

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 macaroons?

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
☐ represent and order with fractions ☐ compare 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

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

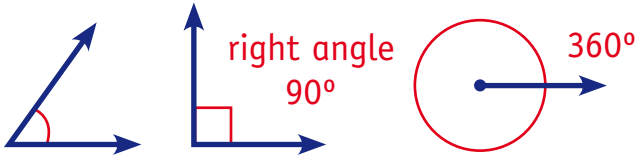
Knowledge	Practices	Pages
Measurement — Measuring		
Different measurement tools and scales use different-sized units; the unit must be recorded with the measurement amount.	Using familiar objects and experiences to create estimation benchmarks	43, 44, 45, 47, 78, 177, 180, 182, 183, 184, 185
	Using the 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

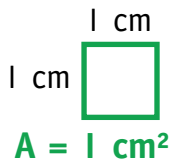
angle

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

Measured in degrees



area

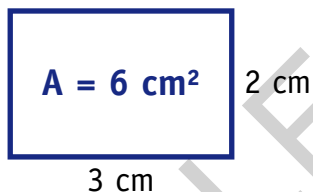


The size of a surface
Measured in squares

1 square centimetre = 1 cm²

Rectangular area
= length × 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)

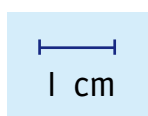


centimetre (cm)

A unit of length

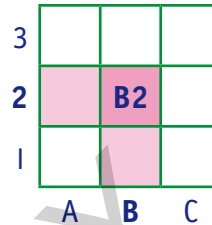
10 mm = 1 cm

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

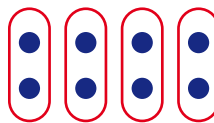
3,927, 1,423, 875, 610, 40

digit

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

division (÷)

Sharing into equal groups

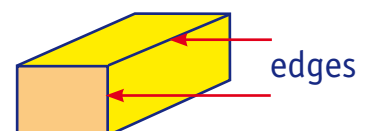


4 groups of 2

$$8 \div 2 = 4$$

edge

Where two surfaces meet



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



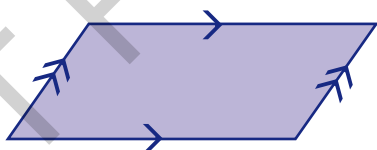
$$5 \times 4 = 20$$

$$6 \times 35 =$$

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

parallelogram

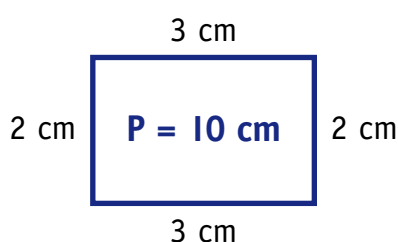
A quadrilateral with opposite sides parallel



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.



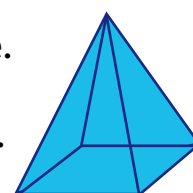
triangular prism

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

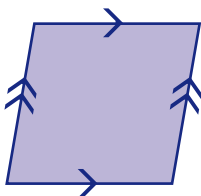
quadrilateral

A 2D shape with 4 straight sides

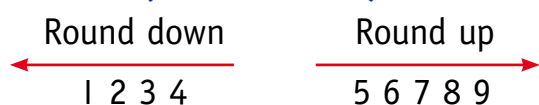


rhombus

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



rounding (to nearest 10)



e.g. 675 $\rightarrow$ 700

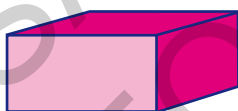
(rounded to the nearest 100)

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

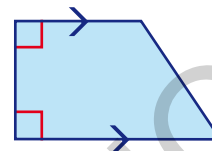
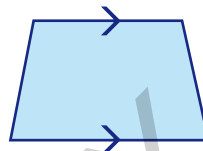
1 hour = 60 minutes

1 minute = 60 seconds

trapezium

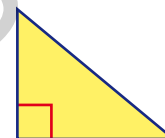
A quadrilateral that has one pair of parallel sides

Some have 2 right angles



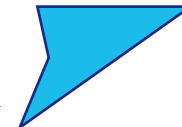
triangle

A 2D shape with 3 straight sides



two-dimensional shapes (2D)

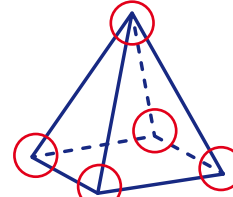
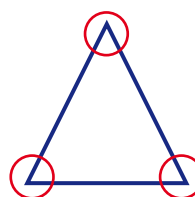
Shapes that only have length and width



vertex

2D: where 2 straight lines meet

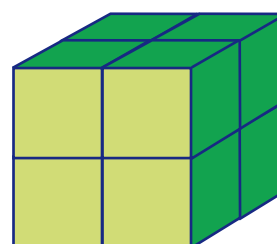
3D: where 3 or more edges meet



1 vertex, 3 vertices

volume

The amount of space a solid object takes up



8 cm³



1 Which wallet holds the most money? _____

2 Which wallet holds the least money? _____

3 Order the wallets from holds least to holds most.

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

4 Add \$10 to:

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

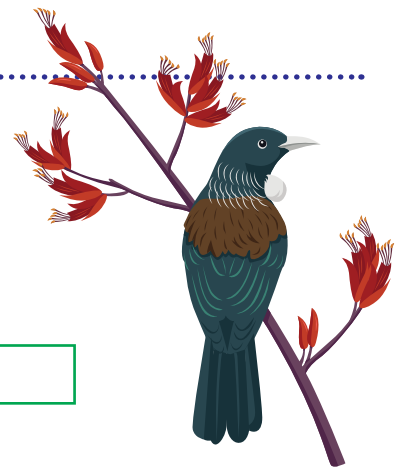
5 Take \$100 from:

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

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

7 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:

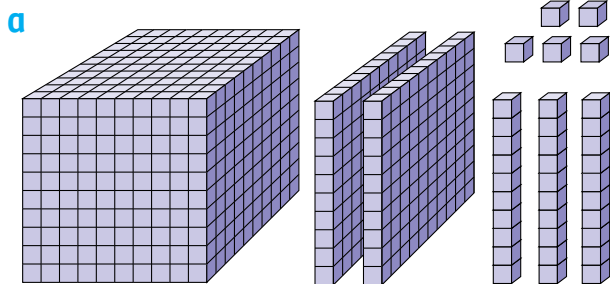
a two hundred and forty-eight. _____ b eight hundred and eleven. _____
c four hundred and fifty. _____ d seven hundred and nine. _____
e one thousand, three hundred and sixty-five. _____
f two thousand, one hundred and ninety-seven. _____
g four thousand, five hundred and eighteen. _____
h seven thousand,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

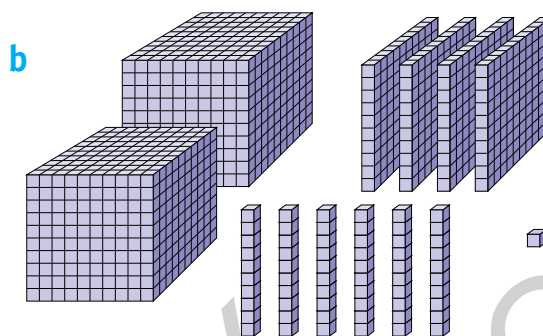
Challenge! What is my number?

