti?

- 1 Measure your **matikara** with a ruler:

_____ cm

- 2 Measure the lengths below in matikara. Use fractions if needed.

- 3 Estimate these lengths in centimetres.



	Length in matikara	Estimate in cm.	Measure in cm.	✓
a width of your desk				
b height of your desk				
c length of your desk				

- 4 Measure the same lengths with a ruler.

- 5 Tick the estimates that were within 2 cm of the metric measurement.

- 6 Measure your **kōiti** with a ruler: _____ cm

- 7 Measure the lengths below in kōiti. Use fractions if needed.

- 8 Estimate these lengths in centimetres.



	Length in kōiti	Estimate in cm.	Measure in cm.	✓
a width of your desk				
b height of this book				

- 9 Tick the estimates within 2 cm.

- 10 a Which is more accurate: matikara or kōiti?

- b Why do you think this is?

I can investigate by:

☐ using inenga roa ☐ measuring with a ruler

Checkpoint 2

1 Order from smallest to largest. p 2

9,390 9,309 9,399 9,319 9,380

2 What is the value of the underlined number? p 5

a 5,782 _____

b 9,603 _____

3 Use the numerals 6, 7, 8, 9 to write a number with: p 5

a 6 in the hundreds place. _____

b 9 in the ones place. _____

c 7 in the thousands place. _____

4 Write each number in words. p 7

a 1,042 _____

b 7,932 _____

c 8,650 _____

5 Round to the nearest hundred. p 8

a 468 _____ b 215 _____

6 Round to the nearest thousand. p 8

a 4,695 _____ b 2,398 _____

7 Compare using < or >. p 9

a 479 _____ 749

b 1,280 _____ 1,820

c 1,005 _____ 1,500

d 3,600 _____ 3,006

8 Double: a 17 _____ b 19 _____

p 13

9 What must be added to make 100? p 14

63 + _____ = _____

10 Fill in the boxes. p 14

a
$$\begin{array}{r} 2 \square \\ + 54 \\ \hline \square 9 \end{array}$$

b
$$\begin{array}{r} \square 2 \\ + 34 \\ \hline 7 \square \end{array}$$

c
$$\begin{array}{r} 64 \\ + \square \square \\ \hline 78 \end{array}$$

11 a p 14

$$\begin{array}{r} 174 \\ + 113 \\ \hline \end{array}$$

b
$$\begin{array}{r} 383 \\ + 215 \\ \hline \end{array}$$

c
$$\begin{array}{r} 460 \\ + 337 \\ \hline \end{array}$$

12 a p 16

$$\begin{array}{r} 4731 \\ + 3457 \\ \hline \end{array}$$

b
$$\begin{array}{r} 3298 \\ + 6501 \\ \hline \end{array}$$

13 Write the next two rows. p 17

48 - 13 = 35

58 - 13 = 45

68 - 13 = 55

a _____

b _____

14 Complete: p 18

	49	53	50	56	54
-47					
-39					

15 Use the number lines. p 19

a 32 - 17 = _____



b 624 - 325 = _____



Checkpoint 2

- 16 Write the next two terms and the rule.

p 24

a 5 8 11 14 17 _____

Rule _____

b 20 25 30 35 _____

Rule _____

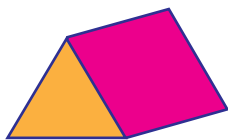
c 63 58 53 48 _____

Rule _____

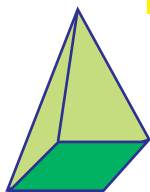
- 17 Name these 3D objects.

p 38 & 39

a



b



- 18 How many faces has:

p 40

a a cube?

b a triangular pyramid?

- 19 What am I?

p 41

a 1 curved surface _____

b 6 rectangular faces _____

- 20 Write the coins to make the amounts.

p 33

a \$2.40 _____

b \$7.10 _____

- 21 Complete.

p 33

a

+	\$6	40c	\$21	\$2.20
\$6				

b

-	\$1	\$3.70	\$1.90	80c
70c				

- 22 Use the number line.

p 32

$$872 - 346 = \underline{\hspace{2cm}}$$



- 23 Write three more facts.

p 31

$$20 - 13 = 7 \quad \underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

$$\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

$$\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

- 24 My frog jumped 58 cm.

Thea's frog jumped 37 cm.

What was the difference? _____



p 29

- 25 a

$$\begin{array}{r} 7894 \\ - 3452 \\ \hline \end{array}$$

$$\underline{\hspace{2cm}}$$

b

$$\begin{array}{r} 9265 \\ - 6717 \\ \hline \end{array}$$

$$\underline{\hspace{2cm}}$$

p 32

- 26 Sam had \$5. He bought one melon for \$3.20 and one lollipop for 60c.

p 33

a How much did he spend? _____

b How much change did he get? _____



- 27

64	?
102	

p 35

$$? = \underline{\hspace{2cm}}$$

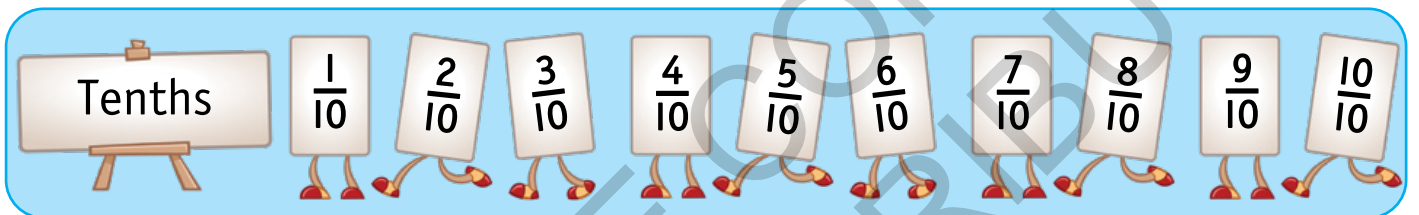
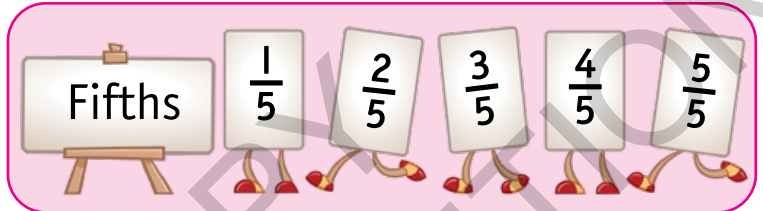
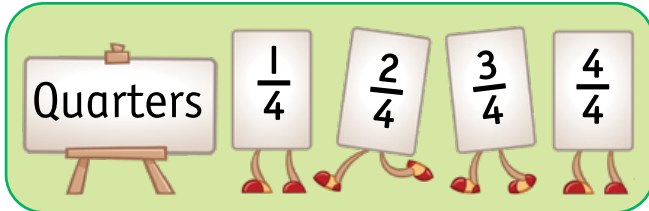
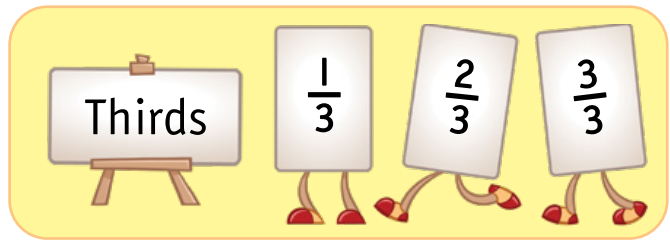
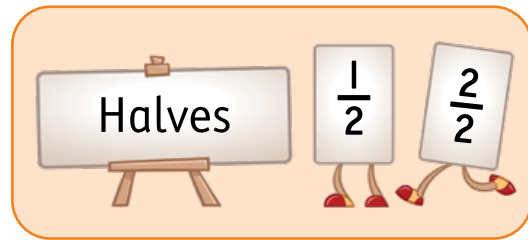
- 28 Circle the correct answer.

p 45

a A door is about **2 cm** **2 m** high.

b A book cover is about **20 cm** **1 m** wide.

c A bedroom is about **50 m** **4 m** long.



1 Write each set of fractions in order, smallest to largest.

a $\frac{1}{4}, \frac{3}{4}, \frac{2}{4}, \frac{4}{4}$

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

c $\frac{1}{5}, \frac{2}{5}, \frac{3}{5}, \frac{5}{5}, \frac{4}{5}$

d $\frac{1}{10}, \frac{9}{10}, \frac{3}{10}, \frac{2}{10}, \frac{4}{10}, \frac{5}{10}, \frac{6}{10}, \frac{7}{10}, \frac{8}{10}, \frac{10}{10}$

e $\frac{3}{5}, \frac{2}{5}, \frac{1}{5}, \frac{4}{5}$

f $\frac{2}{2}, \frac{1}{2}$

2 Colour the fraction. Then write and colour a smaller fraction.

a $\frac{4}{5}$

--	--	--	--	--

--

b $\frac{5}{10}$

--	--	--	--	--	--	--	--

--

c $\frac{3}{4}$

--	--	--	--

--

d $\frac{2}{3}$

--	--	--

--

1 Match.

$$\frac{2}{10}$$

$$\frac{2}{3}$$

$$\frac{4}{5}$$

$$\frac{3}{4}$$

2 out of 3
equal parts

2 out of 10
equal parts

3 out of 4
equal parts

4 out of 5
equal parts

four-fifths

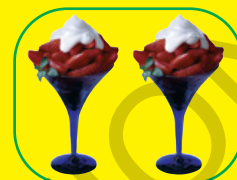
two-thirds

two-tenths

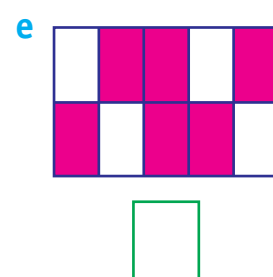
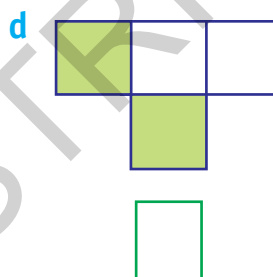
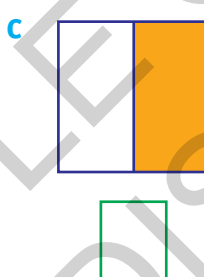
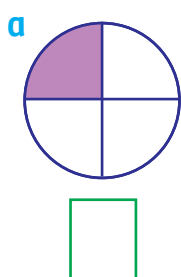
three-quarters

$\frac{2}{5}$ = numerator
5 = denominator

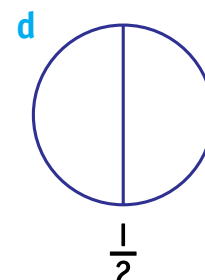
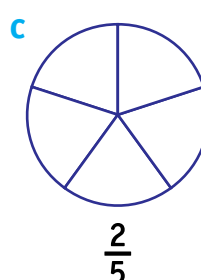
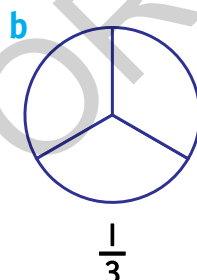
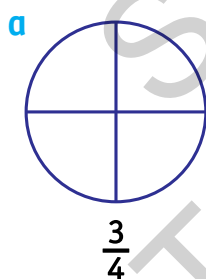
This means 2 equal
parts out of 5.



2 Write the fraction coloured.



3 Colour to match the fraction.



4 Write the fractions from question 3 in order from smallest to largest.

5 Draw a diagram to show:

a

$$\frac{4}{5}$$

b

$$\frac{3}{10}$$

1 Divide each bar, then colour the fraction.

a Colour one half.

1 out of 2 = $\frac{1}{2}$

halves

b Colour one third.

1 out of _____ = $\frac{1}{3}$

thirds

c Colour one quarter.

1 out of _____ = $\frac{1}{4}$

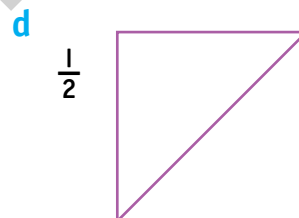
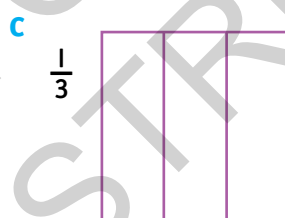
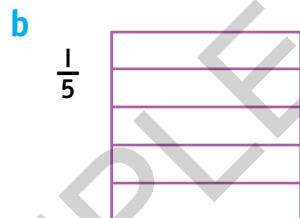
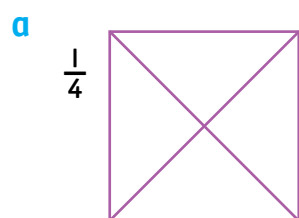
quarters

d Colour one sixth.

_____ out of 6 = $\frac{1}{6}$

sixths

2 Colour the fractions. Then order the fractions from smallest to largest.



smallest _____ largest

3 Circle the larger fraction in each pair.

a $\frac{1}{2}$ $\frac{1}{3}$

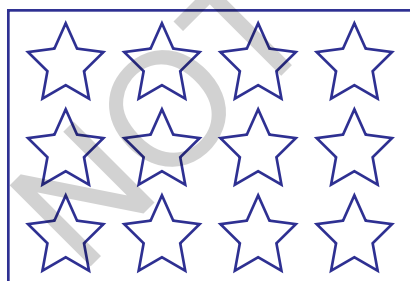
b $\frac{1}{5}$ $\frac{1}{4}$

c $\frac{1}{4}$ $\frac{1}{3}$

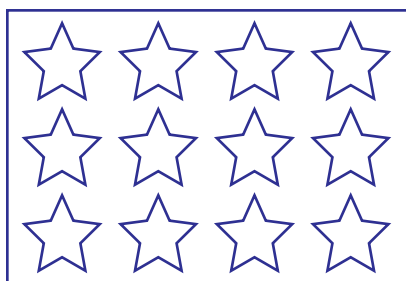
d $\frac{1}{5}$ $\frac{1}{6}$

4 a Colour the correct fractions.

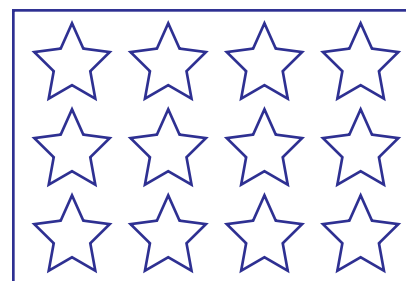
$\frac{1}{3}$



$\frac{1}{4}$



$\frac{1}{6}$



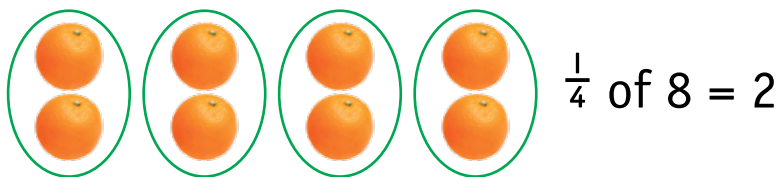
b Order these fractions from smallest to largest. _____

5 a The denominator of the fraction tells how many _____.

b As the denominator gets bigger, the fraction gets _____.

To find a fraction of a group, divide by the denominator.

To find $\frac{1}{4}$ of 8, divide 8 by 4.



1 What is one-quarter of:

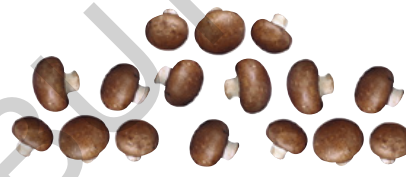
a 8 mangoes? _____



b 12 peas? _____



c 16 mushrooms? _____

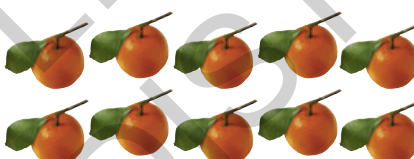


2 What is one-fifth of:

a 5 chillies? _____



b 10 oranges? _____



c 15 pumpkins? _____



3 Draw.

a $\frac{1}{5}$ of 10 bananas

b $\frac{1}{6}$ of 24 cherries

c $\frac{3}{4}$ of 8 apples

4 a $\frac{1}{2}$ of a bunch of grapes = 10. 1 whole bunch of grapes = _____

b $\frac{1}{2}$ of a dozen eggs = 6. 1 whole dozen eggs = _____

c $\frac{1}{4}$ of a bag of sweets = 3. 1 whole bag of sweets = _____

d $\frac{1}{5}$ of a box of plums = 6. 1 whole box of plums = _____

e $\frac{1}{10}$ of a packet of biscuits = 5. 1 whole packet of biscuits = _____



Mastery Checklist

I can: ☐ recognise and represent fractions in shapes, words and fraction notation
☐ represent and order unit fractions

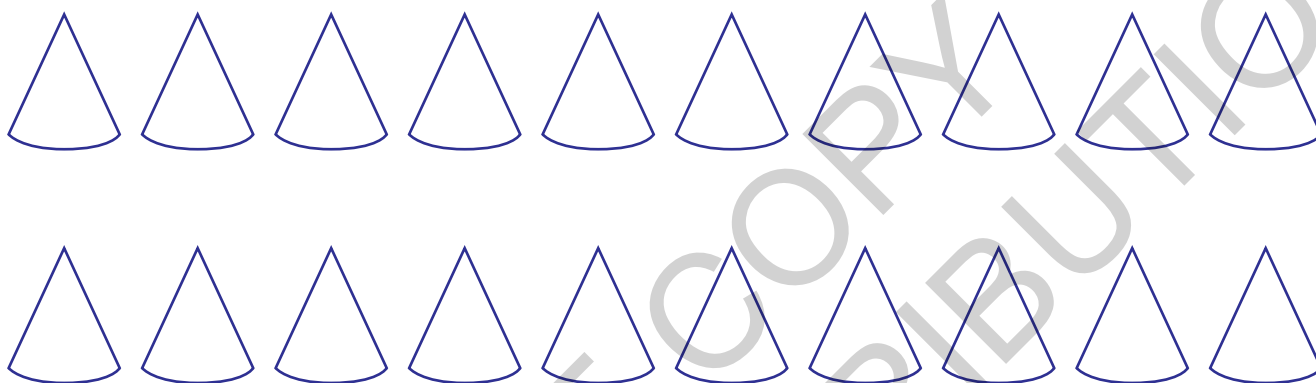
☐ put fractions in order
☐ compare fractions
☐ work out fractions of a group

Fractions at the party

1 There are 20 party hats.

$\frac{1}{2}$ are red. $\frac{1}{4}$ are blue. $\frac{1}{5}$ are green. The rest are pink.

Colour the hats to match. Label each group with their fractions.



2 Answer true or false.

a $\frac{1}{2}$ of 20 hats is more than $\frac{1}{5}$ of 20 hats. _____

b $\frac{1}{5}$ of 20 hats is more than $\frac{1}{4}$ of 20 hats. _____

c $\frac{1}{4}$ of 20 hats is half as much as $\frac{1}{2}$ of 20 hats. _____

d $\frac{1}{2}$ is the same as $\frac{1}{5}$ plus $\frac{1}{4}$ of the hats. _____

How do you know? _____

e $\frac{1}{2}$ of the hats plus $\frac{1}{4}$ of the hats is all the hats. _____

Explain how you know. _____

3 Write two of your own statements about the fractions of the hats.

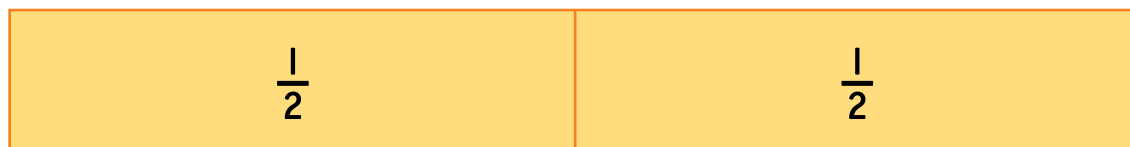
I can solve problems by:

☐ understanding fractions of an amount ☐ using diagrams

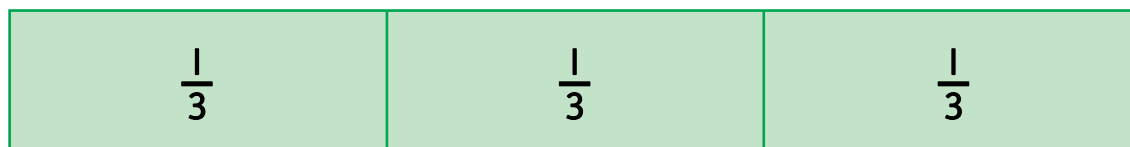
Equivalent fractions

equivalent – having
the same value,
equal to

TERM 2
Week 2



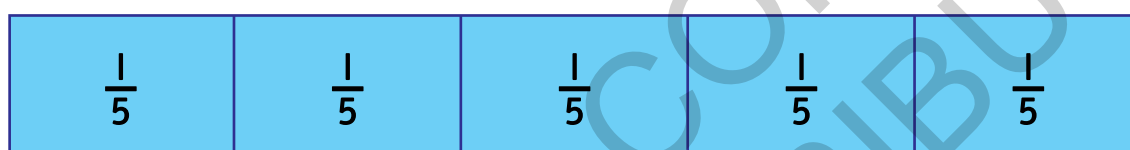
halves



thirds



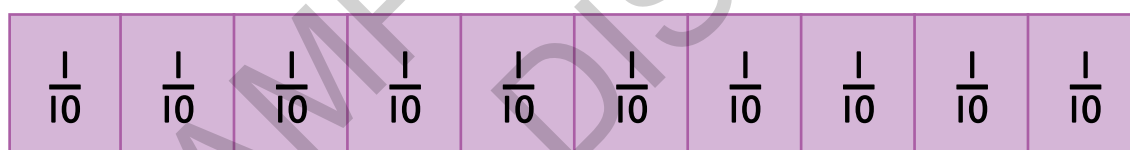
quarters



fifths



eighths



tenths

1 How many in 1 whole?

a eighths _____ **b** fifths _____ **c** thirds _____ **d** tenths _____ **e** quarters _____

2 How many:

a quarters make $\frac{1}{2}$? _____

b tenths make $\frac{1}{2}$? _____

c eighths make $\frac{1}{2}$? _____

d eighths make $\frac{1}{4}$? _____

3 Find the fraction which is equivalent to:

a $\frac{3}{4}$ _____

b $\frac{2}{10}$ _____

c $\frac{2}{5}$ _____

d $\frac{6}{10}$ _____

e $\frac{4}{5}$ _____

4 Answer true or false.

a $\frac{4}{10}$ equals $\frac{1}{5}$ _____

b $\frac{3}{10}$ is less than $\frac{1}{5}$ _____

c $\frac{7}{10}$ is more than $\frac{3}{5}$ _____

d $\frac{9}{10}$ is more than $\frac{4}{5}$ _____

e $\frac{1}{2}$ is less than $\frac{3}{5}$ _____

f $\frac{1}{2}$ is less than $\frac{1}{3}$ _____



The denominator 2 divides one whole into two equal parts.



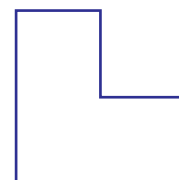
The denominator 4 divides one whole into 4 equal parts.

- 1 $\frac{1}{4}$ is one of four parts. a $\frac{2}{4}$ is _____ of four parts.
b $\frac{3}{4}$ is _____ of four parts. c $\frac{4}{4}$ is _____ of four parts.
d Are all four parts the same size? _____ Why? _____

- 2 a Divide this shape into thirds.

b $\frac{1}{3}$ means one of _____ parts.

c Write the thirds in order. _____



- 3 a $\frac{1}{5}$ means one of _____ parts.

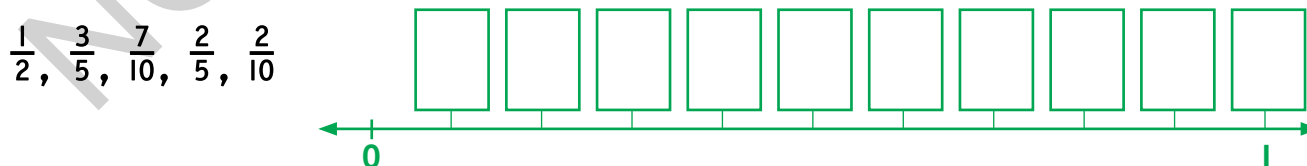
b Write the fifths in order. _____

- 4 a Colour three fifths. b Colour an equivalent number of tenths.



c $\frac{3}{5} = \frac{\boxed{}}{10}$ d $\frac{1}{5} = \frac{\boxed{}}{10}$ e $\frac{8}{10} = \frac{\boxed{}}{5}$ f $\frac{\boxed{}}{10} = \frac{1}{2}$

- 5 Place these on the number line.



- 6 a _____ + $\frac{1}{2}$ = 1 whole b _____ + $\frac{2}{5}$ = 1 whole
c _____ + $\frac{2}{3}$ = 1 whole d _____ + $\frac{2}{4}$ = 1 whole

1 What fraction is coloured?

a



b



c



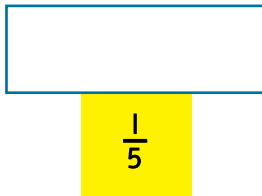
2 ← numerator

3 ← denominator

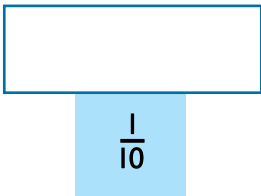
The **denominator** tells us how many parts altogether.
The **numerator** tells us how many parts we have.

2 Draw diagrams to show the fraction.

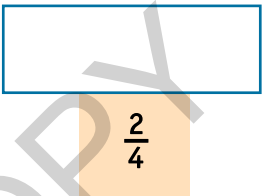
a



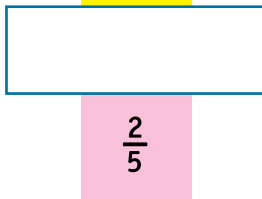
b



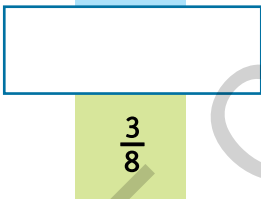
c



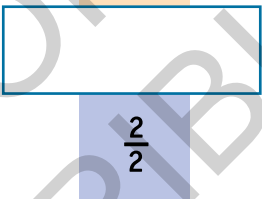
d



e

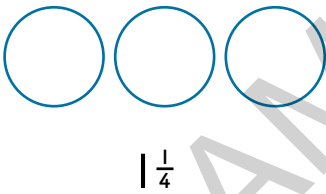


f

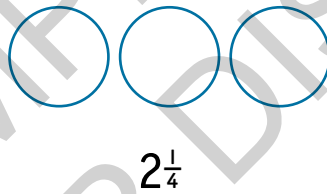


3 Draw lines and colour to show the fraction.

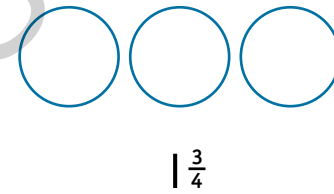
a



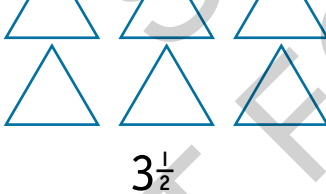
b



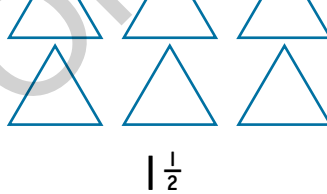
c



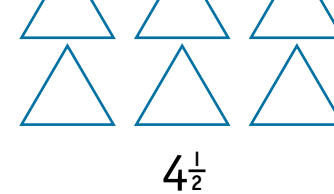
d



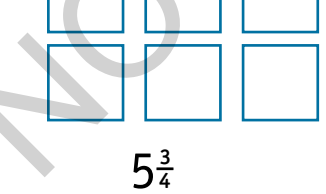
e



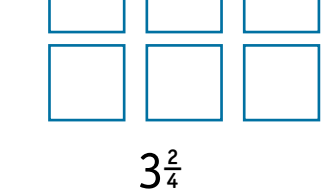
f



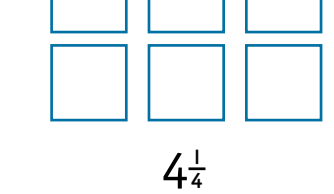
g



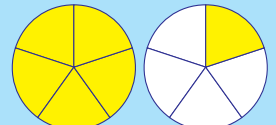
h



i



Sometimes we have whole numbers with fractions.



This shows 1 whole and 1 fifth.

1 1/5

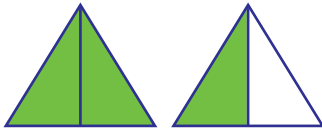
Draw a diagram

Draw a diagram to show $5\frac{3}{8}$. How many eighths altogether?

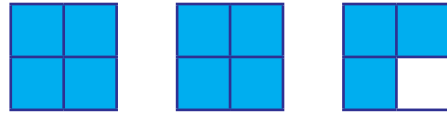
Improper fractions

TERM 2
Week 2

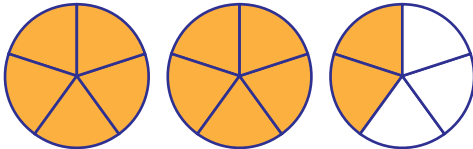
1 How many parts coloured?



a $\frac{\boxed{}}{2}$ halves = $\frac{\boxed{}}{2}$



b $\frac{\boxed{}}{4}$ quarters = $\frac{\boxed{}}{4}$



c $\frac{\boxed{}}{5}$ fifths = $\frac{\boxed{}}{5}$



d $\frac{\boxed{}}{3}$ thirds = $\frac{\boxed{}}{3}$

2 Write the mixed numbers from above.

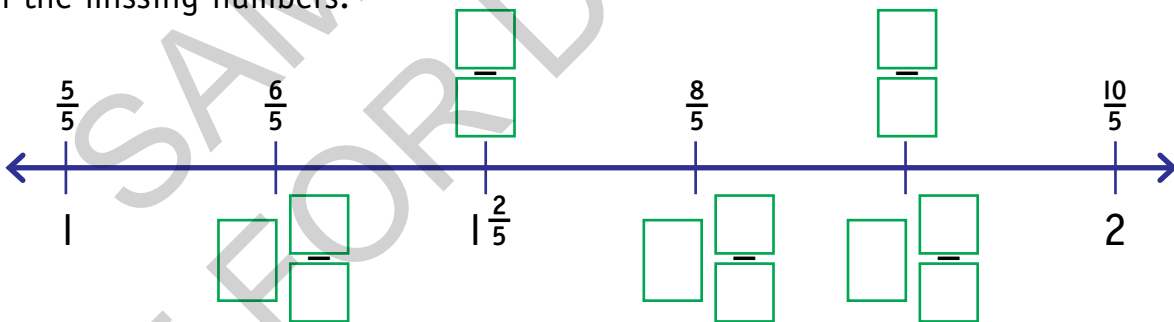
a $\frac{\boxed{}}{\boxed{}} = \boxed{} \frac{\boxed{}}{\boxed{}}$

b $\frac{\boxed{}}{\boxed{}} = \boxed{} \frac{\boxed{}}{\boxed{}}$

c $\frac{\boxed{}}{\boxed{}} = \boxed{} \frac{\boxed{}}{\boxed{}}$

d $\frac{\boxed{}}{\boxed{}} = \boxed{} \frac{\boxed{}}{\boxed{}}$

3 Fill in the missing numbers.



4 Complete.

a $1 \frac{2}{10} = \frac{\boxed{}}{\boxed{}}$

b $2 \frac{1}{2} = \frac{\boxed{}}{\boxed{}}$

c $3 \frac{2}{3} = \frac{\boxed{}}{\boxed{}}$

d $\frac{8}{6} = \boxed{} \frac{\boxed{}}{\boxed{}}$

e $\frac{10}{4} = \boxed{} \frac{\boxed{}}{\boxed{}}$

f $\frac{13}{5} = \boxed{} \frac{\boxed{}}{\boxed{}}$



Mastery Checklist I can: ☐ represent fractions in their simplest form
☐ represent mixed numbers and improper fractions
☐ convert between mixed numbers and improper fractions

Double or half recipes

- 1 This recipe makes 20 muffins. You need 40 muffins. Write a new list of ingredients using doubling.

Ingredients for 20 muffins

- $3\frac{1}{2}$ cups self-raising flour
- $1\frac{1}{4}$ cup of butter
- $1\frac{1}{2}$ cup of sugar
- 2 large eggs
- $1\frac{1}{3}$ cup of milk
- $\frac{3}{4}$ tsp vanilla essence
- $\frac{1}{2}$ cup diced apple

Ingredients for 40 muffins

- _____ cups self-raising flour
- _____ cup of butter
- _____ cup of sugar
- _____ large eggs
- _____ cup of milk
- _____ tsp vanilla essence
- _____ cup diced apple

- 2 This recipe makes 40 cookies. You only need 20. Write a new list of ingredients using halving.

Ingredients for 40 cookies

- 150 g butter
- 1 cup sugar
- 2 cups brown sugar
- 2 eggs
- $\frac{1}{2}$ tsp vanilla essence
- $\frac{1}{4}$ tsp salt
- $2\frac{1}{2}$ cups self-raising flour
- 300 g milk choc chips

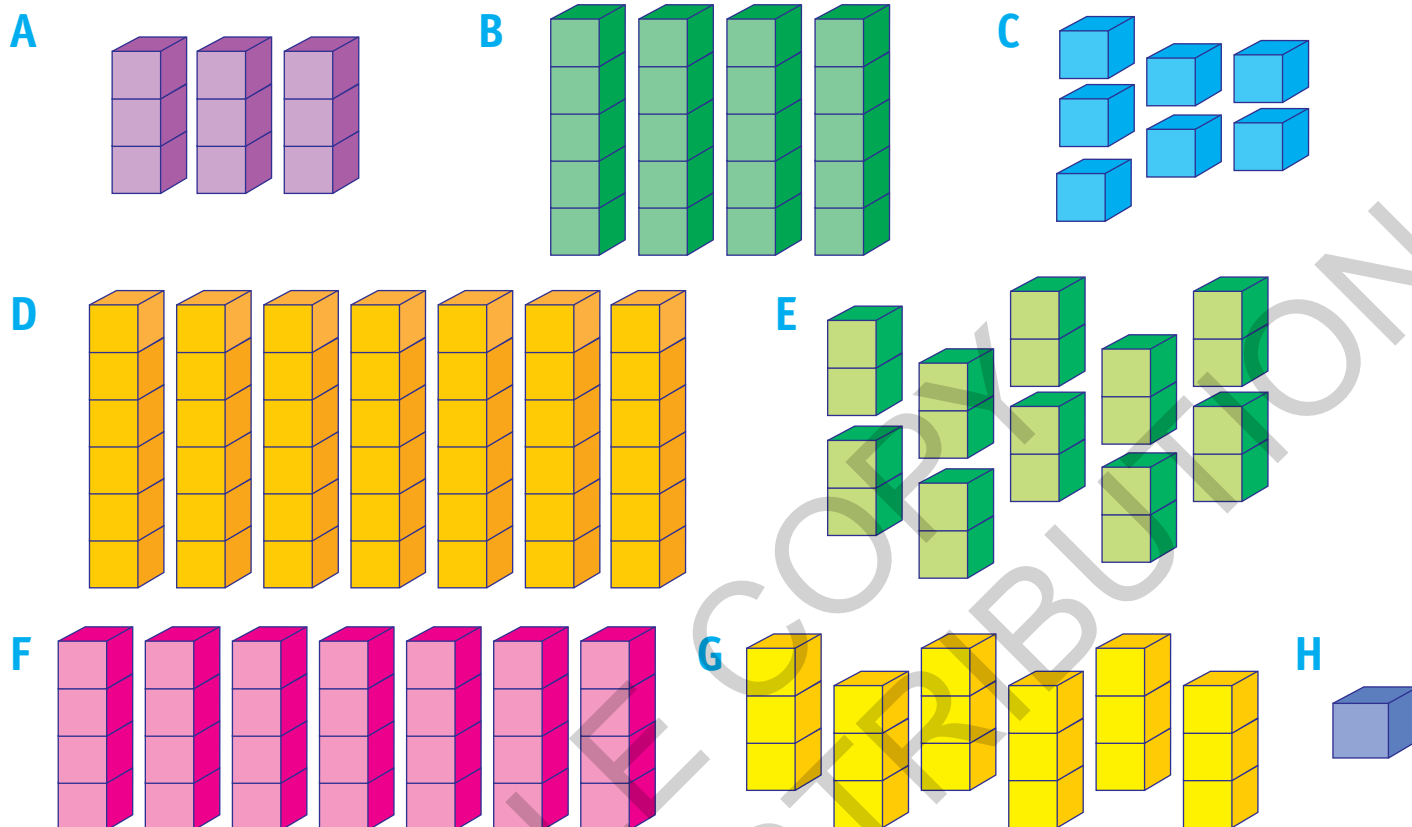
Ingredients for 20 cookies

- _____ g butter
- _____ cup sugar
- _____ cups brown sugar
- _____ eggs
- _____ tsp vanilla essence
- _____ tsp salt
- _____ cups self-raising flour
- _____ g milk choc chips



I can solve problems by:

☐ doubling and ☐ halving



Picture	Repeated addition	Multiplication	Total
A	$3 + 3 + 3$	3×3	9
B			
C			
D			
E			
F			
G			
H			

2 Combine two groups.
Put **A** and **G** together.

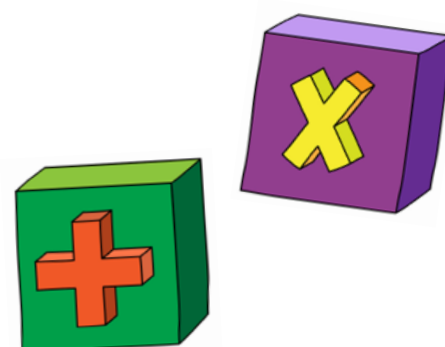
a Write a repeated addition sentence.

b Write a multiplication sentence.

c How many blocks altogether?

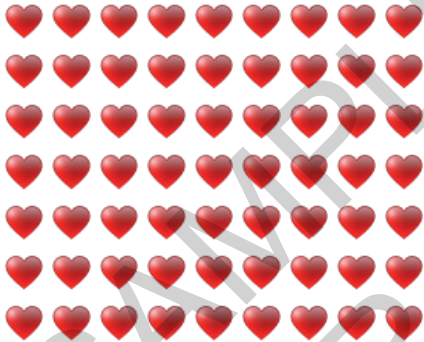
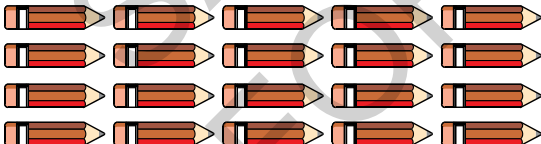
3 Write the multiplication sentence and find the total.

	Repeated addition	Multiplication	Total
a	$6 + 6 + 6 + 6$	$\times$	
b	$8 + 8 + 8$		
c	$5 + 5 + 5 + 5 + 5 + 5$		
d	$9 + 9 + 9 + 9$		
e	$7 + 7 + 7 + 7 + 7$		



1 Use different colours to match.

a	$2 + 2 + 2 + 2$	6 bundles of 6	4×2	25
b	$5 + 5 + 5 + 5 + 5$	4 lots of 2	6×6	8
c	$6 + 6 + 6 + 6 + 6 + 6$	three nines	5×5	10
d	$9 + 9 + 9$	5 groups of 5	7×4	36
e	$4 + 4 + 4 + 4 + 4 + 4 + 4$	1 lot of 10	3×9	27
f	10	7 groups of 4	1×10	28

2 a		$8 + 8 + 8 = \square$ ice-creams	$3 \times 8 = \square$
b		$9 + 9 + 9 + 9 + 9 + 9 + 9 = \square$ hearts	$\square \times 9 = \square$
c		$5 + 5 + 5 + 5 = \square$ pencils	$4 \times \square = \square$
d		$7 = \square$ cakes	$\square \times \square = \square$
e		$\square + \square + \square = \square$ apples	$\square \times \square = \square$
f		$\square + \square = \square$ balloons	$\square \times \square = \square$



- 1 These dogs all need good homes. How many dogs are there? _____
- 2 How many dogs would each person get if they were fairly shared by:

a 4 people? _____	b 3 people? _____
c 2 people? _____	d 24 people? _____
e 6 people? _____	f 8 people? _____
g 1 person? _____	h 12 people? _____
- 3 Tom took half the dogs. How many did he take? _____
- 4 Jacky took one quarter of the dogs. How many did she take? _____
- 5 If five people wanted the dogs, would they each get a fair share? _____
Why? _____
- 6 Are there other ways to share which are not fair? _____

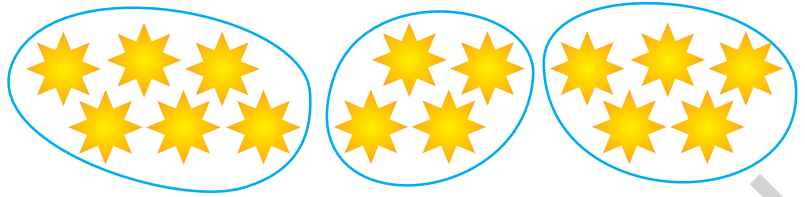


Fair shares

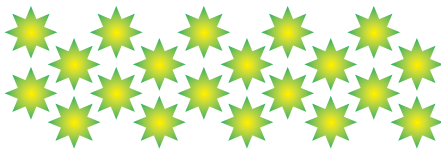
Fair shares
means an equal
number in each
share.

TERM 2
Week 3

- 1 **a** Are these shares fair? _____
b Why? _____



- 2 **a** Make 5 fair shares.



One share _____

- b** Make 4 fair shares.



One share _____

- c** Make 10 fair shares.

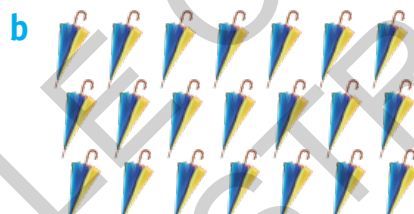


One share _____

- 3 Circle to make fair shares. How many in each share?



_____ $\div 2 =$ _____

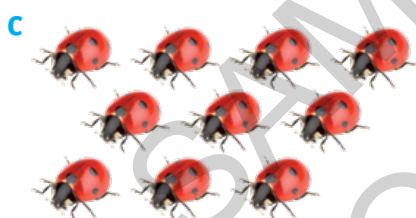


_____ $\div 3 =$ _____

$\div$ means share

6 shared into
2 groups

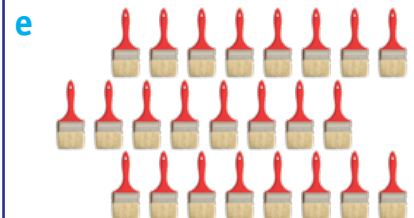
$$6 \div 2 = 3$$



_____ $\div 5 =$ _____



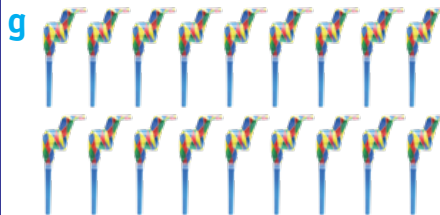
_____ $\div 10 =$ _____



_____ $\div 2 =$ _____



_____ $\div 4 =$ _____



_____ $\div 3 =$ _____



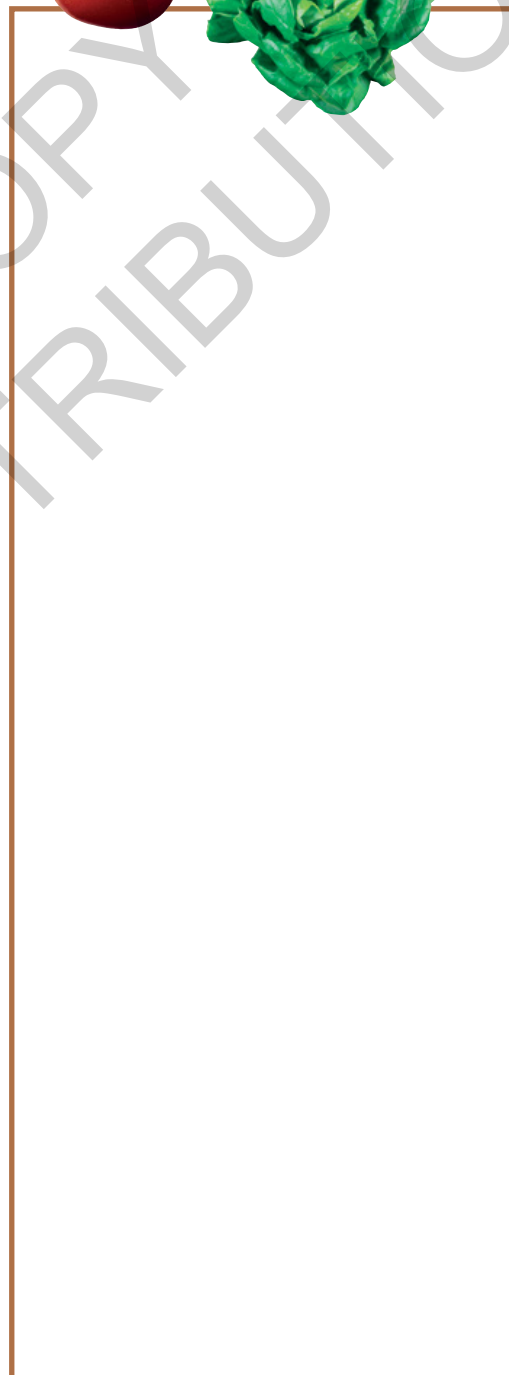
_____ $\div 4 =$ _____

- 4 **a** Share 20 lollies into 5 packets. How many in each packet? _____ $\div$ _____ = _____
b Share 15 apples onto 5 plates. How many on each plate? _____ $\div$ _____ = _____
c Put 10 children into 2 equal groups. How many in each group? _____ $\div$ _____ = _____
d Put 50 crayons equally into 10 boxes. How many in each box? _____ $\div$ _____ = _____
e Share 27 marbles among 3 girls. How many for each girl? _____ $\div$ _____ = _____

Vegetable garden

Nicau is planning three garden beds of lettuces, tomatoes and radishes. He wants to plant each vegetable in equal rows. He has 30 lettuce, 32 tomato and 36 radish plants. How can he plant them in these garden beds?

