

Year 4 (2023-24)

Maths The Year Ahead...

The following information booklet details the general plan for teaching and learning in the coming academic year at HHJS. We follow the White Rose Scheme of learning which is attached for your information. I have also included some extra resources you may find useful at home for pre-teaching or consolidation.

*** These booklets are available on the website for all KS1 and 2 year groups across our federation.*
For more information speak to Miss Duffy (year 4 @HHJS).

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn term	Number Place value VIEW		Number Addition and subtraction VIEW		Measurement Area VIEW	Number Multiplication and division A VIEW		Consolidation				
Spring term	Number Multiplication and division B VIEW		Measurement Length and perimeter VIEW		Number Fractions VIEW			Number Decimals A VIEW				
Summer term	Number Decimals B VIEW		Measurement Money VIEW		Measurement Time VIEW		Consolidation		Geometry Shape VIEW		Geometry Position and direction VIEW	






Useful resources

White Rose's **free workbooks** align with the topics we will cover.

- Available for **all topics** across the year.

<https://whiterosemaths.com/parent-resources>


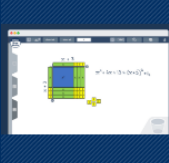


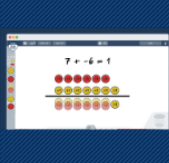
Get the free workbooks

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					
Autumn Block 1 Place value	Autumn Block 2 Addition and subtraction	Autumn Block 3 Length and perimeter	Autumn Block 4 Multiplication and division	Spring Block 1a Multiplication and division (a)	

Free digital tools - these match the representations used in class and align with our mastery approach, by *bringing the maths to life*.

<https://whiterosemaths.com/resources/digital-tools>

Free digital tools

				
Place value chart	Algebra tiles	Rekenrek	Bar model	Double-sided counters

Stage 4 PROMPT sheet

4/1 Count in multiples

Now you must learn these multiples

Multiples of 6	Multiples of 7	Multiples of 9	Multiples of 11	Multiples of 12	Multiples of 25
6	7	9	11	12	25
12	14	18	22	24	50
18	21	27	33	36	75
24	28	36	44	48	100
30	35	45	55	60	125
36	42	54	66	72	150
42	49	63	77	84	175
48	56	72	88	96	200
54	63	81	99	108	225
60	70	90	110	120	250
66	77	99	121	132	275
72	84	108	132	144	300

4/2 Find 1000 more or less

thousands	hundreds	tens	units
4	5	6	7

To increase or decrease by 1000 this is the digit that changes.

4567 has increased by 1000 to **5567**

thousands	hundreds	tens	units
5	5	6	7

4567 has decreased by 1000 to **3567**

thousands	hundreds	tens	units
3	5	6	7

4/2 Round to nearest 10, 100, 1000,

Example 1- Round **4279** to the nearest **1000**

- Step 1 - Find the 'round-off digit' - **4**
- Step 2 - Look one digit to the right of **4** - **2**

5 or more? NO - leave 'round off digit' unchanged
- Replace following digits with zeros

ANSWER - 4000

Example 2- Round **4279** to the nearest **10**

- Step 1 - Find the 'round-off digit' - **7**
- Step 2 - Look one digit to the right of **7** - **9**

5 or more? YES - Add one to the 'round off digit'
- Replace following digits with zeros