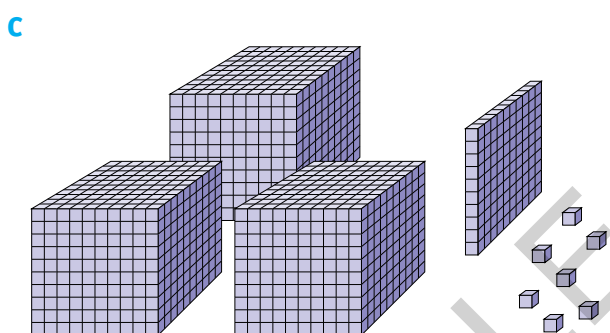
My ones digit is 4, my hundreds digit is 7,
my tens digit is 5 and my thousands digit is 9.

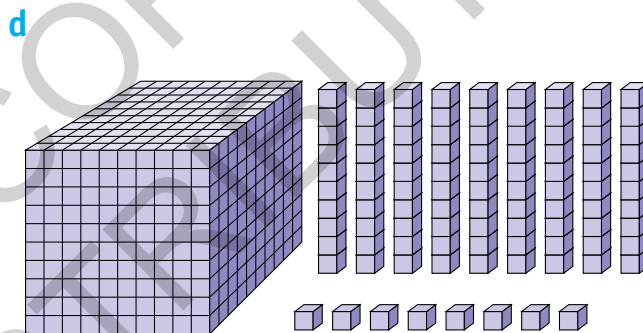


1 Write the number shown.









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

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

b 3,964

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

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

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

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

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

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

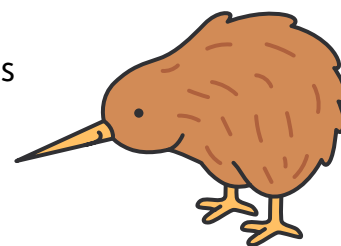
			Ones
--	--	--	------

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.

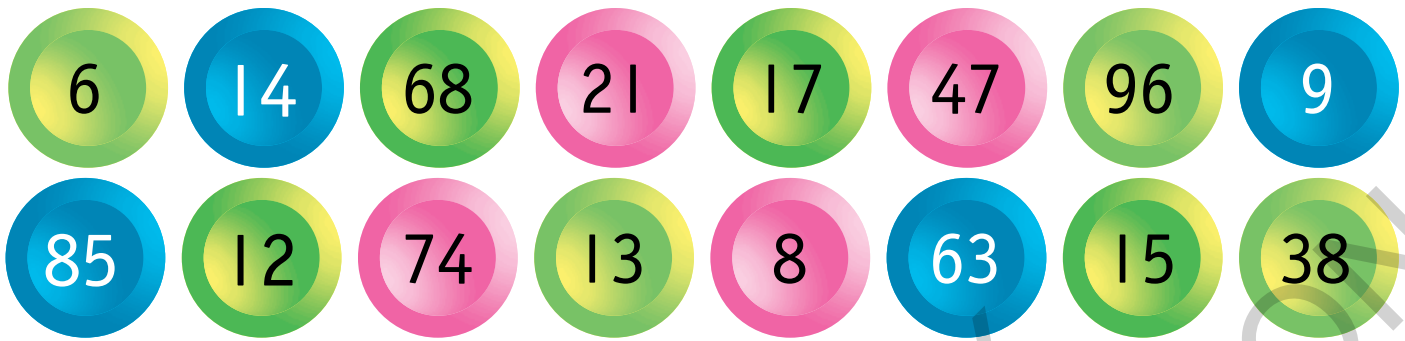
- a rua mano, kotahi rau toru tekau mā rua _____
- b kotahi mano, ono rau iwa tekau mā rima _____
- c ono mano, whitu rau rima tekau mā iwa _____

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 $58 + 14 = 50 + 10 + 8 + 4 =$ _____
 b $75 + 45 =$ _____ + _____ + _____ + _____ = _____
 c $46 + 86 =$ _____ + _____ + _____ + _____ = _____
 d $93 + 75 =$ _____ + _____ + _____ + _____ = _____
 e $127 + 67 =$ _____ + _____ + _____ + _____ + _____ = _____
 f $155 + 36 =$ _____ + _____ + _____ + _____ + _____ = _____
 g $137 + 43 =$ _____ + _____ + _____ + _____ + _____ = _____



2 Partition numbers to add.

- a $48 + 15 =$ _____ b $66 + 35 =$ _____ c $54 + 27 =$ _____
 d $87 + 36 =$ _____ e $33 + 49 =$ _____ f $68 + 83 =$ _____
 g $124 + 35 =$ _____ h $118 + 67 =$ _____ i $136 + 49 =$ _____

3 Partition numbers and use the compensation strategy.

- a $42 + 39 = 42 + 40 - 1 =$ _____
 b $63 + 38 =$ _____ + _____ + _____ = _____
 c $18 + 78 =$ _____ + _____ - _____ = _____
 d $54 + 19 =$ _____ + _____ - _____ = _____
 e $146 + 59 =$ _____ + _____ + _____ - _____ = _____
 f $316 + 68 =$ _____ + _____ + _____ - _____ = _____



4 Double these numbers.

11	12	13	14	15	16	17	18	19	20

5 Use doubles to help.

- a $14 + 15 =$ _____ b $16 + 15 =$ _____ c $11 + 12 =$ _____
 d $20 + 19 =$ _____ e $57 + 58 =$ _____ f $124 + 123 =$ _____
 g $109 + 107 =$ _____ h $143 + 145 =$ _____ i $217 + 216 =$ _____

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?