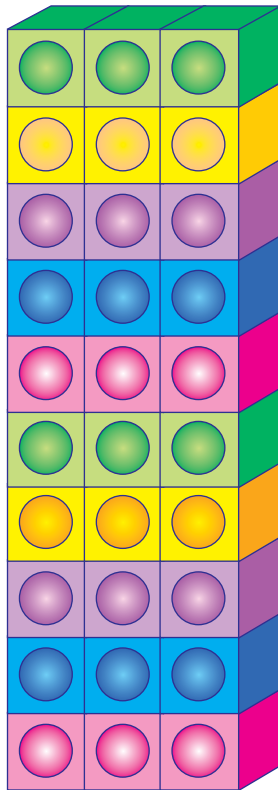
Key:  = lettuce  = tomato  = radish



I can solve problems by:

- ☐ sharing into equal groups ☐ drawing arrays

1



0 a $0 \times 3 = 3 \times 0 = 0$

3 b $1 \times 3 = 3 \times 1 = 3$

6 c $2 \times 3 = 3 \times 2 = \square$

9 d $3 \times 3 = 3 \times 3 = \square$

12 e $4 \times 3 = 3 \times \square = \square$

15 f $\square \times 3 = 3 \times 5 = \square$

18 g $6 \times 3 = 3 \times \square = \square$

21 h $7 \times 3 = 3 \times \square = \square$

24 i $\square \times 3 = 3 \times \square = 24$

27 j $\square \times 3 = 3 \times \square = \square$

30 k $10 \times 3 = 3 \times 10 = \square$

Memorise the
3× table.

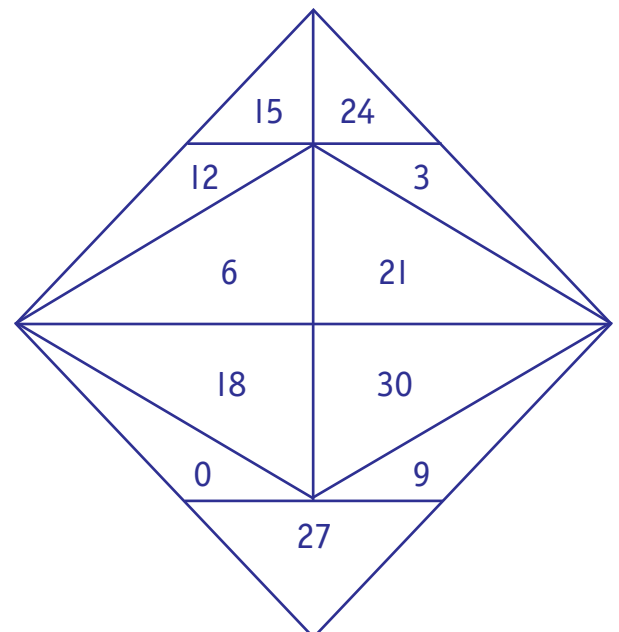
Count by threes.



2 Complete.



3 Pick ③ and another number from the bag. Multiply them. Colour the two numbers in the bag and then colour the answer in the rhombus the same colour.





1 How many hands? _____

2 How many fingers? _____

a 2 hands _____

c 7 hands _____

e 6 hands _____

g 4 hands _____

i 9 hands _____

k 11 hands _____

b 12 hands _____

d 0 hands _____

f 3 hands _____

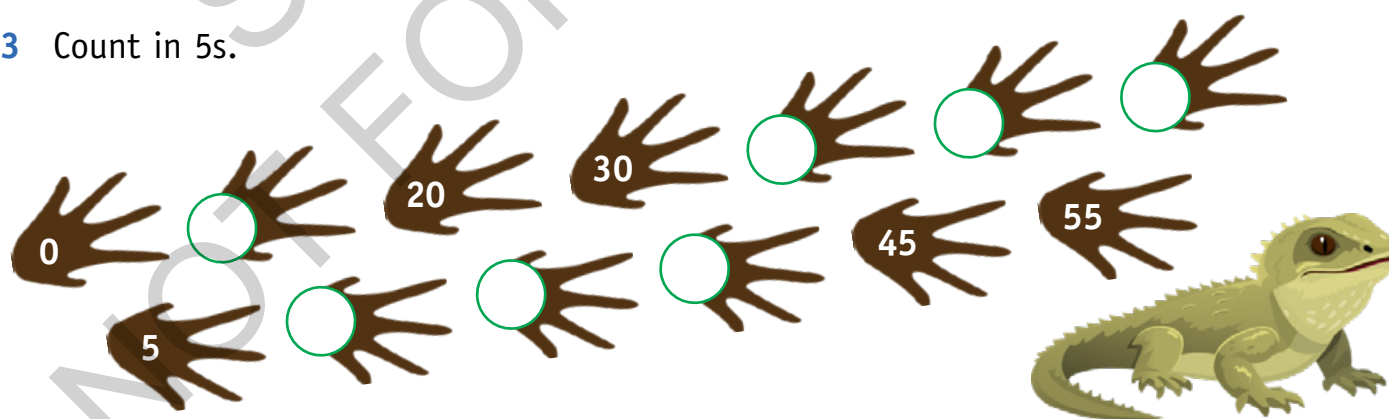
h 10 hands _____

j 8 hands _____

l 5 hands _____



3 Count in 5s.



4 Complete from memory.

×	4	1	5	9	3	7	12	10	6	0	11	8	2
5													



1 How many petals on:

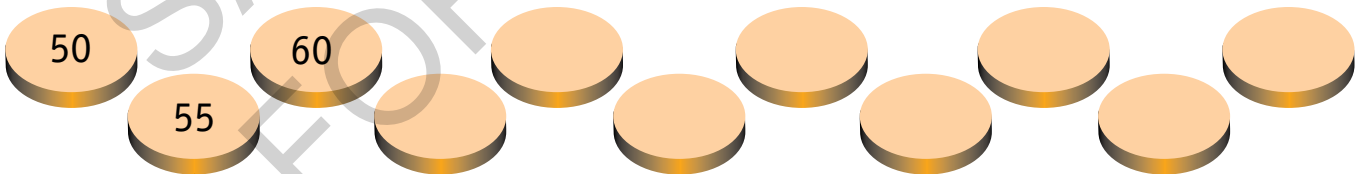
- | | |
|--|-------------------------|
| a 1 flower? _____ | b 7 flowers? _____ |
| c 3 flowers? _____ | d 10 flowers? _____ |
| e 2 flowers? _____ | f 4 flowers? _____ |
| g 9 flowers? _____ | h 6 flowers? _____ |
| i 5 flowers? _____ | j 8 flowers? _____ |
| k How many petals on no flowers? _____ | |
| l $11 \times 5 =$ _____ | m $12 \times 5 =$ _____ |

Any number times zero is always equal to zero.



- 2 a $0 \times 6 =$ b $3 \times 0 =$ c $2 \times 0 =$ d $0 \times 8 =$
e $9 \times 0 =$ f $0 \times 4 =$ g $66 \times 0 =$ h $999 \times 0 =$

3 Count by 5s.



4

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	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60

- a Colour the $\times 3$ numbers yellow.
b Colour the $\times 5$ numbers blue.
c Which numbers turn green?

- d Why? _____



Kanga jumps along the path 4 spaces each time.

1 Colour the numbers she will land on.

2 How far did she go in:

- a 0 jumps? _____ b 1 jump? _____ c 2 jumps? _____ d 3 jumps? _____
e 4 jumps? _____ f 5 jumps? _____ g 6 jumps? _____ h 7 jumps? _____
i 8 jumps? _____ j 9 jumps? _____ k 10 jumps? _____

3 A dog has 4 paws. Add groups of 4 to find how many paws on:

- a 1 dog $4 \times 1 =$ _____ b 2 dogs $4 \times 2 =$ _____
c 3 dogs $4 \times 3 =$ _____ d 4 dogs $4 \times 4 =$ _____
e 5 dogs $4 \times 5 =$ _____ f 6 dogs $4 \times 6 =$ _____
g 7 dogs $4 \times 7 =$ _____ h 8 dogs $4 \times 8 =$ _____
i 9 dogs $4 \times 9 =$ _____ j 10 dogs $4 \times 10 =$ _____
k How many paws would no dogs have? $4 \times 0 =$ _____



- 4 a $4 \times 10 =$ _____ b $10 \times 4 =$ _____ c $4 \times 6 =$ _____ d $1 \times 4 =$ _____ e $4 \times 0 =$ _____
f $0 \times 4 =$ _____ g $9 \times 4 =$ _____ h $4 \times 4 =$ _____ i $7 \times 4 =$ _____ j $8 \times 4 =$ _____

5 A butterfly has 4 spots on its wings. How many spots on 5 butterflies?



6 Each car has 4 wheels. How many wheels on 7 cars?



1 Count backwards in:

- a 3s from 21, _____, _____, _____, _____, _____, _____
- b 4s from 38, _____, _____, _____, _____, _____, _____
- c 10s from 100, _____, _____, _____, _____, _____, _____

0×

$$0 \times 3 = 0$$

$$0 \times 5 = 0$$

$$0 \times 10 = 0$$

2 Write the number sentence and answer. How many:

- a wheels on 8 trikes? $3 \times 8 = 24$ on 3 trikes? $3 \times 3 = 9$
- b eyes on 9 owls? _____ on 5 owls? _____
- c corners on 7 squares? _____ on 4 squares? _____
- d toes on 6 feet? _____ on 8 feet? _____
- e sides on 5 triangles? _____ on 10 triangles? _____
- f sides on 4 pentagons? _____ on 9 pentagons? _____
- g fingers on 4 hands? _____ on 7 hands? _____
- h ears on 10 horses? _____ tails on 10 horses? _____
- i feet on 1 dog? _____ feet on 3 dogs? _____

3 a One ticket to a show costs \$10. What is the cost of 6 tickets?



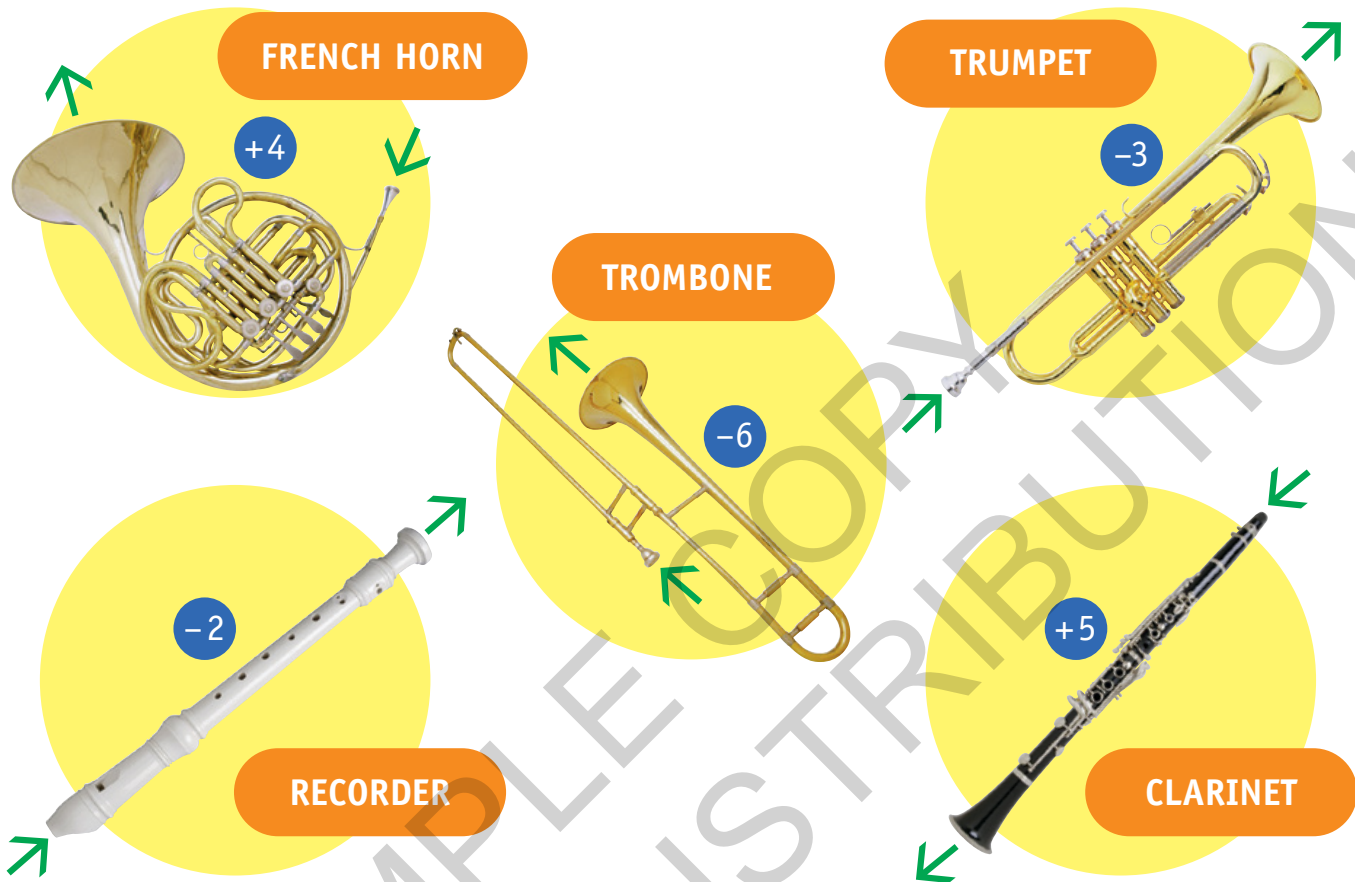
b Ten children get 5 lollies each. How many lollies altogether?



4 Complete this from memory.

×	0	1	2	3	4	5	6	7	8	9	10
10											

- Mastery Checklist** I can:
- ☐ memorise the 3×, 5×, 4×, 10× tables
 - ☐ remember what happens when multiplying by 0
 - ☐ count back in 3s, 4s, 5s and 10s
 - ☐ write number sentences
 - ☐ complete number facts from memory



These are magical instruments.

Each instrument has its own number rule. Put a number into the instrument and apply the rule 4 times. Write the four numbers that come out.

- 1 Start with 7. Apply the French horn rule 4 times. Write each new number.

- 2 Start with 34. Apply the trombone rule 4 times. Write each new number.

- 3 What happens to a 14 in a:

a trumpet? _____

b clarinet? _____

c recorder? _____

- 4 What must be put in the clarinet for 40 to come out at the end of 4 changes?

1 Look at page 70. Complete these:

- | | | | | | |
|------------------------|----------------|-------|-------|-------|-------|
| a for the trumpet. | Start with 18. | _____ | _____ | _____ | _____ |
| Rule = _____ | Start with 25. | _____ | _____ | _____ | _____ |
| b for the clarinet. | Start with 18. | _____ | _____ | _____ | _____ |
| Rule = _____ | Start with 23. | _____ | _____ | _____ | _____ |
| c for the recorder. | Start with 18. | _____ | _____ | _____ | _____ |
| Rule = _____ | Start with 15. | _____ | _____ | _____ | _____ |
| d for the French horn. | Start with 16. | _____ | _____ | _____ | _____ |
| Rule = _____ | Start with 11. | _____ | _____ | _____ | _____ |
| e for the trombone. | Start with 24. | _____ | _____ | _____ | _____ |
| Rule = _____ | Start with 29. | _____ | _____ | _____ | _____ |

2 This is your kazoo. Decide on your rule for how it changes numbers.

KAZOO



3 Use your kazoo.

- | | | | | |
|-------------------|-------|-------|-------|-------|
| a Start with 84. | _____ | _____ | _____ | _____ |
| b Start with 110. | _____ | _____ | _____ | _____ |



4 Invent a musical instrument and make it add and subtract numbers.

- | | |
|------------------------|-------|
| a Instrument name | _____ |
| b Changes it makes | _____ |
| c Use your instrument. | _____ |
| Start at 92. | _____ |

Draw it here.

1 Write the next three rows. Continue each number pattern.

a

$$4 + 9 = 13$$

$$14 + 9 = 23$$

$$24 + 9 = 33$$

b

$$8 + 7 = 15$$

$$18 + 7 = 25$$

$$28 + 7 = 35$$

c

$$9 + 7 = 16$$

$$19 + 7 = 26$$

$$29 + 7 = 36$$

d

$$46 - 12 = 34$$

$$56 - 12 = 44$$

$$66 - 12 = 54$$

e

$$89 - 5 = 84$$

$$89 - 15 = 74$$

$$89 - 25 = 64$$

f

$$6 + 6 + 6 = 18$$

$$7 + 7 + 7 = 21$$

$$8 + 8 + 8 = 24$$

2 Describe the patterns in Question 1.

In **a**, **b** and **c**

The first number changes by _____. The second number stays _____.

The answer increases by _____.

d The first number changes by _____. The second number stays _____.

The answer changes by _____.

e The first number stays _____. The second number changes by _____.

The answer changes by _____.

f Each number increases by _____. The total increases by _____.

3 Follow the patterns.

a

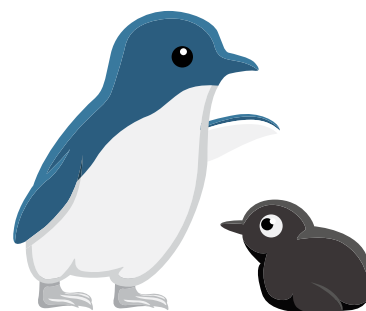
$$1, 2, 4, 7, \underline{\quad}, 16, \underline{\quad}, \underline{\quad}, \underline{\quad}$$

+1 +2 +3 +4 +5 +6 +7

b

$$1, 4, \underline{\quad}, 16, \underline{\quad}, \underline{\quad}, 49, \underline{\quad}, \underline{\quad}$$

+3 +5 +7 +9 +11 +13 +15



Describing patterns

TERM 2
Week 5

1 Write the missing terms, then write the pattern rule.

a $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, _____, _____

Pattern rule: _____

b \$1.80, \$1.70, _____, \$1.50, \$1.40, \$1.30, _____

Pattern rule: _____

c 2, 7, 12, _____, _____, 27, _____

Pattern rule: _____

d 25, 40, _____, 70, _____, _____

Pattern rule: _____

e 36, 45, 54, 63, _____, 81, _____

Pattern rule: _____

f 10, 120, 230, _____, _____, 560, _____

Pattern rule: _____



2

9×6

5×3

3×4

double 27

$8 + 7$

4×4

$36 - 4$

1 dozen

$9 + 3 + 4$

9×5

$100 - 55$

8×4

Colour the terms that are equal.



3 Use a calculator.

a Press AC b Press 5 c Press + + d Press =

e What does your calculator show? _____ f Press = again.

g Keep pressing = and write the answers. _____

h What is the pattern? _____



Mastery Checklist I can: ☐ create and continue addition and subtraction patterns
☐ explain the rule in addition and subtraction patterns

Checkpoint 3

1 Which is the largest fraction?

Shade one bubble.

$\frac{1}{3}$
☐

$\frac{1}{4}$
☐

$\frac{1}{8}$
☐

$\frac{1}{2}$
☐

$\frac{1}{5}$
☐

2 a I have 9 dogs. How many is $\frac{1}{3}$ of the group?

b $\frac{1}{4}$ is 5 cats. How many in the whole group?

Write your answer in the boxes.



3 4 out of 10 squares are coloured pink. What is another name for $\frac{4}{10}$?

Shade one bubble.



$\frac{4}{4}$
☐

$\frac{2}{4}$
☐

$\frac{1}{2}$
☐

$\frac{2}{5}$
☐

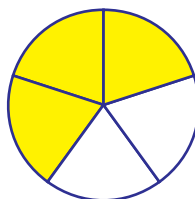
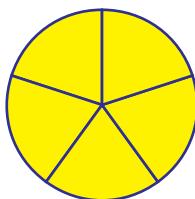
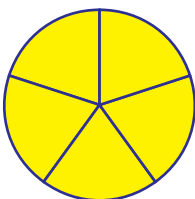
4 Add to make a whole.

Write your answer in the boxes.

a $\frac{4}{8} + \frac{\boxed{}}{8} = \frac{\boxed{}}{8}$

b $\frac{7}{10} + \frac{\boxed{}}{10} = \frac{\boxed{}}{\boxed{}}$

5 Write as an improper fraction and as a mixed number.



Checkpoint 3

6 Double this recipe.

= 2 eggs = _____

= $1\frac{1}{2}$ cups milk = _____

= 2 cups flour = _____

= $\frac{1}{4}$ cup sugar = _____

= 1 tsp maple syrup = _____

7 Halve this recipe.

8 Complete the equations.



$$\square \times \square = \square$$

$$\square \div \square = \square$$

$$\square \times \square = \square$$

$$\square \div \square = \square$$

Write your answers
in the boxes.

9



a Make 6 fair shares. How many in each share?

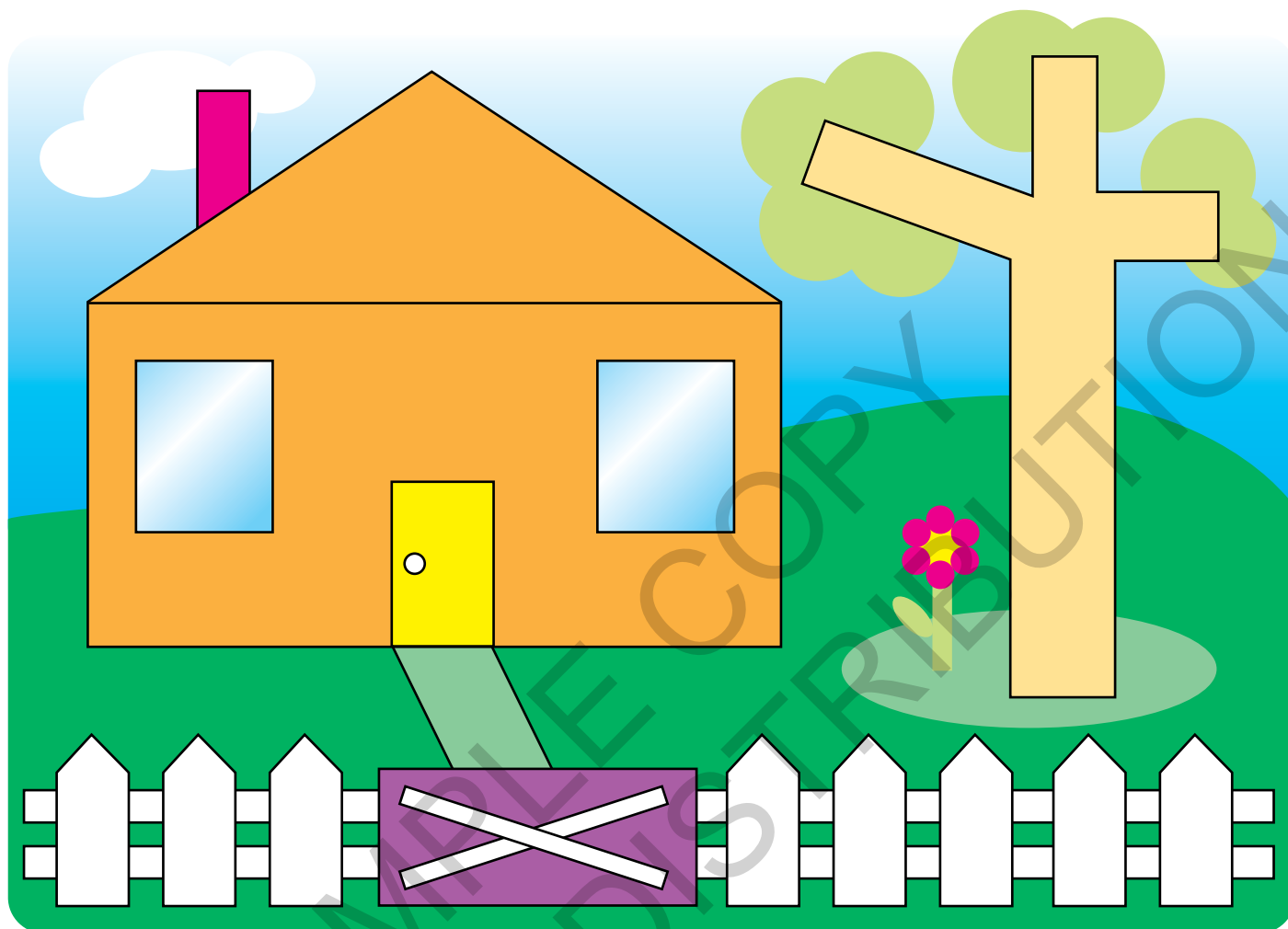
b Share into 3 groups. How many in each group?

10 Complete from memory.

×	10	1	2	0	5	3	4	8	6	9	7
3											
5											
10											
4											

11 Complete the number pattern.

30, 29, 27, 24, 20, ,



1 a Is a millimetre smaller than a centimetre? _____

b How many millimetres in one centimetre? _____

2 Measure in centimetres:

a the width of the house. _____

b the height of the window. _____

c the short side of the chimney. _____

d the height of the house wall. _____

e the height of a fence paling. _____

f the width of a tree branch. _____

3 Without measuring, name three things that are about 2 cm.

a _____ b _____ c _____

4 Measure the three things to see how close you are.

a _____ b _____ c _____

5 Draw a line that is:

a 4 cm 6 mm long.

b 3 cm 2 mm long.



Equivalent length units

m is metre
cm is centimetre
mm is millimetre
 10 mm = 1 cm
 100 cm = 1 m

TERM 2
 Week 6

1 How many centimetres in:

- a** 2 m? _____ **b** 5 m? _____ **c** 3 m? _____ **d** $4\frac{1}{2}$ m? _____ **e** $1\frac{1}{2}$ m? _____

2 How many millimetres in:

- a** 3 cm? _____ **b** 7 cm? _____ **c** 10 cm? _____ **d** $\frac{1}{2}$ cm? _____ **e** $2\frac{1}{2}$ cm? _____

3 Change these to metres.

- a** 100 cm _____ **b** 700 cm _____ **c** 900 cm _____ **d** 350 cm _____ **e** 550 cm _____

4 Change these to centimetres.

- a** 50 mm _____ **b** 10 mm _____ **c** 40 mm _____ **d** 20 mm _____ **e** 70 mm _____

5 Name three things you might measure in millimetres.

- a** _____ **b** _____ **c** _____

6 Draw these straight lines and label them.

- A** 10 mm **B** 40 mm **C** 55 mm **D** 25 mm **E** 38 mm **F** 73 mm

Area for drawing straight lines and labeling them.

7 Give each alien a name and then measure its height on this page.



Name _____
 Height _____



Name _____
 Height _____



Name _____
 Height _____



Name _____
 Height _____

Challenge! Measure your height in: centimetres.

millimetres.



Estimating length

TERM 2
Week 6

1 Match.

- a 1 metre A 1 mm
b 1 centimetre B 1 m
c 1 millimetre C 1 cm

2 Match.

- a 1 metre _____
b 1 centimetre _____
c 1 millimetre _____

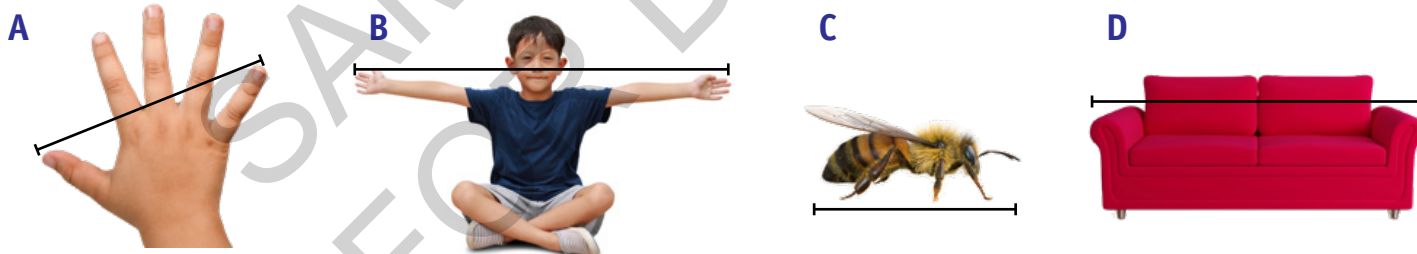
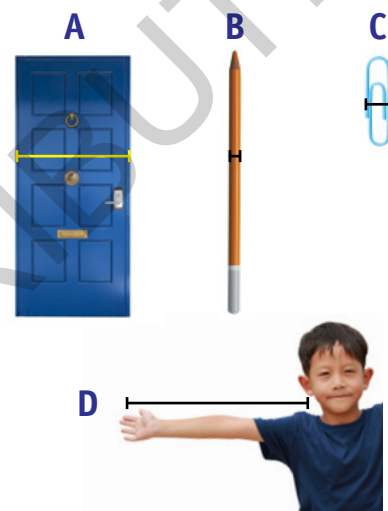


3 Match.

- a 1 m A 10 mm
b $\frac{1}{2}$ m B 100 cm
c 1 cm C 50 cm
d $\frac{1}{2}$ cm D 5 mm

4 Match.

- a 1 m _____
b $\frac{1}{2}$ m _____
c 1 cm _____
d $\frac{1}{2}$ cm _____



5 Estimate the lengths of these items.

- a A? _____ b B? _____ c C? _____ d D? _____

6 Write an item you can see that is about this long.

- a 5 m _____ b 5 cm _____
c 5 mm _____ d 10 cm _____

7 Measure those items. Tick them if your estimates were close.

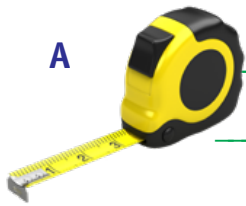
8 a What measurement tools did you use? _____

b Can you think of any other tools for measuring length?

Measurement tools

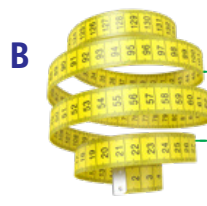
TERM 2
Week 6

1 Name each tool. 2 Circle the units each tool can measure in.



A

m cm mm



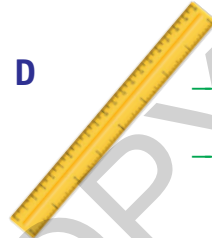
B

m cm mm



C

m cm mm

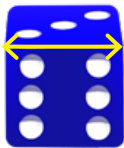


D

m cm mm

3 Write the letter of the tool that would be most useful for measuring each item below:
A, B, C, D.

a



b



c



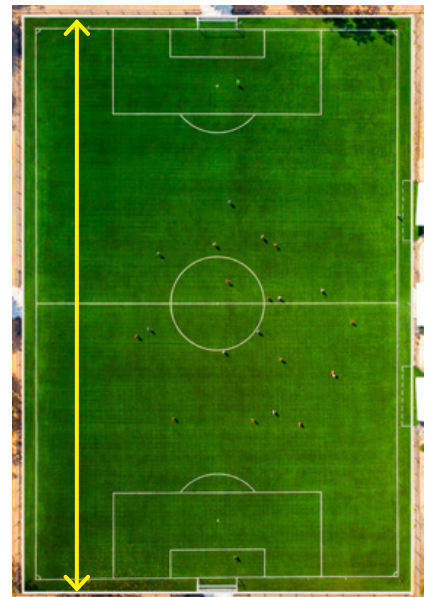
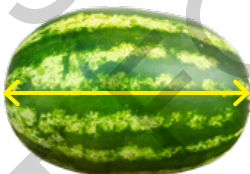
d



e



f



4 Which units would you use to measure each length above?

a

b

c

d

e

f

Mastery Checklist

- I can:
- ☐ measure and estimate lengths in centimetres and millimetres
 - ☐ convert between length units – metres, centimetres and millimetres
 - ☐ find differences in length
 - ☐ use benchmarks for estimation
 - ☐ match tools and units to the length being measured

Classroom layout

In the old days, classrooms were just rows of desks to fit as many students as possible in one room.

If your classroom was just rows of desks, how many students could you fit in?



1 Measure these lengths in metres:

a width of your classroom

b length of your classroom

2 If 1 metre = 1 cm on the grid, draw an outline of your classroom.

3 Measure these lengths:

a width of your desk

b length of your desk

4 a How many desks will fit across the width of your classroom?

b How many rows of desks will fit down the length of your classroom? _____

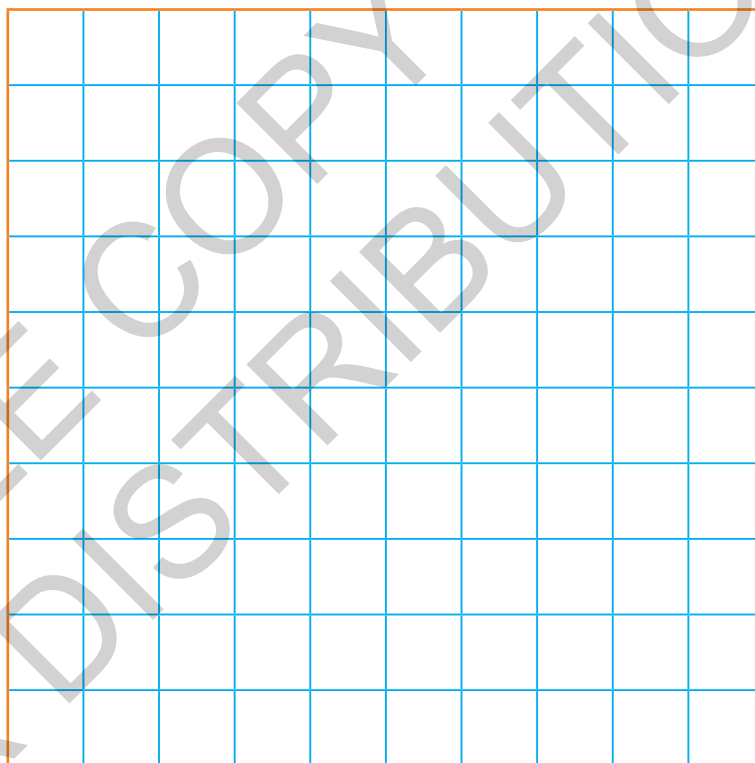
5 a Can you put the desks right up against each other? Why?

b Measure how much space you think you need between the rows of desks.

6 a Draw as many rows of desks as possible into your classroom outline. Remember 1 m = 1 cm.

b How many students can sit at each desk? _____

c How many students could fit into your classroom full of desks? _____



I can solve problems by:

☐ measuring lengths ☐ drawing a diagram to scale

1 Write a multiplication fact for each badge. Do some have more than one?

a 

$10 \times 9 =$

b 

c 

d 

e 

f 

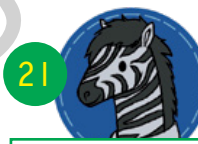
g 

h 

i 

j 

k 

l 

2

$\times$	2	8	5	10	0	7	3	1	6	9	4
4											
10											
5											
3											

3 a 

Mum drew a star with 3 points.
How many points on 9 stars?

b 

Aunt Tui drew a star with five points.
How many points on 9 stars?

c 

Uncle Kai drew a star with four points.
How many points on 9 stars?

d 

How many more points are there on Aunt Tui's stars than on Uncle Kai's stars?

1 Write two number sentences for this picture.

$$\begin{array}{l} \square \times \square = \square \\ \square \times \square = \square \end{array}$$


2 Write a number sentence and the answer.

a 10 cars. 4 people in each car. How many people?

$$\square \times \square = \square$$

b 5 tricycles. 3 wheels on each tricycle. How many wheels?

$$\square \times \square = \square$$

c 3 cases each holding 8 pencils. How many pencils?

$$\square \times \square = \square$$

d 5 rows with 10 boys in each row. How many boys?

$$\square \times \square = \square$$

e 8 nests with 5 eggs in each nest. How many eggs?

$$\square \times \square = \square$$

f 10 pies on each tray. There are 6 trays. How many pies?

$$\square \times \square = \square$$

3 Write the answers and match.

a $\begin{array}{r} 6 \\ \times 3 \\ \hline \end{array}$	b $\begin{array}{r} 8 \\ \times 2 \\ \hline \end{array}$	c $\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$	d $\begin{array}{r} 10 \\ \times 9 \\ \hline \end{array}$	e $\begin{array}{r} 4 \\ \times 1 \\ \hline \end{array}$	f $\begin{array}{r} 8 \\ \times 4 \\ \hline \end{array}$
---	---	---	--	---	---

7 × 5 = 6 × 3 = 8 × 2 = 8 × 4 = 10 × 9 = 4 × 1 =

4 Write a vertical multiplication algorithm for each.

a 2 × 6 =

$$\begin{array}{r} \square \\ \times \square \\ \hline \end{array}$$

b 5 × 3 =

$$\begin{array}{r} \square \\ \times \square \\ \hline \end{array}$$

c 4 × 7 =

$$\begin{array}{r} \square \\ \times \square \\ \hline \end{array}$$

d 3 × 9 =

$$\begin{array}{r} \square \\ \times \square \\ \hline \end{array}$$

Challenge!

3 rows of 3 cookies on each tray.

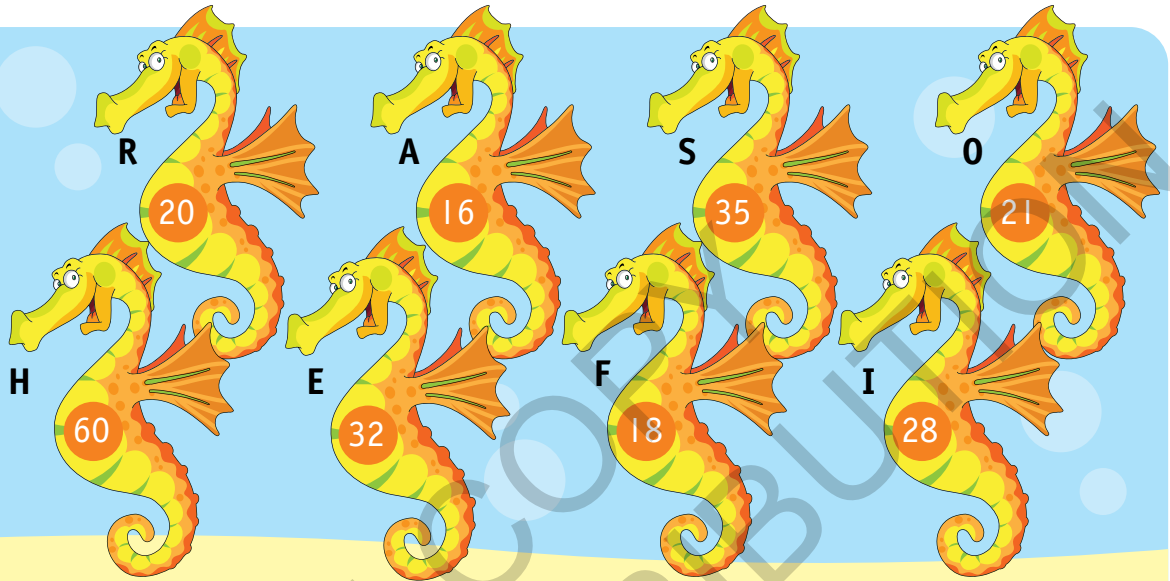
How many cookies on 1 tray?

How many cookies on 5 trays?

How many cookies on 10 trays?

Match the number sentence to its answer.
Then write the letter in the secret message.

- 1 $5 \times 7 =$
- 2 $4 \times 8 =$
- 3 $4 \times 4 =$
- 4 $10 \times 6 =$
- 5 $3 \times 7 =$
- 6 $5 \times 4 =$
- 7 $3 \times 6 =$
- 8 $4 \times 7 =$



1	2	3

4	5	6

1	2	1

3	6	2

7	8	1	4

- | | | | | | |
|--|---|--|--|---|---|
| l $\begin{array}{r} a \\ 8 \\ \times 5 \\ \hline \end{array}$ | b $\begin{array}{r} 9 \\ \times 3 \\ \hline \end{array}$ | c $\begin{array}{r} 10 \\ \times 0 \\ \hline \end{array}$ | d $\begin{array}{r} 7 \\ \times 10 \\ \hline \end{array}$ | e $\begin{array}{r} 5 \\ \times 7 \\ \hline \end{array}$ | f $\begin{array}{r} 4 \\ \times 8 \\ \hline \end{array}$ |
| g $\begin{array}{r} 10 \\ \times 4 \\ \hline \end{array}$ | h $\begin{array}{r} 4 \\ \times 3 \\ \hline \end{array}$ | i $\begin{array}{r} 3 \\ \times 9 \\ \hline \end{array}$ | j $\begin{array}{r} 9 \\ \times 5 \\ \hline \end{array}$ | k $\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$ | l $\begin{array}{r} 6 \\ \times 2 \\ \hline \end{array}$ |

2 Write the product of:

- | | | | |
|------------------------|------------------------|-------------------------|------------------------|
| a 6 and 4 _____ | b 3 and 6 _____ | c 10 and 2 _____ | d 2 and 5 _____ |
| e 4 and 3 _____ | f 7 and 4 _____ | g 6 and 3 _____ | h 8 and 3 _____ |

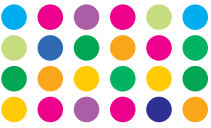
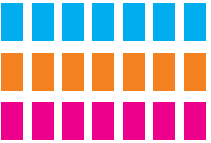
3 Write a multiplication fact for each product.

- | | | |
|------------------------------------|------------------------------------|------------------------------------|
| a _____ $\times$ _____ = 12 | b _____ $\times$ _____ = 30 | c _____ $\times$ _____ = 45 |
| d _____ $\times$ _____ = 24 | e _____ $\times$ _____ = 40 | f _____ $\times$ _____ = 60 |

Challenge! Can you write more multiplication facts for these numbers?

--

I Fill in the missing facts.

a		4 groups of 6	$\begin{array}{r} 6 \\ \times 4 \\ \hline \end{array}$	6×4	24
b		3 groups of 5			
c			$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$		
d					16
e					
f		5 groups of 7		2×9	
g			$\begin{array}{r} 8 \\ \times 3 \\ \hline \end{array}$		

- Mastery Checklist** I can:
- ☐ remember the 3x, 4x, 5x and 10x tables
 - ☐ solve multiplication stories
 - ☐ use horizontal and vertical methods to multiply
 - ☐ draw diagrams to represent multiplication facts
 - ☐ find products of numbers

Operations

- 1 Felicity has 8 pairs of socks. How many socks altogether?

$$8 \times 2 = \square$$

Answer socks



- 2 Rajit bought 7 apples for 10 cents each. How much did he spend?

$$\square \times \square = \square$$

Answer



- 3 Mrs Tiredout has 5 children. Each child has 4 T-shirts. How many T-shirts altogether?

$$\square \times \square = \square$$

Answer T-shirts



- 4 Tui gathers 4 eggs every day. How many eggs in 1 week?

$$\square \times \square = \square$$

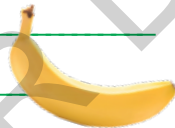
Answer eggs



You write the questions.