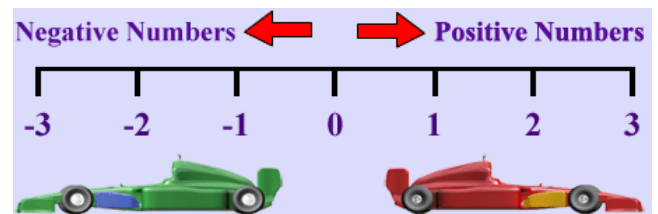
ANSWER - 4280

4/3 Negative numbers

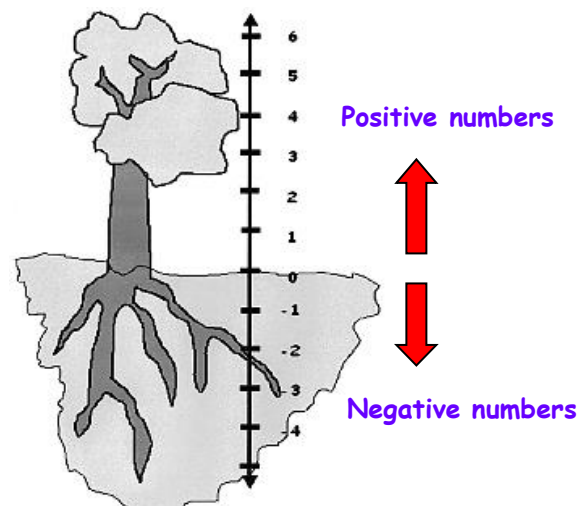
Negative numbers are numbers **BELOW ZERO**

Think of a number line

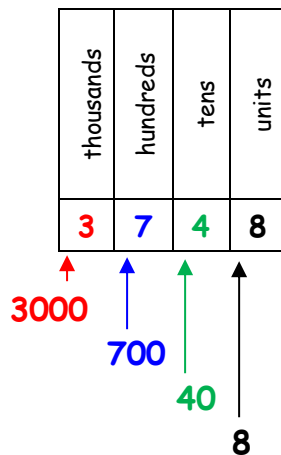
- Horizontal number line



- Vertical number line



4/4 Place value



4/6 Add & subtract

- Line up digits from right to left

Example 1: Add 4735 and 386

$$\begin{array}{r} 4735 \\ + 386 \\ \hline 5121 \\ \hline 111 \end{array}$$

$$\begin{array}{r} 4735 \\ + 386 \\ \hline 5121 \\ \hline 1381 \end{array}$$

Example 2: Subtract 637 from 2476

$$\begin{array}{r} 2476 \\ - 637 \\ \hline 1839 \end{array}$$

$$\begin{array}{r} 2476 \\ - 637 \\ \hline 1839 \end{array}$$

4/5 Roman Numerals to 100

The numbers 1-100 are constructed from these:

I = 1
 V = 5
 X = 10
 L = 50
 C = 100

I	1	XXVI	26	LI	51	LXXVI	76
II	2	XXVII	27	LII	52	LXXVII	77
III	3	XXVIII	28	LIII	53	LXXVIII	78
IV	4	XXIX	29	LIV	54	LXXIX	79
V	5	XXX	30	LV	55	LXXX	80
VI	6	XXXI	31	LVI	56	LXXXI	81
VII	7	XXXII	32	LVII	57	LXXXII	82
VIII	8	XXXIII	33	LVIII	58	LXXXIII	83
IX	9	XXXIV	34	LIX	59	LXXXIV	84
X	10	XXXV	35	LX	60	LXXXV	85
XI	11	XXXVI	36	LXI	61	LXXXVI	86
XII	12	XXXVII	37	LXII	62	LXXXVII	87
XIII	13	XXXVIII	38	LXIII	63	LXXXVIII	88
XIV	14	XXXIX	39	LXIV	64	LXXXIX	89
XV	15	XL	40	LXV	65	XC	90
XVI	16	XLI	41	LXVI	66	XCI	91
XVII	17	XLII	42	LXVII	67	XCII	92
XVIII	18	XLIII	43	LXVIII	68	XCIII	93
XIX	19	XLIV	44	LXIX	69	XCIV	94
XX	20	XLV	45	LXX	70	XCV	95
XXI	21	XLVI	46	LXXI	71	XCVI	96
XXII	22	XLVII	47	LXXII	72	XCVII	97
XXIII	23	XLVIII	48	LXXIII	73	XCVIII	98
XXIV	24	XLIX	49	LXXIV	74	XCIX	99
XXV	25	L	50	LXXV	75	C	100