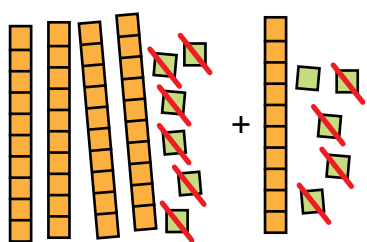
+

Addition with trading

TERM 1
Week 3

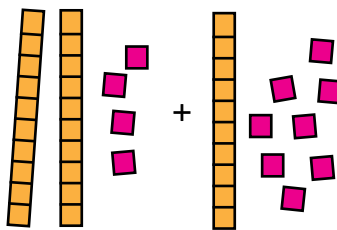
1 Cross off 10 ones and add 1 ten in each diagram.

e.g.



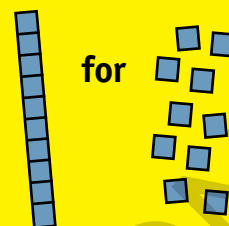
$$46 + 15 = 61$$

a

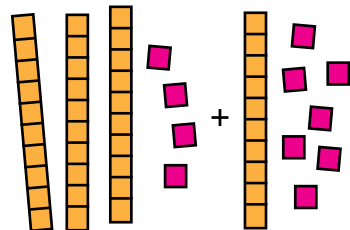


$$\square + \square = \square$$

You can trade

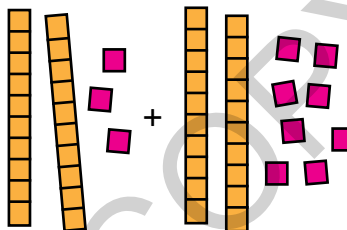


b



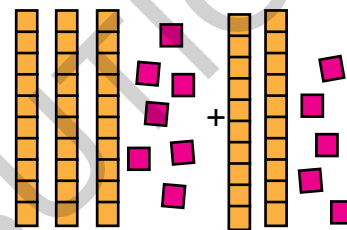
$$\square + \square = \square$$

c



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

d



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

2 a Tens Ones

	Tens	Ones
	5	7
+		9

b Tens Ones

	Tens	Ones
	6	4
+		8

c Tens Ones

	Tens	Ones
	3	5
+		6

d Tens Ones

	Tens	Ones
	8	3
+		8

e Tens Ones

	Tens	Ones
	4	9
+	2	7

f Tens Ones

	Tens	Ones
	3	5
+	3	7

g Tens Ones

	Tens	Ones
	2	8
+	4	8

h Tens Ones

	Tens	Ones
	7	8
+	1	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

	H	T	O
		2	6
		4	3
+		1	7

b H T O

	H	T	O
			1 4
			3 5
+			5 2

c H T O

	H	T	O
			7 6
			3 4
+			6 9

d H T O

	H	T	O
			8 1
			2 9
+			4 3

e H T O

	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 $298 + 543$

	H	T	O
+			

b $615 + 178$

	H	T	O
+			

c $380 + 482$

	H	T	O
+			

d $6,430 + 2,357$

	Th	H	T	O
+				

e $1,843 + 3,728$

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

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?

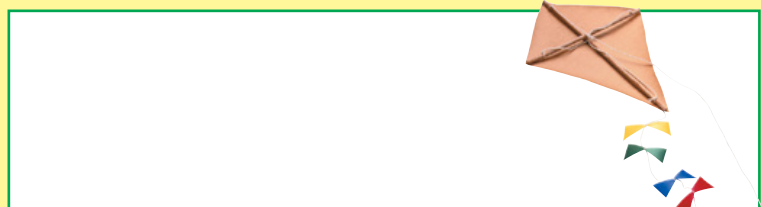


6 Ciara had 880 jelly beans. She ate 132 and felt sick. How many were left?



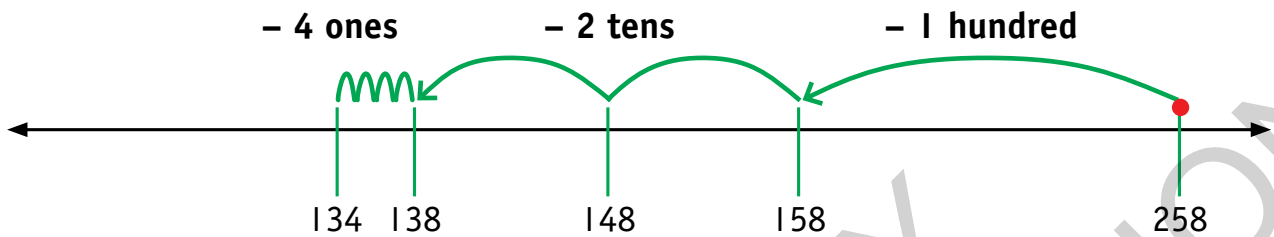
Challenge!

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

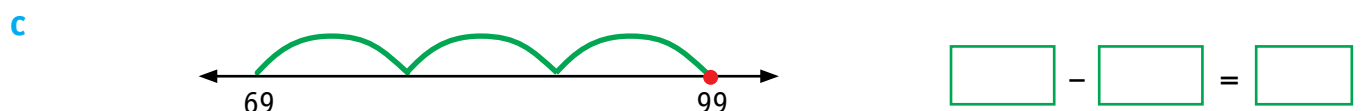
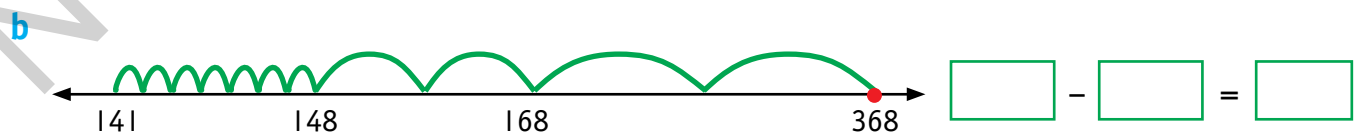
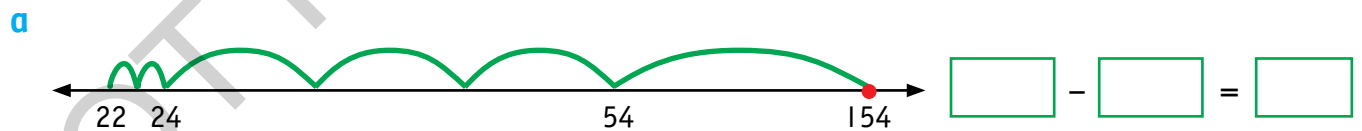
b $348 - 151 = \underline{\hspace{2cm}}$

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

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

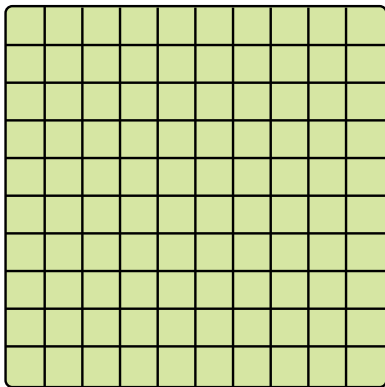
e $473 - 311 = \underline{\hspace{2cm}}$

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?

