Year 4
Maths Examples

ST. MARY'S RC. PRIMARY SCHOOL

1 Count in multiples

Now you must learn these multiples

Multiples of 4	Multiples of 8	Multiples of 50	Multiples of 100
0	0	0	0
4	8	50	100
8	16	100	200
12	24	150	300
16	32	200	400
20	40	250	500
24	48	300	600
28	56	350	700
32	64	400	800
36	72	450	900
40	80	500	1000

hundreds	tens	ones
3	5	2

- To find 10 more or 10 less, it is the 'tens digit' that changes

10 more than 352 becomes 362

10 less than 352 becomes 342

hundreds	tens	ones
3	5	2

- To find 100 more or 100 less, it is the 'hundreds' digit that changes

100 more than 352 becomes 452

100 less than 352 becomes 252

2 Recognise place value

hundreds	tens	ones
3	5	2

352 means 300 + 50 + 2

3 Numbers in words and figures

In order to put FIGURES into WORDS, we must try to imagine that the number is in a PLACE VALUE table like this one

Hundred	Ten	Ones
1	4	7
One hundred	forty	seven
One hundred and forty-seven		

Hundred	Ten	Ones
4	0	9
Four hundred		nine
Four hundred and nine		

3 Compare and order numbers

- Write numbers lining up the digits

Hundred	Ten	Ones
1	4	7
6	3	2
1	7	6
1	6	2

- Begin at the hundreds and compare

632 is the biggest

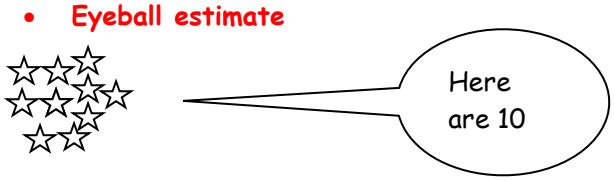
Hundred	Ten	Ones
1	4	7
6	3	2
1	7	6
1	6	2

- Move to the tens and compare

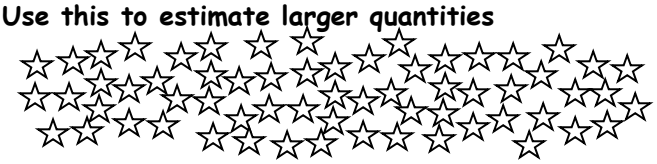
Order is: 632, 176, 162, 147

4 Estimating

- **Eyeball estimate**



Use this to estimate larger quantities



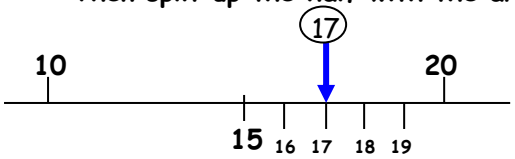
- **Estimate by sampling**

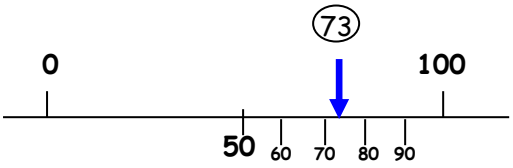


Count your pulse over 15seconds
Multiply the number of pulses by 4 to get the pulse rate over 1 minute (15 x 4 = 60seconds)

- **Estimate on a number line**

Fill in the half way number first
Then split up the half with the arrow





- **Estimate by rounding off a number**

To make a sum easier and give a rough answer

Example: 28 could be rounded to 30
£1.95 could be rounded to £2

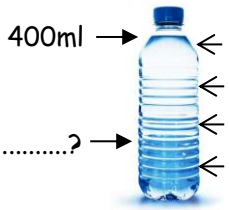
5 Solve problems by estimating

Example: Estimate the cost of 5 magazines at £1.95 each



Answer: It is about 5 x £2 = £10

Example: When full this bottle holds 400ml.
Estimate how much water is left in this bottle.