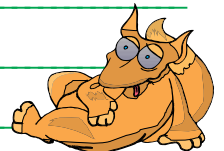
5

$$\square \times \square = \square \quad \text{Answer 30 bananas}$$



6

$$\square \times \square = \square \quad \text{Answer 48 monsters}$$



- 7 Farmer Joe had 25 cows in each of 4 paddocks and 34 sheep in each of 3 paddocks.

a How many cows? $\square \times \square = \square$

b How many sheep? $\square \times \square = \square$

c How many animals altogether?



I can solve problems by:

☐ using multiplication ☐ writing questions and algorithms



These are stamps used in the country of Weirdo.

- 1 Wink only ever bought 20c stamps. How many could he buy for:
 - a 40c? _____
 - b 80c? _____
 - c 20c? _____
 - d 60c? _____
 - e \$1.20? _____
- 2 Wred only bought 10c stamps. How many could she buy for:
 - a 60c? _____
 - b 90c? _____
 - c 20c? _____
 - d 50c? _____
 - e 70c? _____
- 3 Weid only bought \$2 stamps. How many could he buy for:
 - a \$14? _____
 - b \$8? _____
 - c \$18? _____
 - d \$6? _____
 - e \$12? _____
- 4 Wido had \$13. Could she buy eight \$2 stamps? _____
Why? _____
- 5 How much for:
 - a seven 10c stamps? _____
 - b five \$5 stamps? _____
- 6 Wodi has 90c. How many 10c stamps can she buy? _____
- 7
 - a How much to buy 1 of each stamp? _____
 - b How much change from \$10? _____

Challenge! Make a list

Werd has a package to send. List the ways she can make \$3.10 using 5 or less stamps.



Complete each fact family.

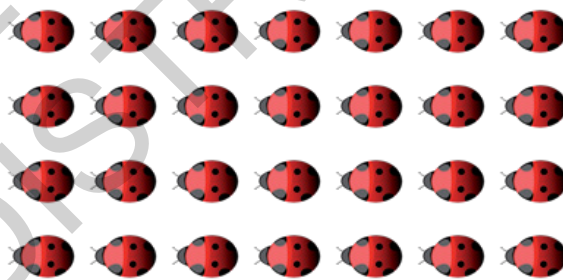
1 $5 \times 4 =$ _____
 $4 \times 5 =$ _____
 $20 \div 5 =$ _____
 $20 \div 4 =$ _____



2 $8 \times 3 =$ _____
 _____ $\times$ _____ = _____
 _____ $\div$ _____ = _____
 _____ $\div$ _____ = _____



3 $7 \times 4 =$ _____
 _____ $\times$ _____ = _____
 _____ $\div$ _____ = _____
 _____ $\div$ _____ = _____



4 Draw an array to match each division fact.

a $18 \div 6 =$ _____

b $21 \div 7 =$ _____

Challenge!

You have 24 marbles.

Show 3 different ways to put the marbles into even groups.

Write the division fact for each way.



How many groups?

TERM 2
Week 8



means to divide.



1 How many boxes?

- a 24 cakes, 6 in each box = _____ boxes b 36 muffins, 4 in each box = _____ boxes
c 40 cookies, 8 in each box = _____ boxes d 45 pears, 9 in each box = _____ boxes
e 28 apples, 7 in each box = _____ boxes f 40 oranges, 8 in each box = _____ boxes
g 12 cans, 6 in each box = _____ boxes h 21 bottles, 7 in each pack = _____ packs

2

a  24 ÷ 8	b  36 ÷ 9	c  30 ÷ 6	d  45 ÷ 5
e  21 ÷ 7	f  12 ÷ 3	g  27 ÷ 9	h  32 ÷ 8
i  18 ÷ 2	j  90 ÷ 9	k  70 ÷ 7	l  32 ÷ 4

- 3
- | | | | |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| a <input type="text"/> ÷ 6 = 8 | b 35 ÷ <input type="text"/> = 5 | c <input type="text"/> ÷ 9 = 7 | d 56 ÷ <input type="text"/> = 8 |
| e 8 × <input type="text"/> = 64 | f <input type="text"/> ÷ 10 = 9 | g 42 ÷ <input type="text"/> = 6 | h <input type="text"/> ÷ 5 = 10 |

Challenge!



A school has 72 students going on camp. They can travel in:

- vans that hold 8 students
- minibuses that hold 12 students
- buses that hold 24 students

How many vehicles would be needed for each choice?

Finding a **fraction of a set** is a **division** question.

The **denominator** is the **divisor**.

What is $\frac{1}{2}$ of 10? $10 \div 2 = 5$ $\frac{1}{2}$ of 10 = 5



1 Write the equation to find the answer.

a $\frac{1}{2}$ of 24? $24 \div 2 =$ _____

c $\frac{1}{4}$ of 32? _____

e $\frac{1}{10}$ of 90? _____

b $\frac{1}{3}$ of 27? _____

d $\frac{1}{5}$ of 35? _____

f $\frac{1}{8}$ of 16? _____

2 Answer true or false.

a $\frac{1}{2}$ of 18 is 9 _____

c $\frac{1}{4}$ of 24 is 8 _____

e $\frac{1}{10}$ of 80 is 8 _____

b $\frac{1}{3}$ of 30 is 9 _____

d $\frac{1}{5}$ of 40 is 4 _____

f $\frac{1}{8}$ of 40 is 5 _____

3 What fraction of the whole is this?

a _____ of 12 is 6

$12 \div 6 =$ _____

The fraction is _____

b _____ of 20 is 5

$20 \div 5 =$ _____

The fraction is _____

c _____ of 24 is 3

$24 \div 3 =$ _____

The fraction is _____

If you know **one equal share**, multiply by the denominator to find the **whole set**.

4 We know one equal share. Find the whole set.

a $\frac{1}{5}$ of a set is 5.

The whole set is

$5 \times 5 =$ _____

b $\frac{1}{4}$ of a set is 9.

The whole set is

c $\frac{1}{8}$ of a set is 6.

The whole set is

d $\frac{1}{3}$ of a set is 5.

The whole set is

e One sixth of a set is 8.

The whole set is _____

f One ninth of a set is 3.

The whole set is _____

5 Write an equation to find the missing number.

a $\frac{1}{2}$ of _____ is 7

b $\frac{1}{4}$ of _____ is 9

c $\frac{1}{10}$ of _____ is 6

d $\frac{1}{3}$ of _____ is 8

Mastery Checklist

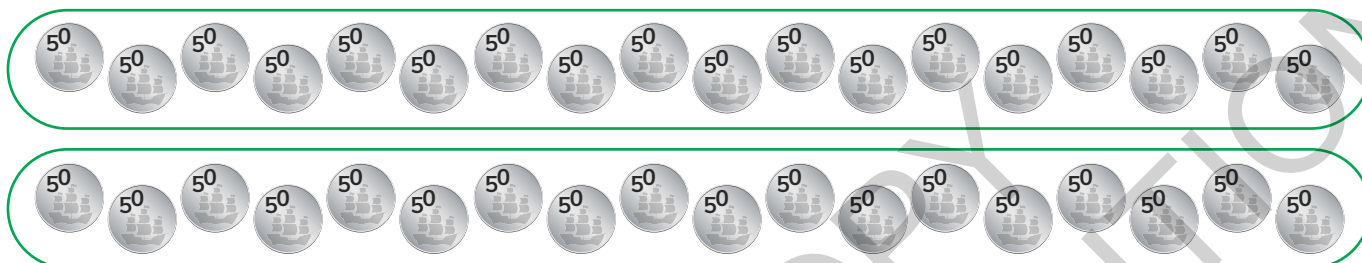
- I can: ☐ work out fair shares
☐ make equal groups
☐ write division equations
☐ work out fractions of a group
☐ work out the whole number when given a fraction of a group



Grandpa's treat

Grandpa has 36 fifty-cent coins. He says that he could share them evenly among his grandchildren, even if he had 2, 3, 4, 5, 6, 7, 8 or 9 grandchildren.

Is he right? Show your working. For example:



Yes, he can share between 2 grandchildren. $36 \div 2 = 18$ $2 \times 18 = 36$

I can solve problems by:

- ☐ using multiplication and division facts ☐ writing equations



1 Draw the cake each person chose.

Mandy	Mahaka	Milly	Mike	Mei
top row, on the left	bottom row, 2nd from the right	middle row, on the right	bottom row, on the left	top row, in the middle

2 Write the position of:

- a the cupcake with the cherry on top. _____
- b the meringue snowman. _____
- c the cream frog. _____
- d the apricot cheesecake. _____
- e the strawberry slice. _____

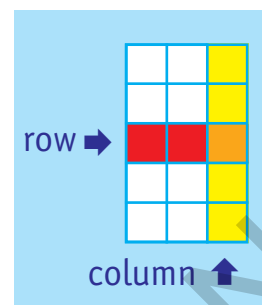
3 Write the names and positions of the three cakes you like best.

- a _____
- b _____
- c _____

1 Which letter is:

- a third column, top row? _____
- b last column, bottom row? _____
- c fifth column, second row? _____
- d second last column, third row from the bottom? _____
- e third column from the right, fourth row from the top? _____
- f These letters spell a word. What is the word? _____

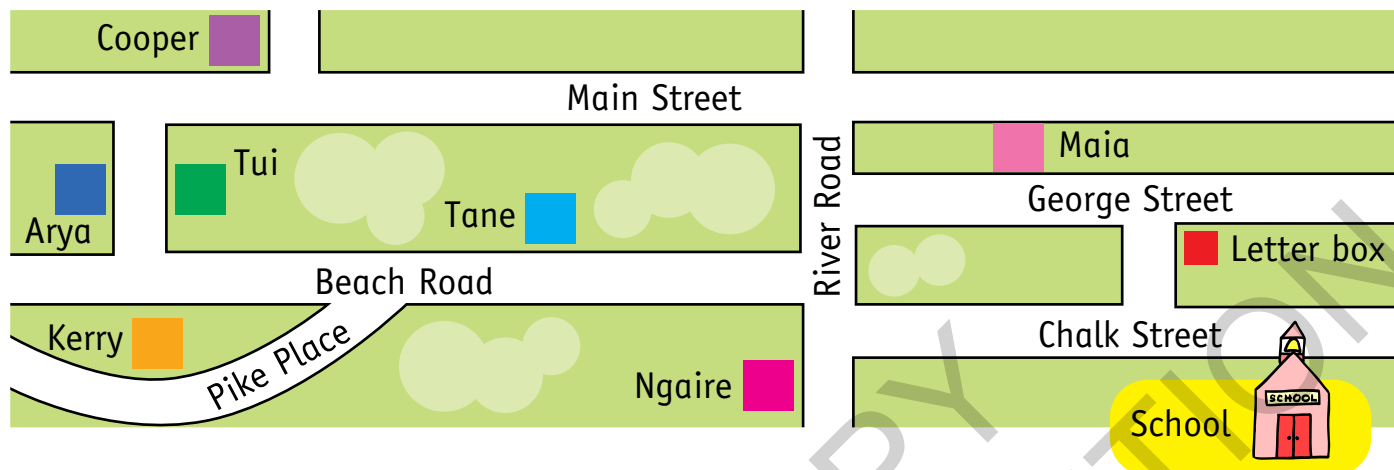
U	P	G	A	D	C
D	S	K	V	E	B
F	B	Y	O	A	N
G	R	O	T	E	F
H	I	L	N	M	R



2 Here is the map of 3B's classroom.

Tim	Ubeen	Kirsty	Zoe	Samad			
Lionel	Bob	Adam		Ayaka	Gill		Temaea
	Chris	Brian	Amy	Samir	Lilly		Gopal
Aliki	Sam	Hanxi	Judith	Joe	Ajit		Leah
				Miss Brown			

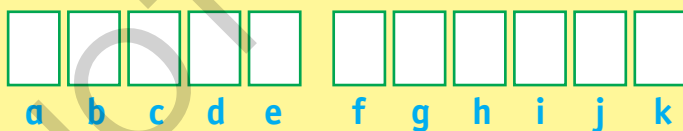
- a How many children are in Miss Brown's class? _____
- b Who is sitting next to Brian? _____
- c Who is sitting in front of the teacher? _____
- d Who is sitting behind Lionel? _____
- e How many children are in Ayaka's row? _____
- f Rodger wants to sit in the third row. Who will he sit next to? _____
- g Joe was talking. He was sent to sit behind Kirsty. Mark his new seat on the map.
- h Draw in red how Joe would get to his new seat.
- i Aliki wanted to borrow a pencil. She walked across the front of the room and down the aisle between Ajit and Leah. She asked the person in the third row on her left. Who did she ask? _____
- j Write directions for the path Adam would take to sit next to Samad.



- Who lives closest to the school? _____
 - On which street does Tane live? _____
 - Who lives at the corner of two streets? _____
 - Arya went to visit her friend. She walked out her front gate, turned left, then turned right. She walked across River Road and entered a house on her right. Who did she visit? _____
 - Draw the path she followed in red.
 - Who lives furthest from Ngaire? _____
- Cooper's mum asked him to post a letter on his way to school. In green, draw his path to school.
 - Write directions to tell how Tui walks home from school.



Challenge! Find the hidden message.



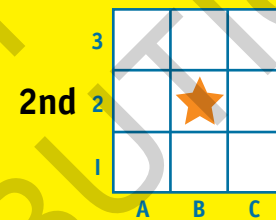
- | | |
|-------------------|-------------------|
| a Column 1, row 2 | g Column 6, row 1 |
| b Column 4, row 6 | h Column 6, row 7 |
| c Column 5, row 3 | i Column 3, row 8 |
| d Column 2, row 6 | j Column 4, row 4 |
| e Column 3, row 3 | k Column 1, row 5 |
| f Column 2, row 1 | |

8	W	T	C	Y	U	I
7	A	R	E	P	O	A
6	S	N	D	O	F	G
5	S	D	F	J	X	H
4	C	V	B	E	N	K
3	A	N	G	M	I	L
2	G	E	R	D	B	Y
1	S	P	F	H	I	L
	1	2	3	4	5	6



Grid references

For position on a grid, read the column (bottom) first then the row (side).



1st

The star is at B2.

1 Write the position of the:

a basket _____

b lamp _____

c armchair _____

d teapot _____

e wooden chest _____

f vase _____

g bath _____

h plate _____

i bell _____

2 Draw:

a a pencil in C1

b a spoon in A3

c an egg cup in E2

d a cup in B5

e a bed in D4

f a book in B3

g a mat in A1

h a jug in C2

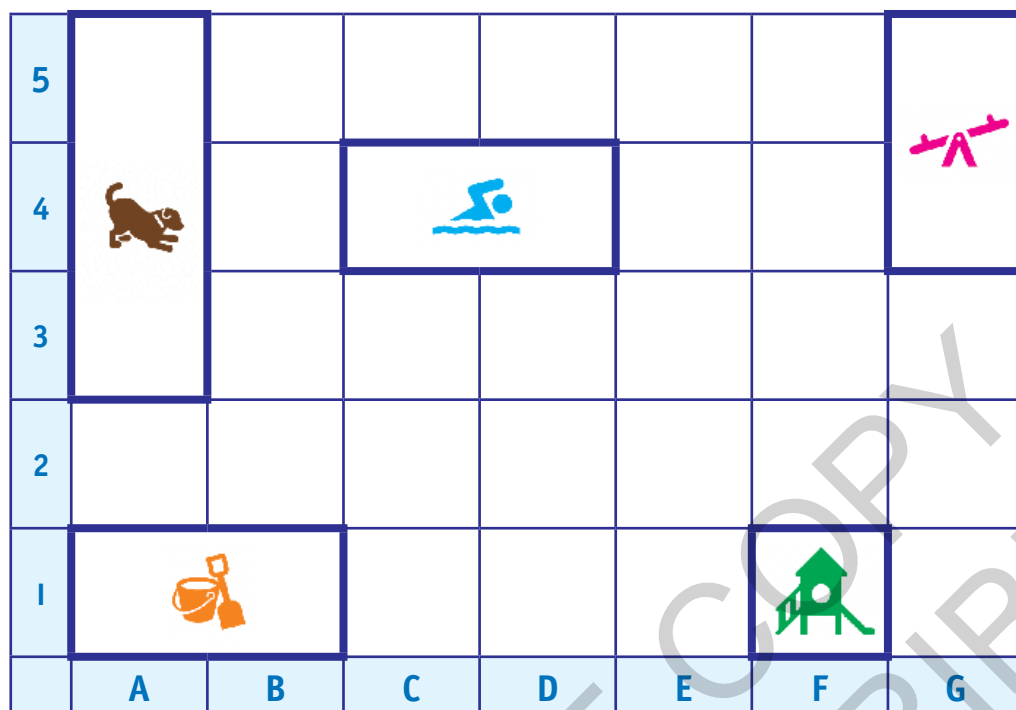
i a broom in D5

3 Name all the blank spaces.

Challenge!

Use centimetre grid paper. Outline a 6×6 grid and label the columns and rows. Draw 15 symbols e.g. ✱ on the grid.

Play with a friend. Try to guess the position of each symbol on your friend's grid.



Key	
	Dog park
	Sandpit
	Swimming pool
	Playground
	Cubbyhouse

1 a What are the coordinates for the cubbyhouse? _____

b What is at G5? _____

c Put a tree in square D2.

2 a From the sandpit, go up 3 squares, then right 2 squares.

Where are you now? _____

b What are the coordinates for where you are? _____

3 Give directions from the cubbyhouse to the dog park.

Mastery Checklist

- I can:
- ☐ use columns and rows to identify a position
 - ☐ understand directions on a street map
 - ☐ draw paths on a map
 - ☐ use grid references to identify and plot positions
 - ☐ use grid references to follow and give directions



Checkpoint 4

1 Write the fraction.

a three-fifths

b seven-tenths

2 Order these fractions from smallest to largest.

$\frac{1}{3}, \frac{1}{5}, \frac{1}{2}, \frac{1}{4}, \frac{1}{6}$

3 Circle the larger fraction. $\frac{1}{2}, \frac{1}{5}$

4 a 16 apples in a box.

What is $\frac{1}{4}$ of the box? _____

b $\frac{1}{5}$ of a box of berries = 3.

1 whole box of berries = _____

5 True or false?

a $\frac{1}{2}$ is the same as $\frac{2}{4}$

b $\frac{1}{2}$ is more than $\frac{2}{5}$

6 Write the symbol: =, <, >.

a $\frac{1}{2}$ $\frac{2}{3}$

b $\frac{4}{10}$ $\frac{3}{5}$

c $\frac{3}{4}$ $\frac{6}{8}$

7 Colour to show $2\frac{5}{8}$.

8 Write $3\frac{1}{4}$ as an improper fraction.

p 51

p 52

p 52

p 53

p 55

p 55

p 57

p 58

9 Write the answer.

a Double $2\frac{1}{2}$ = _____

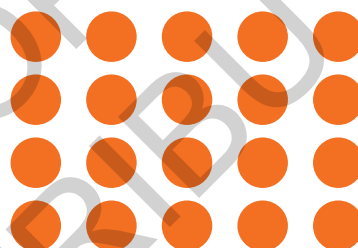
b Half of $2\frac{1}{2}$ = _____

10 Complete.

$3 + 3 + 3 =$ _____ $\times$ _____ $=$ _____

11 Share into 4 fair shares.

How many in one share? _____



12



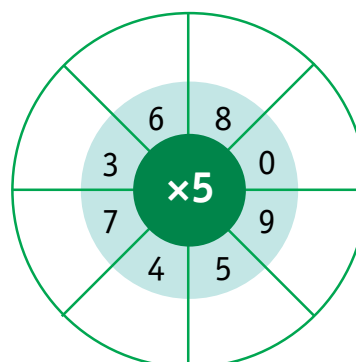
a $30 \div 6 =$ _____

b $30 \div 3 =$ _____

c $30 \div 2 =$ _____

d $30 \div 5 =$ _____

13



p 59

p 61

p 63

p 63

p 66

Checkpoint 4

14 How many

p 69

- a paws on 6 cats? _____
- b wheels on 7 cars? _____
- c corners on 8 triangles? _____
- d people in 9 trios? _____
- e toes on 10 feet? _____
- f fingers on 6 hands? _____

15 Write the missing terms.

p 73

- a \$1.80, \$1.60, _____, \$1.20, _____
- b 25, 33, 41, _____, _____, 65

16



p 91

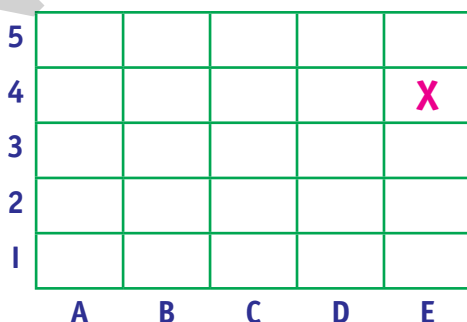
- a What is on the top row in the middle?

- b Write the position of the jacket.

17 a Place a circle at B3.

p 95

- b Where is the X? _____
- c From the X, go down 3 squares, then left 2 squares, and up 4 squares. Where are you? _____



18

p 82

$$\begin{array}{r} \text{a} \quad 4 \\ \times 1 \\ \hline \end{array} \quad \begin{array}{r} \text{b} \quad 5 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} \text{c} \quad 4 \\ \times 9 \\ \hline \end{array} \quad \begin{array}{r} \text{d} \quad 10 \\ \times 6 \\ \hline \end{array}$$

19 Each chapter in a book has 8 pages. How many pages has Liam read if he's read 4 chapters?

p 82

20

p 87



Divide the stars into:

- a 2 groups _____ $\div 2 =$ _____
- b 3 groups _____ $\div 3 =$ _____
- c 9 groups _____ $\div 9 =$ _____
- d 6 groups _____ $\div 6 =$ _____

21 a $\frac{1}{6}$ of 18 is _____

p 89

b $\frac{1}{5}$ is 3. The set is _____.

22 a 1 m = _____ cm

p 77

b $\frac{1}{2}$ m = _____ cm

c 20 cm = _____ mm

d 10 cm = _____ mm

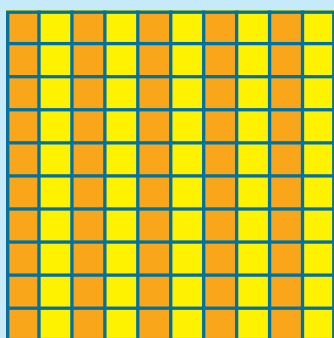


Tenths and decimals

One whole is divided
into 10 equal columns.
Each column is one tenth.

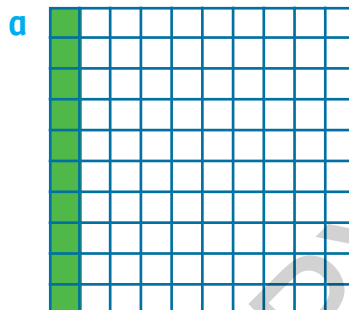
$$\frac{1}{10} = 0.1 \quad \frac{2}{10} = 0.2 \quad \frac{10}{10} = 1 \text{ whole}$$

TERM 3
Week 1

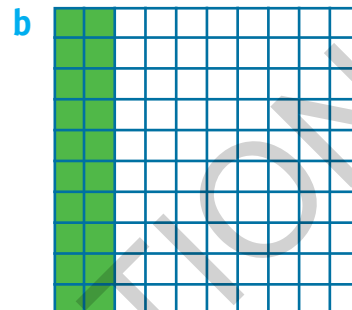


$\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$

- 1 How many tenths are coloured? Write the fraction and decimal.

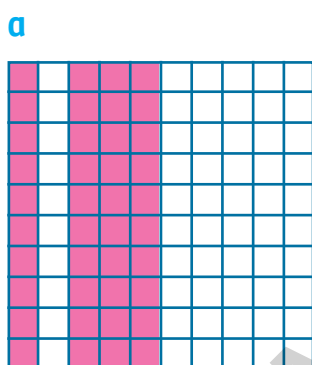


$$\frac{1}{10} = 0. \underline{\hspace{1cm}}$$

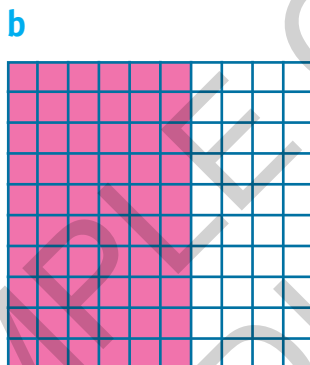


$$\frac{1}{10} = 0. \underline{\hspace{1cm}}$$

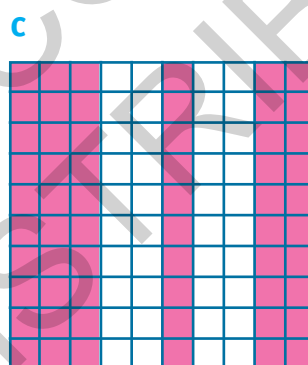
- 2 Write the tenths and the decimal.



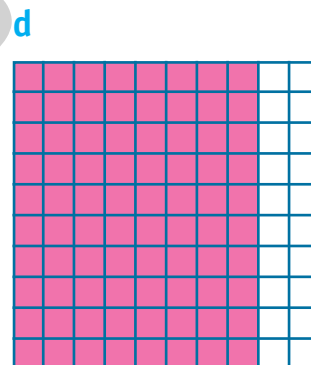
$$\frac{4}{10} = 0. \underline{\hspace{1cm}}$$



$$\frac{8}{10} = 0. \underline{\hspace{1cm}}$$

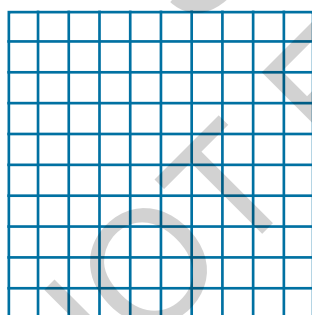


$$\frac{3}{10} = 0. \underline{\hspace{1cm}}$$

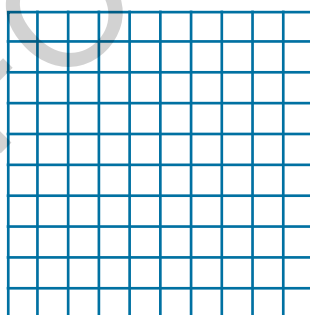


$$\frac{9}{10} = 0. \underline{\hspace{1cm}}$$

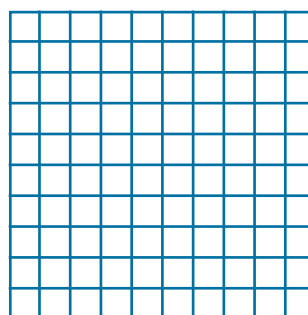
- 3 Colour to show tenths.



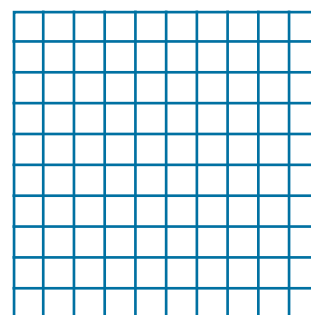
$\frac{4}{10}$



0.8

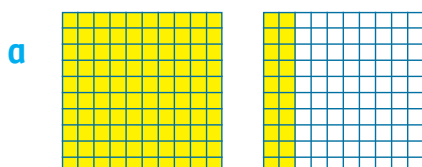


$\frac{3}{10}$

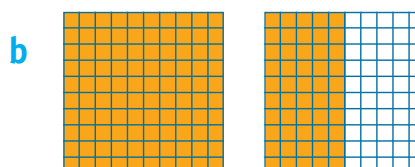


0.9

- 4 Write the number as a fraction and a decimal.

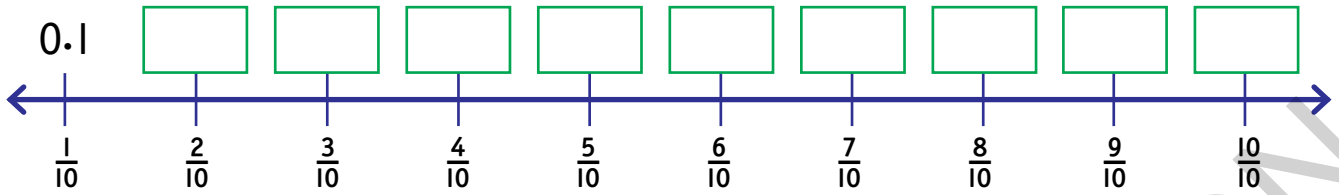


$$1\frac{1}{10} = 1. \underline{\hspace{1cm}}$$



$$1\frac{3}{10} = \underline{\hspace{1cm}}$$

1 Write the decimal tenths in order on the number line:



2 Write the decimal.

a four tenths = _____

b nine tenths = _____

c seven tenths = _____

d one tenth = _____

3 Write the decimal.

a $\frac{2}{10}$ = _____

b $\frac{5}{10}$ = _____

c $\frac{8}{10}$ = _____

4 Write the fraction.

a 0.3 = _____

b 0.6 = _____

c 0.4 = _____

5 Write the fraction, then the decimal.

a 3 out of 10 = $\frac{\boxed{}}{\boxed{10}}$ = 0. _____

b 9 out of 10 = $\frac{\boxed{}}{\boxed{10}}$ = 0. _____

c 8 out of 10 = $\frac{\boxed{}}{\boxed{}}$ = _____

d 5 out of 10 = $\frac{\boxed{}}{\boxed{}}$ = _____



6 Write decimal, then the fraction.

a Joe has one book from a 10 book series.

He has 0. _____ or $\frac{\boxed{}}{\boxed{}}$ of the series.

b Jin made 10 cards and gave away seven.

Jin gave away _____ or $\frac{\boxed{}}{\boxed{}}$ of the cards.

c Janna had \$10. She spent \$6 on lunch.

She spent _____ or $\frac{\boxed{}}{\boxed{}}$ of her money.

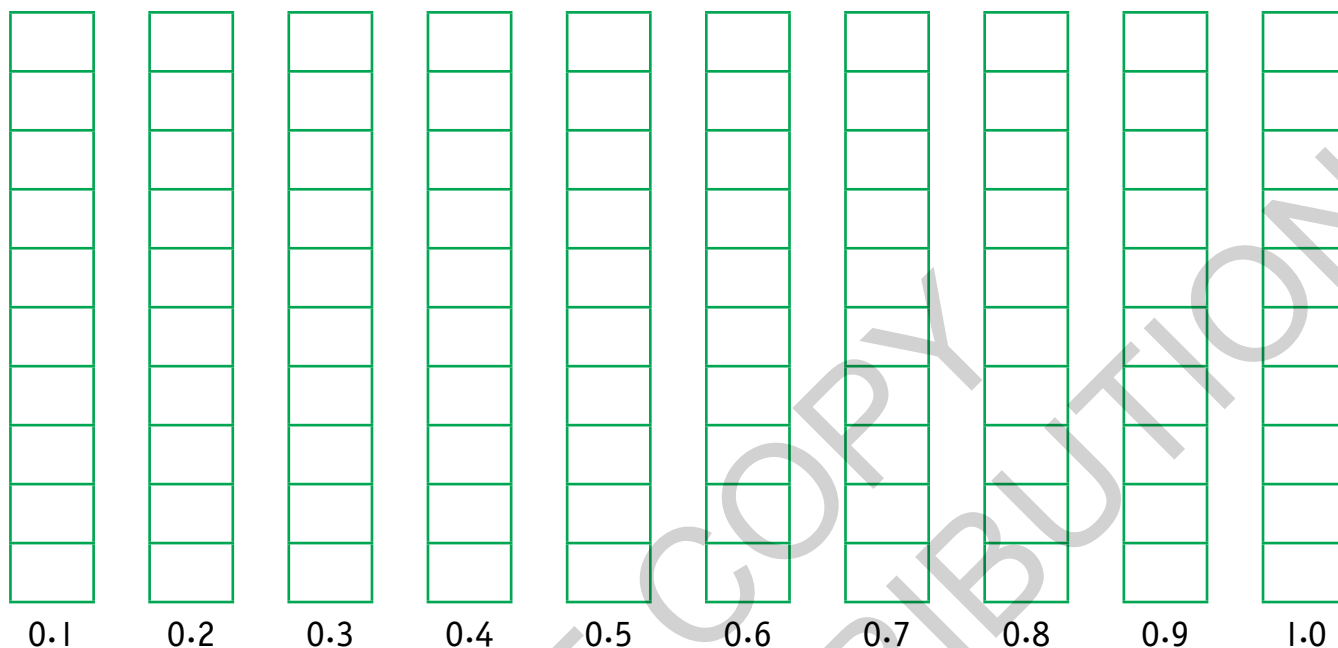
d Jose takes two of the 10 apples in the bowl.

Jose took _____ or $\frac{\boxed{}}{\boxed{}}$ of the apples.

Compare decimals

TERM 3
Week 1

- 1 Colour each decimal fraction.



- 2 Write the decimal.

a four tenths = _____

b nine tenths = _____

c six tenths = _____

d two tenths = _____

- 3 Write in words.

a 0.3 = _____

b 0.8 = _____

c 0.1 = _____

d 1.0 = _____

- 4 Write $<$, $>$ or $=$ to make true sentences.

a 0.3 _____ 0.7

b 0.6 _____ 0.2

c 0.5 _____ 0.4

d 0.8 _____ 0.9

e 0.2 _____ 0.5

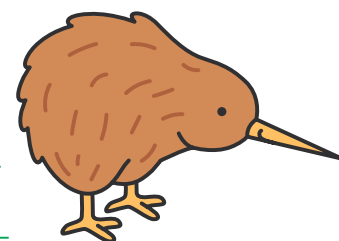
f 0.1 _____ 1.0

g 1.0 _____ a whole

h 0.5 _____ a half

- 5 Which is closer to one whole? 0.6 or 0.9

Explain _____



Challenge! Write these amounts in order from smallest to largest.

\$0.80, \$0.40, \$0.20, \$1.00, \$0.10

--	--	--	--	--

0.5 is the **mid-point** between two whole numbers.
0.1, 0.2, 0.3, 0.4 round **down**.
0.5, 0.6, 0.7, 0.8, 0.9 round **up**.



1 Round to the nearest whole number.

a 1.3 _____ **b** 1.8 _____ **c** 1.1 _____ **d** 1.5 _____ **e** 1.9 _____ **f** 1.4 _____



2 Round to the nearest whole number.

a 4.2 _____ **b** 3.7 _____ **c** 3.3 _____ **d** 4.6 _____ **e** 4.4 _____ **f** 3.5 _____

3 Round to the nearest whole number.

a 7.1 _____ **b** 5.9 _____ **c** 6.2 _____ **d** 8.8 _____ **e** 0.5 _____ **f** 0.4 _____

4 Round to the nearest whole number.

a 1.1 m _____ **b** 2.7 cm _____ **c** 3.5 kg _____ **d** 4.3 L _____

5 Measure these lines in cm and mm, then round to the nearest centimetre.

a _____ cm and _____ mm rounds to _____ cm 

b _____ cm and _____ mm rounds to _____ cm 

c _____ cm and _____ mm rounds to _____ cm 

d _____ cm and _____ mm rounds to _____ cm 

Mastery Checklist I can: ☐ represent tenths as fractions
☐ represent tenths as decimals on a number line
☐ convert between fractions and decimals
☐ compare and order decimals to 1 place
☐ round tenths to the nearest whole number

Order lengths

Olivia measured the height of each garden statue.

She wants to line them up from shortest to tallest.

Can you convert all the units to metres in decimals and put the heights in order?

Statue	Height	Metres
copper dragon	$1\frac{2}{10}$ m	1.2 m
a painted gnome	$\frac{1}{2}$ m	_____ m
b clay duck	30 cm	_____ m
c wooden bird	1 m 50 cm	_____ m
d concrete lion	$\frac{8}{10}$ m	_____ m
e marble person	100 cm	_____ m
f bronze tree	160 cm	_____ m

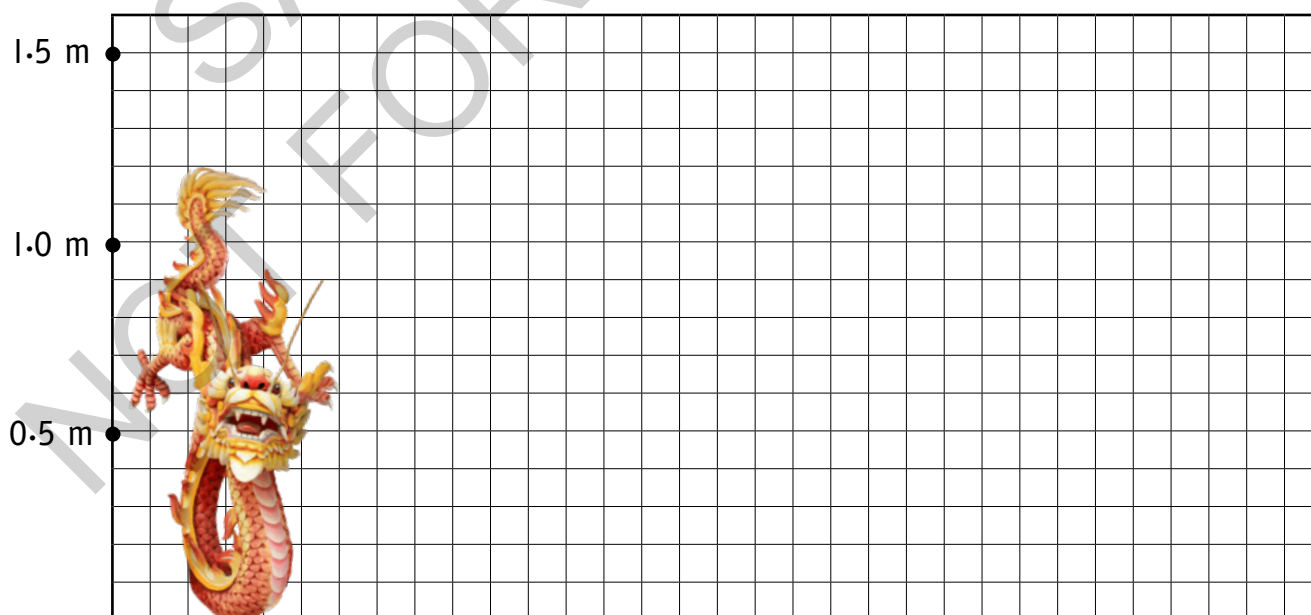


2 Write the heights in order from shortest to tallest.

1 2 3 4 5 6 7

_____ m _____ m _____ m _____ m _____ m _____ m

3 Draw the statues in size order.



I can solve problems by:

☐ converting fractions to decimals ☐ converting centimetres and metres

1 Which digit is in the:

a tens place? _____

b ones place? _____

c tenths place? _____

d 2 = 20 e 3 = _____ f 4 = _____

Tens	Ones	•	Tenths
2	3	•	4

If there is no digit in a place, we use 0 to hold that place.

50.7 means:

- 5 tens (50)
- 0 ones
- 7 tenths

Without the zero, the value changes, e.g. 5.7 is 5 ones and 7 tenths

2 a tens place? _____

b ones place? _____

c tenths place? _____

d 5 = _____ e 0 = _____ f 7 = _____

Tens	Ones	•	Tenths
5	0	•	7

3 a tens place? _____

b ones place? _____

c tenths place? _____

d 6 = _____

e 8 = _____

f 9 = _____

Tens	Ones	•	Tenths
6	8	•	9

4 Complete the table.

Decimal	Fraction	Words
0.3		three tenths
0.8		
	$\frac{5}{10}$	

When you divide by 10, each digit has a value that is 10 times smaller.
e.g. $120 \div 10 = 12$ and $12 \div 10 = 1.2$

5 Divide each number by 10.

	Tens	Ones	•	Tenths
a	2	0	•	0
b		3	•	0
c	4	3	•	0

$\div 10 =$

$\div 10 =$

$\div 10 =$

Tens	Ones	•	Tenths
		•	
		•	
		•	

6 Divide each number by 10.

a $20 \div 10 =$ _____

b $30 \div 10 =$ _____

c $4 \div 10 =$ _____

d $56 \div 10 =$ _____

e $78 \div 10 =$ _____

f $53 \div 10 =$ _____

Order decimal numbers

TERM 3
Week 2

- 1 Write these numbers in order from smallest to largest.

1.0, 0.9, 1.4, 0.6, 1.8, 0.3



- 2 Place these numbers on the number line.

a 0.8

b 2.1

c 1.7

d 1.4

e 2.9

f 0.2

g 2.6



- 3 Divide each number by 10.

a 32 _____

b 28 _____

c 12 _____

d 10 _____

e 9 _____

f 98 _____

g 65 _____

h 17 _____

- 4 Write the answers from question 3 in order from smallest to largest.

When multiplying by 10 each digit moves one place to the left.
Tenths become ones, ones become tens and so on. E.g. $1.2 \times 10 = 12$

- 5 Multiply each number by 10.

a $0.5 \times 10 =$ _____

b $2.8 \times 10 =$ _____

c $3.2 \times 10 =$ _____

d $17.4 \times 10 =$ _____

e $0.9 \times 10 =$ _____

f $61.3 \times 10 =$ _____

- 6 Write each decimal number in words.

0.5 = zero point five 2.4 = two point four 13.6 = thirteen point six

a 0.2 = _____

b 7.8 = _____

c 16.9 = _____

d 34.5 = _____

e 214.7 = _____

f 999.9 = _____

Add and subtract decimals

TERM 3
Week 2

Add the **ones** and the **tenths** separately.

Example: $1.5 + 3.2$

Ones: $1 + 3 = 4$

Tenths: $0.5 + 0.2 = 0.7$

Answer: 4.7

Subtract the **ones** and the **tenths** separately.

Example: $7.9 - 3.2$

Ones: $7 - 3 = 4$

Tenths: $0.9 - 0.2 = 0.7$

Answer: 4.7

1 Add.

a $4.3 + 2.5$

Ones: $4 + 2 =$ _____

Tenths: $0.3 + 0.5 =$ _____

Answer: _____

b $3.6 + 4.2$

Ones: $3 + 4 =$ _____

Tenths: $0.6 + 0.2 =$ _____

Answer: _____

If the tenths make another whole, regroup. Trade **10 tenths** for **1 whole**.

Example: $1.9 + 3.2$

Tenths: $0.9 + 0.2 = 1.1$

$4 + 1.1 = 5.1$

2 Subtract.

a $7.8 - 3.6$

Ones: $7 - 3 =$ _____

Tenths: $0.8 - 0.6 =$ _____

Answer: _____

b $9.9 - 2.7$

Ones: $9 - 2 =$ _____

Tenths: $0.9 - 0.7 =$ _____

Answer: _____



3 Add.

a $6.5 + 1.5 =$ _____

b $4.7 + 1.7 =$ _____

c $3.8 + 3.3 =$ _____

d $5.6 + 2.5 =$ _____

4 True or false?

a $4.2 + 3.5 = 7.7$ **T** **F**

b $1.6 + 4.2 = 5.6$ **T** **F**

c $3.6 + 2.4 = 5.1$ **T** **F**

d $8.6 - 2.5 = 5.1$ **T** **F**

e $7.5 - 1.2 = 6.3$ **T** **F**

f $5.9 - 3.5 = 2.4$ **T** **F**

5 Write the missing number.

a $4.5 +$ _____ $= 7.9$

b _____ $+ 1.2 = 4.5$

c $5.6 +$ _____ $= 9.0$

d $9.6 -$ _____ $= 4.3$

e _____ $- 3.2 = 2.7$

f $7.8 -$ _____ $= 4.1$

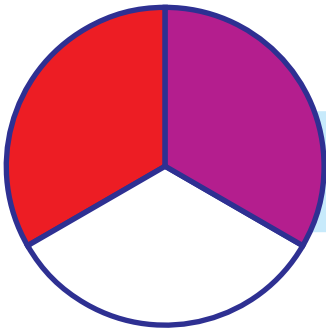
6 Write a number sentence to solve each problem.

a I add 1.2 kg of sugar to 3.5 kg of flour. How much do my ingredients weigh now?

b A rope is 9.9 m long. If 3.7 m is cut off, how much rope is left?