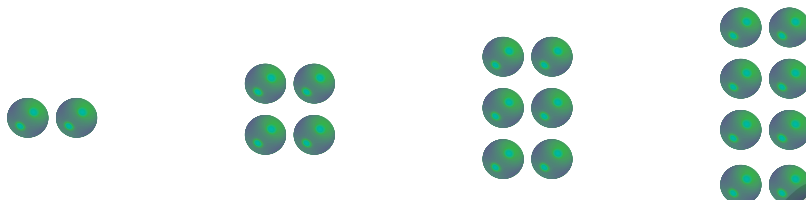
I can solve problems by:

☐ finding unknown amounts ☐ writing algorithms to solve a problem

A

0 4 8 12 16 20

B



C

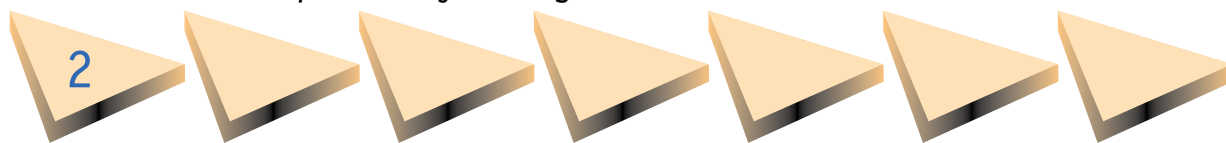
2 5 8 11 14 17

D

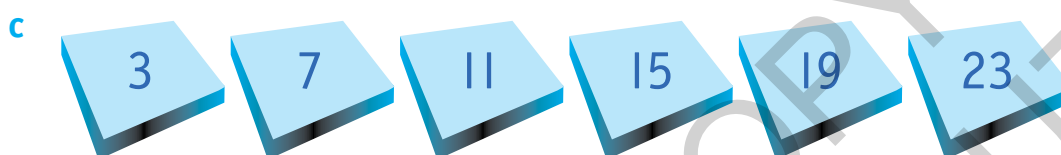


- 1
 - a How is pattern A made? _____
 - b What are the next three numbers? _____
 - c What will the 12th number be? _____
- 2 Draw the next term for B.
- 3
 - a What is the next number in C? _____
 - b What is the rule for C? _____
 - c Will 27 be in C? _____ Why? _____
- 4
 - a How many squares will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

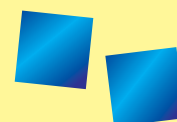
Term	1	2	3	4	5	6
Number of squares	1					

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.

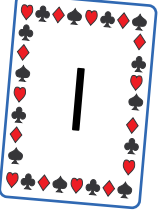
1,278	1,268	1,258	1,248	
1,228	1,282	1,238	1,283	
☐	☐	☐	☐	☐

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

☐

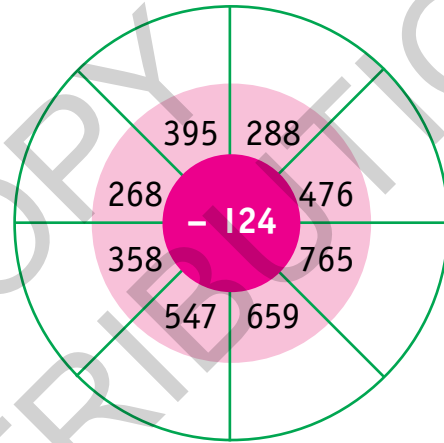
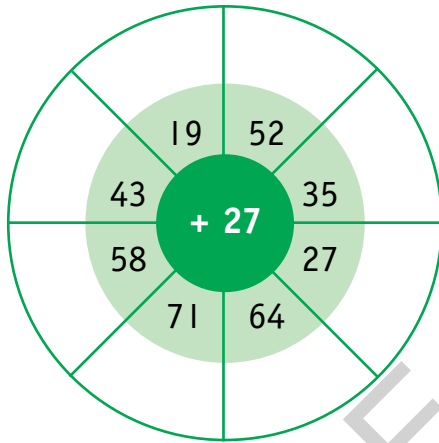
400

☐

355

☐

7



8 Write the algorithm and calculate the answer.

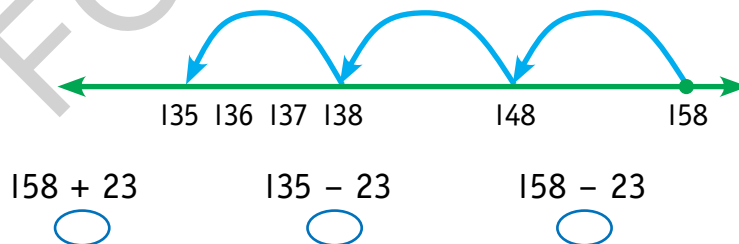
$$7,248 + 1,309$$

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?

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

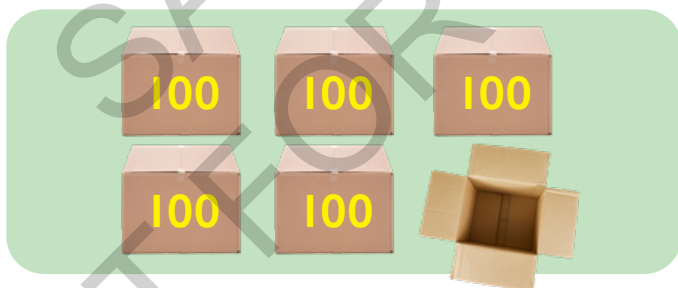
3 Write a problem for each. Then write a number sentence.

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?

Subtraction on a number line

TERM 1
Week 6

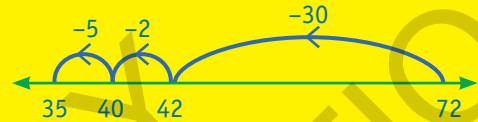
1 Subtract.