Answer: about 150ml

6 Add 3 digit numbers mentally

Partitioning

236 + 319

200 + 30 + 6 + 300 + 10 + 9
= 500 + 40 + 15
= 555

Subtract 3 digit numbers mentally

363 - 126

Partitioning

363 - 100 - 20 - 6
=263 - 20 - 6
=243-6
=237

Counting on from 126

(126) + 4
130 + 3
133 + 230
=363
Answer = 237

7 Written method for addition

- **Line up the digits in the correct columns**

e.g. 132 + 239

H	T	U	
1	3	2	
2	3_1	9	+
3	7	1	

Written method for subtraction

- **Line up the digits in the correct columns**

e.g. 327 - 119

H	T	U	
3	$^{1}\not{2}$	$^{1}7$	
1	1	9	-
2	0	8	

8 Estimate answers to calculations

- Round off each number
- Then do the calculation
- Check using the inverse

Example: Estimate 83 – 28

80 – 30 = 50
Inverse: 50 + 30 = 80 ✔

9 Missing number problems

Fact family for +/-

34 + 23 = 57

57 - 23 = 34

23 + 34 = 57

57 – 34 = 23

10 Know the 3, 4 and 8 times tables

1	x	3	=	3	1	x	4	=	4	1	x	8	=	8
2	x	3	=	6	2	x	4	=	8	2	x	8	=	16
3	x	3	=	9	3	x	4	=	12	3	x	8	=	24
4	x	3	=	12	4	x	4	=	16	4	x	8	=	32
5	x	3	=	15	5	x	4	=	20	5	x	8	=	40
6	x	3	=	18	6	x	4	=	24	6	x	8	=	48
7	x	3	=	21	7	x	4	=	28	7	x	8	=	56
8	x	3	=	24	8	x	4	=	32	8	x	8	=	64
9	x	3	=	27	9	x	4	=	36	9	x	8	=	72
10	x	3	=	30	10	x	4	=	40	10	x	8	=	80
11	x	3	=	33	11	x	4	=	44	11	x	8	=	88
12	x	3	=	36	12	x	4	=	48	12	x	8	=	96

Fact family for x/÷

9 x 8 = 72

72 ÷ 9 = 8

8 x 9 = 72

72 ÷ 8 = 9

11 Multiply & divide

- A 2-digit number by a single digit

Column method

$$\begin{array}{r} 38 \\ \times\ 3 \\ \hline 114 \\ \hline {\scriptstyle 2} \end{array}$$

Grid method

	30	8
3	90	24

90 + 24 = **114**

Partitioning method

38 x 3
= 30 x3 + 8 x 3
= 90 + 24
= 114

12 Multiply & divide

- Look for connections between two sums
- Remember the fact family for x/÷

Example: 6 x 4 = 24 (x10) So 60 x 4 = 240
So 240 ÷ 4 = 60

Example: 9 x 8 = 72 (x2) So 18 x 8 = 144
So 144 ÷ 8 = 18

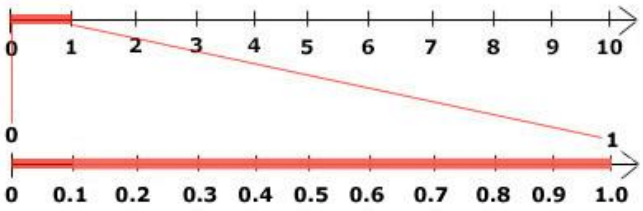
13 Tenths

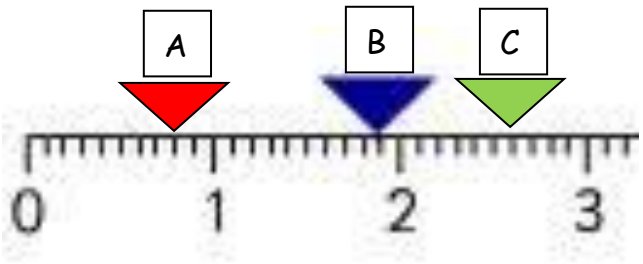
tens	ones	•	tenths
8	2	•	6

- This represents 6 tenths = $\frac{6}{10}$

Counting in tenths (continued)

- A whole one divided into 10 equal parts
- 1 ÷ 10 = 1 tenth or $\frac{1}{10}$ Or 0.1





