North Downs Primary School
One school - Three villages - One vision

Be the best you can be, every day

Year 3

3/1 Count in multiples

Now you must learn these multiples

Multiples of 3	Multiples of 6	Multiples of 4	Multiples of 8
0	0	0	0
3	6	4	8
6	12	8	16
9	18	12	24
12	24	16	32
15	30	20	40
18	36	24	48
21	42	28	56
24	48	32	64
27	54	36	72
30	60	40	80

Multiples of 50	Multiples of 100
0	0
50	100
100	200
150	300
200	400
250	500
300	600
350	700
400	800
450	900
500	1000

3/2 Recognise place value

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

hundreds	tens	ones
3	5	2

352 means **300** + **50** + 2

3/3 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 chart 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		

3/4 Compare and order numbers

Write numbers lining up the digits

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

Begin at the hundreds and compare
632 is the biggest

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

Move to the tens and compare
Descending Order is: 632, 176, 162, 147
Ascending Order is: 147, 162, 176, 632

3/5 Estimating

Eyeball estimate

Here are 10
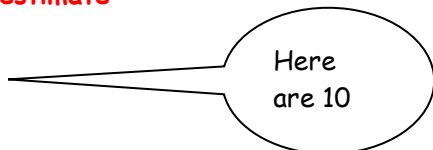
Use this to estimate larger quantities

Estimate by sampling
Count your pulse over 15 seconds
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

⑰

10   20
15 16 17 18 19

㉒73

0   100
50 60 70 80 90
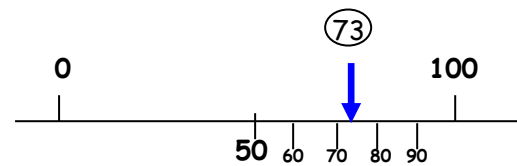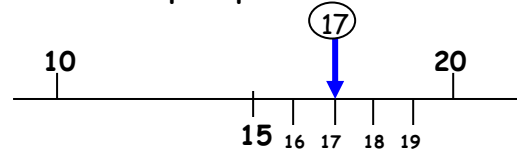
Estimate by rounding off a number
To make a sum easier and give a rough answer

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

3/5a 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.

400ml →

Answer: about 150ml   ....? →

3/6 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

3/7 Written method for addition

Line up the digits in the correct columns

e.g. 132 + 239

```
H T O
1 3 2
2 3 9 +
3 7 1
  1
```

Written method for subtraction

Line up the digits in the correct columns

e.g. 327 - 119

```
H T U
3 ¹2 ¹7
1 1 9 -
2 0 8
```

3/8 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 ✔

3/9 Missing number problems

Fact family for +/-

34 + 23 = 57

57 - 23 = 34

23 + 34 = 57

57 – 34 = 23

3/10 Know the 3,6,4 and 8 times tables

1	x	3	=	3		1	x	6	=	6
2	x	3	=	6		2	x	6	=	12
3	x	3	=	9		3	x	6	=	18
4	x	3	=	12		4	x	6	=	24
5	x	3	=	15		5	x	6	=	30
6	x	3	=	18		6	x	6	=	36
7	x	3	=	21		7	x	6	=	42
8	x	3	=	24		8	x	6	=	48
9	x	3	=	27		9	x	6	=	54
10	x	3	=	30		10	x	6	=	60
11	x	3	=	33		11	x	6	=	66
12	x	3	=	36		12	x	6	=	72

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

Fact family for x/÷

9 x 8 = 72

72 ÷ 9 = 8

8 x 9 = 72

72 ÷ 8 = 9

3/11 Multiply & divide

A 2-digit number by a single digit

Column method

```
  3 8
    3×
  2 4   (8×3)
  9 0   (30×3)
1 1 4
```

```
      3 8
      3 ×
    ─────
    1 1 4
        2
```