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

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

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

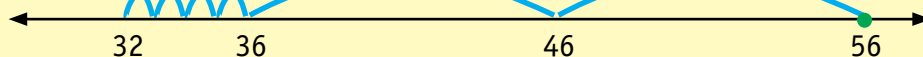
Challenge! Ari had 14 marbles. He gave 2 away and had 16 left.

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

\$3.60



Cario

\$1.80



\$2.40



Flame

\$2.50



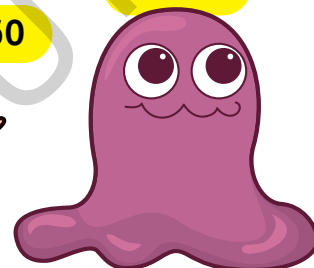
Tum Tum

\$1.60



Toot

\$3.20



Blobby

Big Ice

\$2.80



\$1.70



Gurk

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 _____

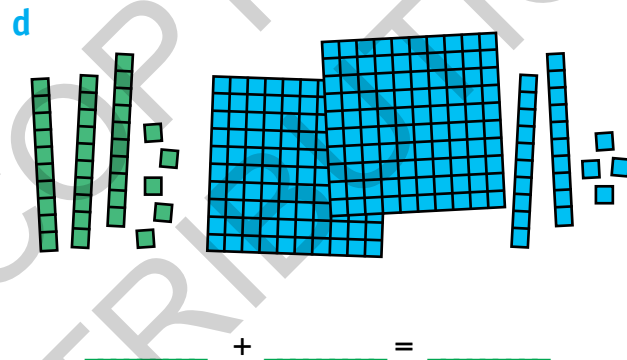
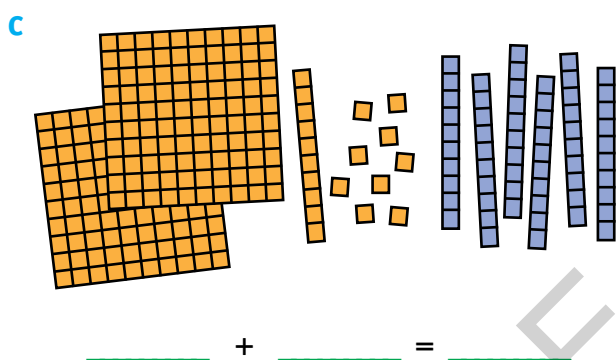
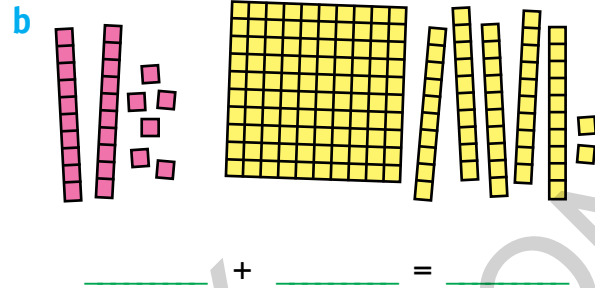
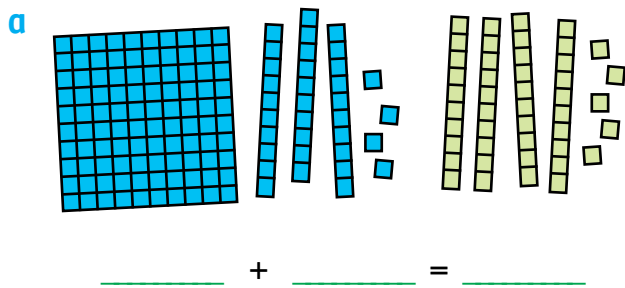
3 Which 3 toys did Mary buy?

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		$\begin{array}{r} 75 + \underline{\quad\quad} = 139 \\ 139 - 75 = \underline{\quad\quad} \end{array}$		
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	?		$\underline{\quad\quad} + \underline{\quad\quad} = \underline{\quad\quad}$		
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	?			$\underline{\quad\quad} + \underline{\quad\quad} + \underline{\quad\quad} = \underline{\quad\quad}$
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> ? = _____					$\underline{\quad\quad} + \underline{\quad\quad} = \underline{\quad\quad}$		
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> ? = _____					$\underline{\quad\quad} + \underline{\quad\quad} = \underline{\quad\quad}$		

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

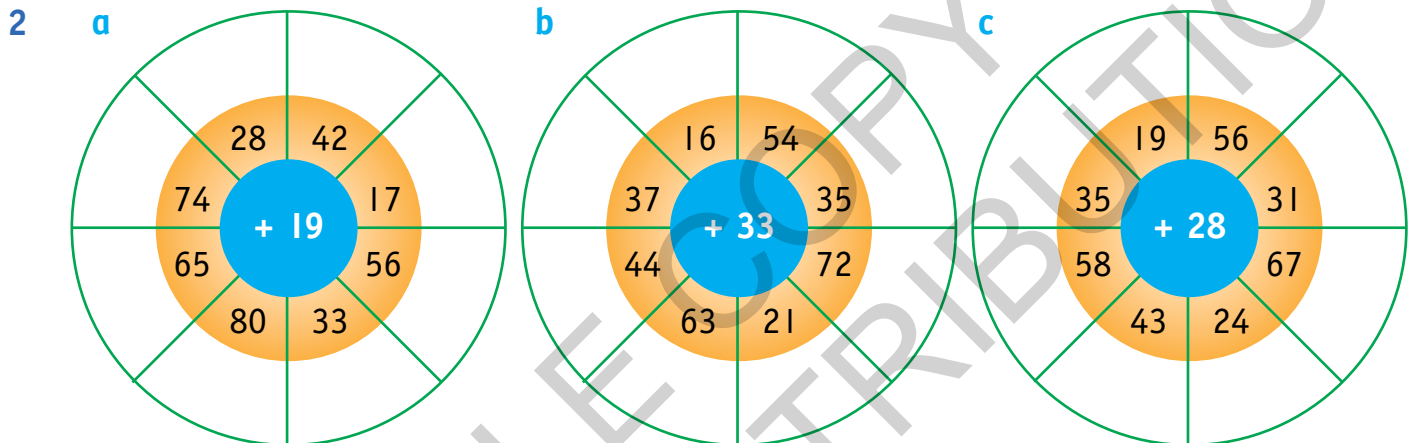
Challenge!

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?