4/7 Estimate a calculation

- Round off each number so that the calculation is easy to do

Example 1: 644 x 11

To make it easy use:

$$600 \times 11 = 6600 \text{ or } 600 \times 10 = 6000$$

Example 2: 503.926 + 709.328

To make it easy use:

$$500 + 700 = 1200$$

Example 3: Half of 51.4328963

To make it easy use:

$$\text{Half of } 50 = 25$$

Example 3: 806 - 209

To make it easy use:

$$800 - 200 = 600$$

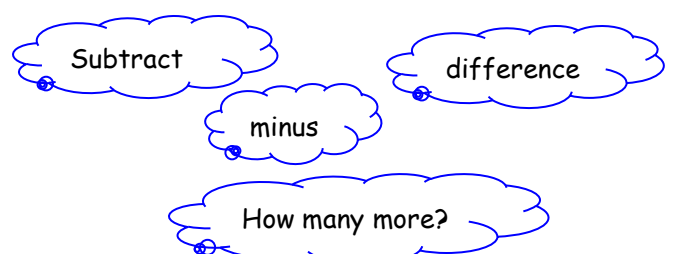
4/8 Addition & subtraction problems

(Based upon 4/6)

Words associated with addition:



Words associated with subtraction:



4/9 Multiplication tables

Times Table - 12x12

	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

Remember:

$$7 \times 8 = 56 \quad 8 \times 7 = 56 \quad 56 \div 7 = 8 \quad 56 \div 8 = 7$$

4/10 Factor pairs

The number 12 can be made from these factor pairs

1×12
 2×6
 3×4
 4×3
 6×2
 12×1

From these factor pairs we can see that the factors of 12 are: 1, 2, 3, 4, 6, 12

4/11 Multiply by a single digit number

Example: 342×7

$\begin{array}{r} 342 \\ \underline{7 \times} \\ 2394 \\ \underline{21} \end{array}$	$\begin{array}{r} 342 \\ \underline{217 \times} \\ 2394 \end{array}$	$300 \times 7 = 2100$ $40 \times 7 = 280$ $2 \times 7 = 14$ $342 \times 7 = 2394$
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4/12 Connections between 2 sums

- Look for connections between the 2 sums

Example: We know $342 \times 7 = 2394$ (See above)

So we also know $342 \times 14 = 4788$

$\xrightarrow{\times 2}$ $\xrightarrow{\times 2}$

Example: We know $342 \times 7 = 2394$ (See above)

So we also know $684 \times 7 = 4788$

$\xrightarrow{\times 2}$ $\xrightarrow{\times 2}$

Example: We know $342 \times 7 = 2394$ (See above)

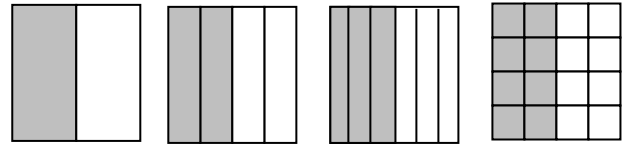
So we also know $342 \times 8 = 2394 + (342 \times 1) = 2736$

$\xrightarrow{+1}$

4/13 Common equivalent fractions

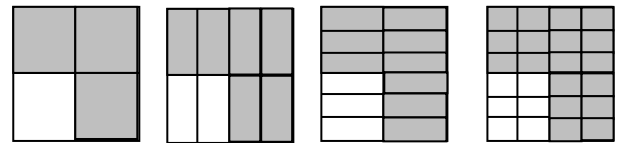
- The same fraction can be expressed in different ways

ALL THESE ARE $\frac{1}{2}$



$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{8}{16}$$

ALL THESE ARE $\frac{3}{4}$



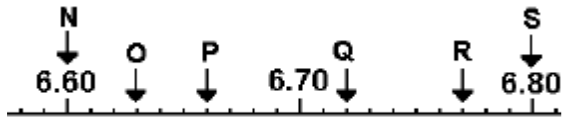
$$\frac{3}{4} = \frac{6}{8} = \frac{9}{12} = \frac{18}{24}$$

4/14 Hundredths

tens	units	•	tenths	hundredths
8	2	•	6	4

- This represents 4 hundredths = $\frac{4}{100}$
- To find a hundredth of an object or quantity you divide by 100

4/14 Counting in hundredths (continued)



- O = 6.63
- P = 6.66
- Q = 6.72
- R = 6.77

4/16 Decimal equivalents

Others to learn are:

$$\frac{1}{4} = 0.25 \quad \frac{1}{2} = 0.5 \quad \frac{3}{4} = 0.75$$

4/15 Add & subtract fractions

- To add and subtract fractions

When the denominators are the same

$$\frac{5}{8} + \frac{3}{8} = \frac{8}{8} = 1$$

Do not add the denominators

$$\frac{5}{8} - \frac{1}{8} = \frac{4}{8}$$

Do not subtract the denominators

4/17 Effect of dividing by 10 and 100

- To **divide** by 10, move each digit one place to the **right**

e.g. $35 \div 10 = 3.5$

Tens	Units	•	tenths
3	5	•	
	3	•	5

- To **divide** by 100, move each digit 2 places to the **right**

e.g. $35 \div 100 = 0.35$

(we add a zero to show there are no whole numbers)