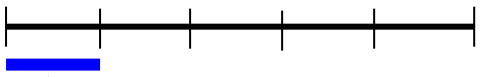
A – 0.8
B – 1.9
C – 2.6

Example: $\frac{1}{10}$ of 20 = 20 ÷ 10 = 2

14 Fraction of line or objects

- To find $\frac{1}{5}$ of a line

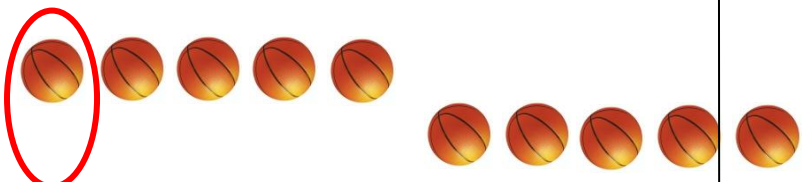
  Divide the line into 5 equal parts



Each part is $\frac{1}{5}$

- To find $\frac{1}{5}$ of a set of objects

  Divide objects into 5 equal parts



$\frac{6}{24}$

- To find a tenth of an object or quantity you divide by 10

14 Write a fraction of a number of object



$\frac{2}{5}$ are blue and $\frac{3}{5}$ are red

15 Use fractions as numbers

To find $\frac{1}{5}$ of 20 we do 20 ÷ 5 = 4

To find $\frac{2}{5}$ of 20 we do 4 x 2 = 8

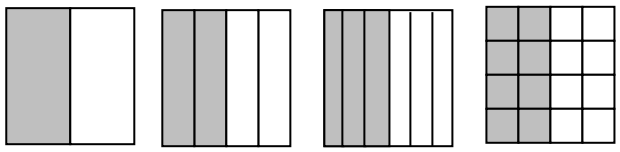
To find $\frac{3}{5}$ of 20 we do 4 x 3 = 12

Each part is $\frac{1}{5}$

16 Equivalent fractions

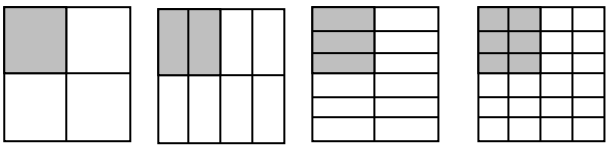
- The same fraction can be expressed in different ways

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



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

ALL THESE ARE $\frac{1}{4}$



$\frac{1}{4}$ = $\frac{2}{8}$ = $\frac{3}{12}$ =

17 Add & subtract fractions

- To add and subtract fractions

When the denominators are the same

$$\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$$

Do not add the denominators

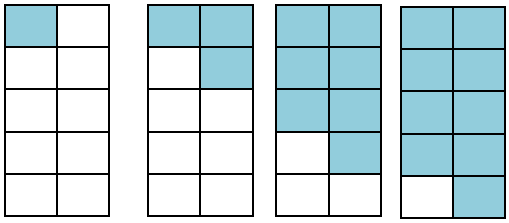
$$\frac{5}{7} - \frac{1}{7} = \frac{4}{7}$$

Do not subtract the denominators

18 Compare fractions

- **Fractions with the same denominator**

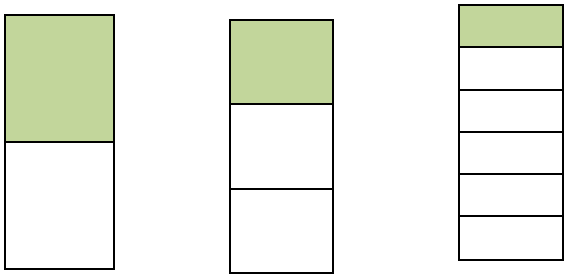
$\frac{1}{10}$ $\frac{3}{10}$ $\frac{7}{10}$ $\frac{9}{10}$