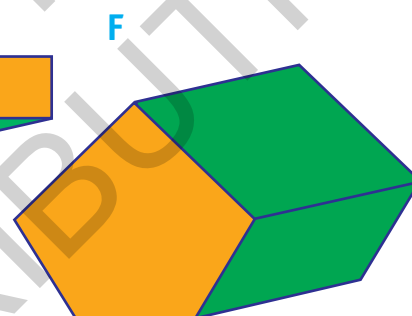
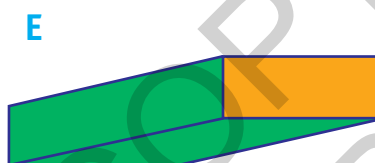
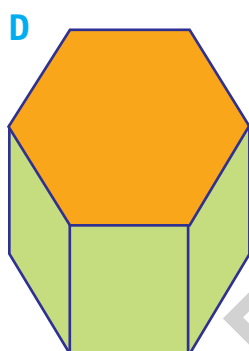
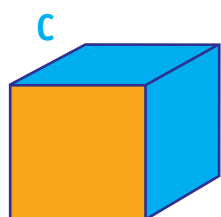
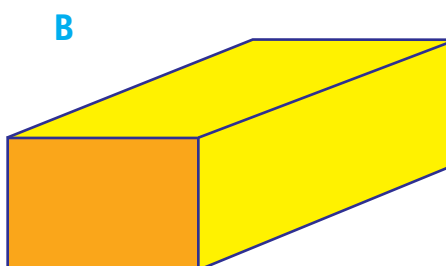
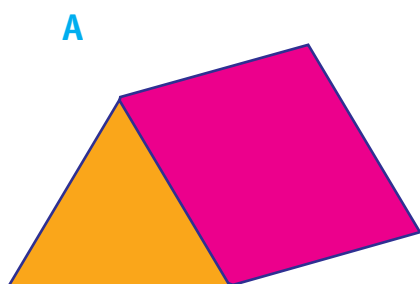
Mastery Checklist

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.

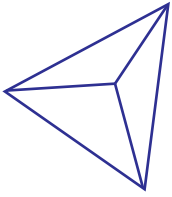
A _____ B _____ C _____
D _____ E _____ F _____

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

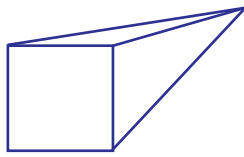
5 What is a prism? _____

1 Name these pyramids.

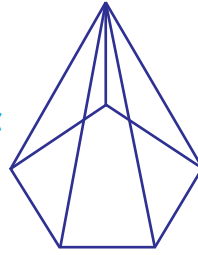
a



b



c

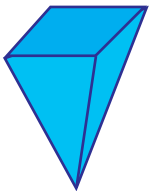


Pyramids:

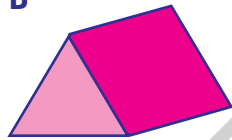
- have one base and all other faces are triangles
- are named by the shape of the base.

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

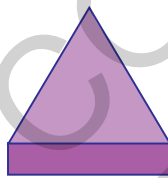
A



B



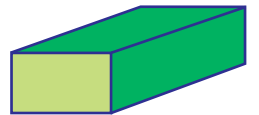
C



D



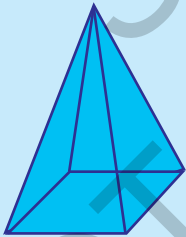
E



- 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?

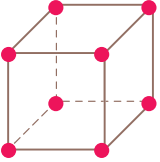
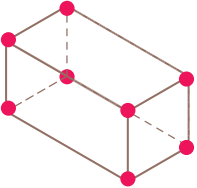
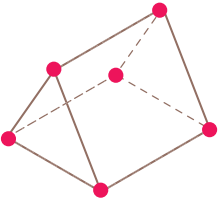
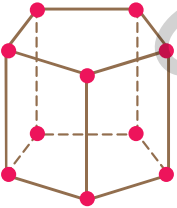
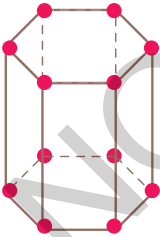
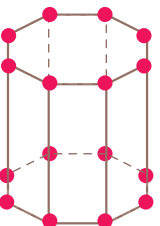


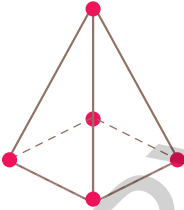
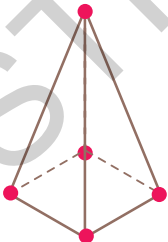
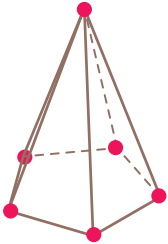
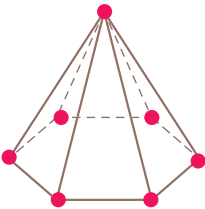
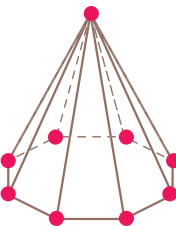
Constructing 3D objects

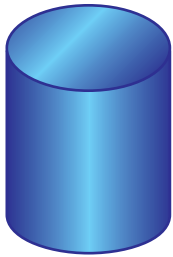
TERM 1
Week 8



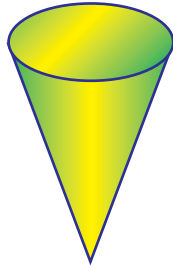
Use clay and small sticks or straws to construct 3D objects.
Then write how many faces, edges and vertices.

Prism	Faces	Edges	Vertices
	6	12	8
			
			
			
			
			

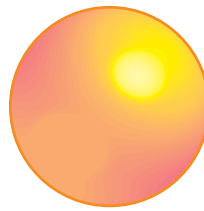
Pyramid	Faces	Edges	Vertices
	5	8	5
			
			
			
			
			



cylinder



cone



sphere



1 Name three things that are cylinders.

a _____ b _____ c _____

2 Name three things that are cones.

a _____ b _____ c _____

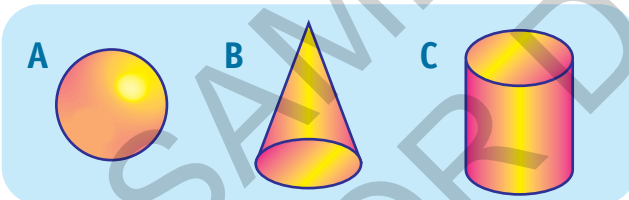
3 Name three things that are spheres.