Tens	Units	•	tenths	hundredths
3	5	•		
	0	•	3	5

4/16 Decimal equivalents

units	•	tenth
0	•	6

$$0.6 \Leftrightarrow \frac{6}{10}$$

units	•	tenths	hundredths
0	•	0	3

$$0.03 \Leftrightarrow \frac{3}{100}$$

units	•	tenths	hundredths
0	•	6	3

$$0.63 \Leftrightarrow \frac{63}{100}$$

4/18 Round decimals to nearest whole

The Rules:

- If the digit behind the decimal point is **LESS THAN 5**, the number is rounded **DOWN** to the next whole number

Example: 6.4 becomes rounded to 6

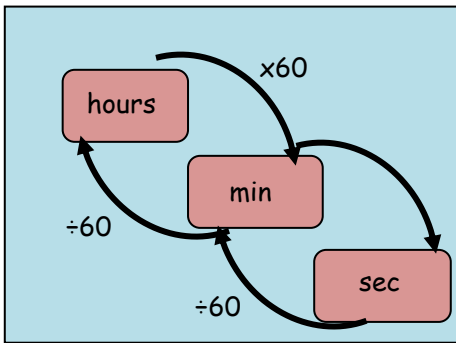
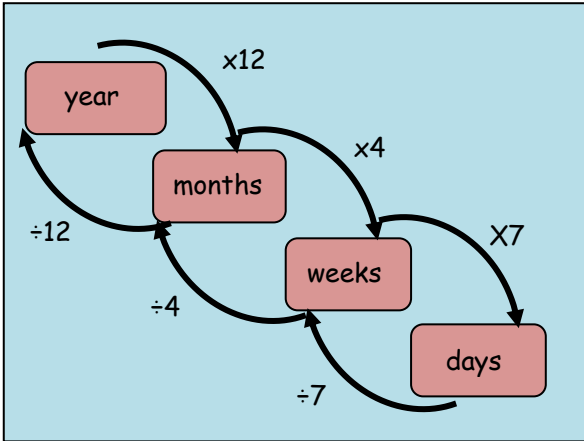
- If the digit behind the decimal point is **5 OR MORE**, the number is rounded **UP** to the next whole number