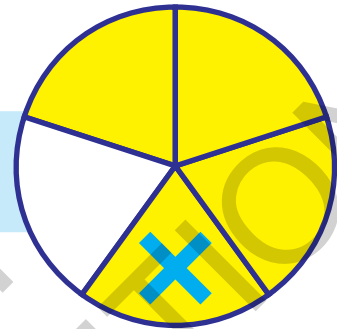
c Huatare ran 7.8 km on Monday and 5.6 km on Tuesday. How far did he run in total?

When we **add** or **subtract** fractions with the **same denominator**, the denominator stays the same. We only **add** or **subtract** the **numerators**.



$$\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$$

$$\frac{4}{5} - \frac{1}{5} = \frac{3}{5}$$



1 Add.

a $\frac{1}{4} + \frac{2}{4} = \frac{\boxed{}}{4}$

b $\frac{2}{6} + \frac{3}{6} = \frac{\boxed{}}{6}$

c $\frac{3}{8} + \frac{4}{8} = \frac{\boxed{}}{8}$

d $\frac{4}{10} + \frac{5}{10} = \frac{\boxed{}}{10}$

2 Add.

a $\frac{3}{7} + \frac{3}{7} = \frac{\boxed{}}{\boxed{}}$

b $\frac{2}{5} + \frac{2}{5} = \frac{\boxed{}}{\boxed{}}$

c $\frac{4}{9} + \frac{4}{9} = \frac{\boxed{}}{\boxed{}}$

d $\frac{5}{12} + \frac{5}{12} = \frac{\boxed{}}{\boxed{}}$

3 Subtract.

a $\frac{3}{5} - \frac{1}{5} = \frac{\boxed{}}{5}$

b $\frac{7}{9} - \frac{6}{9} = \frac{\boxed{}}{9}$

c $\frac{3}{3} - \frac{2}{3} = \frac{\boxed{}}{3}$

d $\frac{4}{4} - \frac{2}{4} = \frac{\boxed{}}{4}$

4 Subtract.

a $\frac{5}{6} - \frac{4}{6} = \frac{\boxed{}}{\boxed{}}$

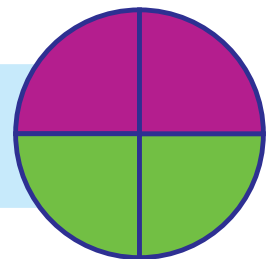
b $\frac{6}{8} - \frac{2}{8} = \frac{\boxed{}}{\boxed{}}$

c $\frac{9}{10} - \frac{2}{10} = \frac{\boxed{}}{\boxed{}}$

d $\frac{5}{7} - \frac{3}{7} = \frac{\boxed{}}{\boxed{}}$

If the **numerator** is the **same** as the **denominator**, that makes **one whole**.

$$\frac{2}{4} + \frac{2}{4} = \frac{4}{4} = 1$$



5 Add to make a whole.

a $\frac{3}{4} + \frac{\boxed{}}{4} = \frac{4}{4}$

b $\frac{1}{6} + \frac{\boxed{}}{6} = \frac{6}{6}$

c $\frac{3}{8} + \frac{\boxed{}}{8} = \frac{8}{8}$

d $\frac{6}{10} + \frac{\boxed{}}{10} = \frac{10}{10}$

e $\frac{3}{5} + \frac{\boxed{}}{5} = \frac{\boxed{}}{\boxed{}}$

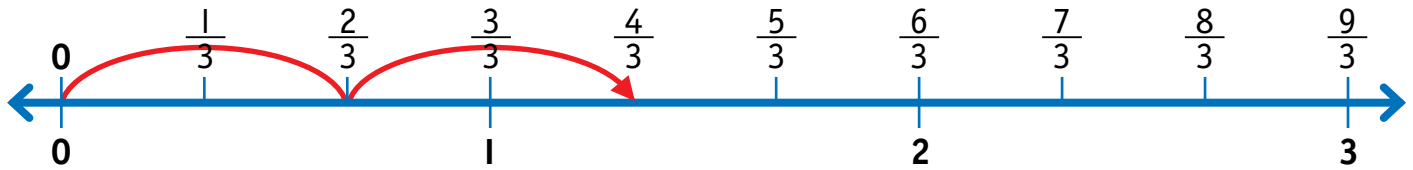
f $\frac{4}{7} + \frac{\boxed{}}{7} = \frac{\boxed{}}{\boxed{}}$

g $\frac{7}{9} + \frac{\boxed{}}{9} = \frac{\boxed{}}{\boxed{}}$

h $\frac{8}{12} + \frac{\boxed{}}{12} = \frac{\boxed{}}{\boxed{}}$

Calculate fractions beyond 1

TERM 3
Week 2



1 Jump along the number line to add.

$$\frac{2}{3} + \frac{2}{3} = \frac{\boxed{}}{3}$$

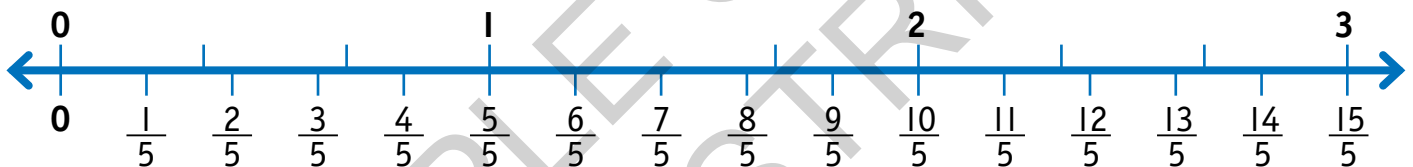
2 Jump down the number line to subtract.

$$\frac{8}{3} - \frac{2}{3} = \frac{\boxed{}}{3}$$

3 Add. Write the answer as a mixed number.

a $\frac{3}{3} + \frac{5}{3} = \frac{\boxed{}}{\boxed{}} = \boxed{} \frac{\boxed{}}{\boxed{}}$

b $\frac{2}{3} + \frac{4}{3} = \frac{\boxed{}}{\boxed{}} = \boxed{} \frac{\boxed{}}{\boxed{}}$



4 Jump along the number line to add.

$$\frac{3}{5} + \frac{3}{5} = \frac{\boxed{}}{5}$$

5 Jump down the number line to subtract.

$$\frac{6}{5} - \frac{3}{5} = \frac{\boxed{}}{5}$$

6 Add. Write the answer as a mixed number.

a $\frac{3}{5} + \frac{6}{5} = \frac{\boxed{}}{\boxed{}} = \boxed{} \frac{\boxed{}}{\boxed{}}$

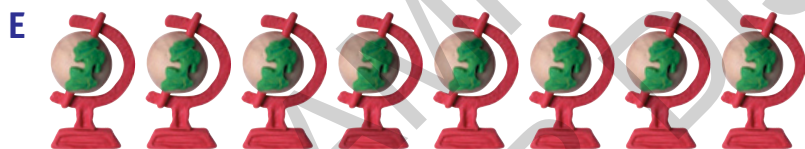
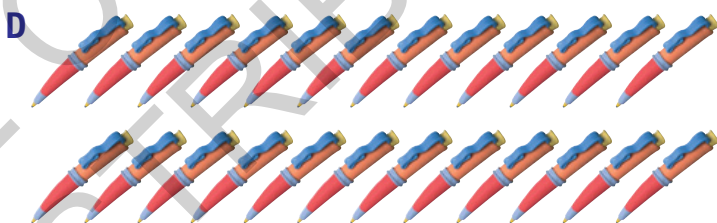
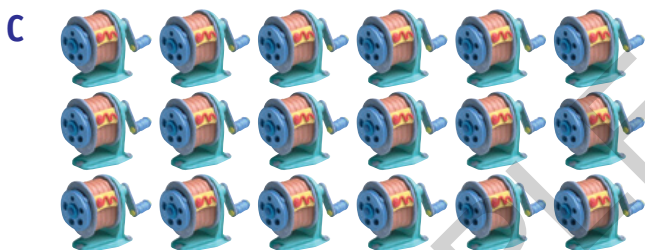
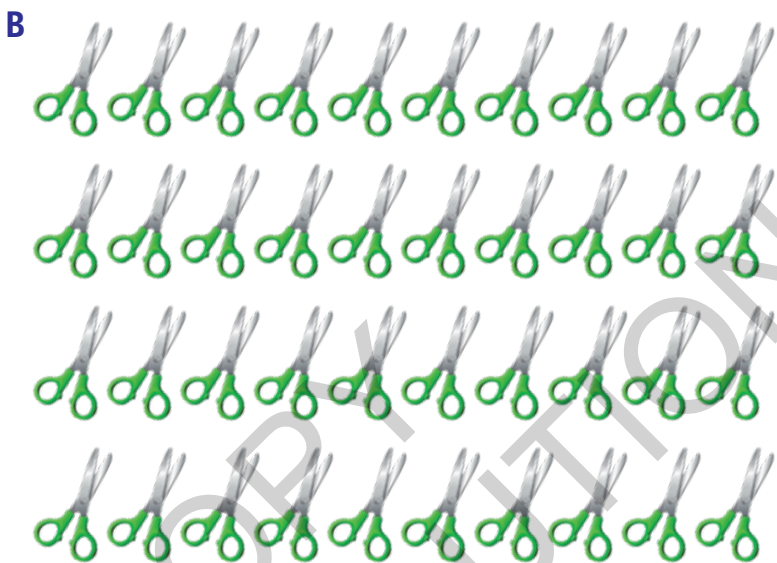
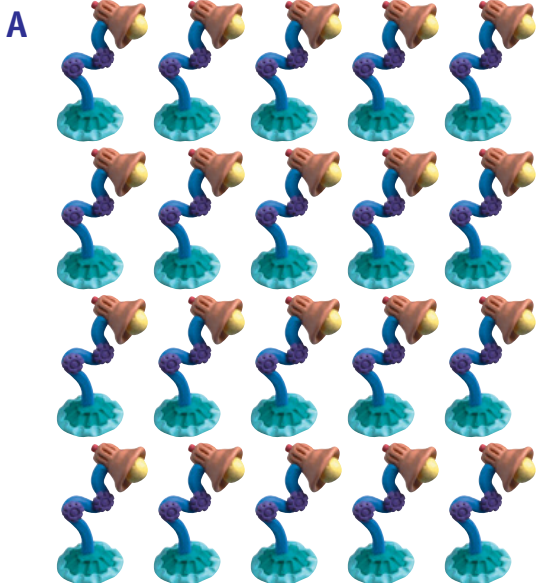
b $\frac{7}{5} + \frac{6}{5} = \frac{\boxed{}}{\boxed{}} = \boxed{} \frac{\boxed{}}{\boxed{}}$

7 Subtract. Write the answer as a mixed number.

a $\frac{15}{5} - \frac{4}{5} = \frac{\boxed{}}{\boxed{}} = \boxed{} \frac{\boxed{}}{\boxed{}}$

b $\frac{13}{5} - \frac{6}{5} = \frac{\boxed{}}{\boxed{}} = \boxed{} \frac{\boxed{}}{\boxed{}}$

Mastery Checklist I can: ☐ understand tenths as a place value and multiply or divide to change place values
☐ order decimal numbers and write them in words
☐ add and subtract decimals and fractions, improper fractions, and mixed numbers with the same denominators



Write as many multiplication facts as you can for each group.

A

B

C

D

E

F



Here are 5 groups of 6 children.

1 How many children in:

- a 3 groups? _____ b 6 groups? _____ c 4 groups? _____ d 2 groups? _____
e 10 groups? _____ f 8 groups? _____ g 5 groups? _____ h 7 groups? _____
i 9 groups? _____ j 0 groups? _____ k 11 groups? _____ l 12 groups? _____

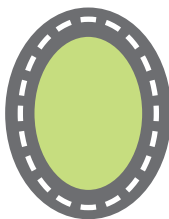
2 Complete.



3

×	6	10	2	8	4	0	7	3	9	1	12	5
6												

4 It takes 6 minutes to walk around the oval. How long will it take to walk around the oval 8 times?



5 1 toy costs \$6.
How much will 5 toys cost?



\$6.00

6 There are 6 legs on each bee.
How many legs are there on 7 bees?



7 Make up your own '6' story.



1 How many legs on:

- a 1 spider? _____ b 6 spiders? _____
c 4 spiders? _____ d 9 spiders? _____
e 2 spiders? _____ f 10 spiders? _____
g 3 spiders? _____ h 8 spiders? _____
i 7 spiders? _____ j 5 spiders? _____
k 0 spiders? _____ l 11 spiders? _____

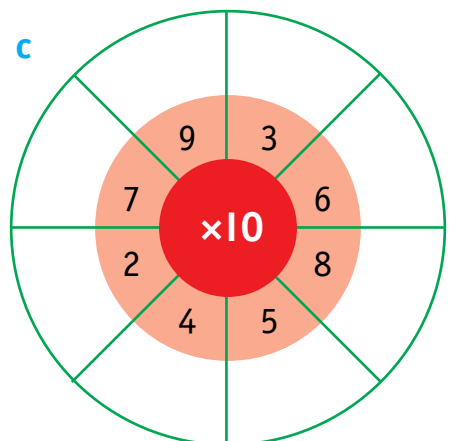
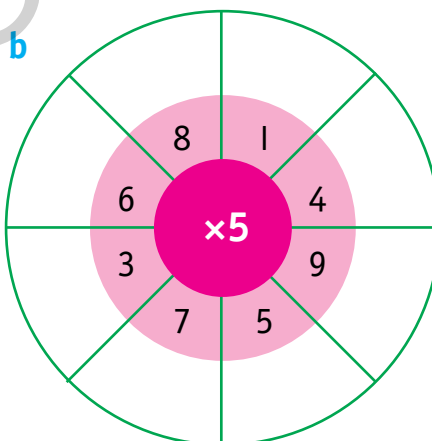
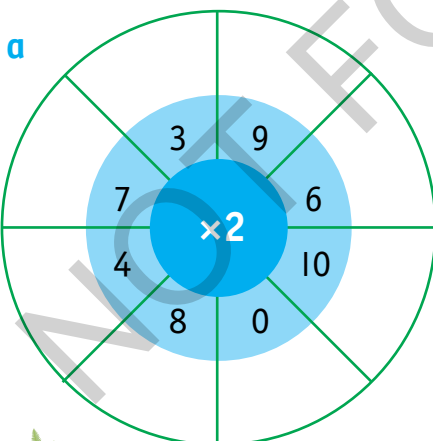
2 Complete.

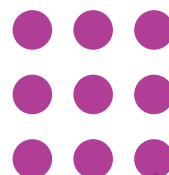
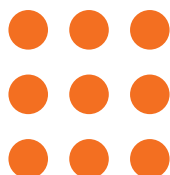
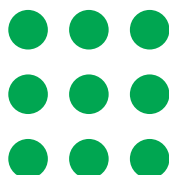
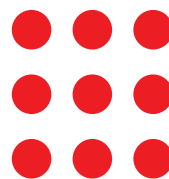
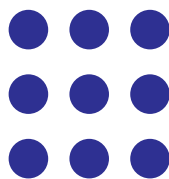
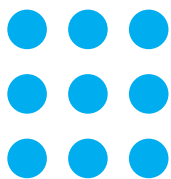


3

×	6	10	2	8	4	0	7	3	9	1	12	5
8												

4 Complete these as quickly as you can.





1 How many dots in each group? _____

2 How many groups? _____

3 How many dots?

a in 1 group _____

b in 5 groups _____

c in 3 groups _____

d in 8 groups _____

e in 6 groups _____

f in 10 groups _____

g in 12 groups _____

h in 4 groups _____

i in 11 groups _____

j in 2 groups _____

k in 7 groups _____

l in 9 groups _____

4 Match the number sentence to the answer.

a 9×7

b 9×0

c 9×11

d 9×6

e 9×12

f 9×8

g 9×10

72

0

108

99

81

63

36

90

54

9

18

45

27

h 9×9

i 9×3

j 9×4

k 9×1

l 9×2

m 9×5

5 Complete.

×	3	1	6	8	12	4	7	0	11	9	5	10	2
9													



- 1 a How many colours does a rainbow have? _____
b Can you name the colour in each arch?

2 How many arches in:

- a 10 rainbows _____ b 0 rainbows _____ c 5 rainbows _____
d 2 rainbows _____ e 4 rainbows _____ f 6 rainbows _____
g 3 rainbows _____ h 8 rainbows _____ i 7 rainbows _____
j 9 rainbows _____

3 Complete the 7 times table.

×	1	2	3	4	5	6	7	8	9	10	11	12
7												

4 a Complete the 2 and 5 times tables.

b Add the answers to the 2 and 5 times tables in each column.

×	1	2	3	4	5	6	7	8	9	10	11	12
2												
5												
+												

- c Compare to question 3. What do you notice? _____
d What is a strategy to help you remember your 7 times table? _____

5 Complete from memory.

×	3	8	5	4	2	7	1	6	10	11	9	12
7												

- Mastery Checklist** I can: ☐ write number facts to go with arrays
☐ remember the 0×, 1×, 2×, 3×, 4×, 5×, 10× tables
☐ memorise the 6×, 7×, 8×, 9× tables
☐ complete number facts from memory

Complete the number fact families.

e.g. 16 2 8 $2 \times 8 = 16$ $8 \times 2 = 16$ $16 \div 2 = 8$ $16 \div 8 = 2$	1 12 4 $\times = 12$ $\times = 12$ $12 \div =$ $12 \div =$	2 21 $\times = 21$ $\times = 21$ $21 \div =$ $21 \div =$	3 25 $\times = 25$ $\times = 25$ $25 \div =$ $25 \div =$
4 30 3 $\times =$ $\times =$ $\div =$ $\div =$	5 30 5 $\times =$ $\times =$ $\div =$ $\div =$	6 36 4 $\times =$ $\times =$ $\div =$ $\div =$	7 42 6 $\times =$ $\times =$ $\div =$ $\div =$
8 48 4 $\times =$ $\times =$ $\div =$ $\div =$	9 48 6 $\times =$ $\times =$ $\div =$ $\div =$	10 60 6 $\times =$ $\times =$ $\div =$ $\div =$	11 60 5 $\times =$ $\times =$ $\div =$ $\div =$

Mental multiplication strategies

TERM 3
Week 4

- 1 a Complete the 2 times table. b Double each answer.

c Which times table have you made? _____

	1	2	3	4	5	6	7	8	9	10	11	12
$\times 2$												
$\times 2$												
$\times 2$												

d Double the answers to complete the next row.

e Which times table have you made? _____

f What strategy can help you work out the 4 times table? _____

g What strategy can help you work out the 8 times table? _____

- 2 a Complete the 3 times table. b Double the answers.

c Which times table have you made? _____

	1	2	3	4	5	6	7	8	9	10	11	12
$\times 3$												
$\times 2$												

d What strategy can help you work out the 6 times table? _____

- 3 a Complete the 4 and 5 times tables.

b Add the answers to the 4 and 5 times tables in each column.

c Which times table have you made? _____

$\times$	1	2	3	4	5	6	7	8	9	10	11	12
4												
5												
+												

d What is a strategy to help you remember your 9 times table? _____

Using the division sign

$$12 \div 3 = 4$$

$$12 \div 4 = 3$$

$$3 \times 4 = 12$$

$$4 \times 3 = 12$$

TERM 3
Week 4

1 Use this group of 24 ice-creams to help you to divide.

- a $24 \div 8 =$ _____ b $24 \div 6 =$ _____
c $24 \div 3 =$ _____ d $24 \div 24 =$ _____
e $24 \div 4 =$ _____ f $24 \div 1 =$ _____



2 Use this group of 30 bears to help you to divide.

- a $30 \div 10 =$ _____
b $30 \div 6 =$ _____
c $30 \div 3 =$ _____
d $30 \div 5 =$ _____
e $30 \div 30 =$ _____
f $30 \div 1 =$ _____



3 Complete these number sentences.

- a $5 \times 6 =$ _____ b $3 \times 6 =$ _____ c $4 \times 8 =$ _____ d $10 \times 9 =$ _____
 $30 \div 5 =$ _____ $18 \div 3 =$ _____ $32 \div 4 =$ _____ $90 \div 10 =$ _____
 $30 \div 6 =$ _____ $18 \div 6 =$ _____ $32 \div 8 =$ _____ $90 \div 9 =$ _____

- 4 a $42 \div 7 =$ _____ b $10 \div 5 =$ _____ c $20 \div 10 =$ _____ d $40 \div 10 =$ _____
e $27 \div 9 =$ _____ f $48 \div 8 =$ _____ g $49 \div 7 =$ _____ h $36 \div 6 =$ _____
i $54 \div 9 =$ _____ j $35 \div 5 =$ _____ k $9 \div 9 =$ _____ l $100 \div 10 =$ _____

5 a 30 balls are packed into boxes of 6.
How many boxes are needed?

$$\square \div \square = \square$$

c 5 children share 25 biscuits equally.
How many biscuits each?

$$\square \div \square = \square$$

b Mrs Lim is making 50 cupcakes.
She puts 10 cupcakes on each tray.
How many trays are needed?

$$\square \div \square = \square$$

d Mr Baker has 60 apples. He puts
6 apples in each bag. How many bags?

$$\square \div \square = \square$$

Challenge!

Maia baked 5 trays of 8 muffins each.
She shared the muffins into 10 bags.
How many muffins per bag? $\square$



1 True or false?

- | | | | |
|---------------------|-----|----------------------|-----|
| a $5 \times 6 = 20$ | T F | b $3 \times 7 = 21$ | T F |
| c $4 \times 6 = 24$ | T F | d $2 \times 10 = 25$ | T F |
| e $16 \div 4 = 8$ | T F | f $24 \div 8 = 4$ | T F |
| g $18 \div 3 = 6$ | T F | h $25 \div 5 = 4$ | T F |

The = sign means
'the same as'.

Work out both sides of
the equation.

- ✓ Same value = True
✗ Different values = False

2 Make each number sentence true.

- | | | | |
|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a $5 \times \underline{\quad} = 20$ | b $\underline{\quad} \times 4 = 12$ | c $2 \times 10 = \underline{\quad}$ | d $5 \times \underline{\quad} = 10$ |
| e $16 \div 4 = \underline{\quad}$ | f $\underline{\quad} \div 8 = 4$ | g $24 \div 8 = \underline{\quad}$ | h $25 \div 5 = \underline{\quad}$ |

3 Match to make true number sentences.

- | | |
|------------------|-----------------|
| a $2 \times 8 =$ | A 3×6 |
| b $4 \times 5 =$ | B 4×4 |
| c $2 \times 9 =$ | C 2×10 |
| d $30 \div 3 =$ | D $28 \div 4$ |
| e $14 \div 2 =$ | E $30 \div 6$ |
| f $45 \div 9 =$ | F $100 \div 10$ |

4 Make each number sentence true.

- | |
|--|
| a $4 \times 9 = 6 \times \underline{\quad}$ |
| b $5 \times 8 = \underline{\quad} \times 10$ |
| c $6 \times \underline{\quad} = 4 \times 12$ |
| d $12 \div 3 = 28 \div \underline{\quad}$ |
| e $30 \div 5 = \underline{\quad} \div 4$ |
| f $24 \div \underline{\quad} = 21 \div 7$ |

5 Which part is false? Cross it out.

- | | |
|--|---|
| a $2 \times 6 = 3 \times 4 = 3 \times 5$ | b $4 \times 9 = 3 \times 8 = 6 \times 6$ |
| c $3 \times 6 = 4 \times 4 = 2 \times 8$ | d $5 \times 6 = 8 \times 4 = 3 \times 10$ |

Challenge!

Write your own true number sentences with some false ones mixed in. Swap with a partner and see if you can find the false ones.



Mastery Checklist

- I can: ☐ use strategies for mental multiplication
☐ connect division to multiplication
☐ solve division word problems
☐ solve true or false and open number sentences

Bags to pack

Rangi, Sam and Tye bought 48 grocery items. They wanted to find how many ways they could pack them equally into bags. Rangi found the most ways. Sam thought of 3 ways, 1 less than Tye. Tye thought of 4 less than Rangi. How many ways did Rangi find?



What might be the ways that Rangi thought of, apart from this way?



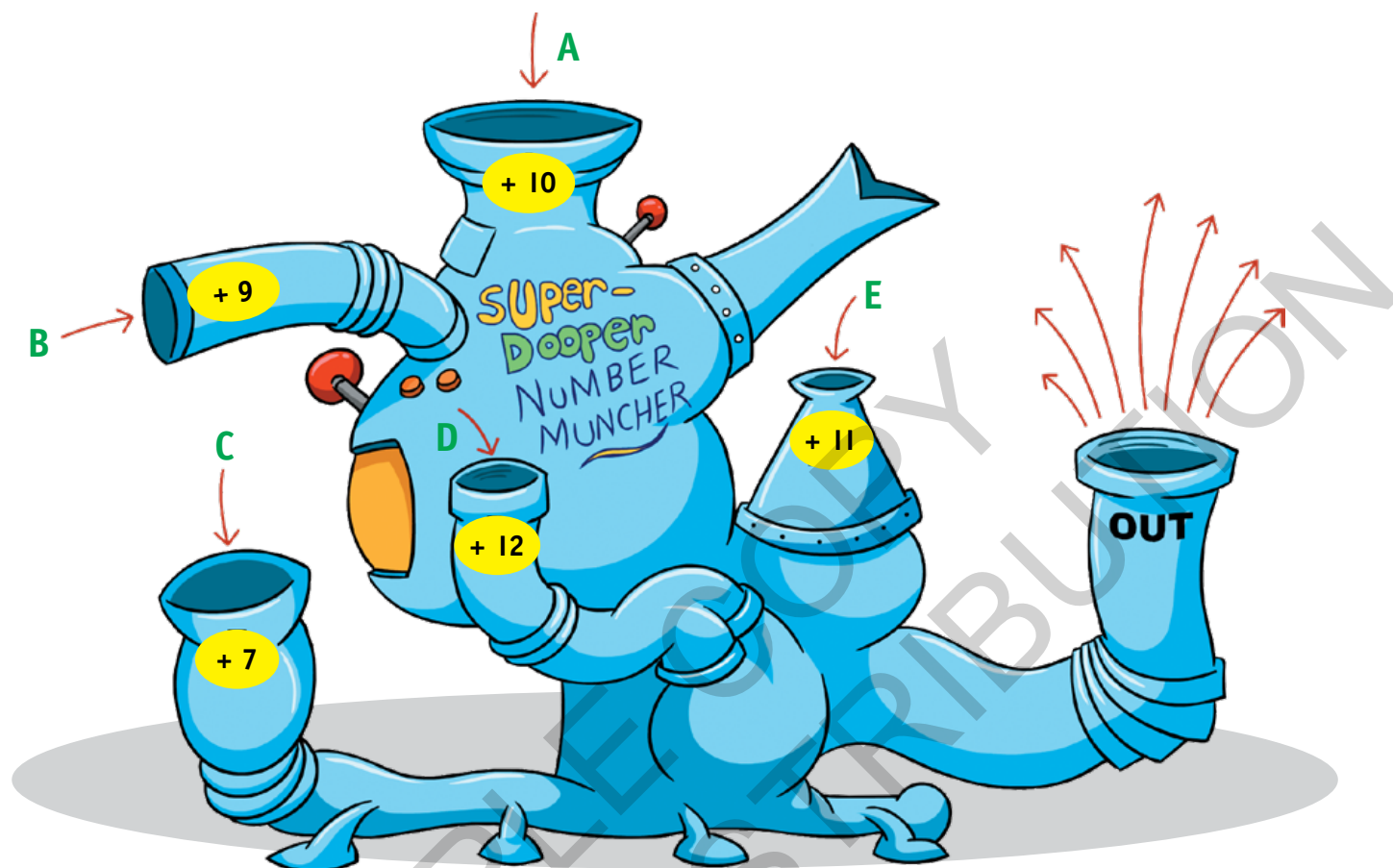
$$24 + 24 = 48$$

$$2 \times 24 = 48$$

$$48 \div 2 = 24$$

I can solve problems by:

- ☐ using multiplication and division ☐ writing equations



In this amazing machine, numbers are changed into a pattern of four more numbers.

1 What comes out if these numbers are put into A?

- | | | | |
|------|-------|------|-------|
| a 10 | _____ | b 35 | _____ |
| c 24 | _____ | d 9 | _____ |

2 What comes out if these numbers are put into E?

- | | | | |
|------|-------|------|-------|
| a 3 | _____ | b 25 | _____ |
| c 12 | _____ | d 38 | _____ |

3 What comes out if these numbers are put into D?

- | | | | |
|-----|-------|------|-------|
| a 7 | _____ | b 9 | _____ |
| c 4 | _____ | d 11 | _____ |

4 What comes out if these numbers are put into B?

- | | | | |
|------|-------|------|-------|
| a 24 | _____ | b 19 | _____ |
| c 16 | _____ | d 27 | _____ |

5 What comes out if these numbers are put into C?

- | | | | |
|------|-------|------|-------|
| a 3 | _____ | b 15 | _____ |
| c 30 | _____ | d 41 | _____ |



1 Complete these patterns.

- a 2, 4, 6, _____, _____, _____, 14, 16, _____, _____, _____
- b 15, 18, _____, _____, _____, 30, 33, _____, _____, _____
- c 10, 20, _____, _____, _____, _____, 70, _____, _____, 100
- d 62, 57, _____, _____, 42, _____, _____, _____, 22, _____
- e 15, 20, _____, _____, _____, _____, 45, _____, _____, 60

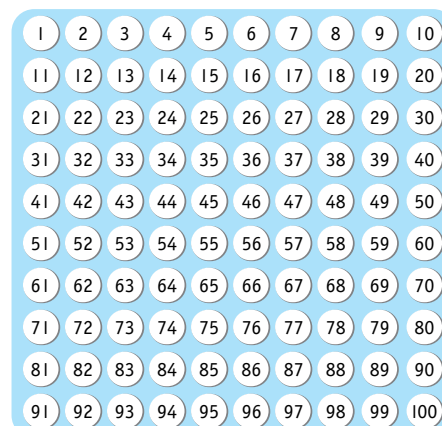
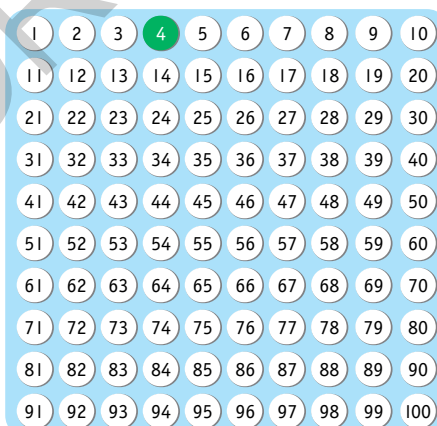
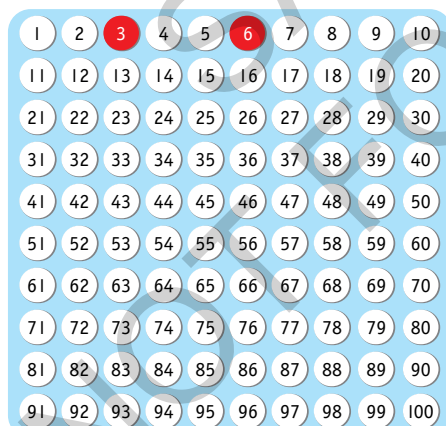
2 Use the rule in each square to fill in the missing numbers.

- a $+5$ 6 $\rightarrow$ $\rightarrow$ $\rightarrow$ $\rightarrow$ $\rightarrow$
- b $+10$ 8 $\rightarrow$ $\rightarrow$ $\rightarrow$ $\rightarrow$ $\rightarrow$
- c -4 40 $\rightarrow$ $\rightarrow$ $\rightarrow$ $\rightarrow$ $\rightarrow$
- d -3 56 $\rightarrow$ $\rightarrow$ $\rightarrow$ $\rightarrow$ $\rightarrow$

3 a Colour the 3s pattern red. Continue to 100.

b Colour the 4s pattern green. Continue to 100.

c Colour the 5s pattern yellow. Continue to 100.



d Which numbers are coloured on all three grids? _____

Challenge! Complete these patterns.

215, 224, 233

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528, 519, 510

----------------------	----------------------	----------------------	----------------------	----------------------

- 1 Write the pattern for adding 6 in this table.

Order of term	1	2	3								
Term	6	12									

- 2 Write the pattern for adding 7 in this table.

Order of term	1	2	3								
Term	7	14									

- 3 a Write your own pattern using addition or subtraction.

- b Write the rule. _____

- c Make a table for adding 9.

Order of term	1	2	3								
Term	9	18									

- 4 Ryan is building a fence. He starts with 1 post, then puts in a second post. He strings wire between the 2 posts and that's 1 section. He puts in a third post, strings wire between it and the last post, and now he has 2 sections. He is planning to make 8 sections. How many posts will he use in total?

- a Fill in the table.

Sections	1	2						
Posts	2	3						

- b What is the rule? _____

- c How many posts did Ryan use in total? _____

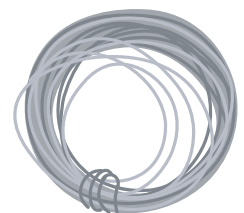
- 5 Ryan uses 5 m of wire for each section. How much wire will he use altogether?

- a Fill in the table.

Sections	1	2						
Wire	5	10						

- b What is the rule? _____

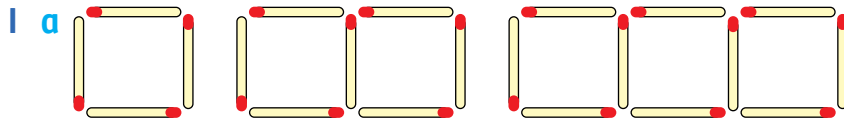
- c How much wire did Ryan use altogether? _____



Making patterns

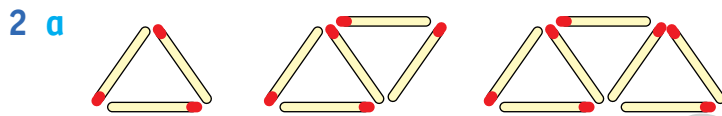
TERM 3
Week 5

Aroha used matches to make some shapes. Draw the next shape in the box, then complete the table. Look for patterns.



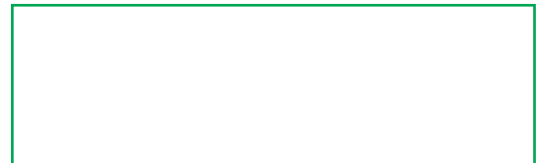
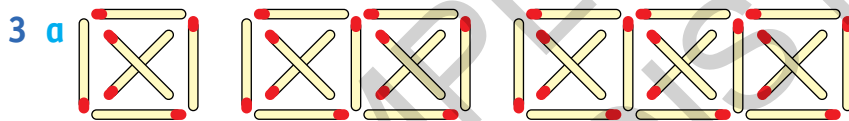
b

Number of shapes	1	2	3	4	5	6	7	8
Number of matches	4	7	10					



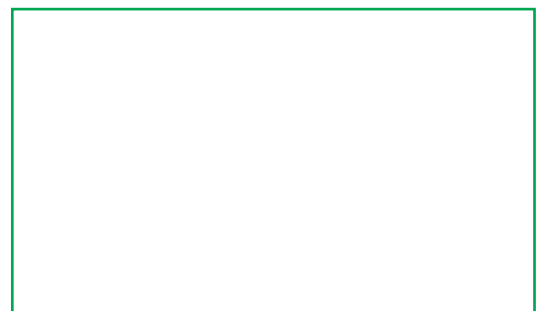
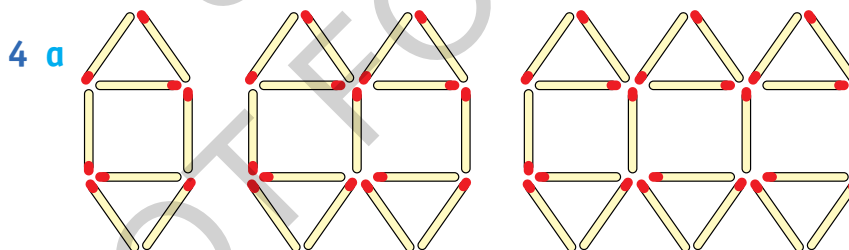
b

Number of shapes	1	2	3	4	5	6	7	8
Number of matches								



b

Number of shapes	1	2	3	4	5	6	7	8
Number of matches								



b

Number of shapes	1	2	3	4	5	6	7	8
Number of matches								

- Mastery Checklist** I can:
- ☐ find patterns in numbers
 - ☐ write the missing term in a pattern
 - ☐ use a calculator to make number patterns
 - ☐ follow a rule to make a number pattern
 - ☐ complete addition and subtraction patterns

Checkpoint 5

1 Write the decimal that matches each fraction.

Write your answer in the box.

a $\frac{3}{10}$

b $\frac{7}{10}$

c $\frac{6}{10}$

d $\frac{9}{10}$

2 Which is the largest?

Shade one bubble.

$\frac{3}{10}$
☐

0.2
☐

$\frac{1}{2}$
☐

0.4
☐

3 Write $>$, $<$ or $=$.

Write your answer in the box.

a 0.6 $\frac{3}{10}$

b 0.3 $\frac{3}{10}$

c $\frac{4}{10}$ 0.5

d 0.8 $\frac{7}{10}$

4 Add.

Shade one bubble.

$0.3 + 0.1 = ?$

0.5
☐

4.0
☐

0.4
☐

1.4
☐

5

Input

Output

→

→

→

Write your answer.

What rule is being used? _____

Checkpoint 5

6 Make a whole.

Write your answer in the box.

a $\frac{6}{10} + \frac{\square}{10} = \frac{10}{10}$ b $0.3 + \square = 1$ c $\frac{2}{8} + \frac{\square}{8} = \frac{8}{8}$

7

$8 \times 7 = ?$

Shade one bubble.

54
☐

56
☐

63
☐

64
☐

8 Double this recipe.

- 3 eggs
- $1\frac{1}{2}$ cups milk
- 2 cups flour

Write the doubled amounts.

9 Halve this recipe.

- 8 eggs
- 2 cups milk
- 6 cups flour

Write the halved amounts.

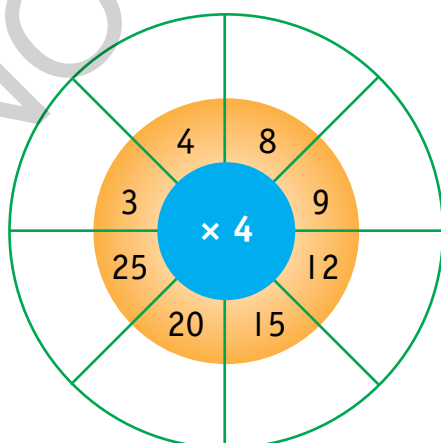
10 Lin, Jo and Mei shared 24 stickers equally.

Write an equation and solve.

Write your answer in the box.

$\square \div \square = \square$

11

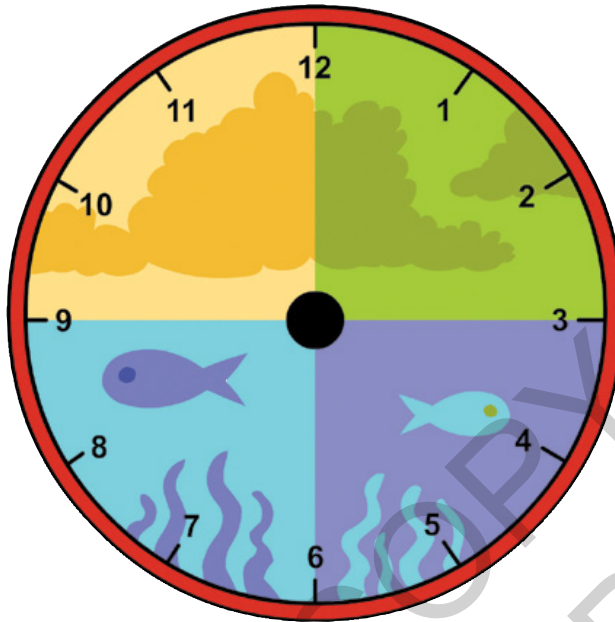


12

a $8 \times 7 = \square$ b $7 \times 9 = \square$

c $56 \div 8 = \square$ d $63 \div 7 = \square$

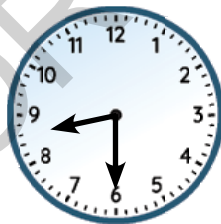
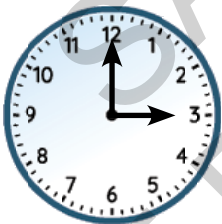
e $8 \times 4 = \square$ f $72 \div 9 = \square$



1 Complete the table.

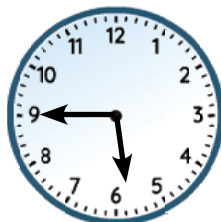
Time	Minute hand points to	Hour hand is...
4 o'clock		on 4
	6	between 7 and 8
	3	just after 10
	9	just before 5

2 Write the times.



a

b



c

d

3 Write each time from question 2 on these digital clocks.

a

 :

b

 :

c

 :

d

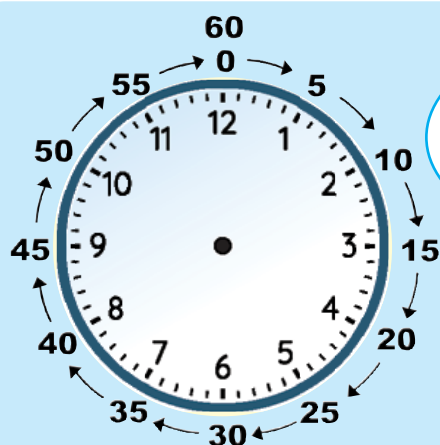
 :

4 Think about the hour hand.

a At half past 5, where is the hour hand?

b At quarter past 8, is the hour hand just after 8 or just before 9?

c At quarter to 3, is the hour hand just after 2 or just before 3?



Between each number on the clock face there are 5 minutes.



short hand
tells the hour
long hand
tells the minute
60 minutes
= 1 hour

1 How many minutes pass as the minute hand moves from:

- | | | |
|------------------|------------------|-----------------|
| a 12 to 1 _____ | b 12 to 3 _____ | c 12 to 6 _____ |
| d 12 to 9 _____ | e 12 to 7 _____ | f 12 to 2 _____ |
| g 12 to 12 _____ | h 12 to 11 _____ | i 12 to 4 _____ |
| j 12 to 10 _____ | k 12 to 5 _____ | l 12 to 8 _____ |

2



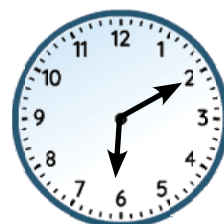
a 3:25



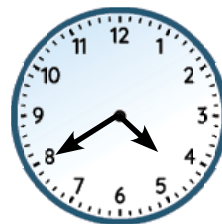
b



c



d

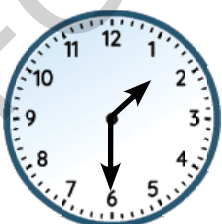


e

3 Use 'past' and 'to' to tell these times, e.g. $\frac{1}{4}$ to 5.



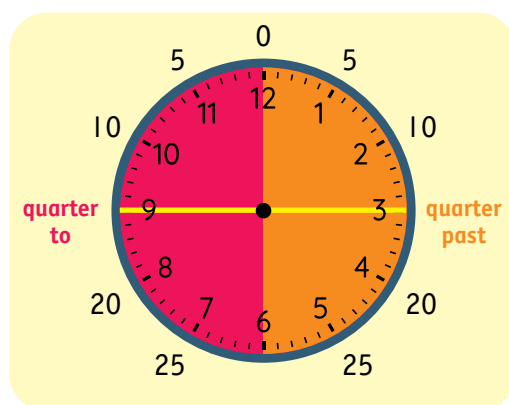
a



b



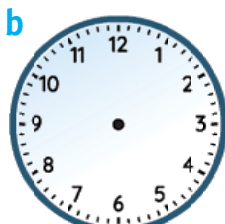
c



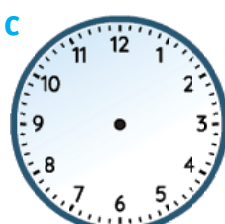
4 Draw these times.