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

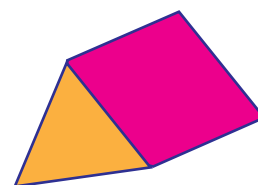
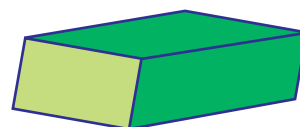
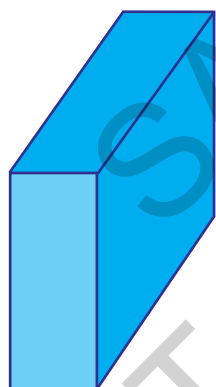
TERM 1
Week 8

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.

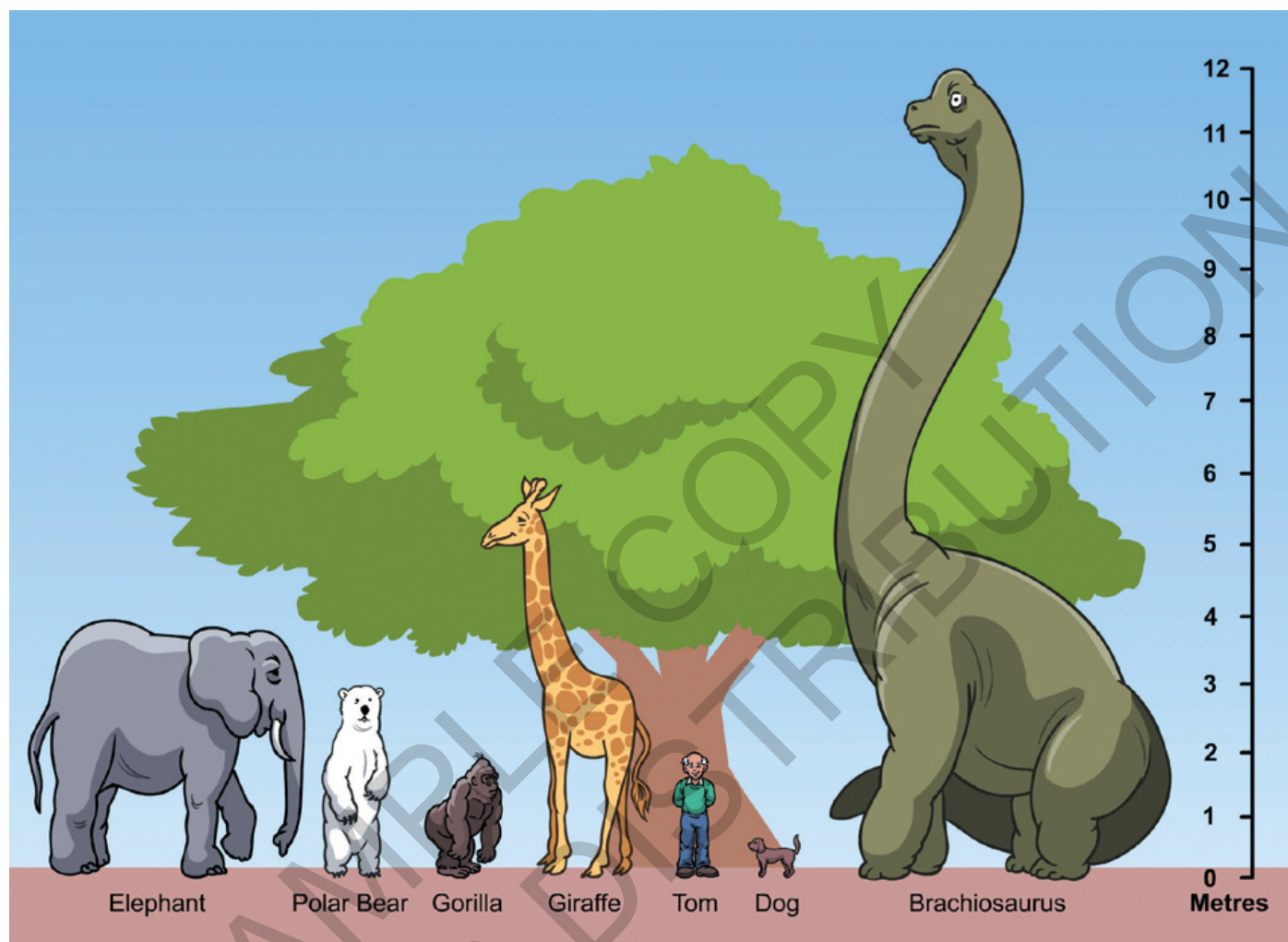


- 5 What did you find out about prisms?

- 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



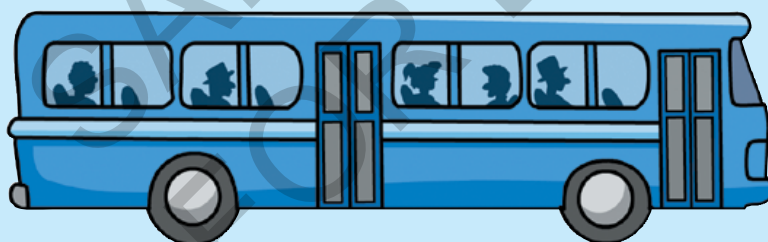
The car is _____ m long.

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

_____ p 13

8 Double: a 17 _____ b 19 _____

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 _____

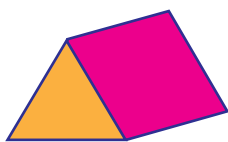
c 63 58 53 48 _____

Rule _____

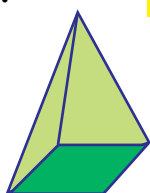
- 17 Name these 3D objects.

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 I 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