The bigger the numerator, the bigger the fraction

- **Unit Fractions**

$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{6}$

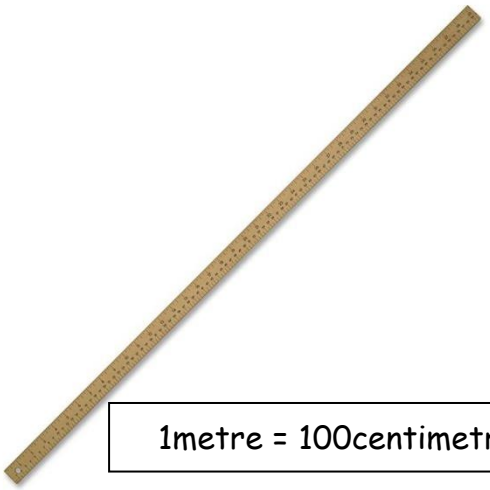


The bigger the denominator, the smaller the fraction

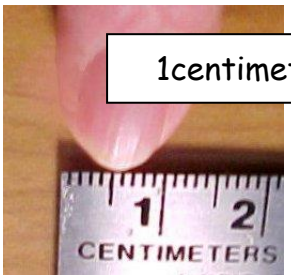
19 Add & subtract measures

- **The units must be the same**

Length – Example

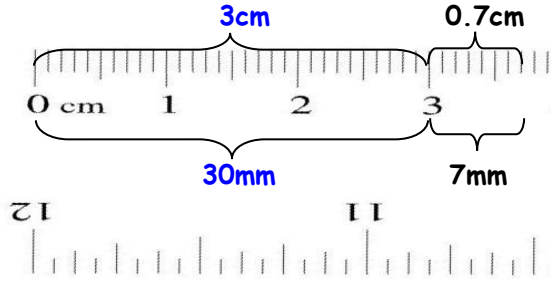


1metre = 100centimetres



1centimetre = 10millimetres

3cm + 7mm
= 30mm + 7mm
= 37mm
or 3cm 7mm or 3.7cm



Mass – Example



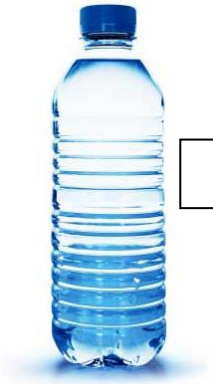
= 1000g

3kg – 450g

= 3000g – 450g
= 2550g
or 2kg 550g or 2.55kg

19 Add & subtract measures (continued)

Volume – Example



1litre = 1000millilitres

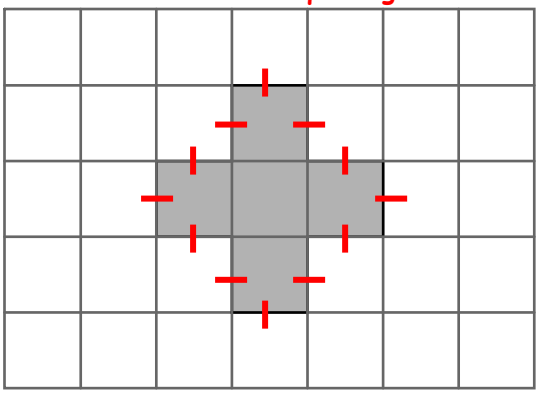


800ml + 720ml
= 1520ml
= 1 litre and 520ml
= 1.52 litres

20 Perimeter

PERIMETER is the distance round the outside of a shape

- **On a centimetre square grid – count round**



Perimeter of this shape = 12cm

- **Measurements given - add up all round**

6cm

4cm  4cm

6cm

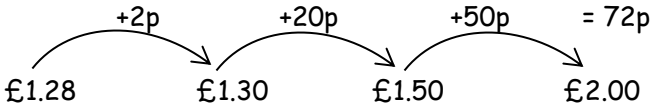
Perimeter of this shape = 6 + 4 + 6 + 4 = 20cm