Example: 6.5 becomes rounded to 7

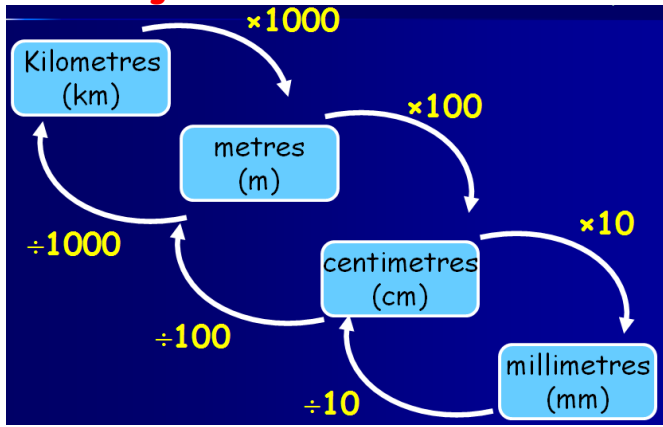
6.8 becomes rounded to 7

4/19 Convert between units of measure

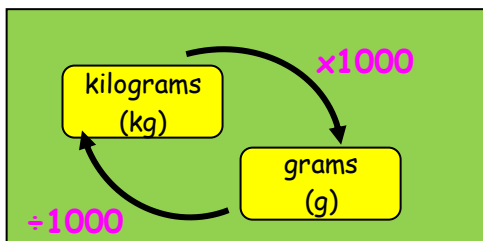
- **Time**



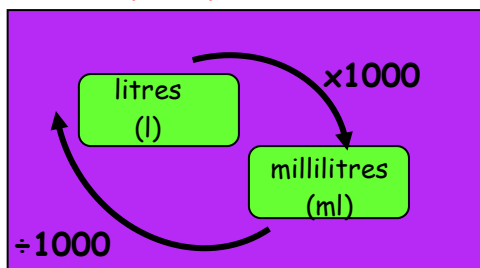
- **Length**



- **Mass or weight**

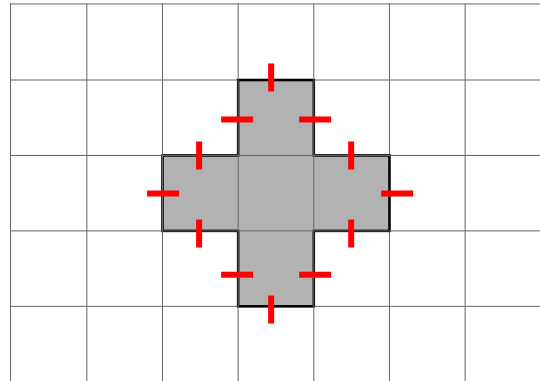


- **Capacity or volume**

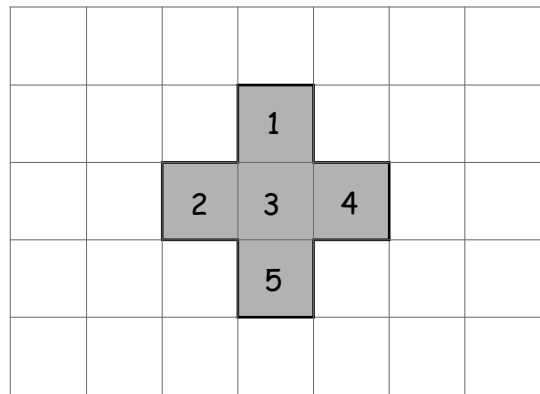


4/20 Perimeter & area by counting

- **Perimeter** is round the **OUTSIDE**
Perimeter of this shape = 12cm



- **Area** is the number of squares **INSIDE**
Area of this shape = 5cm²



4/21 Estimate measures

- **Capacity**



a 5ml spoon



a 330ml can of drink



an average bucket holds 10 litres

4/21 Estimate measures - continued

• Mass



this apple weighs 125g



this bag of sugar weighs 1kg



this man weighs 70kg

• Length



this pencil is 17cm long



length of classroom is 10m



distance to Exeter is 64miles

4/22 12- and 24-hour clock



MORNING in 24-Hour Clock											
0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
12:00am (midnight)	1:00am	2:00am	3:00am	4:00am	5:00am	6:00am	7:00am	8:00am	9:00am	10:00am	11:00am

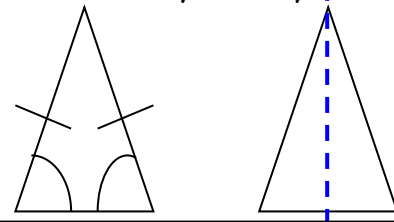
AFTERNOON in 24-Hour Clock											
1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
12:00pm (midday)	1:00pm	2:00pm	3:00pm	4:00pm	5:00pm	6:00pm	7:00pm	8:00pm	9:00pm	10:00pm	11:00pm

4/23 - Properties of quadrilaterals & triangles

TRIANGLES - angles add up to 180°

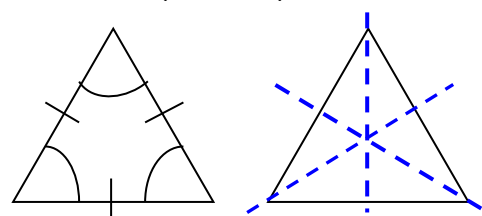
Isosceles triangle

- 2 equal sides
- 2 equal angles
- 1 line of symmetry
- No rotational symmetry



Equilateral triangle

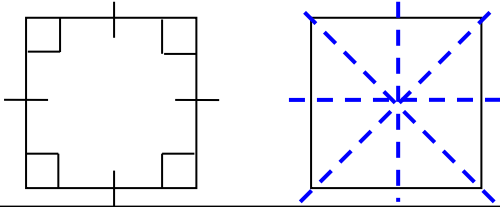
- 3 equal sides
- 3 equal angles - 60°
- 3 lines of symmetry
- Rotational symmetry order 3