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

b

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

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

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

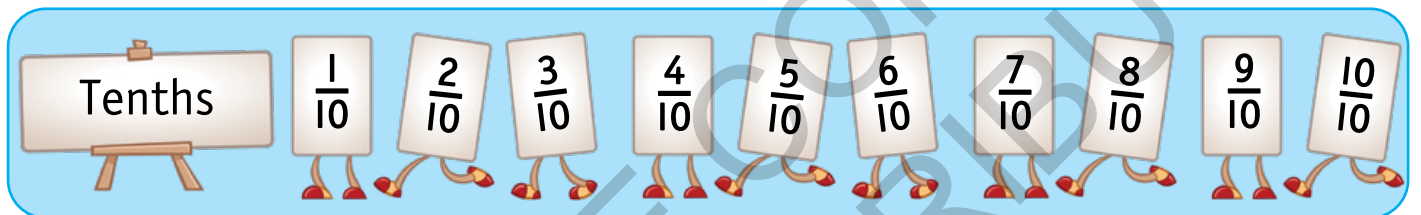
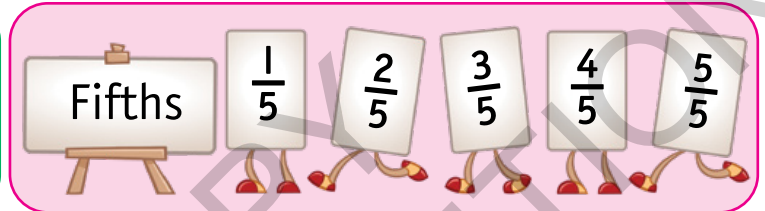
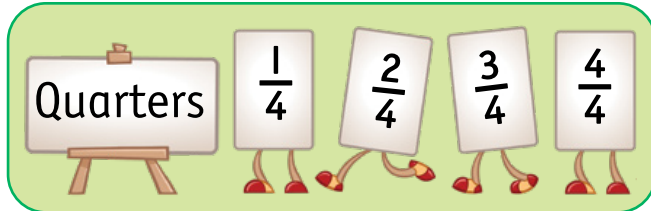
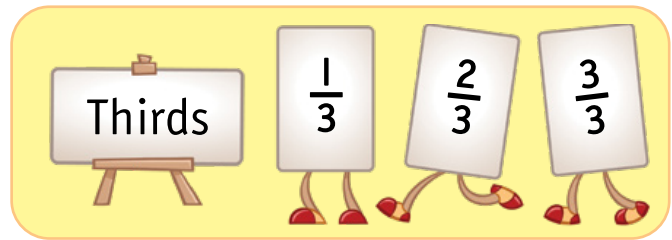
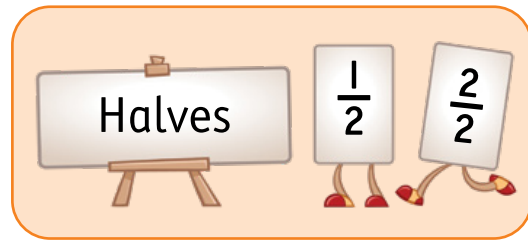
- 28 Circle the correct answer.

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

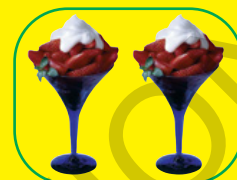
two-thirds

two-tenths

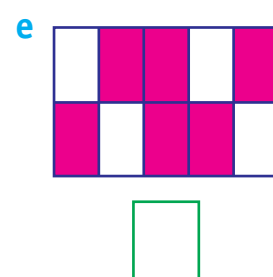
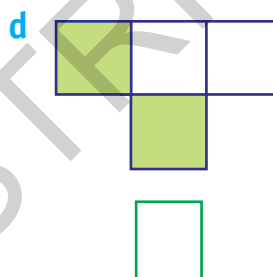
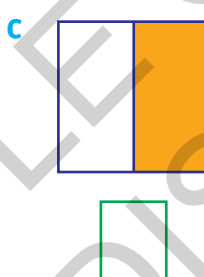
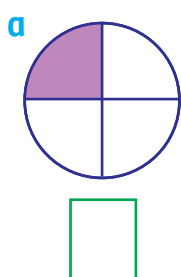
three-quarters

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

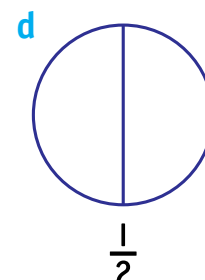
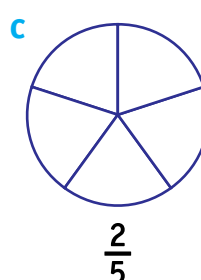
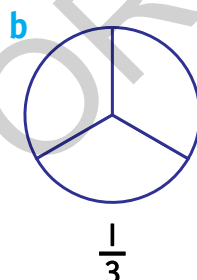
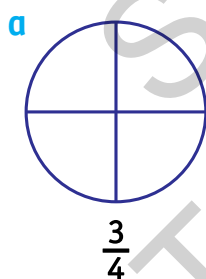
This means 2 equal
parts out of 5.



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 = $\frac{1}{4}$

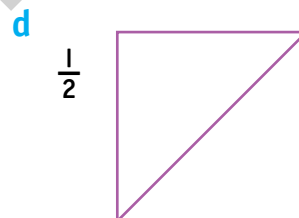
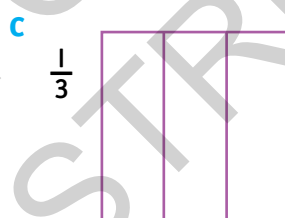
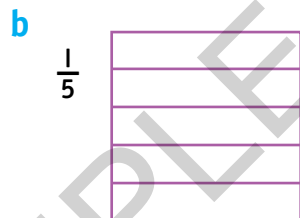
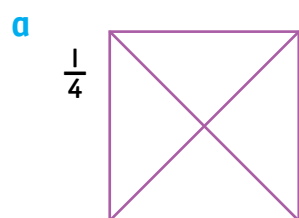
quarters

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

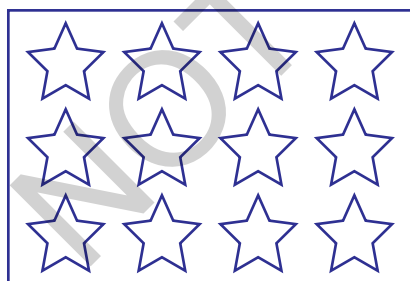
b $\frac{1}{5}$ $\frac{1}{4}$

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

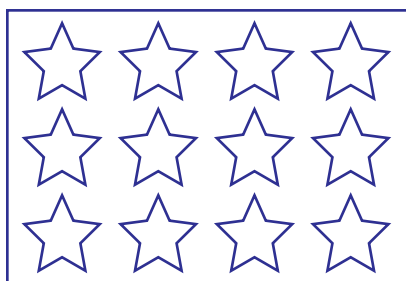
d $\frac{1}{5}$ $\frac{1}{6}$

4 a Colour the correct fractions.

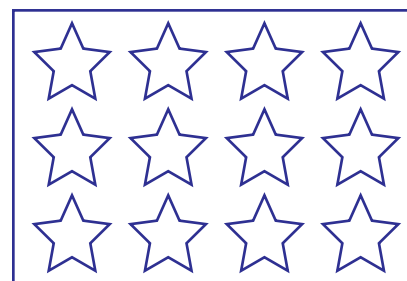
$\frac{1}{3}$



$\frac{1}{4}$



$\frac{1}{6}$



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 _____.