21 Bills and change

To work out a bill

1 chocolate bar - £1.10
1 pen – 10p
1 pencil – 8p
Total = £1.28

To find change by the 'add-on' method



22 Time

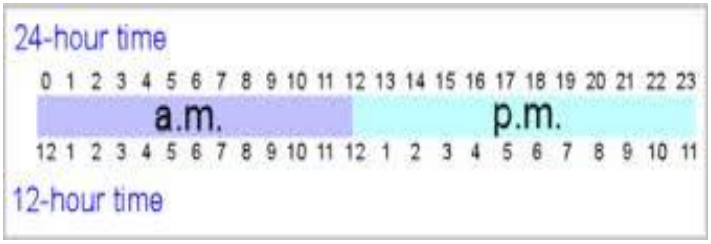
Analogue clock

Roman **Hindu-Arabic**





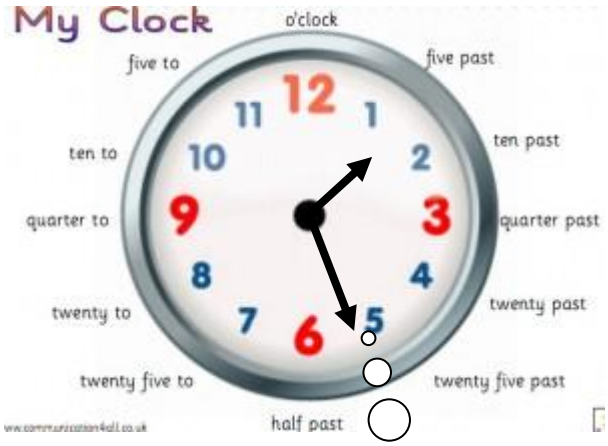
12- and 24-hour clock



23 Time

Reading the time



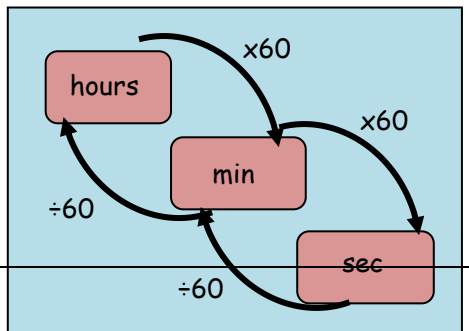


5 minutes between each number- so this time is 1:27 or we say 27 minutes

Times of the day in 12-hour clock

Morning	Afternoon
12.00 midnight	12.00 noon
1.00 am	1.00 pm
2.00 am	2.00 pm
3.00 am	3.00 pm
4.00 am	4.00 pm
5.00 am	5.00 pm
6.00 am	6.00 pm
7.00 am	7.00 pm
8.00 am	8.00 pm
9.00 am	9.00 pm
10.00 am	10.00 pm
11.00 am	11.00 pm
12.00 noon	12.00 midnight

24 Time – hours minutes, seconds



Months of the year



- A rhyme to remember the days in each month

> *30 days has September,*
> *April, June and November.*
> *All the rest have 31*
> *Except February alone,*
> *Which has 28 days clear*
> *And 29 in each leap year.*

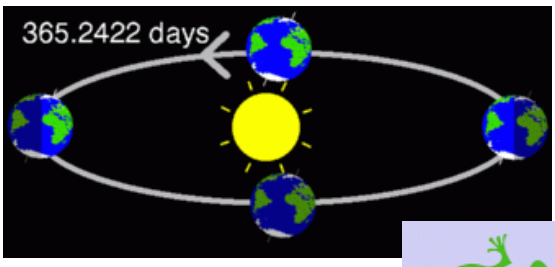
- the "knuckle method"



A knuckle is "31 days", and in between each knuckle it isn't.
And where your hands meet, the two knuckles are "July, August", which both have 31 days.

February has 28 days & 29 days in a leap year (every 4 years)