25 to 5



5 past 10



$\frac{1}{4}$ to 5



20 past 12



10 past 7

Analogue and digital times

TERM 3
Week 6

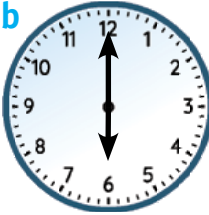
1

a



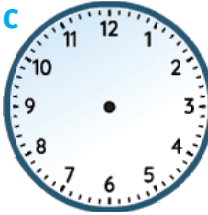
11:15

b



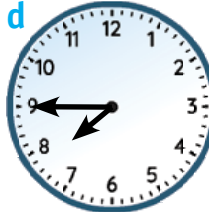
:

c



4:30

d



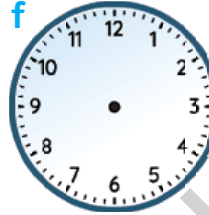
:

e



5:45

f



12:15

2

a 7:05

b 11:15

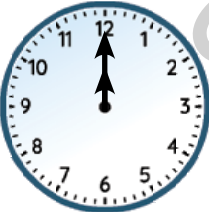
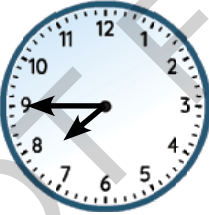
c 3:45

d 9:05

e 5:30

	Read	Means
a	seven-oh-five	5 minutes past 7
b		
c		
d		
e		

3 Match the time to the correct clock.




half-past one

twenty minutes past three

quarter-to eight

midnight

seven-oh-five

ten to nine

twenty-five past six

two o'clock

quarter-past ten

forty-five minutes past four

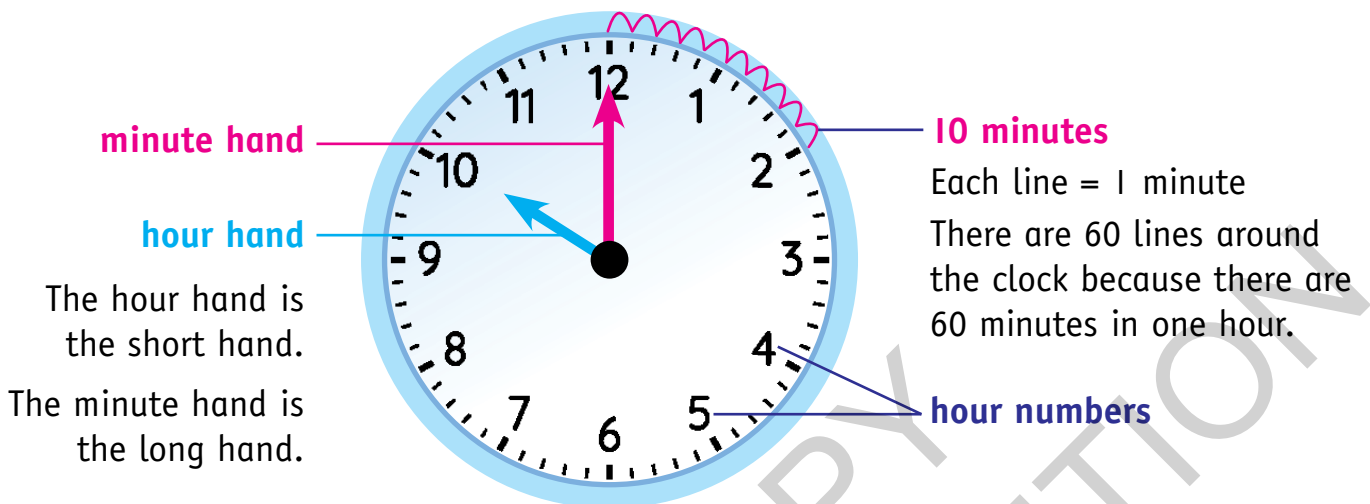
3:20

1:30

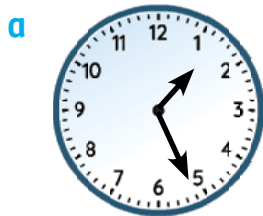
7:05

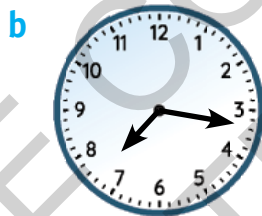
4:45

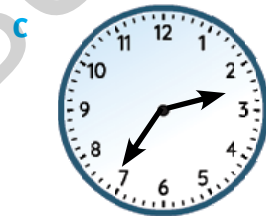
10:15



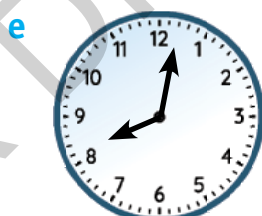
1 Write the minutes past the hour time. Then show the digital time.

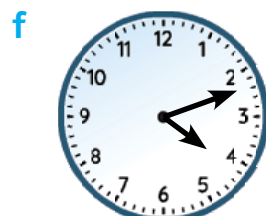








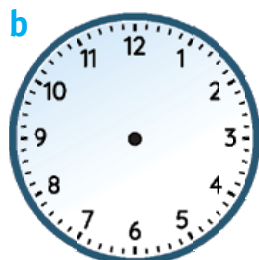




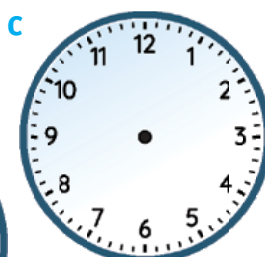
2 Draw these times.



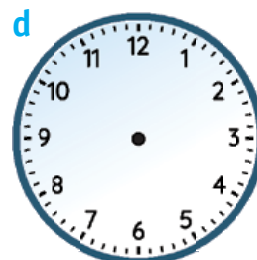
26 to 5



6 past 11



14 to 4



21 past 1



9 past 6

- 1 a It's before noon. Draw a circle around the earliest time.

10:31

3:10

1:30

10:30



- b It's after noon. Draw a circle around the latest time.

2:45

6:40

11:30

11:50

- 2 It's after midnight. Number these times in order from earliest to latest.

5:10

12:10

7:45

1:10

- 3 Write the analogue time 10 minutes before:

a 20 past 2 _____

b a quarter-past 6 _____

c 10 past 8 _____

d half-past 9 _____

- 4 Write the analogue time 15 minutes after:

a 25 past 4 _____

b twenty to 11 _____

c half-past 7 _____

d ten to 5 _____

- 5 Write the analogue time 5 minutes before:

a twenty to 3 _____

b ten to 12 _____

- 6 Yindi has three chores to do on Saturday:

- vacuuming – 1 hour
- wash the car – 45 minutes
- stack the dishwasher – 25 minutes.

Write the chores where they will fit into Yindi's schedule.



Saturday

8 breakfast

9 soccer

11

12 lunch

1 shopping

2

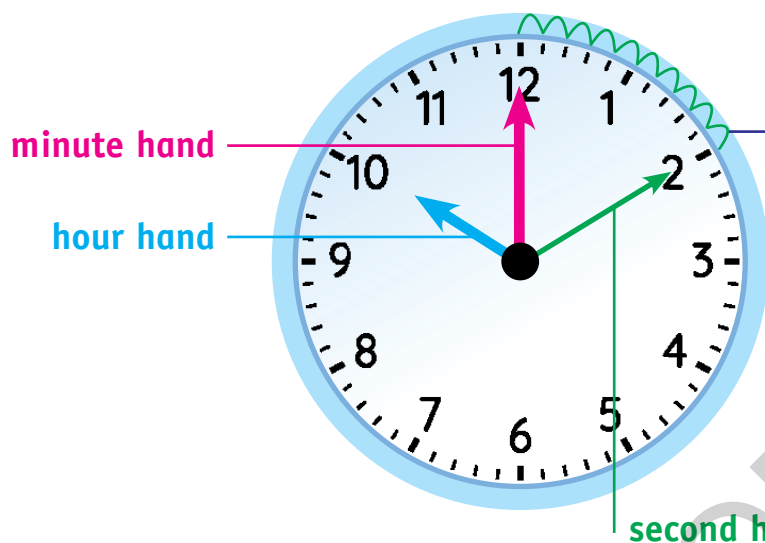
2:40 dance

4

4:45 Nan visiting

Mastery Checklist

- I can:
- ☐ show half hours and quarter hours on a clock
 - ☐ recognise and show times to the nearest 5 minutes
 - ☐ match analogue and digital times
 - ☐ recognise and show times to the minute
 - ☐ complete a schedule
 - ☐ find the time 5 or 10 minutes before or 15 minutes after



10 seconds or 10 minutes

Each line = 1 second for the second hand and 1 minute for the minute hand.

There are 60 seconds in one minute and 60 minutes in one hour.

- 1 How much time has passed when:
 - a the hour hand has done a full turn around the clock face? _____
 - b the minute hand has done a full turn around the clock face? _____
 - c the second hand has done a full turn around the clock face? _____
- 2 How many hours in:
 - a $\frac{1}{2}$ a day? _____ hours
 - b 1 day? _____ hours
 - c 2 days? _____ hours
- 3 How many minutes in:
 - a 1 hour? _____ mins
 - b $1\frac{1}{2}$ hours? _____ mins
 - c 2 hours? _____ mins
 - d 10 hours? _____ mins
 - e 12 hours? _____ mins
 - f 1 day? _____ mins
- 4 How many seconds in:
 - a 1 minute? _____ secs
 - b $2\frac{1}{2}$ minutes? _____ secs
 - c 5 minutes? _____ secs
 - d 10 minutes? _____ secs
 - e 20 minutes? _____ secs
 - f 1 hour? _____ secs
- 5 How many minutes in:
 - a 90 seconds? _____ mins
 - b 210 seconds? _____ mins
 - c $1\frac{1}{4}$ hours? _____ mins
 - d 2 hours and 22 minutes? _____ mins
 - e 1 hour and 120 seconds? _____ mins

Challenge!

How many hours in a week?

How many minutes in a week?

How many seconds in a day?



This is Tim's school day.

A	B
7:15 Wake up	12:30 Lunch break
7:20 Shower and clean teeth	1:10 Back to class
7:30 Get dressed	3:10 School finishes
7:45 Have breakfast	Arrive home and have a snack
8:00 Feed dog, cat and rabbit	4:00 Begin homework
8:20 Walk to school	5:00 Finish homework
8:45 Arrive at school	5:05 Play
9:00 Start school	6:15 Dinner
10:55 Morning recess	7:00 Watch TV
11:10 Back to class	8:30 Bed

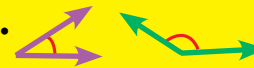
- a Which column is the morning? _____

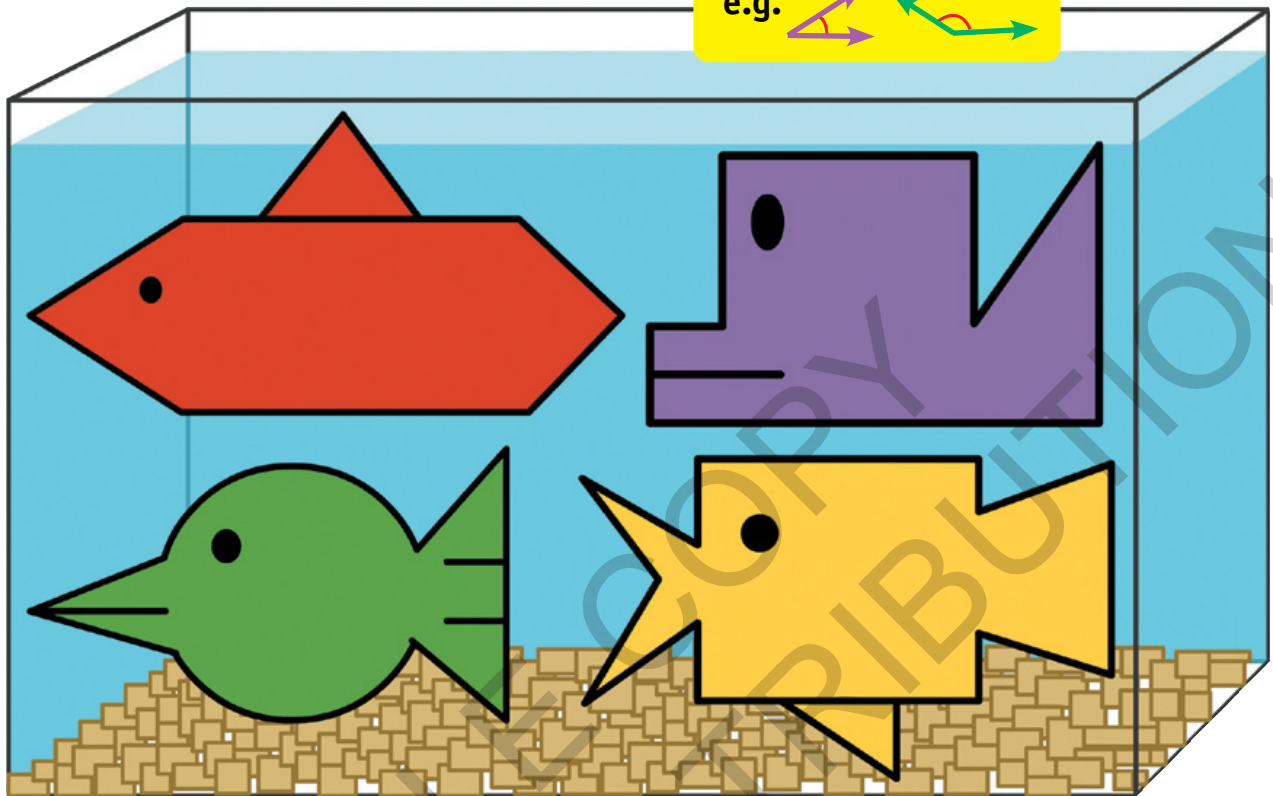
b How do you know? _____

c What times of day are in the other column? _____
- When does Tim begin his shower? _____
- How long does it take for him to get dressed? _____ minutes
- Does Tim have any pets? _____ How do you know? _____
- a How long does it take for Tim to walk to school? _____ minutes

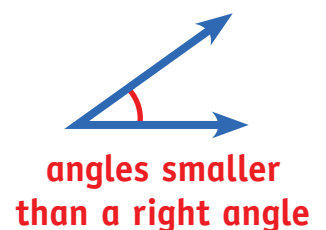
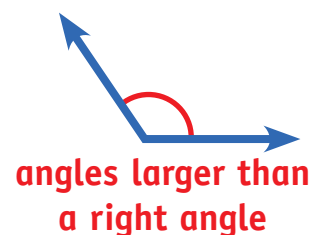
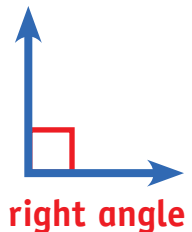
b It takes him the same time to walk home from school.
Complete the timetable by writing the time Tim arrives home.
- How long is school lunchtime? _____ minutes
- How many minutes does Tim spend on his homework? _____ minutes
- How long in hours and minutes does Tim spend watching TV? _____ hours _____ minutes
- Tim watches the same amount of TV each night from Monday to Friday.
How much TV is this for the 5 days? _____ hours _____ minutes



When two straight lines meet, they make an **angle**.
e.g. 



- 1 **a** What shape is the aquarium? _____
b What type of angles are at the corners? _____
- 2 How many angles can you see inside:
 - a** the red fish? _____ **b** the purple fish? _____
 - c** the green fish? _____ **d** the yellow fish? _____
- 3 How many right angles can you see inside:
 - a** the red fish? _____ **b** the purple fish? _____
 - c** the green fish? _____ **d** the yellow fish? _____
- 4 How many angles larger than a right angle can you see inside:
 - a** the red fish? _____ **b** the yellow fish? _____
- 5 How many angles smaller than a right angle can you see inside:
 - a** the green fish? _____ **b** the purple fish? _____
- 6 Draw another angle fish.



- I** **A** **B** **C** **D**
Here are 4 angles. Copy the angle. Draw a larger angle. Draw a smaller angle.

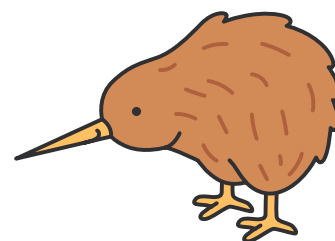
2 Which angle is the largest in:

a column **B**? _____ **b** column **C**? _____ **c** column **D**? _____

3 Which angle is the smallest in:

a column **B**? _____ **b** column **C**? _____ **c** column **D**? _____

4 Look around the classroom and write 3 places where you can see right angles.



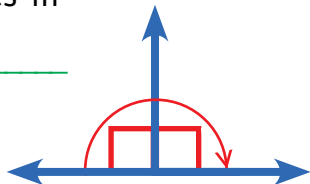
Draw a diagram

Draw a house. Colour the right angles blue, colour the smaller angles pink, colour the larger angles orange.

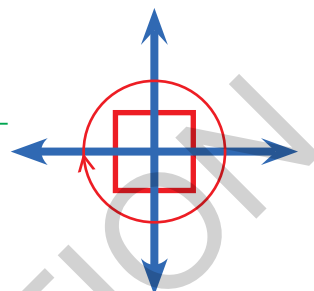
We use the symbol $^{\circ}$ for degrees.
A **right angle** measures **90°** .

1 How many right angles in

a a straight angle _____



b a full rotation _____



2 How many degrees in

a a straight angle: $90^{\circ} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

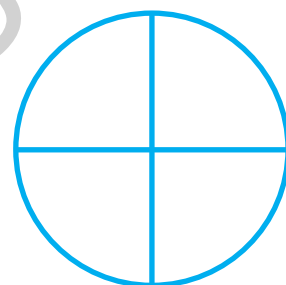
b a full rotation: _____

3 a How many degrees in one quarter of a circle? _____

b How many degrees in half a circle? _____

c How many degrees in three-quarters of a circle? _____

d How many degrees in a full circle? _____



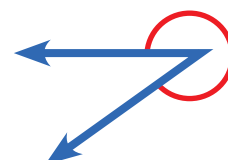
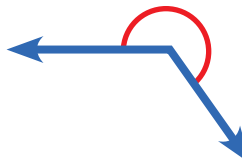
4 Estimate. About how many degrees?

a _____

b _____

c _____

d _____



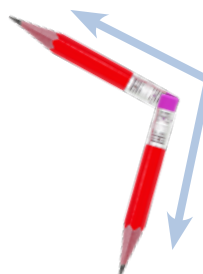
5 Estimate. About how many degrees?

a _____

b _____

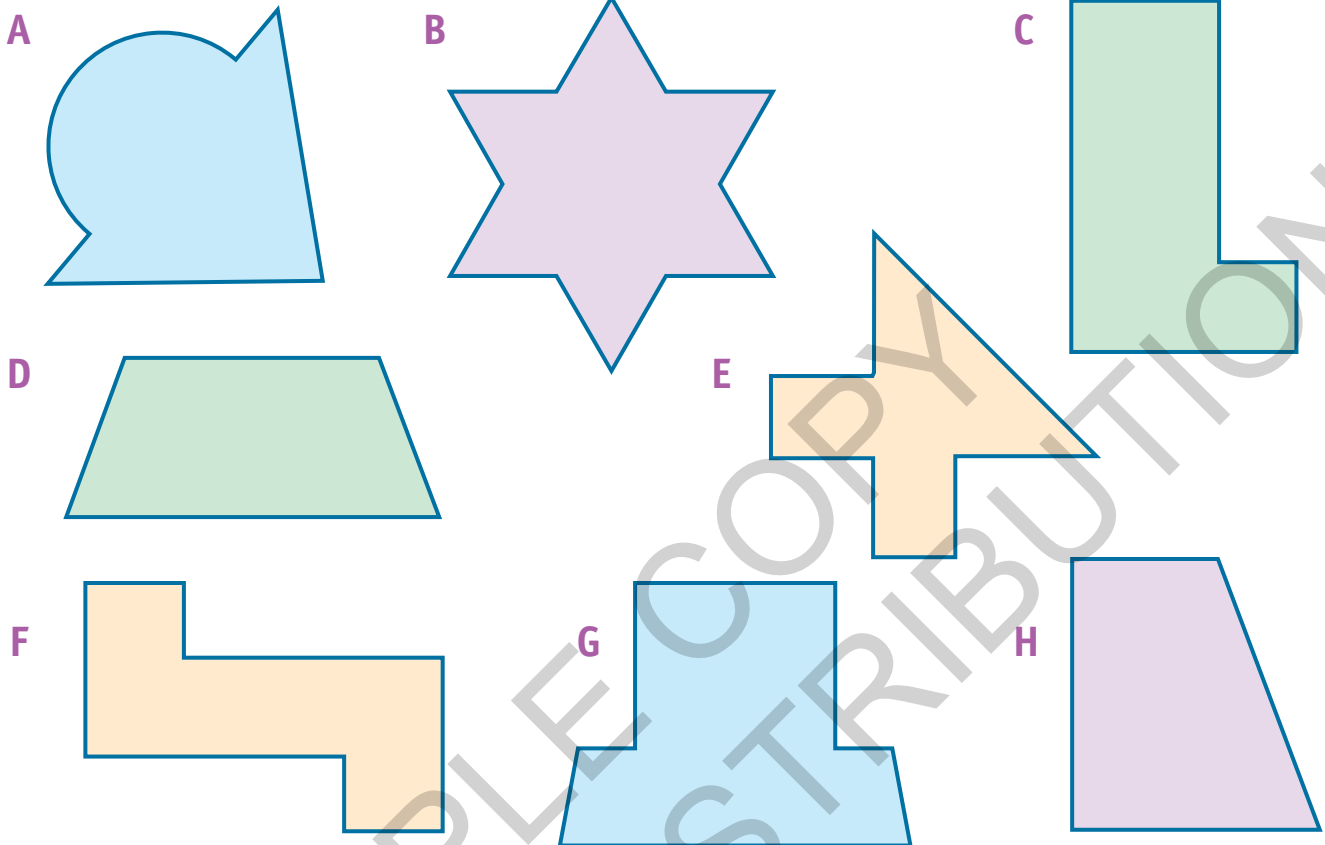
c _____

d _____

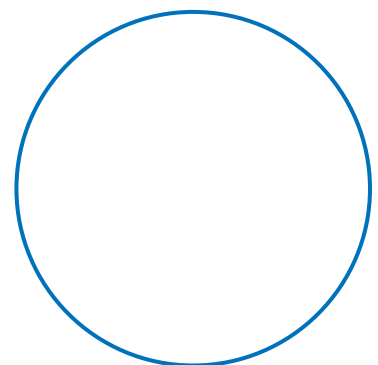


Mastery Checklist

- I can:
- ☐ convert between time units
 - ☐ answer questions about a timetable
 - ☐ count angles in 2D shapes
 - ☐ compare angles to a right angle
 - ☐ draw and compare angles
 - ☐ recognise 90, 180 and 360 degrees as benchmark angles



- 1 Using a pencil and ruler draw in lines of symmetry.
- 2 **a** Use a mirror to check your lines.
b How many did you get right? _____
- 3 Which shapes are not symmetrical? _____
- 4 Name the shapes. **a** **D** _____ **b** **H** _____
c Do all trapeziums have a line of symmetry? _____
- 5 Which shape has more than 1 line of symmetry? _____
- 6 **a** Draw as many lines of symmetry as you can on the circle.
b Tick the statement that best describes symmetry in a circle.
 - ☐ A circle has 2 lines of symmetry.
 - ☐ A circle has no lines of symmetry.
 - ☐ A circle has infinite lines of symmetry.
 - ☐ A circle has 1 line of symmetry.



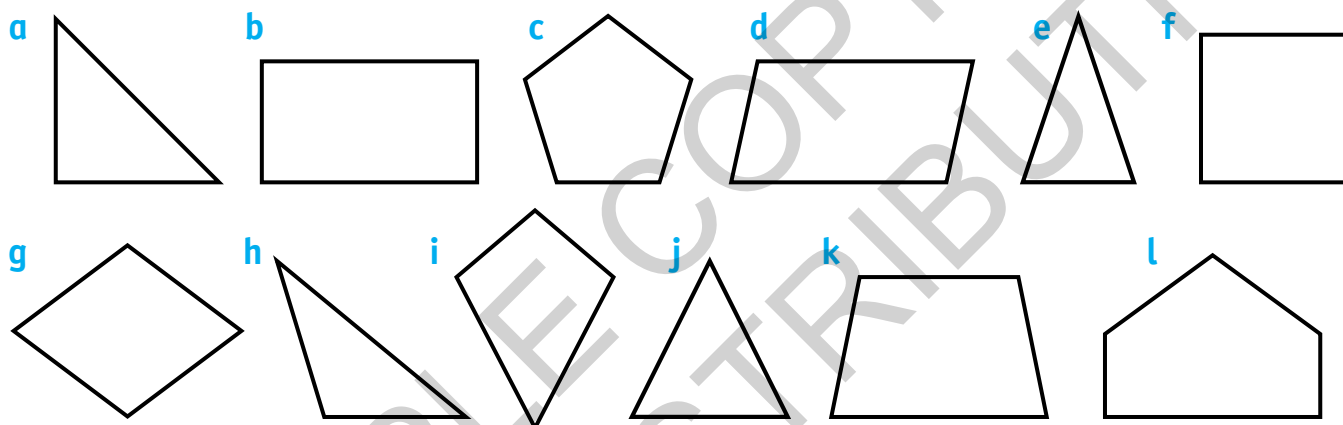
1 Colour the polygons.



2 Make these sentences true.

a A _____ has 3 sides. b A quadrilateral has _____ sides.

3 Colour **triangles blue** and **quadrilaterals green**.



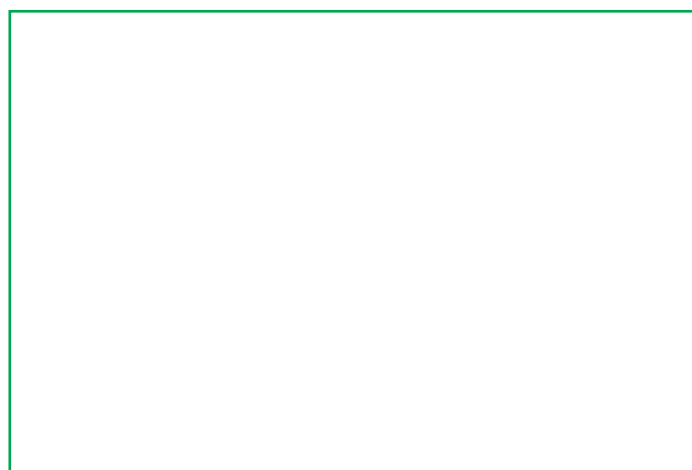
4 Can you name the quadrilaterals?

5 Look at the shapes not coloured.

a How many sides do they have? _____

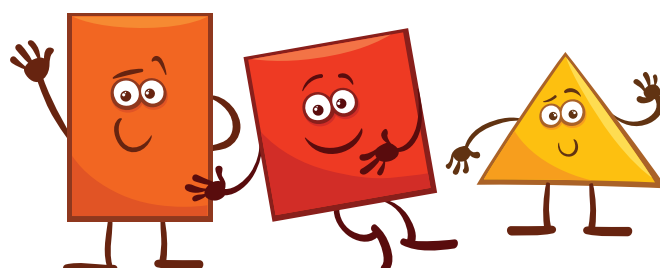
b Draw another shape with the same number of sides.

c Name this shape.



6 Circle – true or false?

- a A triangle has 4 angles. T F
- b A triangle can have 1 right angle. T F
- c A rectangle only has right angles. T F
- d A square has 3 right angles. T F



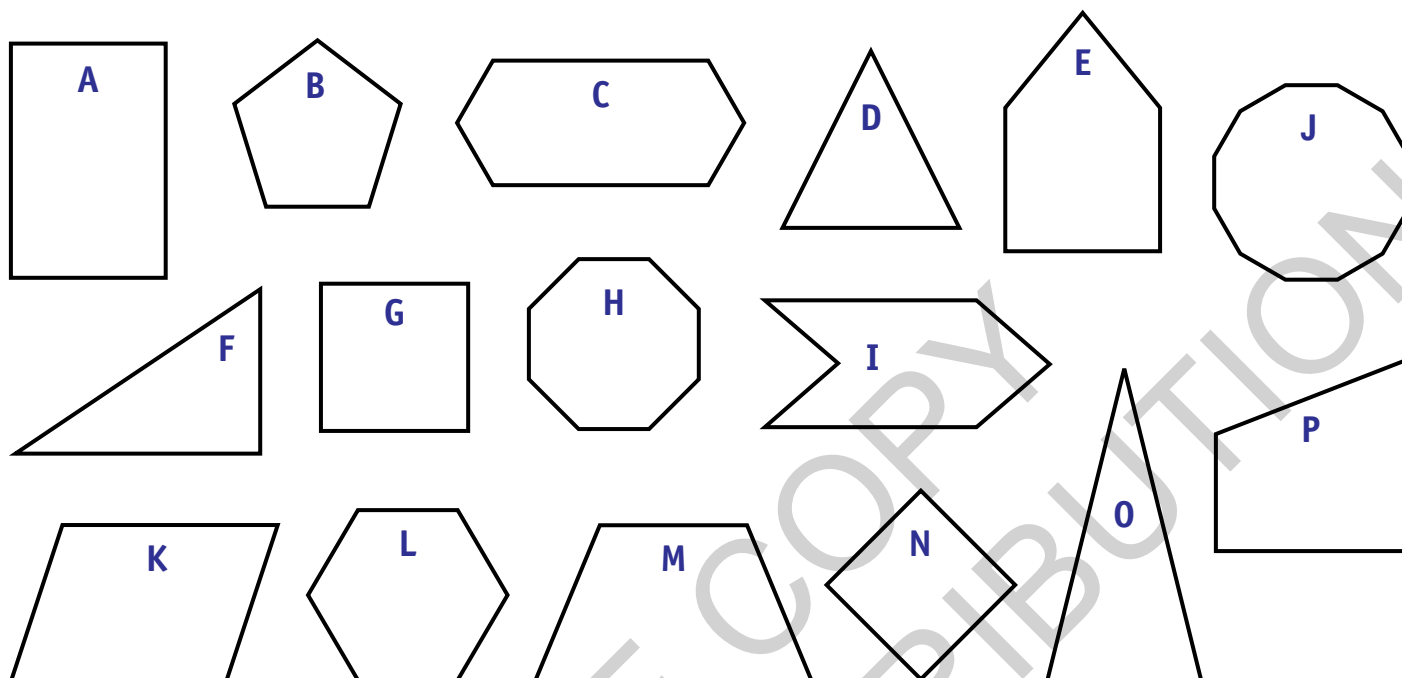
Angles in shapes

A regular polygon has:

- all sides same length
- all angles same size

TERM 3
Week 8

1 Colour the **regular** polygons blue.



2 Complete the sentence.

Irregular polygons have _____ of different lengths and
_____ of different sizes.

3 Mark the right angles in the above shapes with this symbol **L**.

4 a Which shapes have 4 right angles? _____

b What sort of shapes are they? _____

c Which shapes have 2 right angles? _____

d What sort of shapes are they? _____

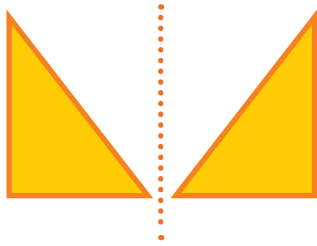
e Which shape has 1 right angle? _____

f What sort of shape is it? _____

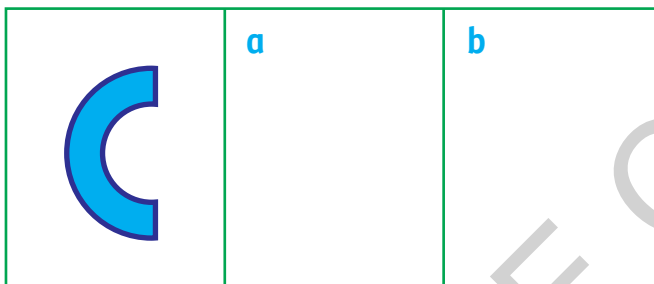
5 a Which shapes have angles smaller than a right angle? _____

b Which shapes have angles larger than a right angle? _____

- 1 This triangle has been reflected. Reflect the shape again. Continue across the page.

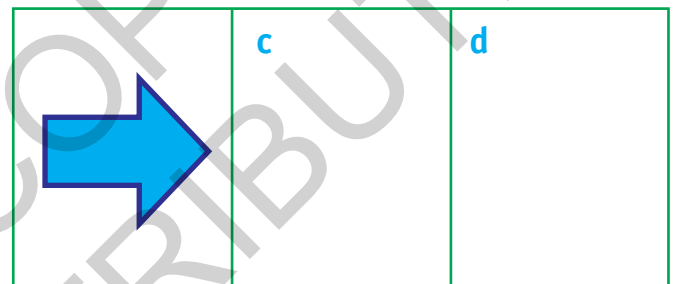


- 2 Translate and reflect each shape.



translate

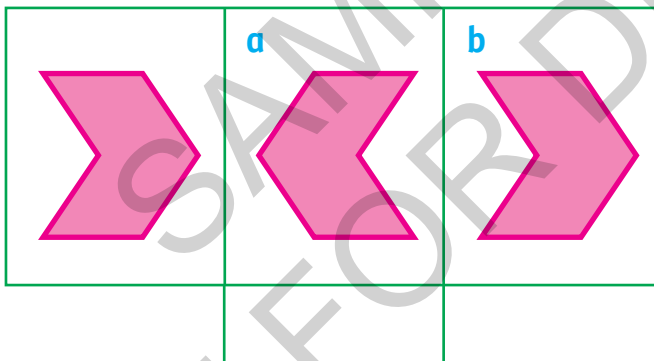
reflect



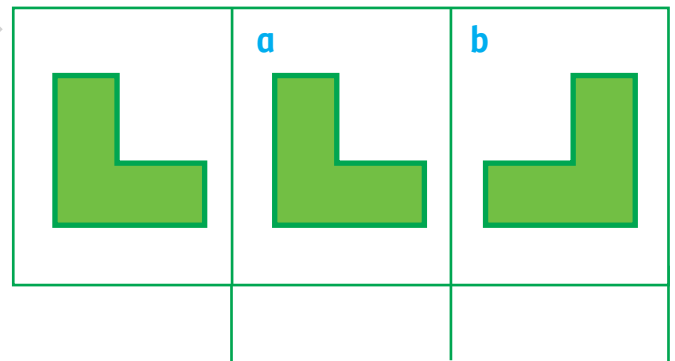
translate

reflect

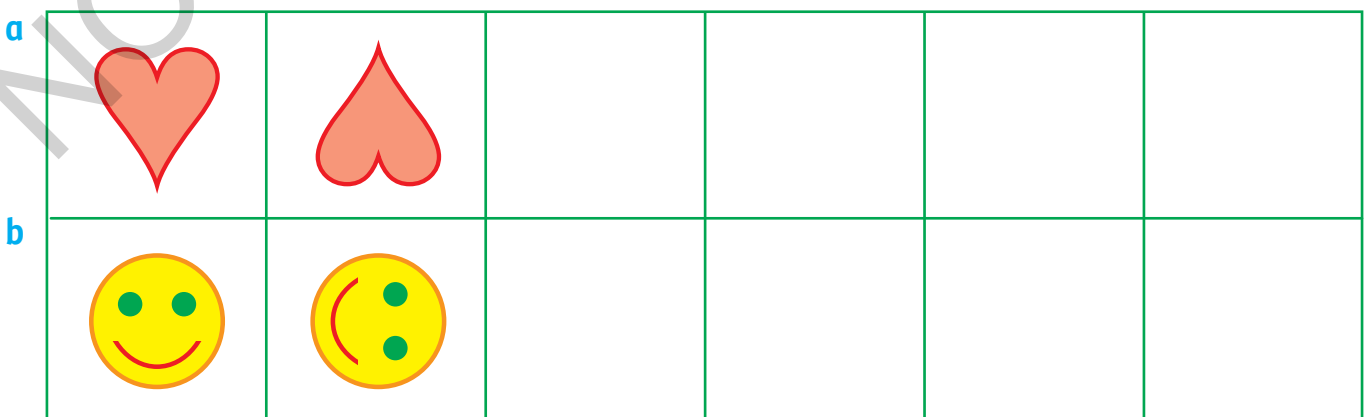
- 3 How has the shape moved?



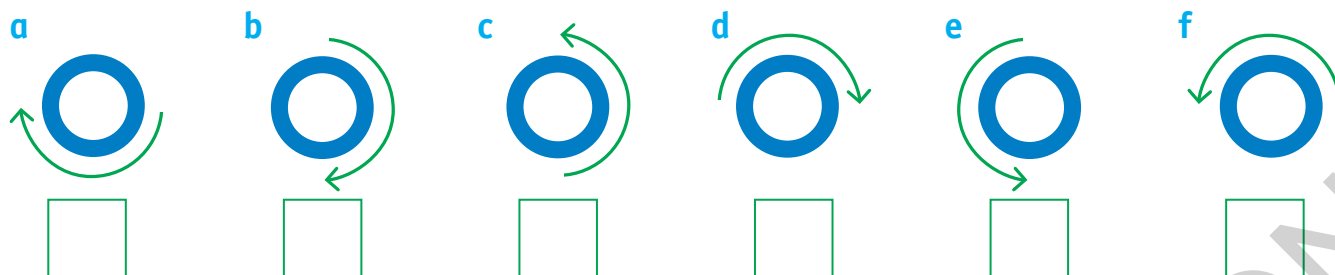
- 4 How has the shape moved?



- 5 Complete the patterns using half or quarter rotations.

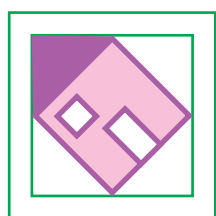


1 Tick the clockwise rotations (✓) and cross the anti-clockwise rotations (✗).

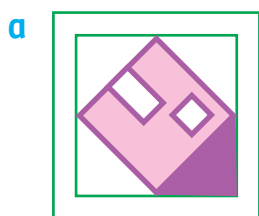


2 How far has the house rotated?

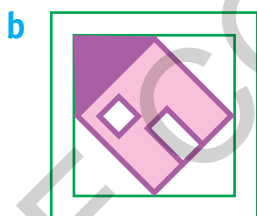
quarter half three-quarters full



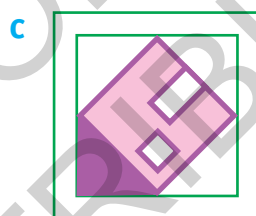
Original



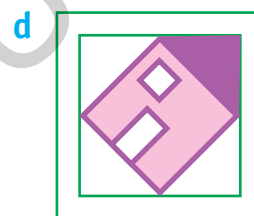
turn



turn

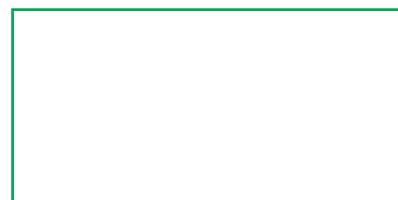
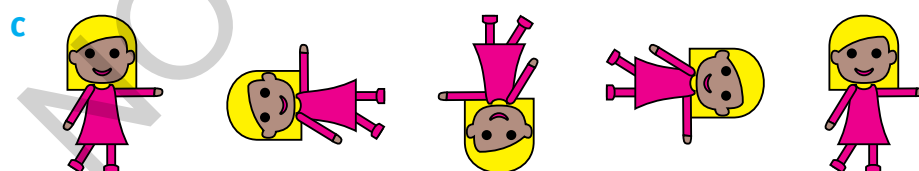
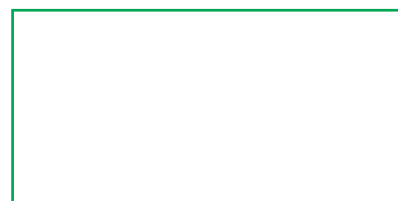
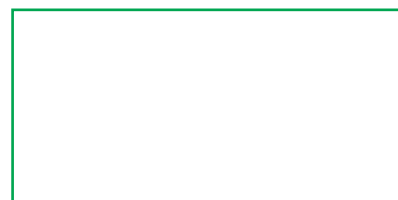


turn



turn

3 Draw the next picture in each rotating pattern.

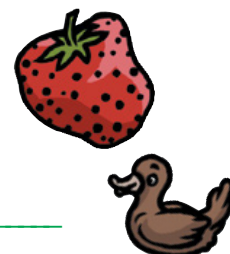


- Mastery Checklist** I can:
- ☐ identify lines of symmetry
 - ☐ identify triangles and quadrilaterals
 - ☐ identify regular and irregular polygons
 - ☐ explore angles in polygons
 - ☐ investigate patterns with shape movements



This is the Luu's garden. Study the key.

- 1 How many square metres is:
 - a the rose garden bed? _____
 - b the shed? _____
 - c the pond? _____
 - d the strawberry patch? _____
- 2 Which gardens have an area of:
 - a 3 square metres? _____ and _____.
 - b 6 square metres? _____ and _____.
- 3 What has an area the same as:
 - a the shed? _____
 - b the pond? _____
- 4 What is the area of the path? _____
- 5 What is the area of the whole garden? _____



Challenge!

How many square metres of grass are there?

Area and perimeter

TERM 3
Week 9

Look at page 139. Remember:

1 m

1 square
metre

Area is the size
of a surface.
Perimeter is the
distance around
the outside.

1 Find the perimeter of the:

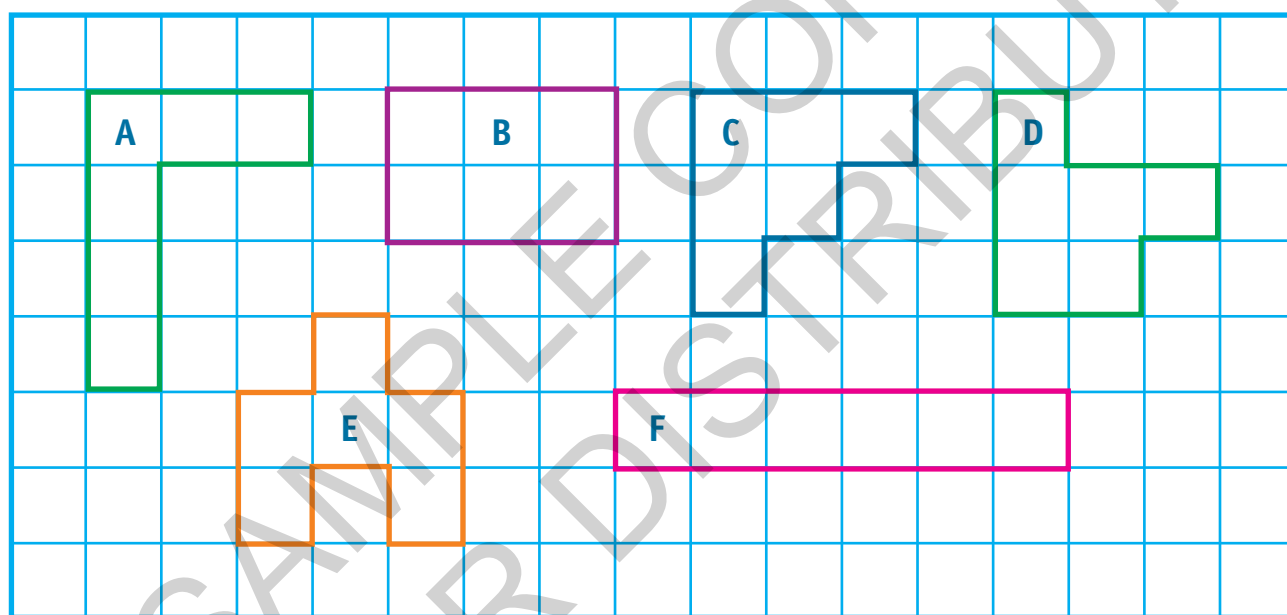
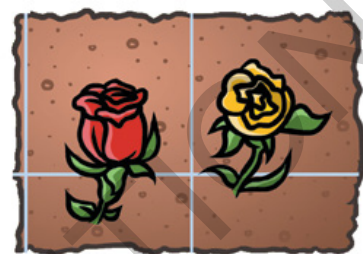
a vegetable garden _____ b herb garden _____

c strawberry patch _____ d flower garden _____

e rose garden _____ f shed and rose garden _____

2 Estimate the perimeter of the pond. _____

3 These are 1 cm squares.



a Find the area of each in cm^2 .

A _____ B _____ C _____ D _____ E _____ F _____

b Find the perimeter of each in cm.