QUADRILATERALS - all angles add up to 360°

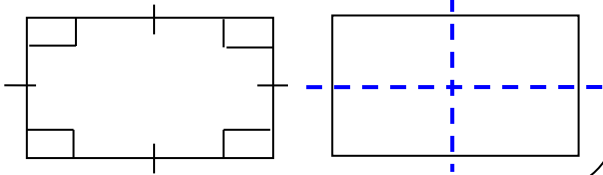
Square

- 4 equal sides
- 4 equal angles - 90°
- 4 lines of symmetry
- Rotational symmetry order 4



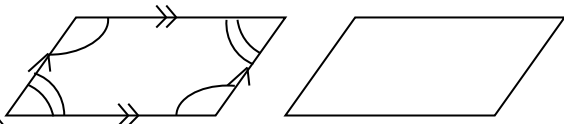
Rectangle

- Opposite sides equal
- 4 equal angles - 90°
- 2 lines of symmetry
- Rotational symmetry order 2



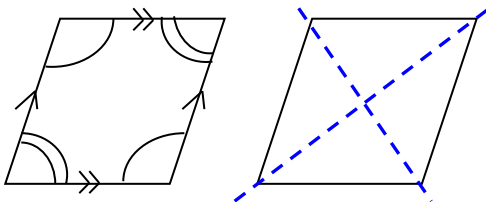
Parallelogram

- Opposite sides parallel
- Opposite angles equal
- NO lines of symmetry
- Rotational symmetry order 2



Rhombus (like a diamond)

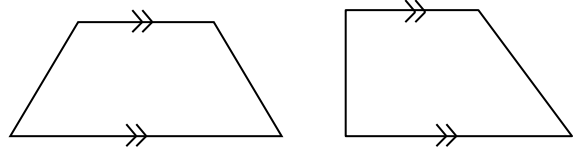
- Opposite sides parallel
- Opposite angles equal
- 2 lines of symmetry
- Rotational symmetry order 2



4/23 - Properties of quadrilaterals & Triangles (continued)

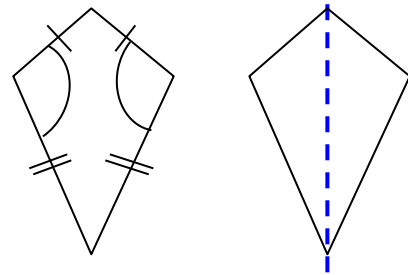
Trapezium

- ONE pair opposite sides parallel

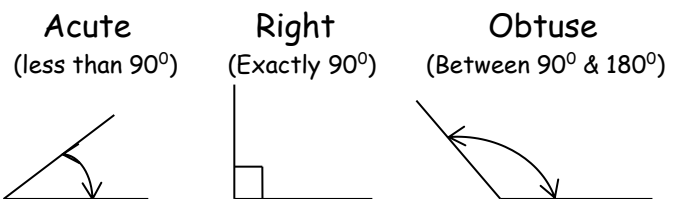


Kite

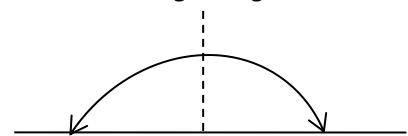
- One pair of opposite angles equal
- 2 pairs of adjacent sides equal
- ONE line of symmetry
- No rotational symmetry



4/24 Types of angles

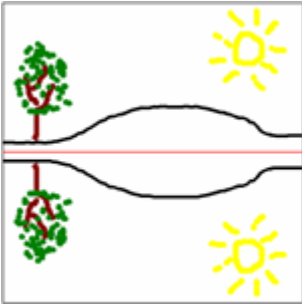


Straight line
(180° or two right angles)