Days in a year

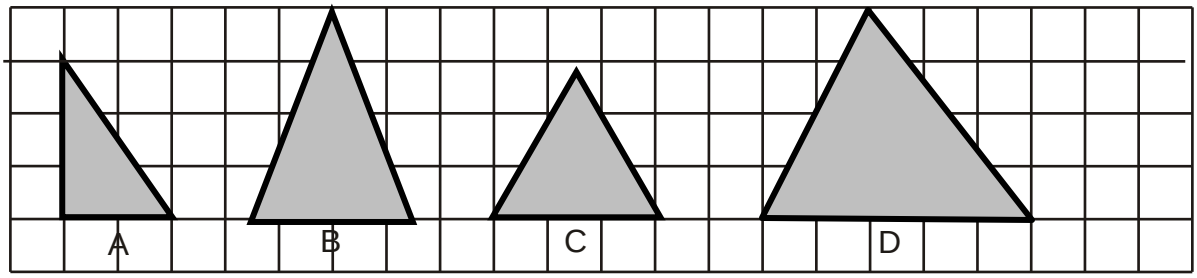


365 days in a year
366 days in a leap year



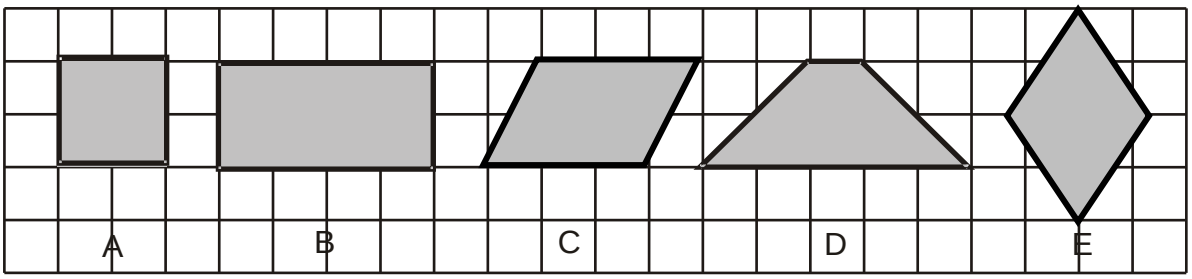
25 – 2D Shapes

- **With 3 sides (Triangles)**



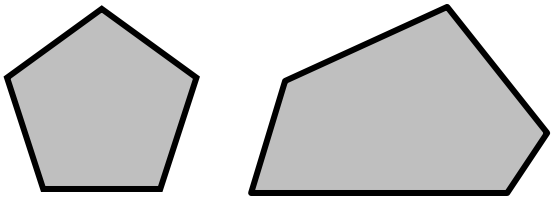
right-angled **isosceles** **equilateral** **scalene**

- **With 4 sides (Quadrilaterals)**



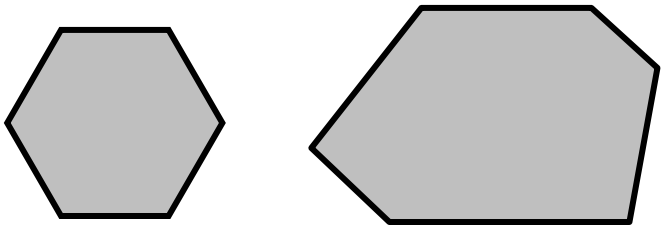
square **rectangle** **parallelogram** **trapezium** **rhombus**

- **With 5 sides (Pentagons)**



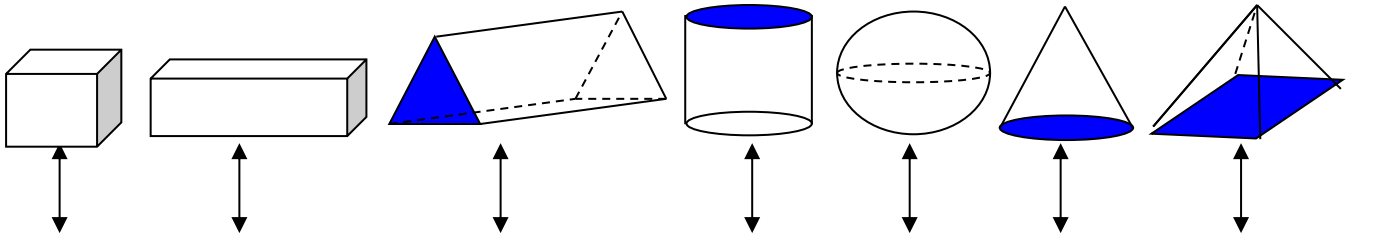
regular **irregular**

With 6 sides (Hexagons)