A _____ B _____ C _____ D _____ E _____ F _____

4 Which shape has:

a the greatest area? _____

b the greatest perimeter? _____

c Are they the same shape? _____

5 Find two shapes with the same area but different perimeters.

Shapes _____ and _____

Area = _____ cm^2

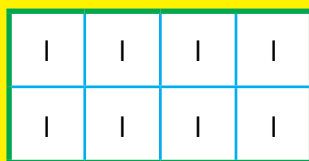
Perimeters = _____ cm and _____ cm

Challenge!

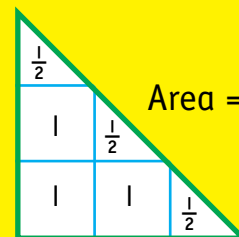
On centimetre grid paper draw 6 different shapes, each with an area of 8 cm^2 . Work out the perimeter of each shape. Write about what you discover.



Area = 1 cm²

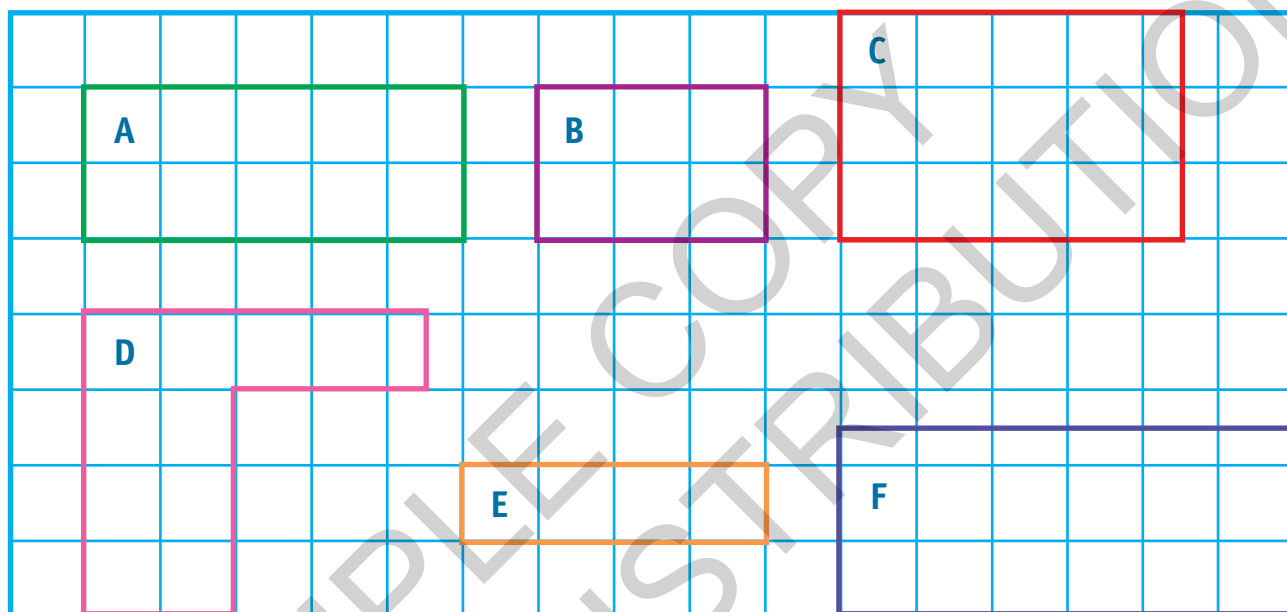


Area = 8 cm²



Area = 4.5 cm²

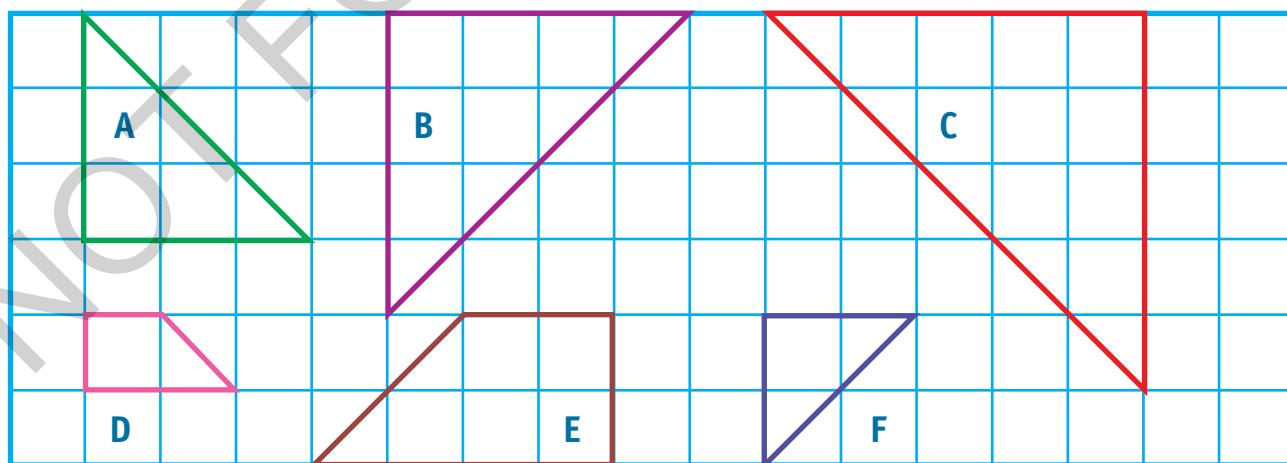
- 1 Write the area of these shapes.



A _____ B _____ C _____ D _____ E _____ F _____

- 2 Which shapes have: **a** the largest area? _____ **b** the smallest area? _____
c an area of $10\frac{1}{2}$ cm²? _____ **d** an area of $13\frac{1}{2}$ cm²? _____

- 3 Write the area of these shapes.



A _____ B _____ C _____ D _____ E _____ F _____

- 4 Which shape has: **a** the largest area? _____ **b** the smallest area? _____
c an area of 8 cm²? _____ **d** an area of $12\frac{1}{2}$ cm²? _____

To find the **area** of a rectangle, multiply its **length** by its **width**. $A = L \times W$

1 Use the formula $A = L \times W$ to calculate these areas.

a $L = 8 \text{ cm}, W = 3 \text{ cm}$ $8 \times 3 = \underline{\hspace{2cm}} \text{ cm}^2$

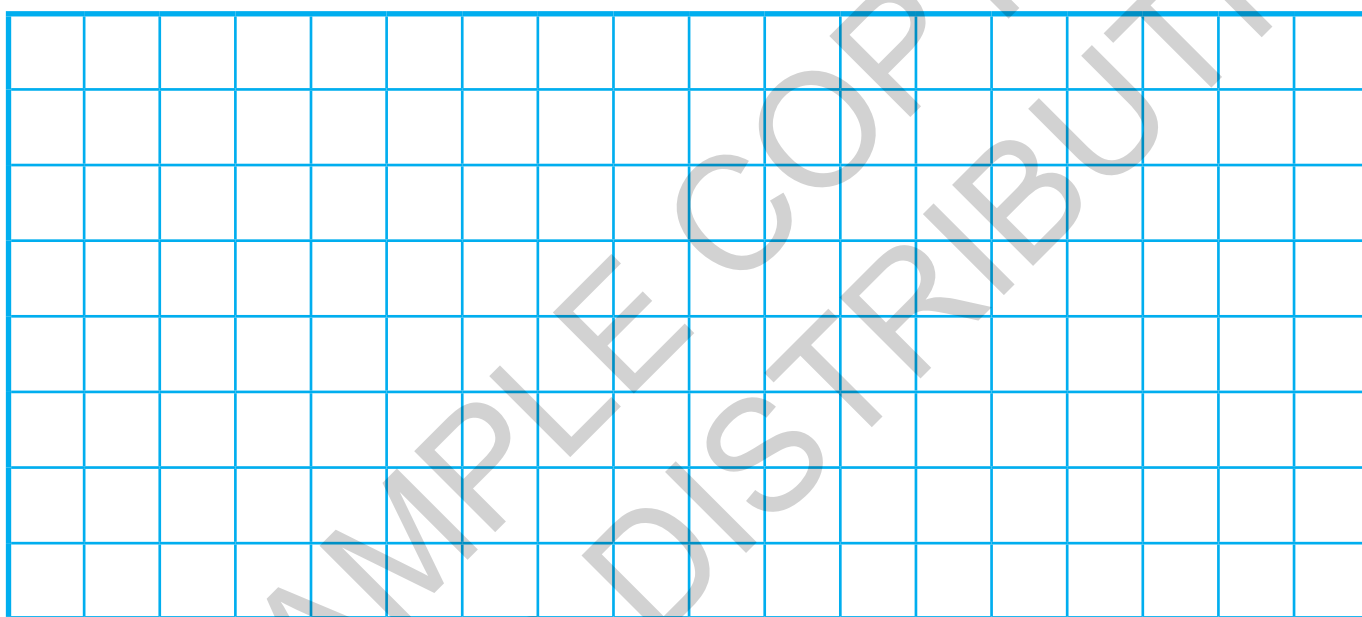
b $L = 10 \text{ cm}, W = 4 \text{ cm}$ $\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ cm}^2$

c $L = 4 \text{ cm}, W = 4 \text{ cm}$ $\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ cm}^2$

Area is measured
in squares.

1 square centimetre
= 1 cm^2

2 Draw these rectangles on this 1 cm grid paper. Label them a, b, c.



3 Count the squares in each shape to find the area. Write the area inside the shape.

4 Do these areas match the areas from question 1? $\underline{\hspace{2cm}}$

If not, redo your calculations to see where the mistake was made.

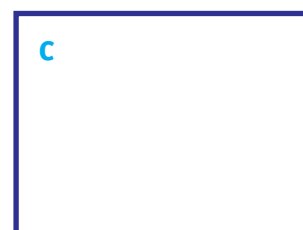
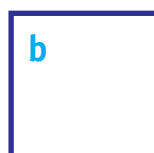
5 Measure the sides of these rectangles and use the formula $A = L \times W$ to calculate their areas.

a $\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ cm}^2$

b $\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ cm}^2$

c $\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ cm}^2$

d $\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ cm}^2$



1 Calculate the perimeter.

a

5 cm



$$P = \square + \square + \square + \square$$

$$= \square \text{ cm}$$

b

8 cm

2 cm



$$P = \square + \square + \square + \square$$

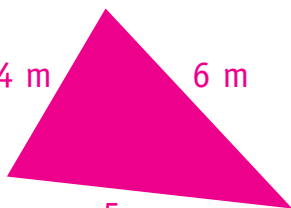
$$= \square \text{ cm}$$

c

4 m

6 m

5 m



$$P = \square + \square + \square$$

$$= \square \text{ m}$$

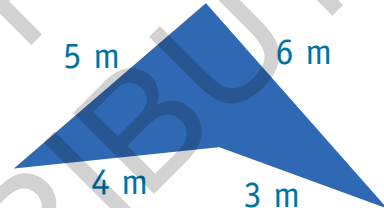
d

5 m

6 m

4 m

3 m



$$P = \square + \square + \square + \square$$

$$= \square \text{ m}$$

2 Write a rule for calculating perimeter:

3 a Measure the side lengths. b Calculate the perimeter. c Calculate the area.
Don't forget to put the units – centimetres or metres.

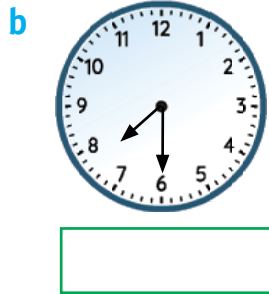
	a Side lengths	b Perimeter	c Area
This book	+ + +	=	× =
Your desk			
The door			

Mastery Checklist I can: ☐ measure area in square metres and centimetres
☐ measure perimeter in centimetres and metres
☐ measure area in whole and half squares
☐ calculate area using multiplication

Checkpoint 6

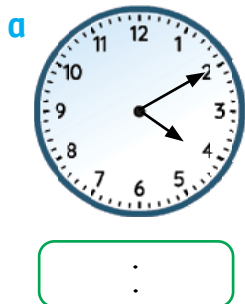
1 Read the clock.

p 125



2 Write the digital time.

p 126



3 A movie starts at 2:15 pm.

p 128

It finishes at 3:00 pm.

How long does it last?

4 Swimming starts at 10:20 am.

p 128

It ends at 11:05 am.

How long?

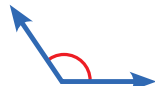
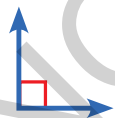
5 Match.

p 132

smaller than
a right angle

right
angle

larger than
a right angle

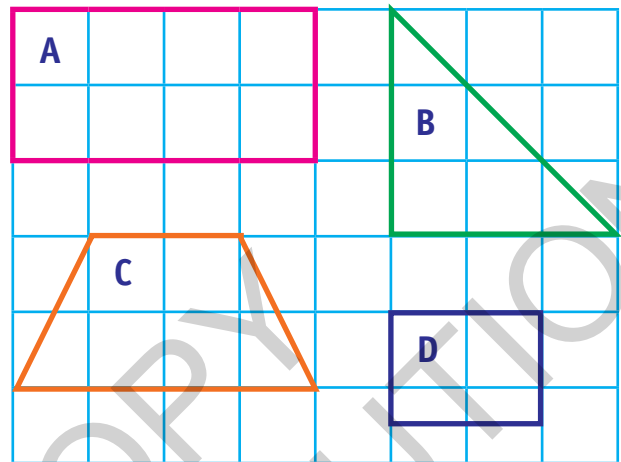


6 Order the decimals from smallest to largest.

p 104

1.2, 0.7, 3.4, 0.1, 1.0

p 140



7 a What is the area of these shapes?

A _____ B _____

C _____ D _____

b What is the perimeter of these shapes?

A _____ D _____

8 A rectangle has:

p 142

Area = 24 cm²

Width = 4 cm

Length = cm

9 A square has sides of 7 cm.

p 143

Perimeter = cm

10 School starts at 8:45 am.

p 128

Lunch begins at 12:15 pm.

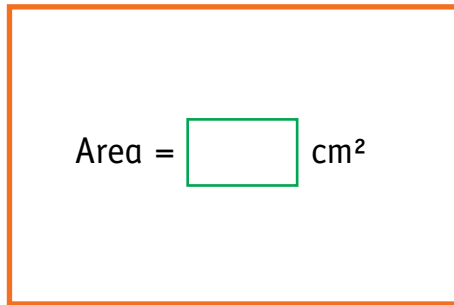
How much time passes before lunch?



Checkpoint 6

11 Find the area.

p 142



12 A rectangle is:

p 143

Length = 8 cm

Width = 3 cm

Perimeter = [] cm

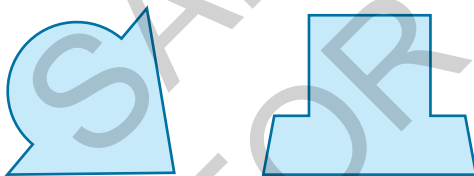
13 a Two rectangles have the same area. Circle **True** or **False**.

p 143

b They must have the same perimeter. Circle **True** or **False**.

14 In each shape draw the line of symmetry.

p 134



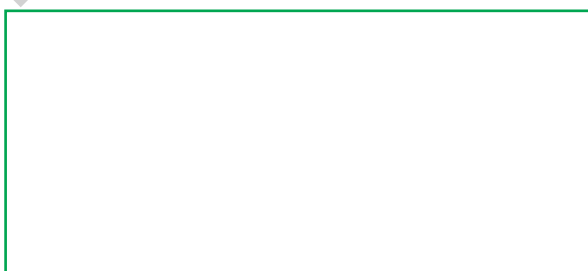
15 Colour the polygons.

p 135



16 Draw a shape with two right angles.

p 136



17 A shape has:

p 136

- 4 equal sides
 - 4 right angles
- What shape is it?

18 How many

p 129

- a hours in 3 days? _____
- b minutes in 3 hours? _____
- c seconds in 3 minutes? _____

19 Multiply.

p 104

- a $7.2 \times 10 =$ _____
- b $0.9 \times 10 =$ _____

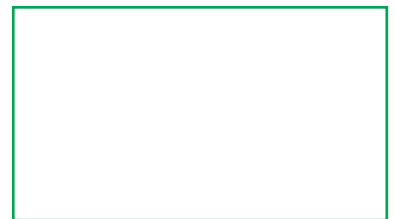
20 Divide.

p 103

- a $18 \div 10 =$ _____
- b $27 \div 10 =$ _____

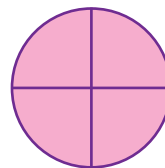
21 Draw an angle larger than a right angle.

p 132



22

p 133



a How many degrees in a right angle?

A 9 B 90 C 18 D 180

b How many degrees in $\frac{1}{2}$ a circle? _____

c How many degrees in $\frac{3}{4}$ of a circle? _____

23 a 1 m = _____ cm

p 102

b $\frac{1}{2}$ m = _____ cm

c 20 cm = _____ mm

d 2.5 cm = _____ mm

Multiplication and division facts

TERM 4
Week 1

Test your memory! Have you memorised the multiplication and division facts?

1 Answer these sums. Time yourself.

- a $8 \times 2 =$ _____ b $10 \times 7 =$ _____ c $3 \times 9 =$ _____ d $6 \times 5 =$ _____
e $4 \times 9 =$ _____ f $5 \times 5 =$ _____ g $10 \times 3 =$ _____ h $9 \times 8 =$ _____
i $7 \times 4 =$ _____ j $8 \times 8 =$ _____ k $9 \times 2 =$ _____ l $4 \times 6 =$ _____
m $3 \times 8 =$ _____ n $36 \div 4 =$ _____ o $45 \div 5 =$ _____ p $72 \div 9 =$ _____
q $64 \div 8 =$ _____ r $42 \div 6 =$ _____ s $24 \div 8 =$ _____ t $25 \div 5 =$ _____
u $18 \div 2 =$ _____ v $24 \div 4 =$ _____ w $30 \div 6 =$ _____ x $27 \div 9 =$ _____
y $18 \div 3 =$ _____ z $20 \div 5 =$ _____



Time:

What was your score? /26

2 Swap and check answers with a buddy.

3 Complete the bottom half. Time yourself again.

- a $4 \times 4 =$ _____ b $7 \times 8 =$ _____ c $8 \times 6 =$ _____ d $8 \times 5 =$ _____
e $3 \times 7 =$ _____ f $9 \times 4 =$ _____ g $8 \times 3 =$ _____ h $9 \times 5 =$ _____
i $4 \times 5 =$ _____ j $8 \times 9 =$ _____ k $7 \times 6 =$ _____ l $5 \times 7 =$ _____
m $9 \times 3 =$ _____ n $18 \div 6 =$ _____ o $45 \div 9 =$ _____ p $24 \div 6 =$ _____
q $48 \div 6 =$ _____ r $32 \div 8 =$ _____ s $70 \div 7 =$ _____ t $40 \div 8 =$ _____
u $21 \div 7 =$ _____ v $24 \div 3 =$ _____ w $64 \div 8 =$ _____ x $36 \div 9 =$ _____
y $36 \div 6 =$ _____ z $56 \div 8 =$ _____



Time:

What was your score? /26

4 Swap and check answers with a buddy.

5 Were you faster? Yes ☐ No ☐ Did you get a higher score? Yes ☐ No ☐

$5 \times 19 =$

5 Area = ?

$5 \times (10 + 9) =$

$(5 \times 10) + (5 \times 9) =$

$50 + 45 = 95$

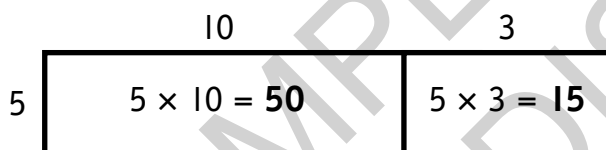
5 Area = 95

The Area Model
Split one factor into smaller parts.
Multiply each smaller part by the other factor.
Then add the answers to find the total.

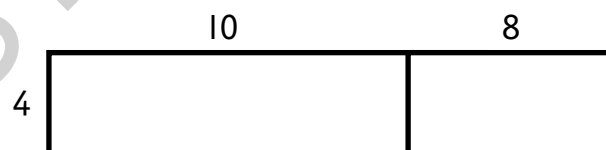
$5 \times 19 = 5 \times (10 + 9)$
 $= (5 \times 10) + (5 \times 9)$
 $= 50 + 45$
 $= 95$

1 Use the area diagrams to multiply by a teen number.

a $5 \times 13 =$ _____



b $4 \times 18 =$ _____



c $8 \times 16 =$ _____

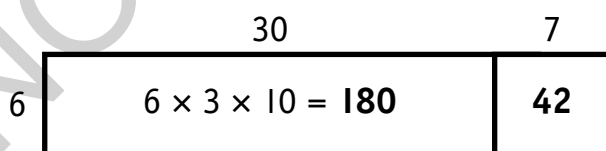


Multiply by tens:

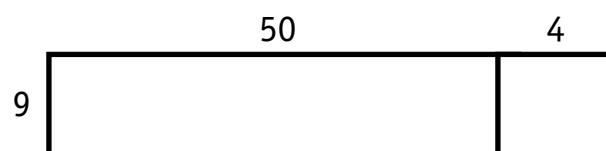
$3 \times 40 = 3 \times 4 \times 10$
 $= 12 \times 10$
 $= 120$

2 Use the area diagrams to multiply by a two-digit number.

a $6 \times 37 =$ _____



b $9 \times 54 =$ _____



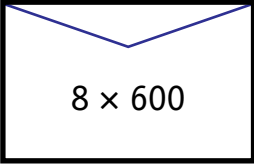
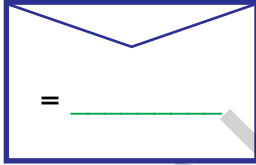
c $4 \times 75 =$ _____

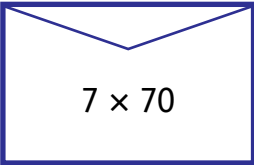
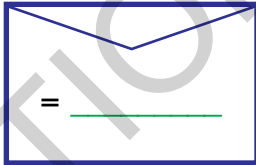


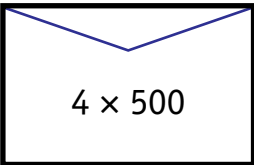
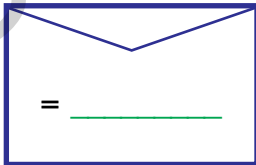
d $5 \times 46 =$ _____

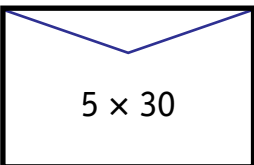
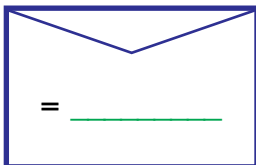


1 Post each letter by snail mail and follow the snail to the answer.

a  8×600 $= 8 \times 6 \times \underline{\hspace{1cm}}$  $= \underline{\hspace{1cm}} \times 100$  $= \underline{\hspace{1cm}}$

b  7×70 $= 7 \times \underline{\hspace{1cm}} \times 10$  $= \underline{\hspace{1cm}} \times 10$  $= \underline{\hspace{1cm}}$

c  4×500 $= 4 \times \underline{\hspace{1cm}} \times 100$  $= \underline{\hspace{1cm}} \times 100$  $= \underline{\hspace{1cm}}$

d  5×30 $= \underline{\hspace{1cm}} \times 3 \times 10$  $= \underline{\hspace{1cm}} \times 10$  $= \underline{\hspace{1cm}}$

2 Break the large number into a smaller sum to find the answer.

- a** $17 \times 5 = (10 \times 5) + (7 \times 5) = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$
- b** $16 \times 8 = (\underline{\hspace{1cm}} \times 8) + (6 \times 8) = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$
- c** $18 \times 3 = (10 \times 3) + (\underline{\hspace{1cm}} \times 3) = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$
- d** $14 \times 8 = (\underline{\hspace{1cm}} \times 8) + (\underline{\hspace{1cm}} \times 8) = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$
- e** $13 \times 9 = (\underline{\hspace{1cm}} \times 9) + (\underline{\hspace{1cm}} \times 9) = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$
- f** $25 \times 7 = (20 \times 7) + (\underline{\hspace{1cm}} \times 7) = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$
- g** $32 \times 4 = (\underline{\hspace{1cm}} \times 4) + (2 \times 4) = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$
- h** $45 \times 6 = (40 \times 6) + (\underline{\hspace{1cm}} \times 6) = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$
- i** $36 \times 5 = (\underline{\hspace{1cm}} \times 5) + (\underline{\hspace{1cm}} \times 5) = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$
- j** $28 \times 4 = (\underline{\hspace{1cm}} \times 4) + (\underline{\hspace{1cm}} \times 4) = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$



1 Multiply a single digit by a 2-digit number.

e.g. $5 \times 38 = 5 \times (30 + 8)$

$$= (5 \times 3 \times 10) + (5 \times 8)$$

$$= (15 \times 10) + 40$$

$$= 150 + 40$$

$$= 190$$

b $3 \times 29 = 3 \times (20 + \underline{\hspace{2cm}})$

$$= (3 \times \underline{\hspace{2cm}} \times 10) + (3 \times 9)$$

$$= (\underline{\hspace{2cm}} \times 10) + 27$$

$$= \underline{\hspace{2cm}} + 27$$

$$= \underline{\hspace{2cm}}$$

d $6 \times 37 = 6 \times (\underline{\hspace{2cm}} + 7)$

$$= (6 \times 3 \times 10) + (6 \times \underline{\hspace{2cm}})$$

$$= (\underline{\hspace{2cm}} \times 10) + \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

a $4 \times 92 = 4 \times (\underline{\hspace{2cm}} + \underline{\hspace{2cm}})$

$$= (4 \times \underline{\hspace{2cm}} \times 10) + (4 \times 2)$$

$$= (36 \times \underline{\hspace{2cm}}) + 8$$

$$= \underline{\hspace{2cm}} + 8$$

$$= \underline{\hspace{2cm}}$$

c $3 \times 78 = 3 \times (\underline{\hspace{2cm}} + \underline{\hspace{2cm}})$

$$= (3 \times \underline{\hspace{2cm}} \times 10) + (3 \times \underline{\hspace{2cm}})$$

$$= (\underline{\hspace{2cm}} \times 10) + \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

e $5 \times 64 = 5 \times (\underline{\hspace{2cm}} + 4)$

$$= (5 \times \underline{\hspace{2cm}} \times 10) + (5 \times \underline{\hspace{2cm}})$$

$$= (\underline{\hspace{2cm}} \times 10) + \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

2 Follow the arrows to find each multiple then add the results to solve.

For example: $6 \times 41 = 6 \times (40 + 1) = 240 + 6 = 246$

a $5 \times 32 = 5 \times (30 + 2) = 150 + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

b $3 \times 73 = 3 \times (70 + 3) = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = 219$

c $8 \times 41 = 8 \times (40 + 1) = \underline{\hspace{2cm}} + 8 = \underline{\hspace{2cm}}$

d $7 \times 56 = 7 \times (50 + 6) = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = 392$

e $6 \times 36 = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$



1 True (T) or false (F)?

a $6 + 4 = 4 + 6$ _____ **b** $8 + 5 = 5 + 8$ _____ **c** $1 + 7 = 7 + 1$ _____ **d** $3 + 9 = 9 + 3$ _____

e $5 + 8 = 8 + 5$ _____ **f** $7 + 6 = 6 + 7$ _____ **g** $3 + 7 = 7 + 3$ _____ **h** $4 + 5 = 5 + 4$ _____

i What rule can you make? _____

2 True (T) or false (F)?

a $3 \times 9 = 9 \times 3$ _____ **b** $7 \times 4 = 4 \times 7$ _____ **c** $8 \times 5 = 5 \times 8$ _____ **d** $5 \times 9 = 9 \times 5$ _____

e $3 \times 5 = 5 \times 3$ _____ **f** $6 \times 5 = 5 \times 6$ _____ **g** $9 \times 4 = 4 \times 9$ _____ **h** $10 \times 8 = 8 \times 10$ _____

i What rule can you make? _____

3 Are the rules the same? _____

4 True (T) or false (F)?

a $6 - 2 = 2 - 6$ _____ **b** $9 - 5 = 5 - 9$ _____ **c** $8 - 3 = 3 - 8$ _____ **d** $7 - 4 = 4 - 7$ _____

e Can you make a rule? _____

5 True (T) or false (F)?

a $18 \div 3 = 3 \div 18$ _____ **b** $25 \div 5 = 5 \div 25$ _____

c $40 \div 4 = 4 \div 40$ _____ **d** $9 \div 3 = 3 \div 9$ _____

e Can you make a rule? _____

6 True (T) or false (F)?

a $9 + 7 = 7 + 9$ _____

b $21 \div 3 = 3 \div 21$ _____

c $14 - 6 = 6 - 14$ _____

d $9 \times 3 = 9 + 3$ _____

7 What happens to all numbers if they are multiplied by 1?

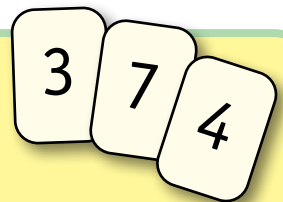
Challenge!

a Add these numbers together in four different ways.

Are the answers always the same?

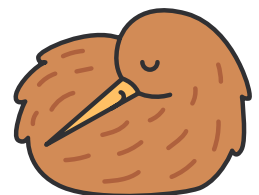
b Multiply the numbers together in four different ways.

Are the answers always the same?



Mastery Checklist

- I can:
- ☐ multiply two-digit by one-digit numbers
 - ☐ use the area model and known facts
 - ☐ use the associative and distributive properties of multiplication
 - ☐ identify rules of commutativity in all operations



In each grid the numbers multiply across, and also down. Use your multiplication facts knowledge to fill in the answers.

A

7	3	
5	8	

B

6	2	
4	7	

C

3	4	
2	8	

D

6	7	
8	9	

E

2	3	9	
4	2	7	
7	8	1	



2 Apply multiplication facts to larger numbers.

a $2 \times 10 =$ _____

b $4 \times 20 =$ _____

c $5 \times 70 =$ _____

d $9 \times 30 =$ _____

e $6 \times 90 =$ _____

f $8 \times 50 =$ _____

g $3 \times 100 =$ _____

h $2 \times 800 =$ _____

i $4 \times 500 =$ _____

j $5 \times 200 =$ _____

k $6 \times 400 =$ _____

l $7 \times 300 =$ _____

Challenge!

Write your own multiplication puzzle.
Swap puzzles with a buddy and solve.

Multiply 3-digit numbers

TERM 4
Week 2

1 Break the large number into smaller numbers to find the answer.

a $183 \times 5 = (100 \times 5) + (80 \times 5) + (3 \times 5)$

$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

b $245 \times 8 = (\underline{\hspace{2cm}} \times 8) + (\underline{\hspace{2cm}} \times 8) + (5 \times 8)$

$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

c $349 \times 3 = (\underline{\hspace{2cm}} \times 3) + (\underline{\hspace{2cm}} \times 3) + (\underline{\hspace{2cm}} \times 3)$

$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

d $423 \times 6 = (\underline{\hspace{2cm}} \times \underline{\hspace{2cm}}) + (\underline{\hspace{2cm}} \times \underline{\hspace{2cm}}) + (\underline{\hspace{2cm}} \times \underline{\hspace{2cm}})$

$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

e $584 \times 9 = (\underline{\hspace{2cm}} \times \underline{\hspace{2cm}}) + (\underline{\hspace{2cm}} \times \underline{\hspace{2cm}}) + (\underline{\hspace{2cm}} \times \underline{\hspace{2cm}})$

$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

f $601 \times 7 = \underline{\hspace{4cm}}$

$= \underline{\hspace{4cm}}$

$= \underline{\hspace{4cm}}$

g $720 \times 4 = \underline{\hspace{4cm}}$

$= \underline{\hspace{4cm}}$

$= \underline{\hspace{4cm}}$

2 Solve these using mental multiplication.

a $370 \times 2 = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

b $650 \times 5 = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

c $315 \times 8 = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

d $932 \times 3 = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$



1 Multiply these mentally.

- a** $27 \times 2 =$ _____ **b** $65 \times 5 =$ _____ **c** $31 \times 8 =$ _____ **d** $93 \times 3 =$ _____
e $76 \times 4 =$ _____ **f** $24 \times 9 =$ _____ **g** $59 \times 6 =$ _____ **h** $83 \times 7 =$ _____
i $73 \times 5 =$ _____ **j** $95 \times 7 =$ _____ **k** $17 \times 4 =$ _____ **l** $52 \times 9 =$ _____

2 Try to do these calculations entirely in your head.

- a** $437 \times 2 =$ _____ **b** $650 \times 5 =$ _____
c $315 \times 8 =$ _____ **d** $932 \times 3 =$ _____
e $875 \times 4 =$ _____ **f** $704 \times 9 =$ _____
g $289 \times 6 =$ _____ **h** $583 \times 7 =$ _____

Working

3 Use a longer format to check your calculations. Tick the ones you got correct.

- a** $437 \times 2 =$ _____

b $650 \times 5 =$ _____

c $315 \times 8 =$ _____

d $932 \times 3 =$ _____

e $875 \times 4 =$ _____

f $704 \times 9 =$ _____

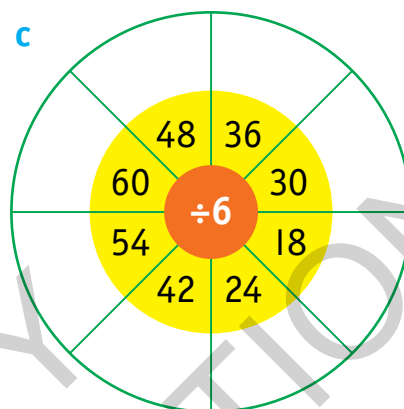
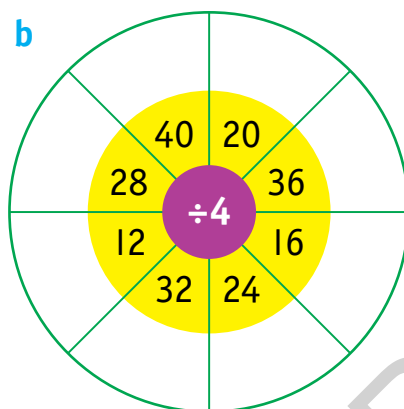
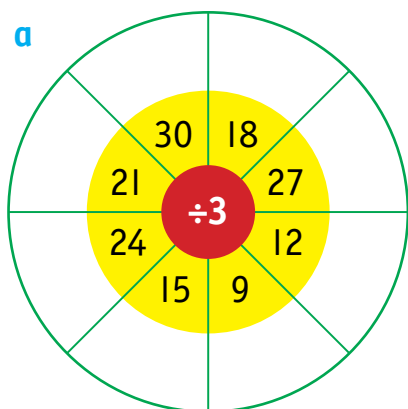
g $289 \times 6 =$ _____

h $583 \times 7 =$ _____

Using division facts

TERM 4
Week 2

1 Complete these dart boards by dividing each number by the central number.



2 Which division fact helps? Use it to find the answer.

a $120 \div 2 =$ _____

$12 \div 2 =$ _____

b $150 \div 3 =$ _____

$15 \div 3 =$ _____

c $450 \div 5 =$ _____

_____ $\div 5 =$ _____

d $240 \div 8 =$ _____

_____ $\div 8 =$ _____

e $280 \div 4 =$ _____

_____ $\div$ _____ $=$ _____

f $300 \div 6 =$ _____

_____ $\div$ _____ $=$ _____

g $210 \div 7 =$ _____

_____ $\div$ _____ $=$ _____

h $180 \div 9 =$ _____

_____ $\div$ _____ $=$ _____

3 Use division facts to divide mentally

a $200 \div 2 =$ _____

b $240 \div 3 =$ _____

c $160 \div 4 =$ _____

d $350 \div 5 =$ _____

e $540 \div 6 =$ _____

f $280 \div 7 =$ _____

g $560 \div 8 =$ _____

h $360 \div 9 =$ _____

i $490 \div 7 =$ _____

j $270 \div 9 =$ _____

k $240 \div 4 =$ _____

l $400 \div 5 =$ _____

4 Step on 'lucky 80' stones to cross the creek. Only shade answers of 80. If you step on other stones, you will sink. Move only right, up and down.

START	$420 \div 6$	$80 \div 1$	$320 \div 4$	$160 \div 2$	$200 \div 2$	$270 \div 3$	FINISH
	$480 \div 6$	$240 \div 3$	$600 \div 10$	$400 \div 5$	$210 \div 7$	$420 \div 7$	
	$360 \div 4$	$240 \div 4$	$400 \div 4$	$560 \div 7$	$640 \div 8$	$540 \div 9$	
	$240 \div 6$	$280 \div 7$	$360 \div 6$	$300 \div 5$	$720 \div 9$	$800 \div 10$	

1 Break the large number into smaller numbers to find the answer.

a $248 \div 2 = (200 \div 2) + (40 \div 2) + (8 \div 2)$ b $279 \div 3 = (270 \div 3) + (9 \div 3)$

$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

c $424 \div 4 = (400 \div \underline{\hspace{2cm}}) + (24 \div \underline{\hspace{2cm}})$ d $655 \div 5 = (\underline{\hspace{2cm}} \div 5) + (\underline{\hspace{2cm}} \div 5)$

$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

e $486 \div 6 = \underline{\hspace{2cm}}$ f $328 \div 4 = \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

2 Solve these.

a $166 \div 2 = \underline{\hspace{2cm}}$ b $125 \div 5 = \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

c $832 \div 8 = \underline{\hspace{2cm}}$ d $369 \div 3 = \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

e $124 \div 4 = \underline{\hspace{2cm}}$ f $630 \div 9 = \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

g $246 \div 6 = \underline{\hspace{2cm}}$ h $147 \div 7 = \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

3 Solve these. Multiply to check your answers.

a $186 \div 2 = \underline{\hspace{2cm}}$ $2 \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$ b $525 \div 5 = \underline{\hspace{2cm}}$ $5 \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

c $432 \div 8 = \underline{\hspace{2cm}}$ $8 \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$ d $936 \div 3 = \underline{\hspace{2cm}}$ $3 \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

e $816 \div 4 = \underline{\hspace{2cm}}$ $4 \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$ f $279 \div 9 = \underline{\hspace{2cm}}$ $9 \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

g $126 \div 6 = \underline{\hspace{2cm}}$ $6 \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$ h $217 \div 7 = \underline{\hspace{2cm}}$ $7 \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

Mastery Checklist

- I can: ☐ multiply 1, 2 and 3-digit numbers by a single digit
☐ divide 2 and 3-digit numbers by a single digit
☐ partition 3-digit numbers to multiply and divide
☐ use multiplication and division facts to multiply and divide larger numbers

I Circle the coins and notes to make the amount.

a \$3.40	
b \$5.70	
c \$62.50	

2 Which ones show \$5.80?

a	b
c	d

3 Make the amount. Show two different ways to make each amount.

a \$8.70

Way 1 _____

Way 2 _____

b \$17.60

Way 1 _____

Way 2 _____

Menu



sushi
¥200 each



spring rolls
¥500 for 3



soup
¥350



yakitori
¥600 for 2



green tea
¥100



rice pancakes
¥450 for 4



stir fry noodles
¥800

- 1 Which items cost less than ¥500?

- 2 Which items cost between ¥500 and ¥1,000?

- 3 What three items could I buy for a total less than ¥1,000?

- 4 If I bought the yakitori, the stir fry and a green tea, what change would I get from ¥5,000?

- 5 If you had ¥2,000, what would you buy? What is the total price of your choice?

- 6 a If ¥1 is equal to 1c in New Zealand money, what is the cost of the sushi in New Zealand dollars? Show your thinking.

- b The same sushi in New Zealand costs NZ\$7. Which country has cheaper sushi?

Study this menu.



	veggie burger \$8.50		milkshake \$4.20
	snacks in a bag \$3.80		juice \$3.40

- 1 What coins would you use to pay for:
 - a the veggie burger? _____
 - b the milkshake? _____
 - c the snacks? _____
 - d the juice? _____
- 2 a My brother wants one of everything on the menu.
Will a \$20 note cover the cost? _____
- b What is the total cost? _____
- 3 What is the cost of:
 - a a veggie burger and a juice?

 - b snacks and juice?

- 4 What change will I receive from \$10 if I buy:
 - a a veggie burger?

 - b both drinks?

Working



- 1
 - a Which two toys are the same price? _____
 - b Which toy costs the most? _____
 - c Which toy is the cheapest? _____
 - d What is the difference between them? _____
- 2
 - a What would 3 teddies cost? _____
 - b What would 7 yo-yos cost? _____
 - c What would 4 tennis balls cost? _____
- 3
 - a Which two toys together cost \$8.50? _____
 - b How much would it cost to buy the car and the yo-yo? _____
 - c Can I buy the donkey and the softball with \$7.50? _____

4 Use some of these coins to pay for each item.



\$1.50	
\$4.50	
\$7.50	
\$3.30	

Addition and subtraction of money

TERM 4
Week 3

- 1 a $10c + 10c + 10c + 20c =$ _____
 c $50c + 50c + 50c =$ _____
 e $20c + 20c + 20c + 50c =$ _____
 b $50c + 10c + 20c + 20c =$ _____
 d $20c + 10c + 20c + 50c =$ _____
 f $10c + 50c + 20c + 10c + 10c =$ _____

- 2 a $\$10 - \$7 =$ _____
 d $\$20 - \$13 =$ _____
 g $\$5 - \$4.50 =$ _____
 b $\$20 - \$12 =$ _____
 e $\$50 - \$30 =$ _____
 h $\$5 - \$1.50 =$ _____
 c $\$10 - \$4 =$ _____
 f $\$100 - \$50 =$ _____
 i $\$10 - \$5.50 =$ _____

3 Complete.

a						b					
+	\$5	\$36	\$19	\$1.50	\$2.80	+	50c	20c	\$2	\$18	\$1.40
\$7						35c					

4 Write two different ways to make each amount with coins.

Amount	Coin combination 1	Coin combination 2
a \$1.80		
b \$2.40		
c \$5.90		
d \$10.50		

- 5 Sam had \$5 pocket money. He spent \$2 on sweets and \$1 on a drink. How much did he have left?



- 6 For her birthday Anahera was given \$5. She already had \$7.60. How much does she now have?