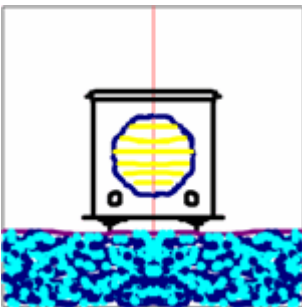


4/25 Identify lines of symmetry

- Horizontal line of symmetry



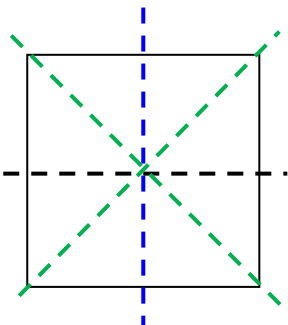
- Vertical line of symmetry



- Oblique line of symmetry

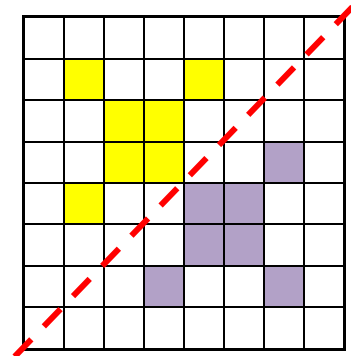
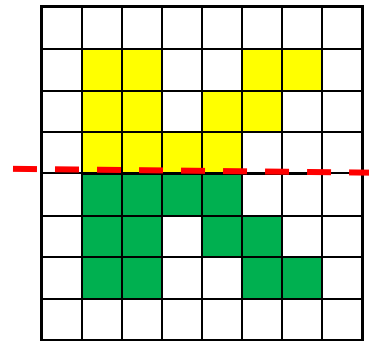
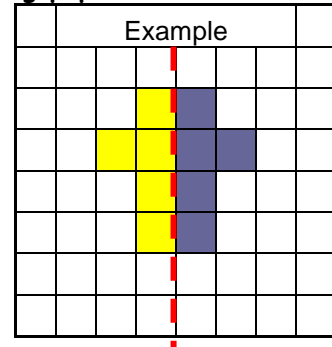


- Horizontal, Vertical & Oblique lines of symmetry



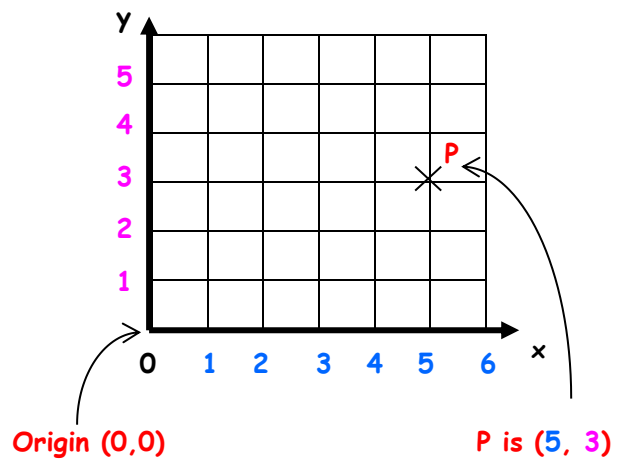
4/26 Complete a symmetrical figure

- Tracing paper is brilliant for this

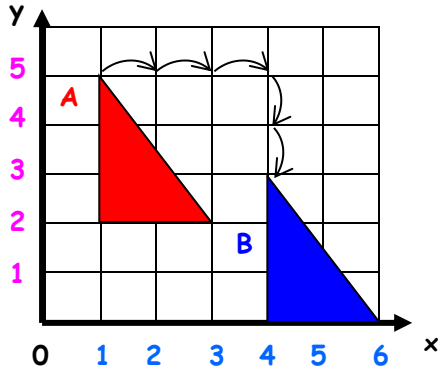


4/27 Describe position of points

- The horizontal axis is the x-axis
- The vertical axis is called the y-axis
- The origin is where the axes meet
- A point is described by two numbers
The 1st number is off the x-axis
The 2nd number is off the y-axis



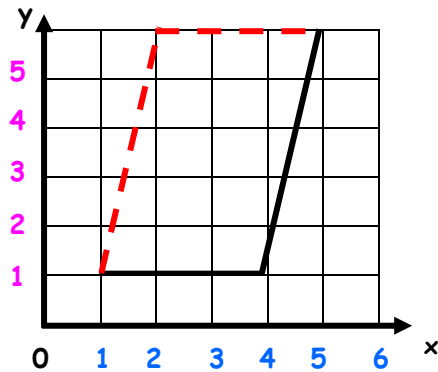
4/27 Describe movement of shapes



Shape A has been moved 3 squares right and 2 down. This movement is called **TRANSLATION**