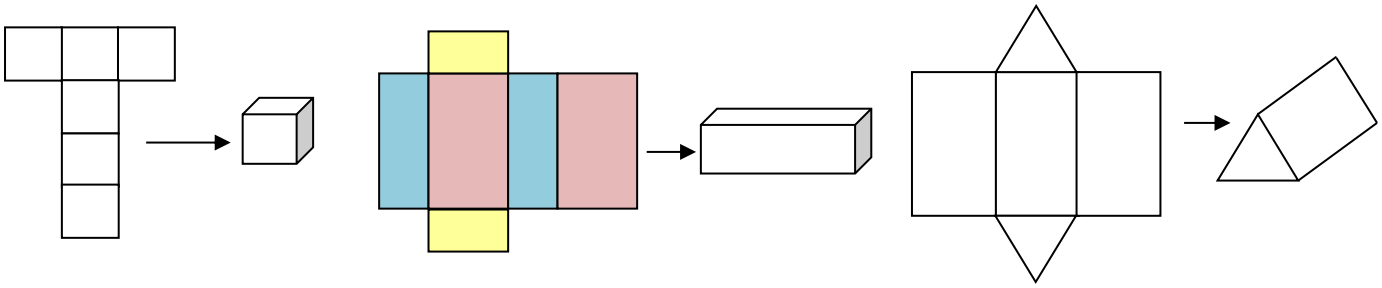
regular **irregular**

25 – 3D Shapes



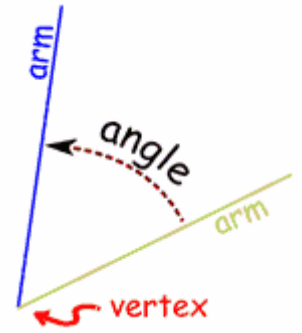
Cube cuboid triangular prism cylinder sphere cone square-based Pyramid

- **Nets**



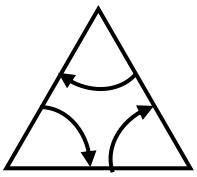
26 Angle

- **An angle is an amount of turn**

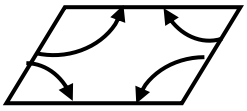


- **Angles in shapes**

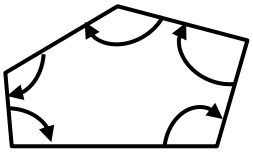
Triangle - 3 angles



Quadrilateral - 4 angles

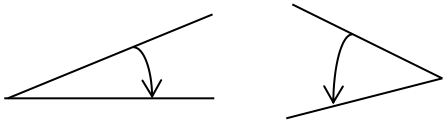


Pentagon – 5 angles

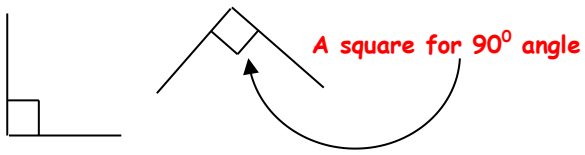


- **Names of angles**

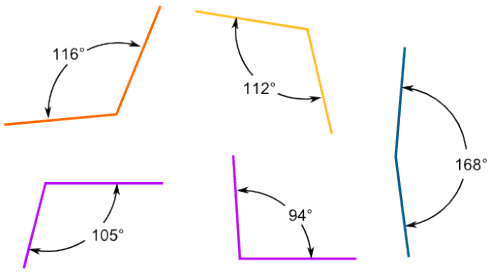
ACUTE angles are less than 90^0



RIGHT angles are exactly 90^0

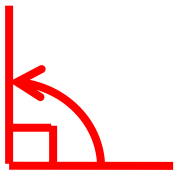


OBTUSE angles are bigger than 90^0

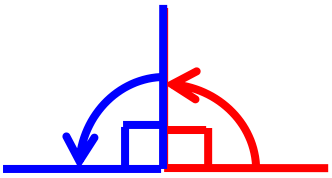


27 Right angles

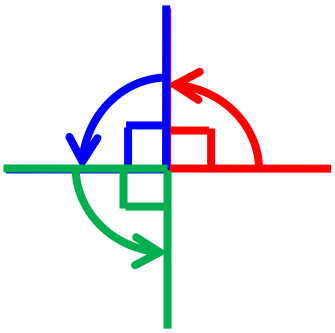
ONE right angle measures exactly 90^0



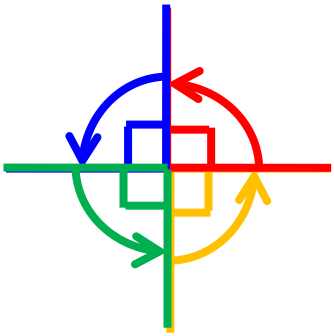
TWO right angles measure exactly 180^0
This is called a half-turn