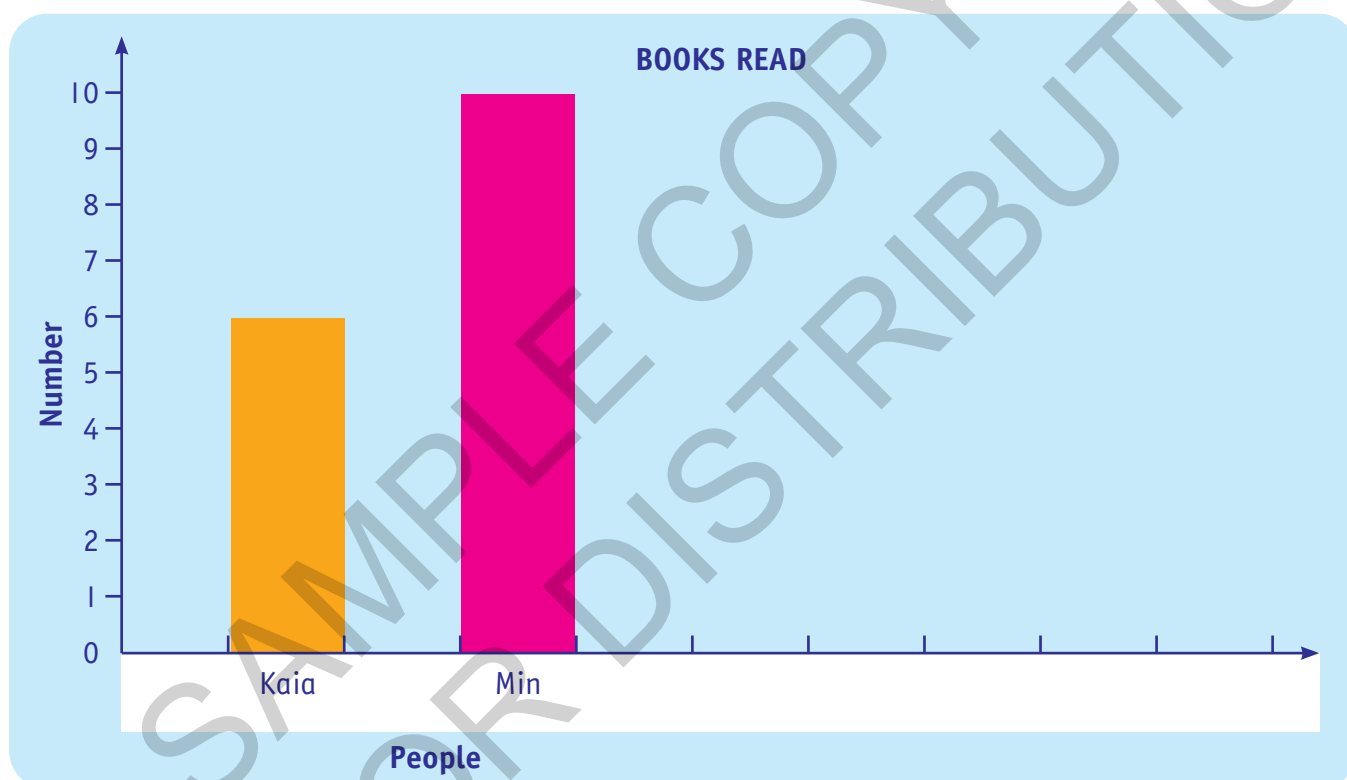
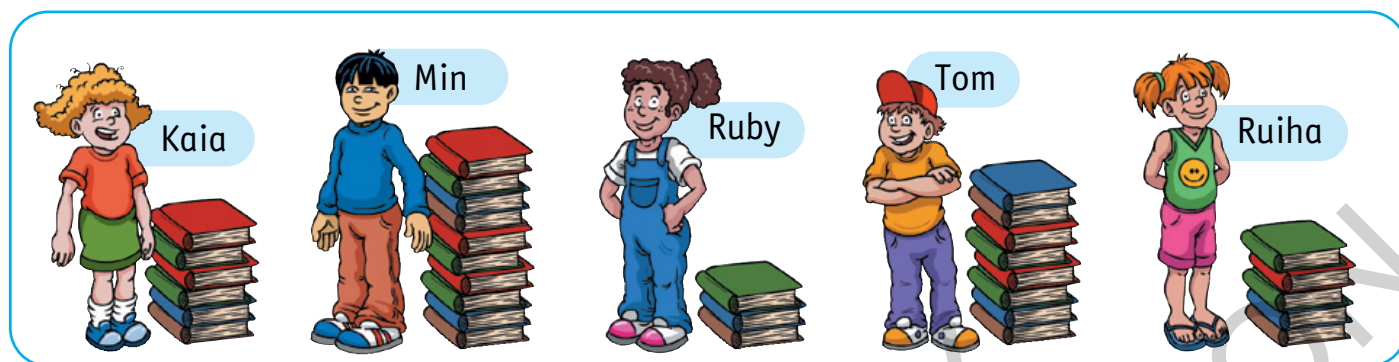
- 7 Bozo's owner paid \$35 at the vet and \$17 for a new lead. How much did he spend?



- 8 I bought an ice cream for \$2 and a sandwich for \$4.40. How much change did I get from \$10?

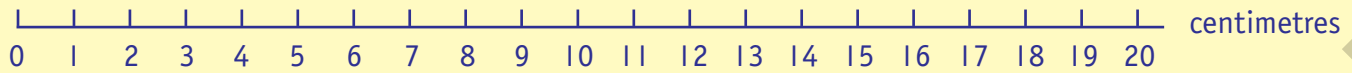


Mastery Checklist I can: ☐ add costs and work out change
☐ recognise New Zealand notes and coins
☐ choose coins to equal an amount
☐ find different combinations of coins to equal an amount
☐ solve money word problems



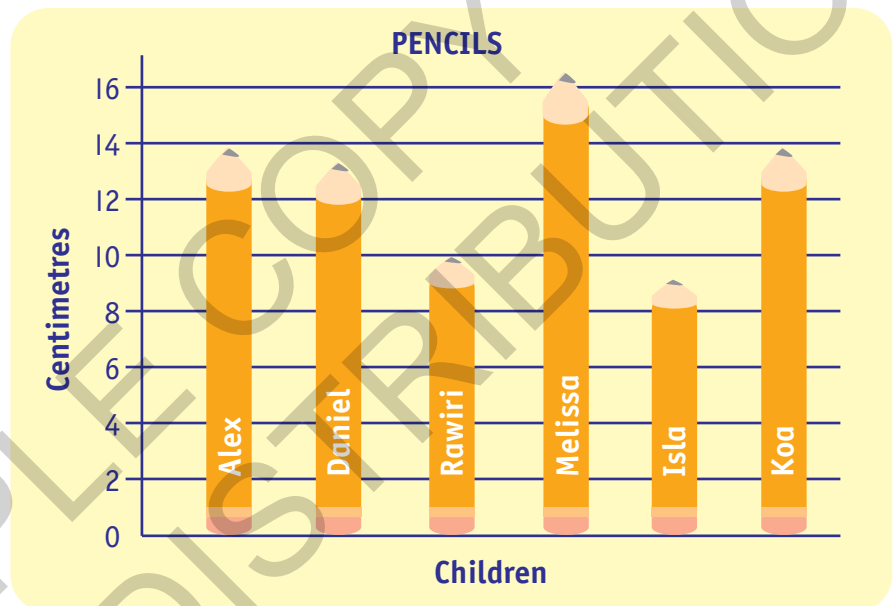
- Complete the bar graph. Write the children's names under the columns.
- What is this graph telling us? _____
- Who has: **a** the most books? _____ **b** the least books? _____
- Who has two less books than Ruiha? _____
- Which two children together have 9 books? _____
- How many books do the children have altogether? _____
- If Tom gives half his books to Min, how many will he now have? _____
- Does the graph tell us who likes reading most? Why or why not?

At the beginning of the year, Mr Wright gave the students in his class new pencils.



- 1 How long were the pencils? _____

One month later Mr Wright asked some students how long their pencils were now. He graphed the results.



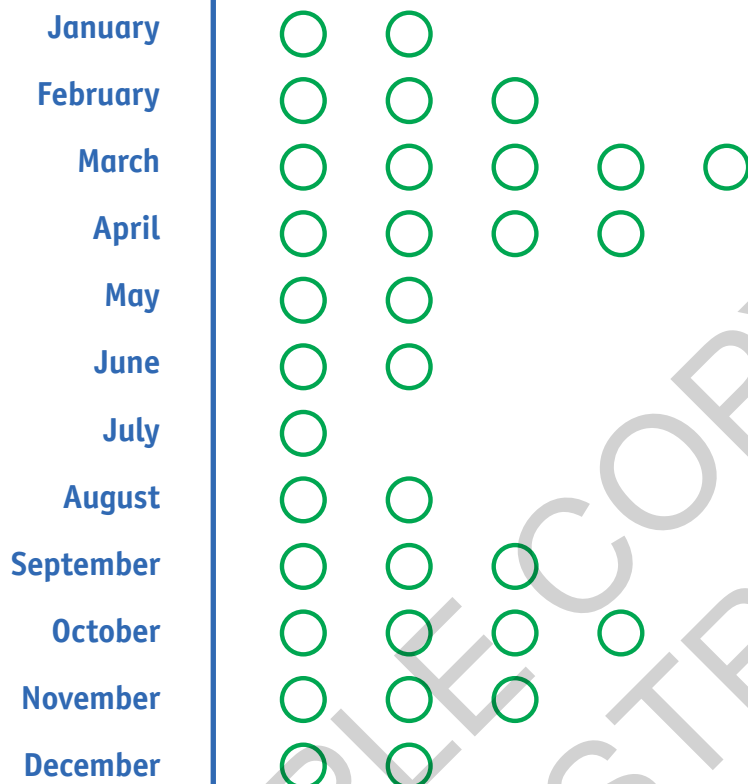
- 2 How long is Alex's pencil? _____
- 3 How long is Daniel's pencil? _____
- 4 Who has the longest pencil? _____
- 5 Whose pencil is the shortest? _____
- 6 a How long is Isla's pencil? _____
- b How much shorter is it now than when she got it? _____
- 7 How much shorter is Rawiri's pencil now than when Mr Wright gave it to him? _____
- 8 Which student has used their pencil the most? Explain.

- 9 Which student has used their pencil the least? Explain.

- 10 Give another possible reason why the pencil lengths are different.

Class birthdays

○ = 1 person



- How many people were surveyed for this graph? _____
- How many birthdays were in:
 - January? _____
 - March? _____
 - May? _____
 - July? _____
 - October? _____
 - December? _____
- Which month
 - has the most birthdays? _____
 - has the least birthdays? _____
- What is the
 - highest number of birthdays in one month? _____
 - lowest number of birthdays in one month? _____
 - most common number of birthdays in a month? _____
- Circle the months for each season in the year: Summer in green, Autumn in red, Winter in blue, Spring in pink.
 - Which season has the most birthdays? _____
 - Which season has the least birthdays? _____
- Who would use a graph like this? _____
 - Why? _____
- Would every class's graph of birthdays look like this? _____
 - Why? _____

Draw a dot plot

TERM 4
Week 4

This shows the numbers of brothers and sisters of children in Class 4A.

0 siblings	1 sibling	2 siblings	3 siblings	4 siblings	over 4 siblings
4	6	5	3	2	4



- I Draw a dot plot to show this information.
 - a Write the numbers of siblings down the left side.
 - b Fill in the dots for each number of siblings.
 - c Give the graph a title.



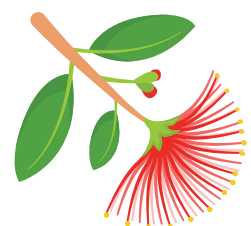
Use the graph to answer these questions.

- 2
 - a What is the most common number of siblings? _____
 - b How many people have that number of siblings? _____
- 3
 - a What is the least common number of siblings? _____
 - b How many people have that number of siblings? _____
- 4 What is the difference between the number of people with the least and most common number of siblings? _____
- 5 Why is a dot plot the best kind of graph for this information?

Mastery Checklist

I can:

- ☐ make bar graphs and dot plots
- ☐ read bar graphs and dot plots
- ☐ carry out a survey



1 Circle the largest volume. Tick the smallest volume.



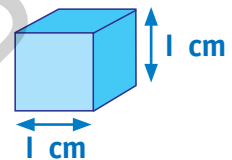
c Which object would take up the most space in your bag?

Volume is the amount of space an object takes up.

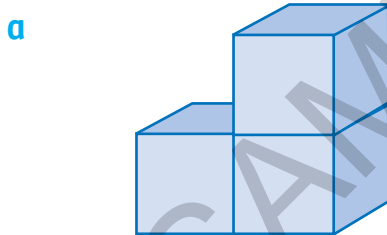
We measure volume in **cubic units**.

This cube is **1 cm × 1 cm × 1 cm**.

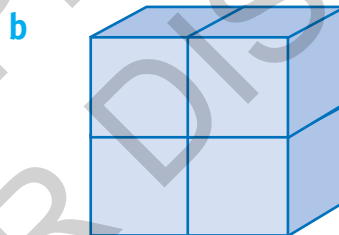
Its volume is **1 cubic centimetre (1 cm³)**.



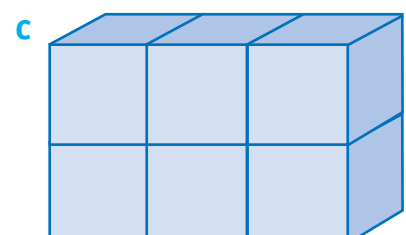
2 How many cubic centimetres in each model?



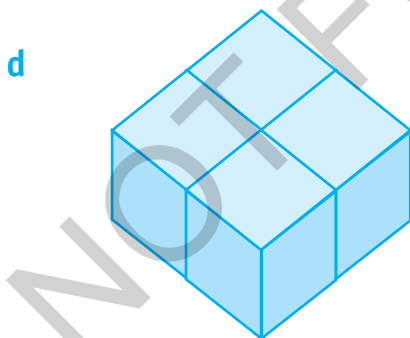
Volume = cm³



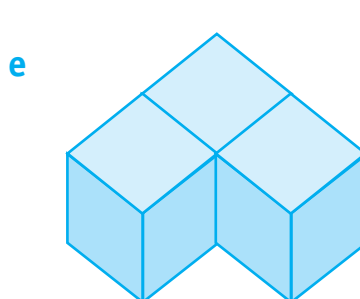
Volume = cm³



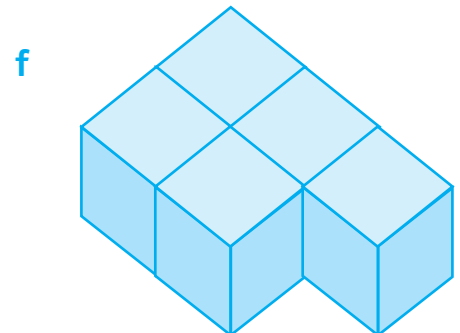
Volume = cm³



Volume = cm³



Volume = cm³



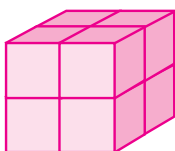
Volume = cm³

g Order the models from smallest to largest volume.

< < < < <

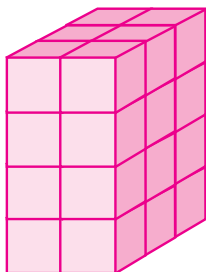
h Which models have the same volume?

1 a



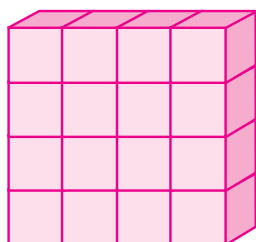
layers of blocks = a volume of blocks

b



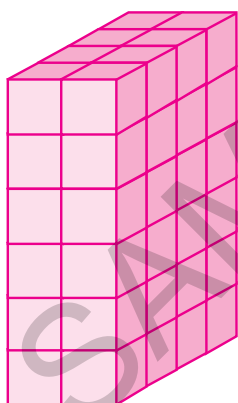
layers of blocks = a volume of blocks

c



layers of blocks = a volume of blocks

d



layers of blocks = a volume of blocks

2 Gather four boxes. How many  fit inside? Guess first, then count.

a



my guess
 my count

b



my guess
 my count

c



my guess
 my count

d



my guess
 my count

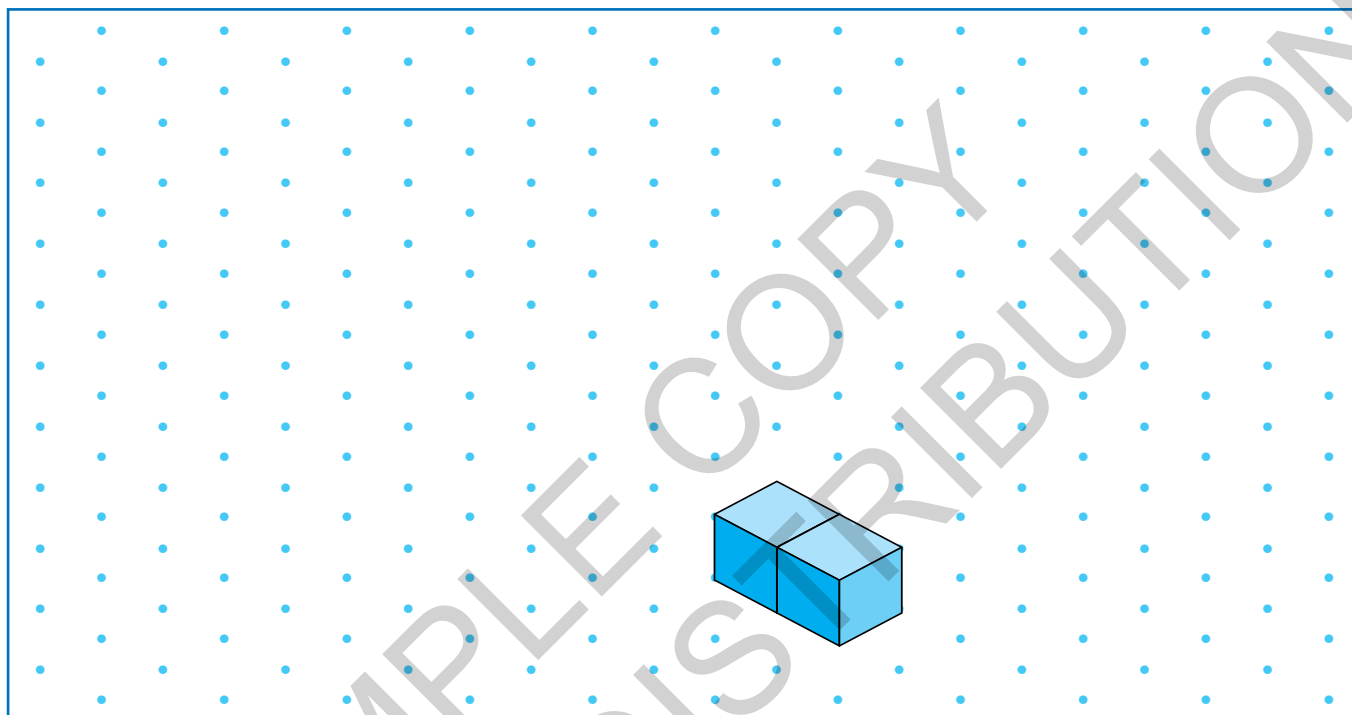




- 1 Use 8 blocks to make a rectangular prism.

How many blocks wide? _____ How many blocks long? _____

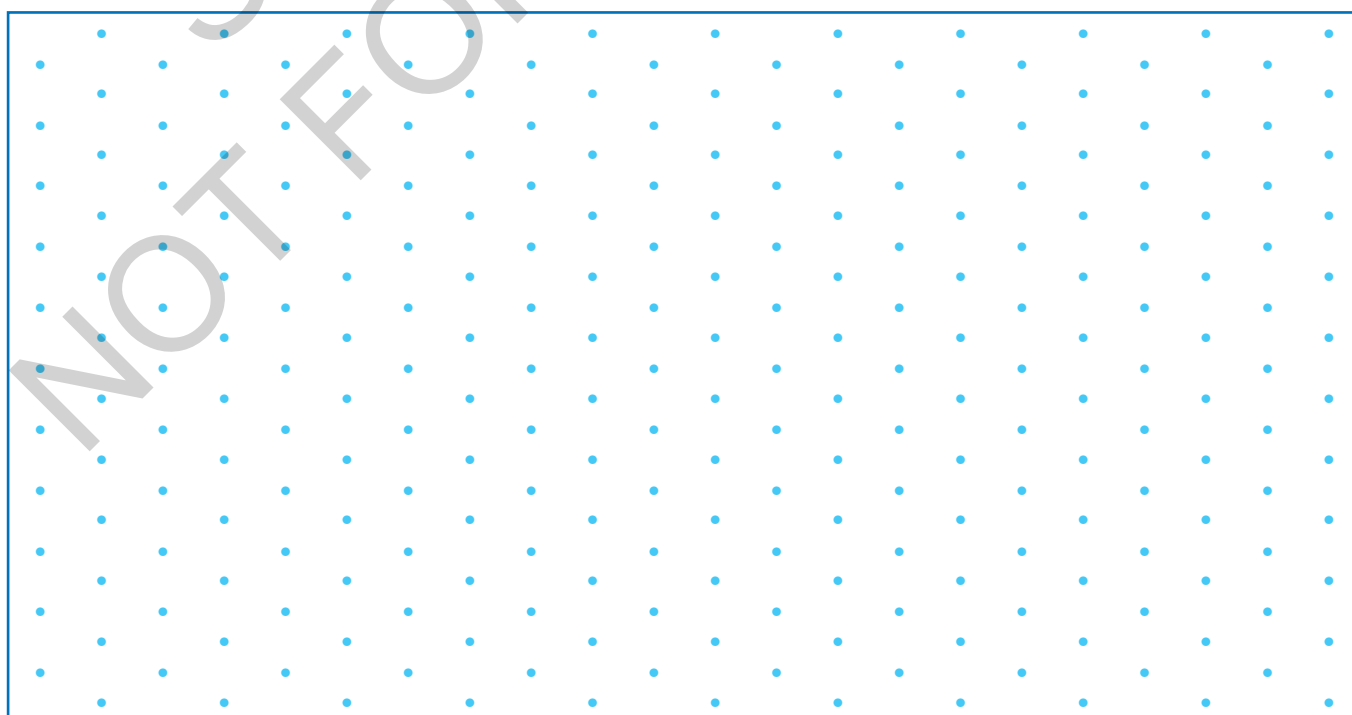
Draw your rectangular prism:



- 2 Use another 8 blocks to make a cube.

How many blocks in the bottom layer? _____

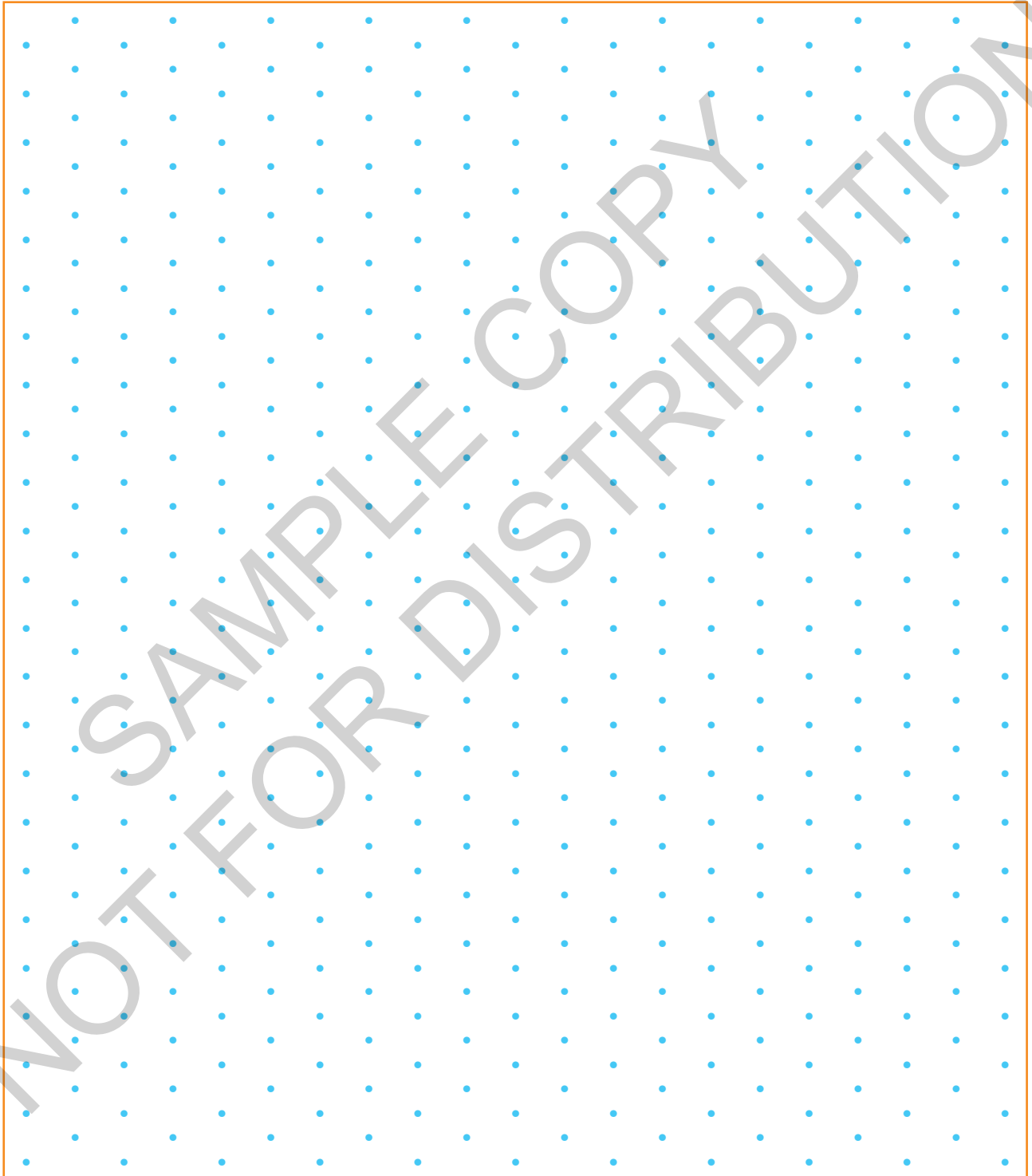
How many blocks in the top layer? _____ Draw your cube:



Same volume, different dimensions

How many different cubes and rectangular prisms can you make using 16 blocks?

Make models using 16 linking cubes. Draw them below.



I can:

- ☐ measure volume in cubic centimetres
- ☐ make different shapes with the same volume

Checkpoint 7

- 1 96 shells are shared equally among 3 children. How many shells does each child get?

p 146

$$96 \div 3 = \boxed{}$$

- 2 Solve.

p 147

$$9 \times 54 = \boxed{}$$

Explain the strategy you used.

- 3 Multiply.

p 147

a $23 \times 3 =$ _____

b $35 \times 4 =$ _____

c $126 \times 2 =$ _____

- 4 Divide.

p 146

a $70 \div 7 =$ _____

b $45 \div 9 =$ _____

c $56 \div 8 =$ _____

- 5 Sione buys:

p 156

- juice \$3.50
- sandwich \$4.80

How much does he spend?

- 6 Ella has \$20.

p 158

She spends \$13.40.

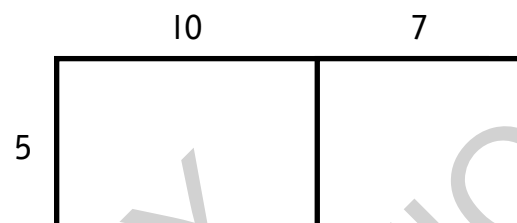
How much change does she receive?



- 7 Use the area diagrams to multiply by a teen number.

p 147

a $5 \times 17 =$ _____

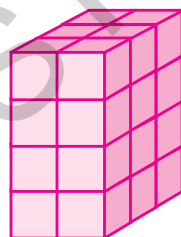


b $6 \times 16 =$ _____



- 8 How many cubes?

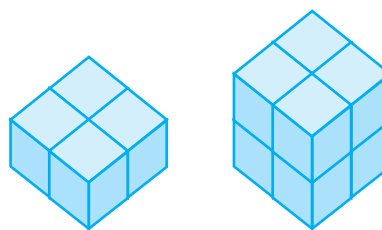
p 166



Volume = cubes.

- 9 Circle the object with the greater volume.

p 166



- 10 Show your working.

p 153

23×5 _____

- 11 Show your working.

p 153

$72 \div 3$ _____

Checkpoint 7

12 A toy costs \$18.70. p 158

A book costs \$6.40.

a How much do they cost altogether?

You pay with \$30.

b How much change do you receive?

13 a $6 \times 70 =$ p 148

b $4 \times 300 =$ _____

c $5 \times 400 =$ _____

14 True (T) or false (F)? p 150

a $6 + 6 = 9 + 6$ ☐

b $9 - 2 = 2 - 9$ ☐

c $24 \div 6 = 6 \div 24$ ☐

d $9 \times 3 = 3 \times 9$ ☐

e $21 \div 3 = 3 + 21$ ☐

15 Divide. p 154

a $40 \div 2 =$ _____

b $300 \div 3 =$ _____

c $160 \div 4 =$ _____

d $360 \div 6 =$ _____

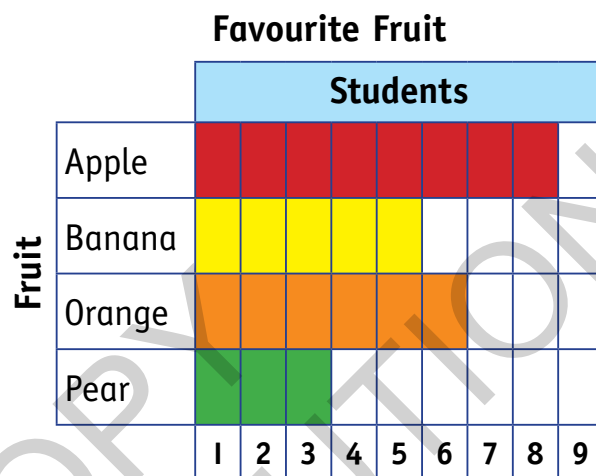
16 A box is: p 166

4 cm cubes long. 2 cm cubes wide.

3 cm cubes high.

Volume = cm^3

17 Read the graph. p 161



a Which fruit was most popular?

b How many students chose fruit altogether?

c How many more students chose apples than pears?

18 Break the larger number into smaller numbers to find the answer. p 152, 154

a 423×8
 $= (\text{ } \times 8) + (\text{ } \times 8) + (\text{ } \times 8)$

$= \text{ } + \text{ } + \text{ }$

$= \text{ }$

b 654×5
 $= \text{ }$

$= \text{ }$

$= \text{ }$

c $424 \div 4$
 $= \text{ }$

$= \text{ }$

$= \text{ }$



survey
the class

1 What's your favourite? Ask each child in your class to choose one.

a Use this tick sheet.

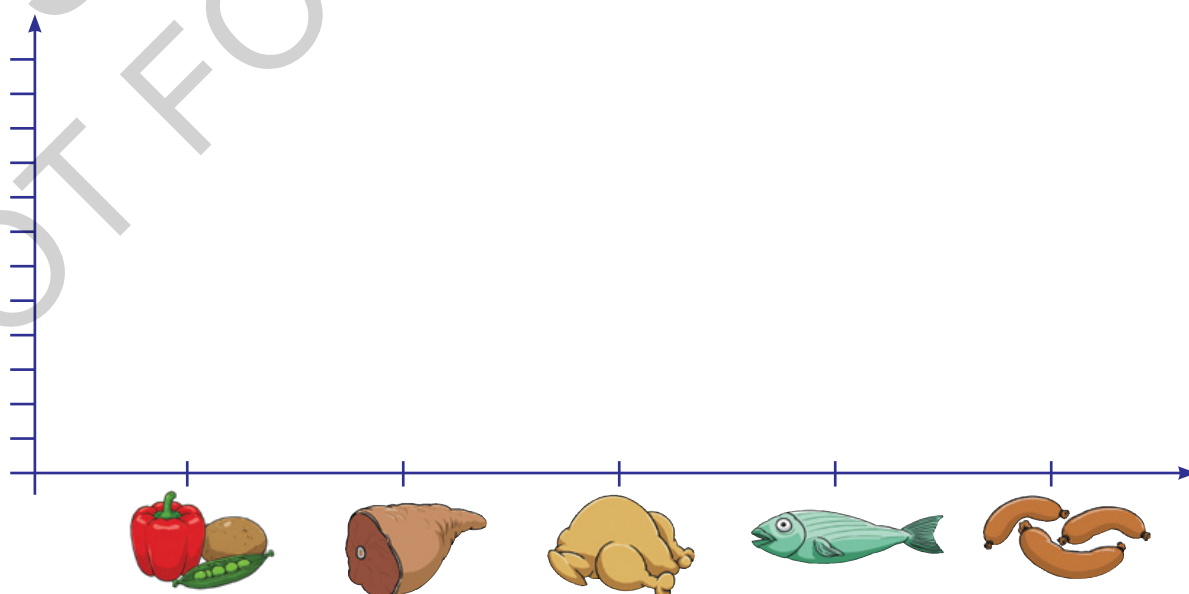
Vegetables
Meat
Chicken
Fish
Sausages

b Now use tally marks.

Vegetables
Meat
Chicken
Fish
Sausages

If the numbers don't match up, check your data.

2 Make a bar graph to show these choices. Remember all the labels.



3 Which do they like most? _____

1 Some friends drew a picture graph of the fish they caught.

- How many people went fishing? _____
- How many fish did Julio catch? _____
- Who caught the most fish?

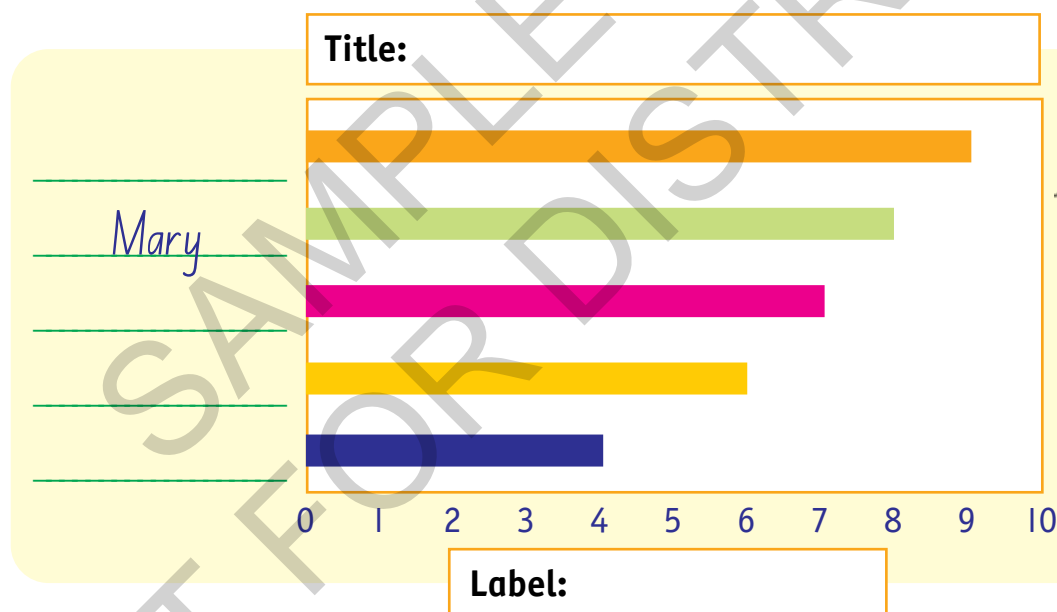
- Who caught twice as many fish as Arthur?

- How many fish were caught altogether? _____
- Who said this? "I caught more fish than Julio, but fewer than Mary." _____



Key  = 2 fish

2 Mary decided to show the information as a bar graph. She drew this.



- Complete the bar graph by writing the name of each person.
- Write a title on the graph.
- Write the missing label.

3 Conn said he would write a table for the information.

- Complete the table for Conn.
- What does the table use instead of pictures?

- What is one advantage of using a table?

Name	Number of fish caught
Arthur	
Julio	
Conn	7
Mary	
Tessie	

SSL Table — Central Districts

	Games	Won	Lost	Drawn	Points
Giants	8	6	1	1	26
Stars	8	6	2	0	24
Dragons	8	5	3	0	20
Furies	8	4	3	1	18
Rams	7	4	3	0	16
Tigers	8	4	4	0	16
Meteors	7	2	5	0	8
Wallabies	8	2	6	0	8



Here is the Schools Soccer League results table for this year.

- What are the points for the:
 - Wallabies? _____
 - Giants? _____
 - Dragons? _____
 - Meteors? _____
- How many points do the teams score for a win? _____
 - How many points do they get for a draw? _____
- How many rounds have been played by most teams? _____
- Who has yet to play their eighth game? _____
- Which two teams had a draw? _____
- If the Rams win their 8th round match, what will the top 4 teams be? _____
- Could the Furies become the league leaders after playing two more games? _____
How? _____
- If the Tigers win the next 4 games, will they be leaders? _____
Why? _____



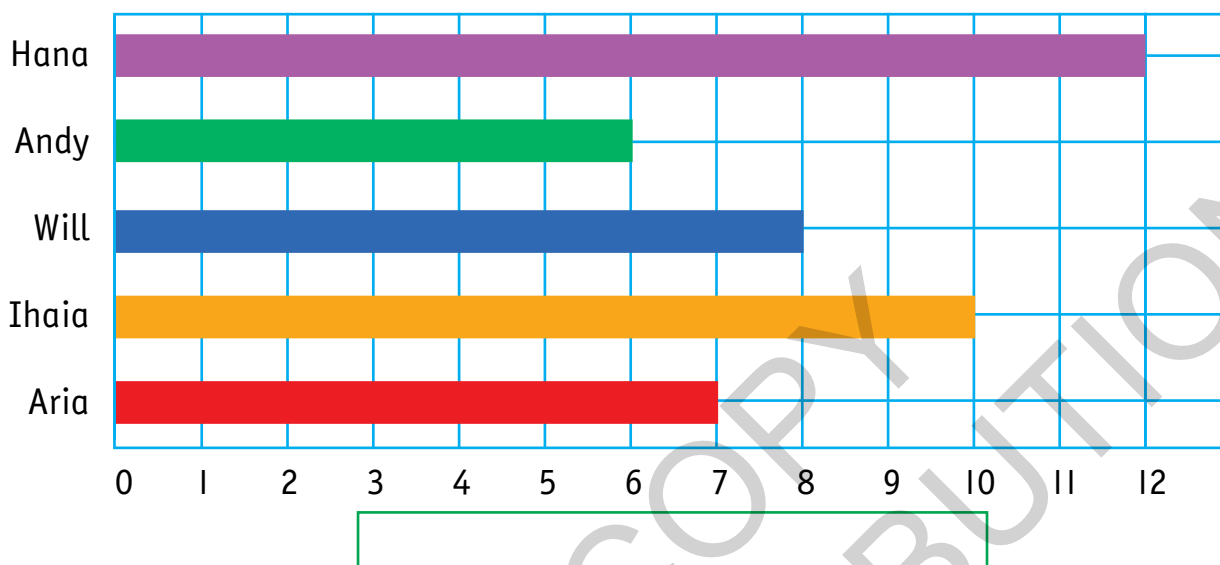
Challenge! Update the table using these results:

Round 8 Rams 4 Meteors 2

Round 9 Giants 3 Wallabies 1 Stars 2 Dragons 1
Meteors 4 Furies 3 Rams 2 Tigers 2

Who is top of the table now?

Hours of Homework for the Fortnight



- 1
 - a How many students compared homework? _____
 - b Write the label for the bottom numbers. _____
 - c Who did the most homework? _____
 - d Who did the least homework? _____
 - e Who did 8 hours of homework? _____
 - f Name three students who did more homework than Aria.



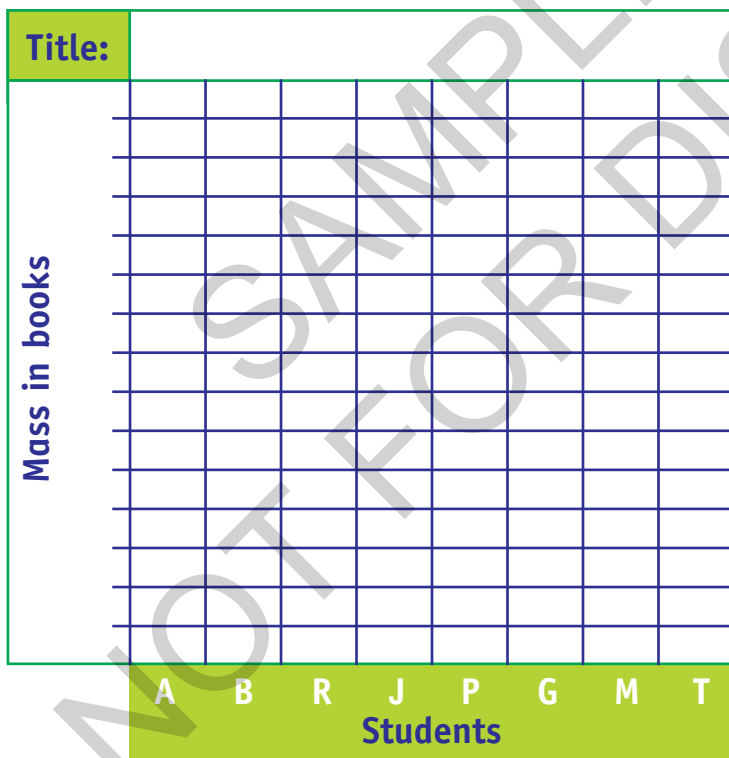
- 2 Draw a picture graph to show the same information. Use one clock to show one hour. Label your graph clearly.

Drawing a bar graph

TERM 4
Week 6

- Eight children have heavy schoolbags.
Their teacher weighs each bag using books.
- a How heavy is Roger's bag? _____ books
 - b Who has the heaviest bag? _____
 - c Who has the lightest bag? _____
 - d Which two bags have the same mass?
_____ and _____
 - e Write the three students with the heaviest bags
from lightest to heaviest.
_____, _____, _____
 - f Whose bag is heavier than George's, but lighter
than Bruce's? _____
 - g What is the mass, in books, of Peter's bag and
Roger's bag together? _____

Amanda's bag (A)	= 8 books
Bruce's bag (B)	= 12 books
Roger's bag (R)	= 10 books
Jan's bag (J)	= 14 books
Peter's bag (P)	= 7 books
George's bag (G)	= 9 books
Michelle's bag (M)	= 8 books
Timothy's bag (T)	= 15 books



- 2 a Make a bar graph by colouring the spaces.
b Write in the vertical scale.
c Write a title for your graph.
- 3 True or False?
a Jan's bag is twice as heavy as Peter's bag. _____
b Roger's bag is lighter than George's bag. _____
c Timothy's bag has the same mass as Michelle's bag and Peter's bag together. _____
d Three students have bags lighter than Roger's bag. _____

Mastery Checklist

- I can:
- ☐ complete a survey and graph results.
 - ☐ answer questions about a picture graph, bar graphs and tables
 - ☐ complete a bar graph and a table
 - ☐ make a picture graph and a bar graph



Find three small containers. Label them **A**, **B** and **C**. Fill each with sand.

1 **a** Feel the weight of each.

b Order from lightest to heaviest.

lightest _____ **heaviest**

2 Use scales to weigh each one.

A _____ **B** _____ **C** _____

3 **a** Empty the containers. Fill them with something different, e.g. blocks.

b Order from lightest to heaviest.

lightest _____ **heaviest**

c Use scales to weigh them again.

A _____ **B** _____ **C** _____

4 Is the order the same each time? _____

5 How could you weigh this book using sand or blocks?

6 How much does this book weigh? _____

1 Use a balance scale to compare a textbook, a reading book and an exercise book.

- a The textbook is _____ than the reading book.
- b The textbook is _____ than the exercise book.
- c The exercise book is _____ than the reading book.

heavier
lighter

2 Put the three books in order from heaviest to lightest.

Heaviest _____ **Lightest**

3 Compare these books to a $\frac{1}{2}$ kg weight. Are they heavier or lighter than half a kilo?

- a a textbook is _____ than half a kilo
- b a reading book is _____ than half a kilo
- c an exercise book is _____ than half a kilo



4 Estimate. Find items that you think will weigh:

- a about 1 kg _____
- b about 2 kg _____
- c about $\frac{1}{2}$ kg _____

5 Check your items on a balance scale with $\frac{1}{2}$ kg and 1 kg weights.

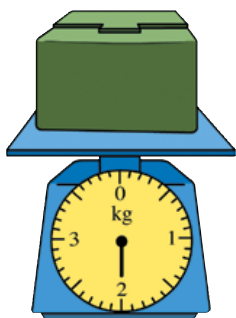
Tick the items you estimated correctly.

6 Use balance scales with $\frac{1}{2}$ kg and 1 kg weights to find two items that weigh:

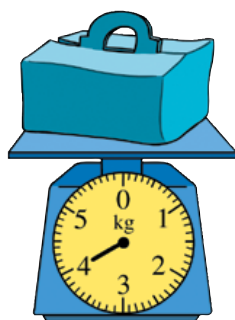
- a about 1 kg together _____
- b about 2 kg together _____
- c about $\frac{1}{2}$ kg together _____
- d exactly the same weight _____
- e How heavy are they? _____



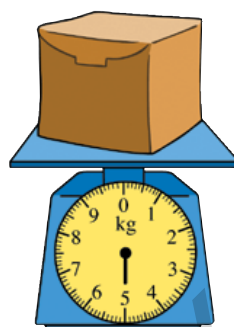
1 What is the mass for each box?



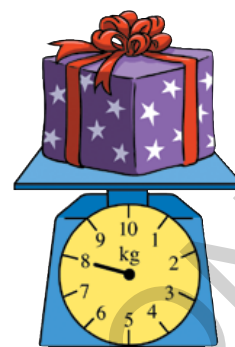
a _____ kg



b _____ kg



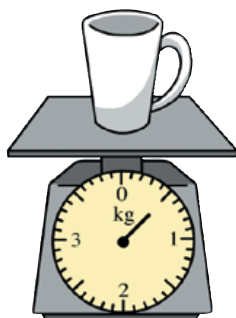
c _____ kg



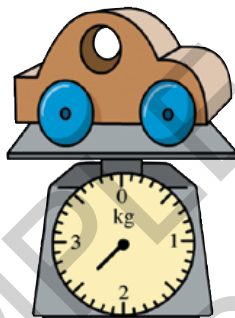
d _____ kg

e What is the total mass of the four boxes? _____

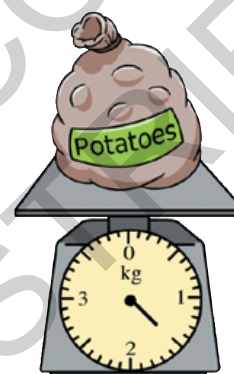
2 What is the mass for each object?



a _____ kg



b _____ kg



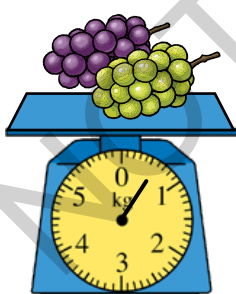
c _____ kg



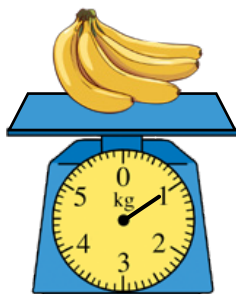
d _____ kg

e Order the objects from lightest to heaviest.