4/28 Complete a 2D shape

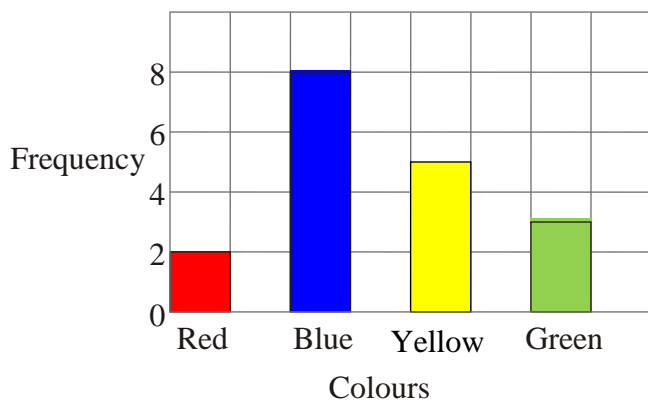
Example: Draw on lines to complete parallelogram



4/29 Present discrete & continuous data

Discrete data is counted
e.g. cars, students, animals

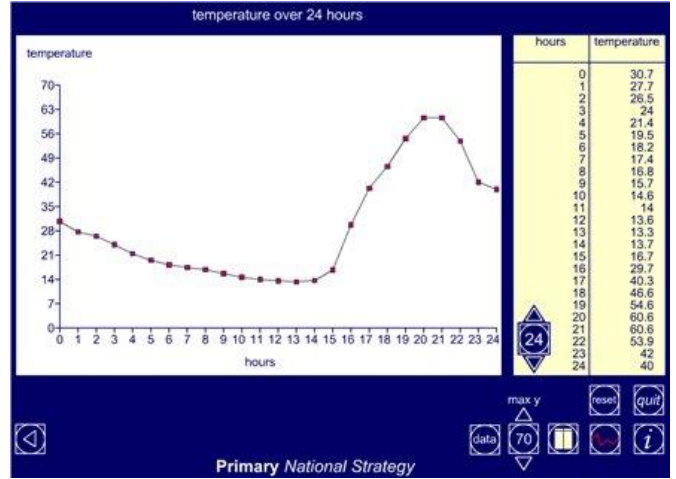
Graph to show favourite colours in Class 4



4/29 Present discrete & continuous data

Continuous data is measured
e.g. heights, times, temperature

Graph to show a patient's temperature over 24h

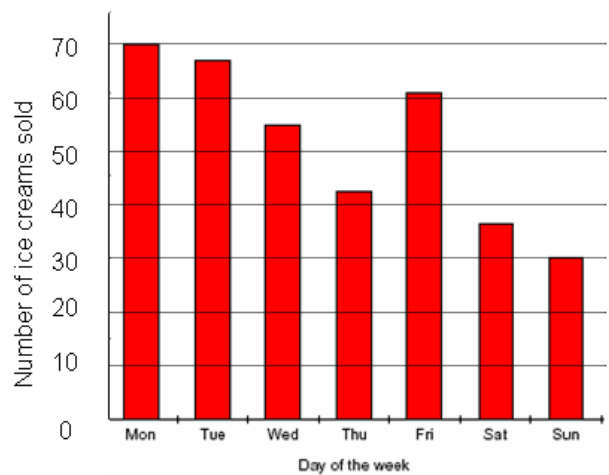


4/30 Compare data in graphs

'Sum' or 'total' means 'add up'

'Difference' or 'how many more' means 'subtract'

Bar chart to show Number of Ice Creams sold in a week



(i) What is the total number of ice creams sold over the weekend?

Answer: $37 + 30 = 67$

(ii) How many more were sold on Friday than Saturday?

Answer: $61 - 37 = 24$

Pictogram to show the number of pizzas eaten by four friends in the past month:

Key:  = 4 pizzas

Alan 

Bob 

Chris 

Dave 

- (i) What is the sum of the number of pizzas eaten in the month

Answer: $6 + 9 + 19 + 12 = 46$

- (ii) Find the difference in the number eaten by Chris and Bob

Answer: $19 - 9 = 10$