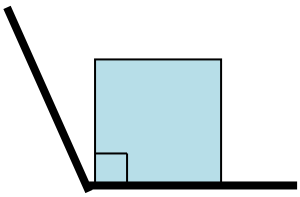
THREE right angles measure exactly 270^0
This is called three quarters of a turn



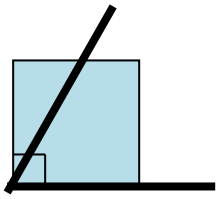
FOUR right angles measure exactly 360^0
This is called a full or complete turn



To check if an angle is bigger or smaller than a right angle, use a square corner



This angle is greater than a right angle



This angle is less than a right angle

28 Types of Lines



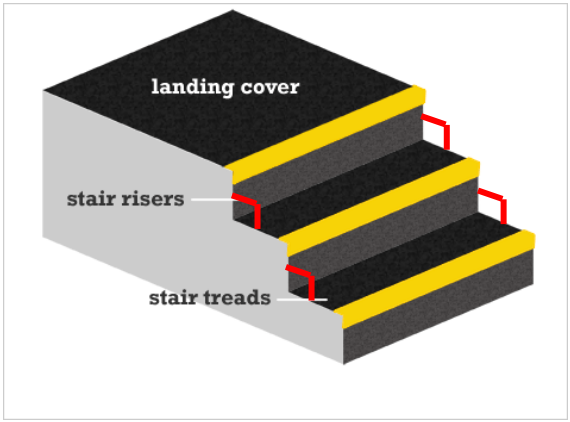
The Horizon is a horizontal line



This cliff face is a vertical line



The running track is parallel lines (never meet)



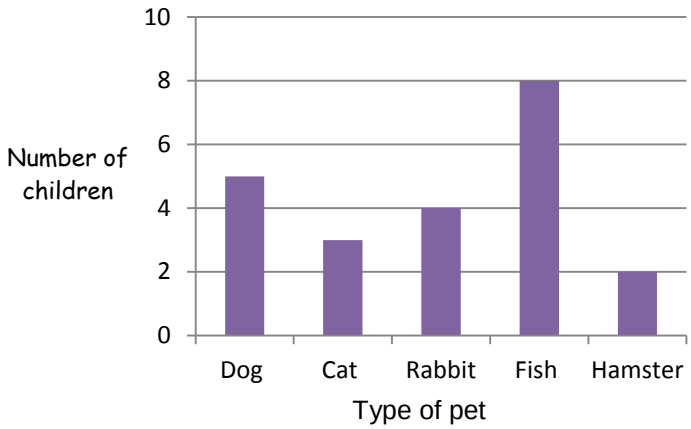
The rise & tread are perpendicular lines (meet at 90°)

29 Bar charts

Frequency table to show pets owned by Year 3

Type of pet	Tally	Number of pets
Dog	𝍸	5
Cat	III	3
Rabbit	IIII	4
Fish	𝍸 III	8
Hamster	II	2

A bar graph to show pets owned by Year 3



Pictogram to show the colours in a tube of Smarties

Colour	Number of Smarties
Green	
Orange	
Blue	
Pink	
Yellow	
Red	
Purple	
Brown	
	Key = 2 smarties

30 Solve answers to questions

- **Bar chart in 29**

(i) How many **more** children own a rabbit than a hamster?

Answer: 4-2 = 2

(ii) What is the **difference** between the number of children who own a dog and the number of children who own a cat?

Answer: 5 – 3 = 2

(iii) How many pets are owned **altogether** by the children Year 3?

Answer: 5 + 3 + 4 + 8 + 2 = 22

- **Pictogram in 29**

(i) How many **fewer** blue smarties are there than yellow ones?

Answer: 11 – 5 = 6

(ii) Work out the **total** number of smarties in the tube

Answer: 55