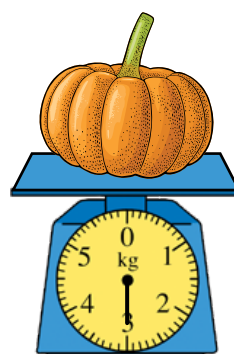
3 How much does each fruit weigh?



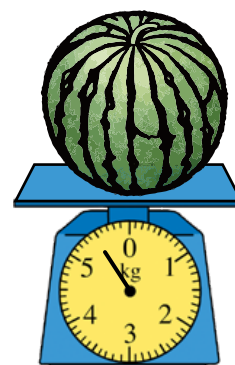
a _____ kg



b _____ kg



c _____ kg



d _____ kg

Challenge!

Look up records for the heaviest example of each fruit above and write them in order. (Yes, a pumpkin is a fruit!)

1 Match.

- | | |
|--------------|---------|
| a 1 kilogram | A 10 g |
| b 500 grams | B 100 g |
| c 100 grams | C 1 kg |
| d 10 grams | D 500 g |

2 Match.

- | | |
|-------------|-------|
| a kilogram | _____ |
| b 500 grams | _____ |
| c 100 grams | _____ |
| d 10 grams | _____ |

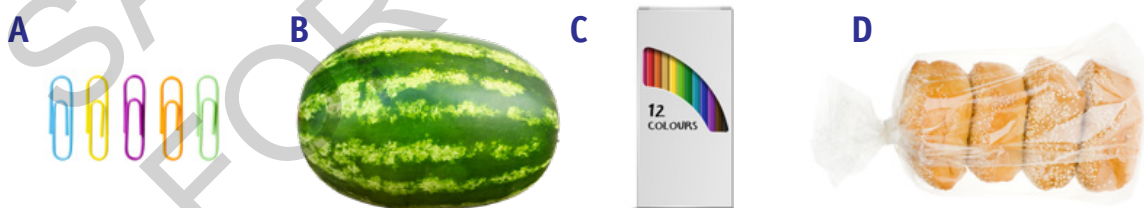
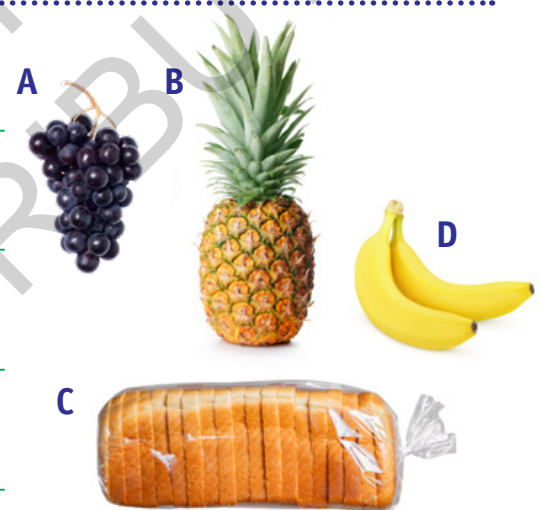


3 Match.

- | | |
|--------------------|----------|
| a 1 kg | A 750 g |
| b $\frac{1}{2}$ kg | B 500 g |
| c $\frac{1}{4}$ kg | C 250 g |
| d $\frac{3}{4}$ kg | D 1000 g |

4 Match.

- | | |
|--------------------|-------|
| a 1 kg | _____ |
| b $\frac{1}{2}$ kg | _____ |
| c $\frac{1}{4}$ kg | _____ |
| d $\frac{3}{4}$ kg | _____ |



5 Estimate the mass of these items.

- | | | | |
|------------|------------|------------|------------|
| a A? _____ | b B? _____ | c C? _____ | d D? _____ |
|------------|------------|------------|------------|

6 Write an item that weighs around each mass.

- | | |
|--------------|---------------|
| a 5 kg _____ | b 10 kg _____ |
| c 5 g _____ | d 50 g _____ |

Mastery Checklist I can:

- ☐ compare the masses of real-life objects
- ☐ compare masses to $\frac{1}{2}$ and 1 kilogram
- ☐ use balance scales
- ☐ read scales in kilograms
- ☐ use benchmarks for estimation

Mass Investigation



The school wants to become more environmentally friendly. We want to learn more about the rubbish our class throws away. Plan an investigation that you could carry out over one week.

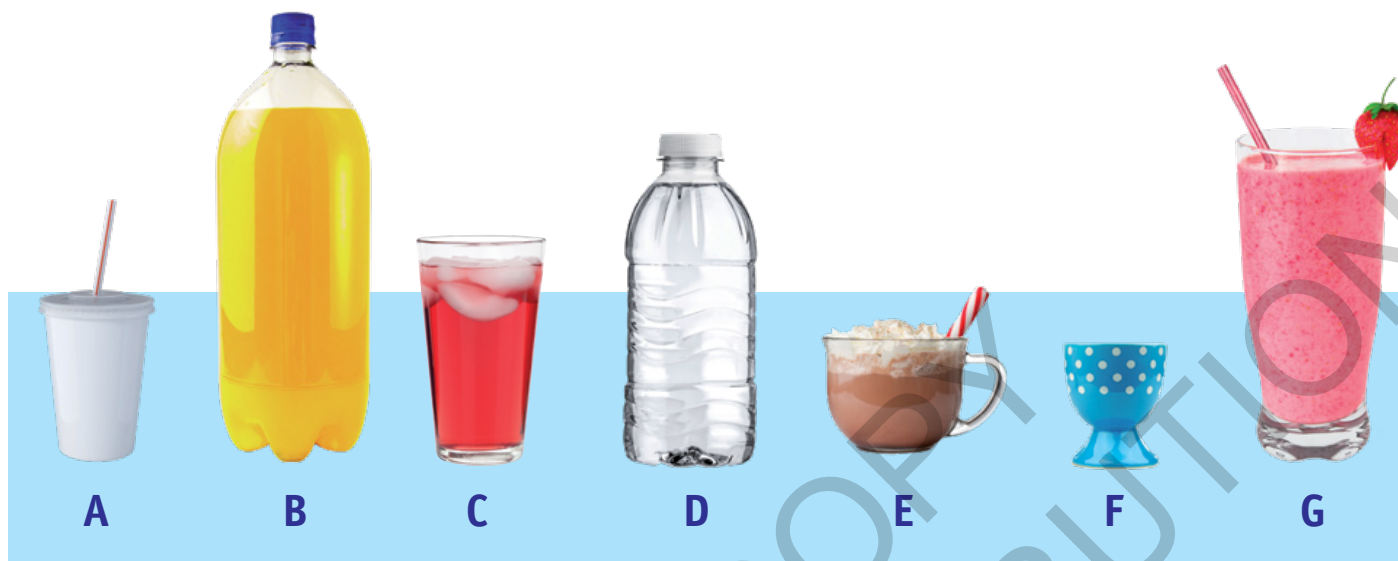
- 1 What do you need to find out? _____
- 2 Plan how you will collect your data. (*Write the steps you will follow.*)

- 3 Record data.

- 4 Conclusion.

I can solve problems by:

☐ conducting an investigation ☐ measuring mass



- 1 Which container holds the most? _____
- 2 Which container holds the least? _____
- 3 Name two containers that hold about the same amount? _____
- 4 Name two containers which hold more than any of these. _____

- 5 Name two containers which hold less than any of these. _____

- 6 About how many cups (E) would be needed to fill:
 - a B? _____
 - b D? _____
 - c A? _____
 - d F? _____
- 7 Write the containers in order from holds least to holds most.

- 8 Get an empty drink bottle and a cup.
 - a How many cups does the bottle hold? _____
 - b Does everyone in the class get the same answer? _____
 - c Why or why not? _____



1 Ali used a cup to fill coloured containers with water.

Container	Number of cups needed
Blue	
Green	
Yellow	
Red	
Orange	
Pink	

- How many cups does the green container hold? _____
- Which container holds the most? _____
- Which container holds the least? _____
- How many cups does the orange one hold? _____
- Which two hold about the same? _____
- What is the difference between the capacity of the biggest and the smallest container? _____

2 Lucy used a different cup. She needed 8 cups to fill the green container.

- Is her cup bigger or smaller than Ali's cup? _____
- About how many of her cups will fill the yellow container? _____
- Would Ali and Lucy get the same answers if they used the same cup? Explain.



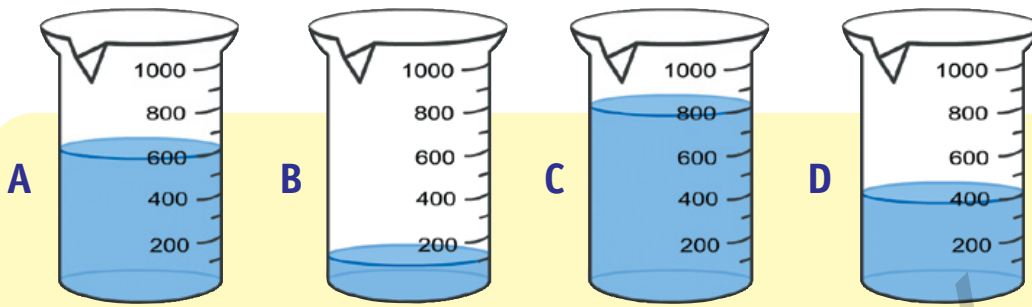
- How much milk is in the jug?
 - How much does the carton hold?
- Fill a 1 litre container with water. Pour it into some cups. How many cups does it fill?



5 Use water and your 1 litre container to find things that hold:

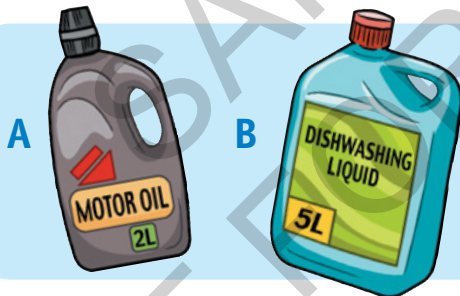
less than 1 litre	about 1 litre	more than 1 litre

These containers measure millilitres.



L = litre
mL = millilitre
1,000 mL = 1 L
500 mL = $\frac{1}{2}$ L

- How much water is in:
a A? _____ b B? _____ c C? _____ d D? _____
- How much more is in: a A than B? _____ b C than D? _____
- How much must be added to:
a B to make 1 L? _____ b C to make 1 L? _____
- Which container is closest to: a 1 L? _____ b $\frac{1}{2}$ L? _____
- Name 4 things which could be measured in millilitres.



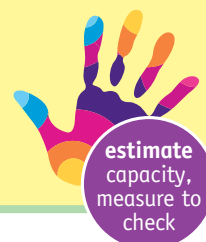
- What is the capacity of A?
 - What is the capacity of B?
 - Which container holds more?
 - How much more does it hold?

- True (T) or false (F)?
 - A dose of medicine is 5 L. _____
 - A car can hold 40 L of petrol. _____
 - A glass holds about 250 mL. _____
 - The capacity of a cup is 200 L. _____
 - My dog drank 1 mL of water today. _____
 - The tall vase can hold 1 L of water. _____



Challenge!

On a large bottle place an elastic band to show where you think $\frac{1}{2}$ L is. Check. Try with different containers.



1 Match.

- | | |
|-------------------|----------|
| a 1 litre | A 10 mL |
| b 500 millilitres | B 100 mL |
| c 100 millilitres | C 1 L |
| d 10 millilitres | D 500 mL |

2 Match.

- | |
|-------------------------|
| a 1 litre _____ |
| b 500 millilitres _____ |
| c 100 millilitres _____ |
| d 10 millilitres _____ |



3 Match.

- | | |
|-------------------|------------|
| a 1 L | A 1,000 mL |
| b $\frac{1}{2}$ L | B 500 mL |
| c $\frac{1}{4}$ L | C 250 mL |
| d $\frac{3}{4}$ L | D 750 mL |

4 Match.

- | |
|-------------------------|
| a 1 L _____ |
| b $\frac{1}{2}$ L _____ |
| c $\frac{1}{4}$ L _____ |
| d $\frac{3}{4}$ L _____ |



5 Estimate the amount these containers hold.

- | | | | |
|------------|------------|------------|------------|
| a A? _____ | b B? _____ | c C? _____ | d D? _____ |
|------------|------------|------------|------------|

6 Write a container to hold these amounts.

- | | |
|--------------|---------------|
| a 5 L _____ | b 10 L _____ |
| c 5 mL _____ | d 50 mL _____ |

Mastery Checklist I can:

- ☐ compare the capacities of different containers
- ☐ use a cup to measure capacity
- ☐ compare capacities to 1 litre
- ☐ relate millilitres to litres
- ☐ choose between millilitres and litres
- ☐ use benchmarks for estimation

Drinks for all

There will be 40 people at a party and you need to buy drinks for them all.

A 2 litre bottle holds 8 cups and a 3 litre bottle holds 12 cups.

How many bottles do you need to buy so that everyone can have two cups?

Find 3 different ways to buy enough bottles of drink.

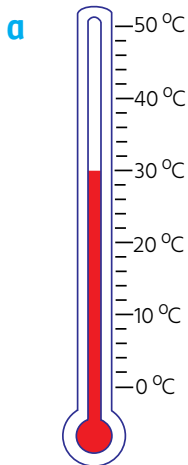


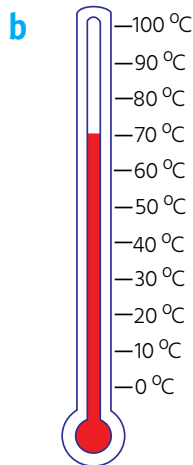
A	B	C
If 2 litre bottles are \$2 and 3 litre bottles are \$3, what is the cheapest option?		
How many mL in each cup? _____		

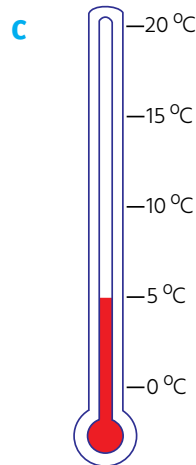
I can solve problems by:

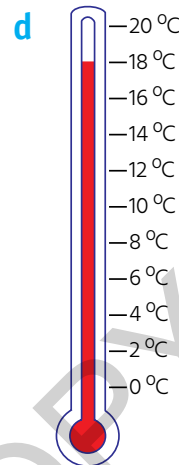
- ☐ understanding capacity ☐ writing algorithms

1 Record the temperatures shown on each thermometer. Look carefully at the scale.









Temperature is
how hot or cold
something is.

You read

20 °C

as 20 degrees
Celsius.



2 Write things you know that match each temperature.

freezing

cold

cool

warm

hot

boiling

3 Place these temperatures in order from coldest to hottest.

a 34 °C, 18 °C, 24 °C, 12 °C

b 16 °C, 4 °C, 0 °C, 11 °C

4 For each day, what temperature could it be?







Challenge!

Research the normal body temperature for:

a human

a dog

a chicken

a kiwi

- 1 Use each digit 0, 2, 4 and 6 once to make all possible 4-digit numbers with 2 in the tens place or hundreds place.

- 2 Write four of those numbers in expanded form.

a _____ + _____ + _____ + _____

b _____ + _____ + _____ + _____

c _____ + _____ + _____ + _____

d _____ + _____ + _____ + _____

- 3 Write two different numbers from your list in words.

- 4 Write your list of numbers in order from smallest to largest.

- 5 Round each number in your list to the nearest hundred.

- 6 Round each number in your list to the nearest thousand.

- 7 Which number from your list am I?

a I am the greatest number. _____

b I round to 6,300. _____

c My hundreds digit is three times bigger than my tens digit. _____

d I am the smallest number. _____

- 8 True (T) or false (F)?

a Every number in my list is even. _____

b Every number has exactly one odd digit. _____

c Every number is greater than 2,000. _____

d Every number rounds to the same thousand. _____

Challenge!

I am an odd 4-digit number.
Three of my digits are even.

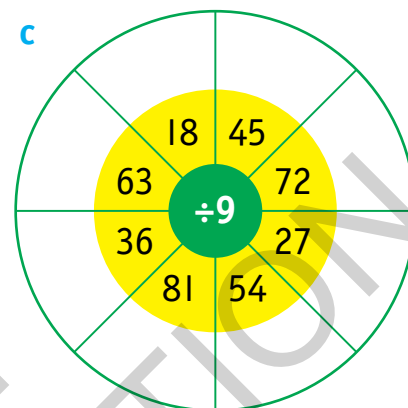
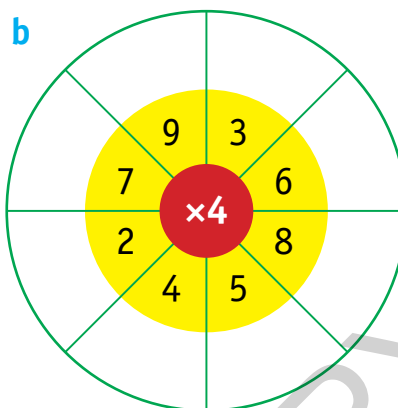
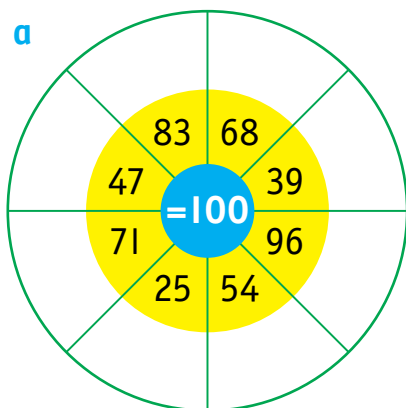
My tens digit is greater than
my ones digit. I have a zero.

My thousands digit is double
my tens digit and four times
my ones digit.

What number am I?



1 Complete these calculations.



2 Work out the missing numbers. Show your working.

a $4,257 + \boxed{} = 7,498$

b $\boxed{} + 3,383 = 8,795$

c $8,062 - \boxed{} = 3,040$

d $\boxed{} - 2,734 = 5,856$

3 Solve these problems. Show your working.

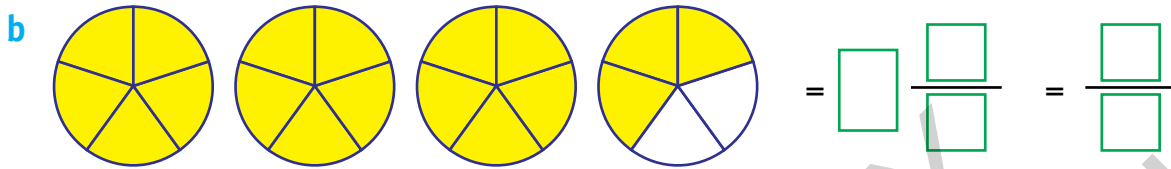
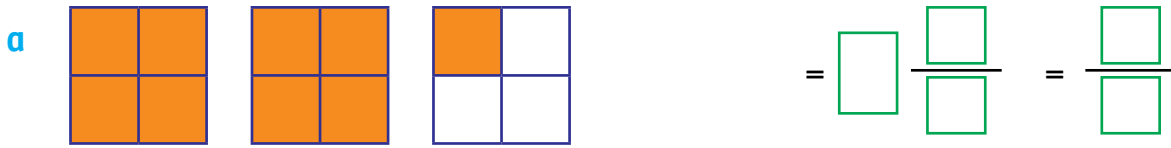
a Kay's 8 chickens lay 1 egg each day. How many eggs do they lay in 90 days?

b Pam has 4 sets of 60 cards. Jon has 5 sets of 50 cards. Who has more cards?

c 612 chocolates are wrapped and put in boxes of 6. How many boxes are full?

d Jay brought 36 orange quarters for his team. How many oranges did he cut up?

1 Write these as mixed numbers. Then convert to improper fractions.



c Place these fractions on the number line.



2 Write as many equivalent fractions as you can for $\frac{1}{2}$.

3 Write each decimal fraction out of 10.

a $0.7 = \frac{\square}{\square}$

b $0.5 = \frac{\square}{\square}$

c $0.9 = \frac{\square}{\square}$

d $0.4 = \frac{\square}{\square}$

e Place these decimals on the number line.



4 a Write these in order from smallest to largest. **0.8**, $\frac{3}{5}$, $\frac{9}{10}$, $\frac{1}{2}$, $1\frac{1}{4}$, **0.6**

b Which is closest to 1? _____

c Which two are equivalent? _____

d Write a number that comes between 0.6 and 0.8. _____



5 Tane has 3 books of a 10-book series.

Write:

a the fraction: _____

b the decimal: _____

6 A water bottle is filled to 8 tenths full.

Write:

a the fraction: _____

b the decimal: _____

7 Aria has run 4 of the 10 laps.

Write:

a the fraction: _____

b the decimal: _____

1 Use the clues to name and draw each 3D object.

a I have 1 curved surface and 1 flat face.

I am a _____.

b My faces are all triangles and there are 4 of them.

I am a _____.

c I have 7 flat faces. Most of my faces are rectangles but two are pentagons.

I am a _____.

d I have 6 flat faces. They are all the same shape and size. I have 8 vertices.

I am a _____.

2 Use the clues to name and draw each.

a I have one curved side and infinite lines of symmetry.

I am a _____.

b I am the only regular quadrilateral.

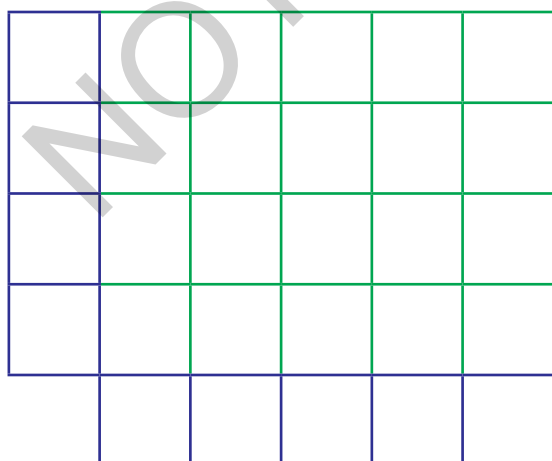
I am a _____.

c I am a quadrilateral with just two right angles.

I am a _____.

3 Make your own map on the grid.

a Label the rows with numbers **1-4** and the columns with letters **ABCDE**.



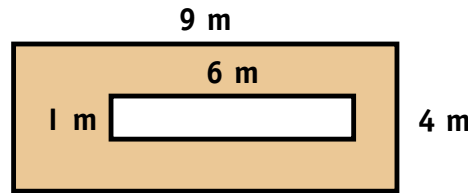
b I Colour: A1-4 blue for water
B1-4 yellow for sand
C1-4, D1-4 and E1-4 green for grass

c Draw:
a shark in A4
a crab in B2
an umbrella in B3
a tree in D1
flowers in E1-2

d Which coordinates would you like to be in? _____

e Why? _____

- 1 This is a wall with a window.



- a Calculate the area of the window. _____
- b Calculate wall area (not including the window). _____
- 2 a A 2 L can of paint covers 10 m^2 . How many cans of paint are needed to paint this wall?

- b The paint is \$1.50 a litre. How much will it cost altogether?

- c It takes you about 40 minutes to paint 5 m^2 . About how long will it take to paint the wall?
Give your answer in hours. _____
- d You need to do a second coat of paint. What is your total cost in money and time?

- 3 a To make curtains, you need a length of fabric that is double the width of the window. How many metres of fabric do you need to buy to make curtains for this window?

- b The curtain fabric has a drop length of 2 m. What area of fabric are you buying altogether?

- c The fabric is \$3 per square metre. What is the cost?

- d The curtain rod is \$5.20 and the brackets are \$2.30. You need 24 curtain rings at 20c each. What is the total cost of putting up curtains?

- 4 a You decide to change the trim around the window. Calculate the perimeter of the window.

- b The window trim is sold by the centimetre. How much trim do you need in centimetres?

Checkpoint 8

1 Write each number in words. p 4

a 2,427 _____

b 6,854 _____

c 7,603 _____

2 Round to the nearest hundred. p 8

a 253 _____ b 817 _____

3 Round to the nearest thousand. p 8

a 3,204 _____ b 4,817 _____

4 Write < or >. p 9

a 293 _____ 329

b 1,642 _____ 1,462

c 2,538 _____ 2,358

d 8,476 _____ 8,674

5 7,513 is the same as: p 10

a _____ tens _____ ones

b _____ hundreds _____ tens _____ ones

c _____ thousands _____ ones

6 Write two multiplication facts for this group. p 61



7 Multiply. p 81

a $6 \times 8 =$ _____

b $7 \times 9 =$ _____

c $8 \times 7 =$ _____

d $9 \times 6 =$ _____

8 a _____ $\times$ _____ = 49 p 113

b $49 \div$ _____ = _____ p 115

9 a $40 \div 10 =$ _____ b $18 \div 2 =$ _____

c $21 \div 3 =$ _____ d $55 \div 5 =$ _____

10



Divide the stars into: p 62

a 2 groups. 1 group = _____ stars

b 3 groups. 1 group = _____ stars

c 9 groups. 1 group = _____ stars

d 6 groups. 1 group = _____ stars

11 Make these equations equal. p 159

a $6 \times 8 = 4 \times$ _____

b $32 \div 8 = 8 \div$ _____

c $3 \times 8 =$ _____ $\times 6$

d $21 \div 7 =$ _____ $\div 4$

12 Write the decimal. p 99

a three tenths = _____

b $\frac{7}{10} =$ _____

c 1 out of 10 = _____

Checkpoint 8

13 Write the fraction.

p 99

- a $0.6 = \underline{\hspace{2cm}}$
- b 10 out of 10 $\underline{\hspace{2cm}}$
- c $0.9 \underline{\hspace{2cm}}$

14 True or false?

p 100

- a 0.5 is smaller than 0.8 $\underline{\hspace{2cm}}$
- b 0.7 is smaller than 0.6 $\underline{\hspace{2cm}}$
- c 0.3 is bigger than 0.2 $\underline{\hspace{2cm}}$
- d 0.1 is bigger than 1.0 $\underline{\hspace{2cm}}$

15 Round to the nearest whole number.

p 101

- a $0.8 = \underline{\hspace{2cm}}$
- b $2.5 = \underline{\hspace{2cm}}$
- c $1.1 = \underline{\hspace{2cm}}$
- d $12.3 = \underline{\hspace{2cm}}$

p 187

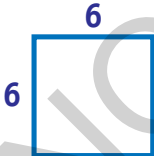
16 The temperature at 8 am was 12°C .
The temperature at 2 pm was 21°C .
How much warmer is it at 2 pm?

$\underline{\hspace{2cm}}$

17 Rectangle.

p 142

Length = 7 cm Width = 4 cm
Area = $\underline{\hspace{2cm}}$ cm^2

18  Write an equation to find the area.

p 142

$\underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

19 Which is heavier?

p 179

- ☐ 750 g
- ☐ 1 kg

20 Complete:

p 179

- a $2 \text{ kg} = \underline{\hspace{2cm}} \text{ g}$
- b $500 \text{ g} = \underline{\hspace{2cm}} \text{ kg}$
- c $4 \text{ kg} = \underline{\hspace{2cm}} \text{ g}$

21 Circle the container that holds one litre.

p 182



22 A bucket holds about:

p 182

- ☐ 250 mL
- ☐ ☐ 2 L
- ☐ ☐ 10 L



23 Use $>$, $<$ or $=$.

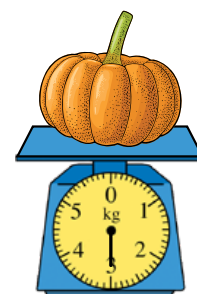
p 182

- a $750 \text{ mL} \underline{\hspace{2cm}} 1 \text{ L}$
- b $2 \text{ L} \underline{\hspace{2cm}} 2,000 \text{ mL}$
- c $500 \text{ mL} \underline{\hspace{2cm}} 1 \text{ L}$

24 Read the scale.

p 179

Weight = $\underline{\hspace{2cm}} \text{ kg}$



25 Circle the coldest temperature.

p 187

- ☐ 4°C ☐ 12°C ☐ 18°C ☐ 25°C

26 Use $>$, $<$ or $=$.

p 187

- a $15^{\circ}\text{C} \underline{\hspace{2cm}} 12^{\circ}\text{C}$
- b $8^{\circ}\text{C} \underline{\hspace{2cm}} 18^{\circ}\text{C}$
- c $20^{\circ}\text{C} \underline{\hspace{2cm}} 20^{\circ}\text{C}$

Checkpoint 8

27 a $8 \times 7 =$ _____

p 146

b $9 \times 6 =$ _____

c $54 \div 6 =$ _____

d $72 \div 8 =$ _____

e $24 \times 4 =$ _____

28 A book costs \$8.50.
A game costs \$12.40.
How much altogether?

p 158

29 Add or subtract.

a $2.5 + 1.3 =$ _____

b $3.9 - 1.6 =$ _____

c $4.2 + 1.5 =$ _____

d $5.7 - 1.3 =$ _____

p 105

30 Match:

$\frac{1}{2}$

0.5

$\frac{3}{10}$

0.3

$\frac{7}{10}$

0.7

p 99

31 A graph shows:

- soccer 12
- basketball 8
- tennis 5



p 161

How many students were surveyed?

32 The class collected:

Week 1 = 18 cans

Week 2 = 22 cans

Week 3 = 15 cans

How many cans altogether?



p 161

33 A watermelon weighs 3 kg.

p 179

A pumpkin weighs 5 kg.

What is their total mass?

_____ kg

34 A rectangle has:

p 142

Area = 24 cm^2

Width = 4 cm

What is its length?

_____ cm

35 Complete the patterns.

p 137

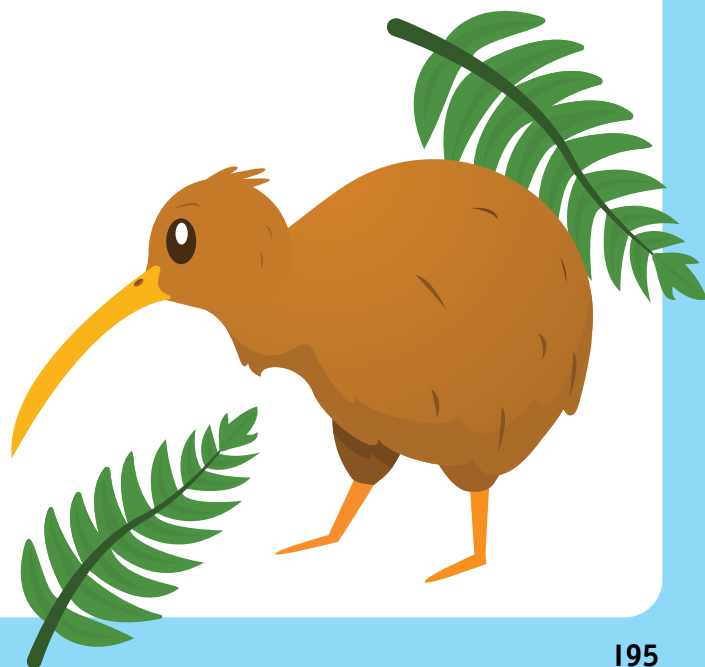
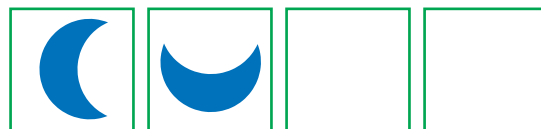
a



b



c



Fast facts

$\times 0, \times 1, \times 2, \times 5, \times 10$

$5 \times 0 = \underline{\quad\quad}$ $10 \times 1 = \underline{\quad\quad}$ $1 \times 1 = \underline{\quad\quad}$ $3 \times 10 = \underline{\quad\quad}$ $10 \times 2 = \underline{\quad\quad}$

$4 \times 5 = \underline{\quad\quad}$ $2 \times 5 = \underline{\quad\quad}$ $3 \times 5 = \underline{\quad\quad}$ $5 \times 10 = \underline{\quad\quad}$ $2 \times 1 = \underline{\quad\quad}$

$0 \times 10 = \underline{\quad\quad}$ $4 \times 10 = \underline{\quad\quad}$ $2 \times 2 = \underline{\quad\quad}$ $3 \times 2 = \underline{\quad\quad}$ $10 \times 10 = \underline{\quad\quad}$

$0 \times 2 = \underline{\quad\quad}$ $1 \times 5 = \underline{\quad\quad}$ $6 \times 5 = \underline{\quad\quad}$ $5 \times 5 = \underline{\quad\quad}$ $6 \times 10 = \underline{\quad\quad}$

$1 \times 0 = \underline{\quad\quad}$ $3 \times 1 = \underline{\quad\quad}$ $0 \times 1 = \underline{\quad\quad}$ $9 \times 10 = \underline{\quad\quad}$ $4 \times 2 = \underline{\quad\quad}$

$8 \times 5 = \underline{\quad\quad}$ $7 \times 5 = \underline{\quad\quad}$ $9 \times 5 = \underline{\quad\quad}$ $7 \times 10 = \underline{\quad\quad}$ $4 \times 1 = \underline{\quad\quad}$

$0 \times 4 = \underline{\quad\quad}$ $8 \times 10 = \underline{\quad\quad}$ $8 \times 2 = \underline{\quad\quad}$ $6 \times 2 = \underline{\quad\quad}$ $7 \times 5 = \underline{\quad\quad}$

$9 \times 2 = \underline{\quad\quad}$ $1 \times 6 = \underline{\quad\quad}$ $3 \times 0 = \underline{\quad\quad}$ $8 \times 1 = \underline{\quad\quad}$ $7 \times 0 = \underline{\quad\quad}$

$\div 1, \div 2, \div 5, \div 10$

$1 \div 1 = \underline{\quad\quad}$ $10 \div 1 = \underline{\quad\quad}$ $30 \div 1 = \underline{\quad\quad}$ $50 \div 10 = \underline{\quad\quad}$ $8 \div 2 = \underline{\quad\quad}$

$50 \div 5 = \underline{\quad\quad}$ $60 \div 10 = \underline{\quad\quad}$ $25 \div 5 = \underline{\quad\quad}$ $12 \div 2 = \underline{\quad\quad}$ $2 \div 1 = \underline{\quad\quad}$

$90 \div 10 = \underline{\quad\quad}$ $10 \div 10 = \underline{\quad\quad}$ $16 \div 2 = \underline{\quad\quad}$ $10 \div 2 = \underline{\quad\quad}$ $10 \div 10 = \underline{\quad\quad}$

$20 \div 2 = \underline{\quad\quad}$ $70 \div 10 = \underline{\quad\quad}$ $10 \div 5 = \underline{\quad\quad}$ $14 \div 2 = \underline{\quad\quad}$ $40 \div 5 = \underline{\quad\quad}$

$35 \div 5 = \underline{\quad\quad}$ $5 \div 1 = \underline{\quad\quad}$ $80 \div 10 = \underline{\quad\quad}$ $30 \div 10 = \underline{\quad\quad}$ $18 \div 2 = \underline{\quad\quad}$

$15 \div 5 = \underline{\quad\quad}$ $45 \div 5 = \underline{\quad\quad}$ $20 \div 5 = \underline{\quad\quad}$ $3 \div 1 = \underline{\quad\quad}$ $4 \div 1 = \underline{\quad\quad}$

$6 \div 3 = \underline{\quad\quad}$ $100 \div 10 = \underline{\quad\quad}$ $20 \div 10 = \underline{\quad\quad}$ $4 \div 2 = \underline{\quad\quad}$ $70 \div 7 = \underline{\quad\quad}$

$6 \div 2 = \underline{\quad\quad}$ $30 \div 6 = \underline{\quad\quad}$ $30 \div 5 = \underline{\quad\quad}$ $16 \div 8 = \underline{\quad\quad}$ $40 \div 10 = \underline{\quad\quad}$

Fast facts

$\times 3, \times 4, \times 8$

$5 \times 3 =$	$3 \times 3 =$	$3 \times 6 =$	$1 \times 3 =$	$4 \times 4 =$
$1 \times 4 =$	$3 \times 4 =$	$5 \times 4 =$	$8 \times 6 =$	$8 \times 1 =$
$3 \times 2 =$	$5 \times 8 =$	$2 \times 4 =$	$3 \times 8 =$	$6 \times 4 =$
$8 \times 4 =$	$0 \times 8 =$	$7 \times 4 =$	$3 \times 0 =$	$2 \times 8 =$
$4 \times 5 =$	$7 \times 8 =$	$7 \times 3 =$	$10 \times 3 =$	$4 \times 6 =$
$9 \times 4 =$	$8 \times 9 =$	$4 \times 0 =$	$5 \times 6 =$	$8 \times 8 =$
$6 \times 3 =$	$10 \times 4 =$	$8 \times 5 =$	$3 \times 7 =$	$6 \times 8 =$
$8 \times 10 =$	$6 \times 6 =$	$9 \times 3 =$	$3 \times 5 =$	$9 \times 8 =$

$\div 3, \div 4, \div 8$

$15 \div 3 =$	$9 \div 3 =$	$8 \div 8 =$	$40 \div 4 =$	$12 \div 4 =$
$8 \div 4 =$	$16 \div 4 =$	$6 \div 3 =$	$24 \div 8 =$	$3 \div 3 =$
$40 \div 8 =$	$12 \div 3 =$	$80 \div 8 =$	$16 \div 8 =$	$24 \div 4 =$
$20 \div 4 =$	$32 \div 8 =$	$30 \div 3 =$	$21 \div 3 =$	$4 \div 4 =$
$48 \div 8 =$	$24 \div 3 =$	$27 \div 3 =$	$28 \div 4 =$	$88 \div 8 =$
$36 \div 4 =$	$64 \div 4 =$	$32 \div 4 =$	$56 \div 8 =$	$18 \div 3 =$
$72 \div 8 =$	$33 \div 3 =$	$48 \div 4 =$	$40 \div 10 =$	$16 \div 2 =$
$36 \div 3 =$	$15 \div 5 =$	$30 \div 10 =$	$80 \div 10 =$	$44 \div 4 =$

Fast facts

Multiply by 7, 8, 9

$3 \times 7 =$ _____	$5 \times 9 =$ _____	$5 \times 8 =$ _____	$2 \times 7 =$ _____	$2 \times 9 =$ _____
$7 \times 8 =$ _____	$6 \times 9 =$ _____	$4 \times 8 =$ _____	$7 \times 7 =$ _____	$9 \times 7 =$ _____
$9 \times 8 =$ _____	$3 \times 9 =$ _____	$10 \times 9 =$ _____	$9 \times 9 =$ _____	$3 \times 8 =$ _____
$5 \times 7 =$ _____	$4 \times 7 =$ _____	$6 \times 8 =$ _____	$4 \times 9 =$ _____	$10 \times 7 =$ _____
$0 \times 7 =$ _____	$10 \times 8 =$ _____	$1 \times 9 =$ _____	$7 \times 3 =$ _____	$7 \times 5 =$ _____
$8 \times 9 =$ _____	$1 \times 7 =$ _____	$8 \times 8 =$ _____	$9 \times 6 =$ _____	$8 \times 4 =$ _____
$2 \times 8 =$ _____	$6 \times 7 =$ _____	$9 \times 2 =$ _____	$1 \times 8 =$ _____	$9 \times 9 =$ _____
$8 \times 7 =$ _____	$7 \times 9 =$ _____	$0 \times 9 =$ _____	$8 \times 5 =$ _____	$7 \times 7 =$ _____

Divide by 7, 8, 9

$49 \div 7 =$ _____	$27 \div 9 =$ _____	$80 \div 8 =$ _____	$35 \div 7 =$ _____	$36 \div 9 =$ _____
$16 \div 8 =$ _____	$18 \div 9 =$ _____	$56 \div 8 =$ _____	$28 \div 7 =$ _____	$70 \div 7 =$ _____
$64 \div 8 =$ _____	$81 \div 9 =$ _____	$63 \div 9 =$ _____	$45 \div 9 =$ _____	$48 \div 8 =$ _____
$21 \div 7 =$ _____	$63 \div 7 =$ _____	$32 \div 8 =$ _____	$90 \div 9 =$ _____	$42 \div 7 =$ _____
$7 \div 7 =$ _____	$24 \div 8 =$ _____	$72 \div 9 =$ _____	$14 \div 7 =$ _____	$54 \div 9 =$ _____
$40 \div 8 =$ _____	$99 \div 9 =$ _____	$56 \div 7 =$ _____	$9 \div 9 =$ _____	$72 \div 8 =$ _____
$84 \div 7 =$ _____	$8 \div 8 =$ _____	$77 \div 7 =$ _____	$88 \div 8 =$ _____	$56 \div 8 =$ _____
$96 \div 8 =$ _____	$108 \div 9 =$ _____	$35 \div 7 =$ _____	$45 \div 9 =$ _____	$64 \div 8 =$ _____

Fast facts

Multiply and divide

$4 \times 20 =$ _____	$7 \times 60 =$ _____	$3 \times 70 =$ _____	$6 \times 40 =$ _____	$2 \times 30 =$ _____
$8 \times 40 =$ _____	$9 \times 20 =$ _____	$5 \times 80 =$ _____	$7 \times 50 =$ _____	$6 \times 30 =$ _____
$5 \times 200 =$ _____	$6 \times 400 =$ _____	$3 \times 300 =$ _____	$6 \times 200 =$ _____	$8 \times 300 =$ _____
$2 \times 400 =$ _____	$7 \times 300 =$ _____	$9 \times 200 =$ _____	$2 \times 700 =$ _____	$8 \times 100 =$ _____
$150 \div 5 =$ _____	$240 \div 8 =$ _____	$40 \div 2 =$ _____	$180 \div 9 =$ _____	$270 \div 3 =$ _____
$250 \div 5 =$ _____	$160 \div 4 =$ _____	$60 \div 3 =$ _____	$490 \div 7 =$ _____	$540 \div 6 =$ _____
$120 \div 4 =$ _____	$320 \div 8 =$ _____	$90 \div 3 =$ _____	$450 \div 9 =$ _____	$210 \div 7 =$ _____
$280 \div 4 =$ _____	$360 \div 6 =$ _____	$100 \div 5 =$ _____	$560 \div 8 =$ _____	$630 \div 7 =$ _____

Multiply and divide decimals

$2.4 \times 10 =$ _____	$3.7 \times 10 =$ _____	$5.8 \times 10 =$ _____	$9.1 \times 10 =$ _____	$4.6 \times 10 =$ _____
$7.3 \times 10 =$ _____	$8.2 \times 10 =$ _____	$1.5 \times 10 =$ _____	$6.9 \times 10 =$ _____	$5.4 \times 10 =$ _____
$2.8 \times 10 =$ _____	$9.6 \times 10 =$ _____	$4.1 \times 10 =$ _____	$7.7 \times 10 =$ _____	$6.3 \times 10 =$ _____
$8.9 \times 10 =$ _____	$3.2 \times 10 =$ _____	$5.6 \times 10 =$ _____	$1.8 \times 10 =$ _____	$7.4 \times 10 =$ _____
$93 \div 10 =$ _____	$27 \div 10 =$ _____	$65 \div 10 =$ _____	$49 \div 10 =$ _____	$81 \div 10 =$ _____
$36 \div 10 =$ _____	$52 \div 10 =$ _____	$68 \div 10 =$ _____	$97 \div 10 =$ _____	$21 \div 10 =$ _____
$84 \div 10 =$ _____	$59 \div 10 =$ _____	$13 \div 10 =$ _____	$47 \div 10 =$ _____	$72 \div 10 =$ _____
$99 \div 10 =$ _____	$25 \div 10 =$ _____	$61 \div 10 =$ _____	$88 \div 10 =$ _____	$34 \div 10 =$ _____



Mathletics

Looking Good!

Titiro Pai!

You've successfully
completed the Year 4
programme!