Grid method

	30	8
3	90	24

90 + 24 = **114**

Partitioning method

38 × 3

= 30 ×3 + 8 × 3

= 90   +   24

= 114

3/12 Multiply & divide

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

Example: 6 × 4 = 24 $\xrightarrow{\times 10}$ So **60** × 4 = 240

So 240 ÷ 4 = 60

Example: 9 × 8 = 72 $\xrightarrow{\times 2}$ So 18 × 8 = 144

So 144 ÷ 8 = 18

3/13 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
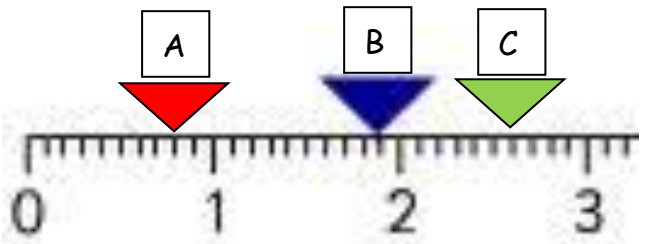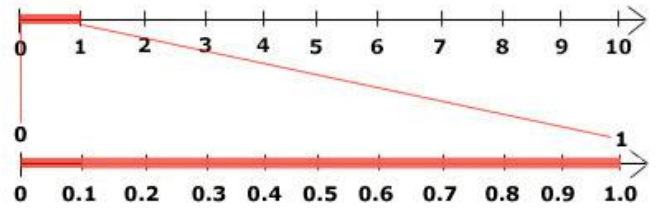
A – 0.8
B – 1.9
C – 2.6

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

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

3/14 Write a fraction of a number of object

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

3/15 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** × 2 = **8**

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

3/14 <u>**Fraction of line or objects**</u>

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

  Divide the line into 5 equal parts
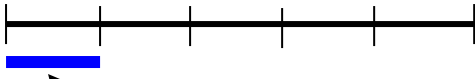
Each part is $\dfrac{1}{5}$

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

  Divide objects into 5 equal parts
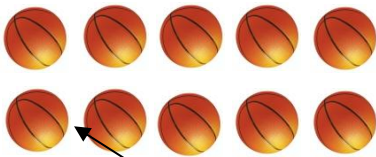
Each part is $\dfrac{1}{5}$

3/16 <u>**Equivalent fractions**</u>

- The same fraction can be expressed in different ways

ALL THESE ARE $\dfrac{1}{2}$
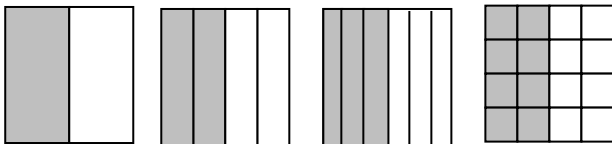
$$\dfrac{1}{2} \ = \ \dfrac{2}{4} \ = \ \dfrac{3}{6} \ = \ \dfrac{8}{16}$$

ALL THESE ARE $\dfrac{1}{4}$
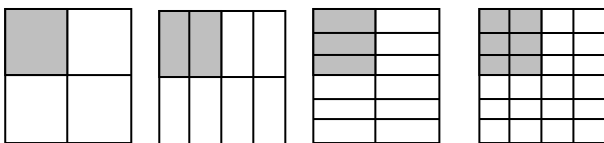
$$\dfrac{1}{4} \ = \ \dfrac{2}{8} \ = \ \dfrac{3}{12} \ = \ \dfrac{6}{24}$$

3/17 <u>**Add & subtract fractions**</u>

- To add and subtract fractions

When the denominators are the same

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

Do not add the denominators

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

Do not subtract the denominators
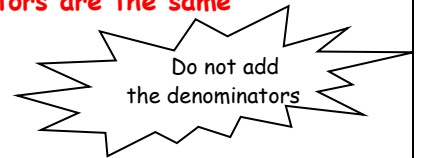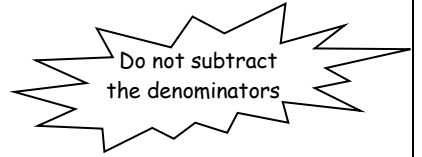
3/18 Compare fractions

- **Fractions with the same denominator**

$$\frac{1}{10} \qquad \frac{3}{10} \qquad \frac{7}{10} \qquad \frac{9}{10}$$
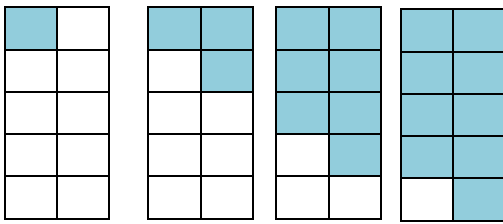
The bigger the numerator, the bigger the fraction

- **Unit Fractions**

$$\frac{1}{2} \qquad\qquad \frac{1}{3} \qquad\qquad \frac{1}{6}$$
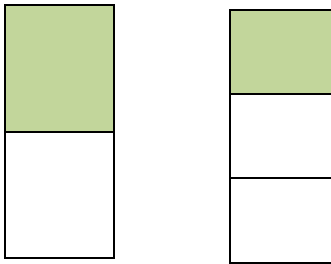
The bigger the denominator, the smaller the fraction
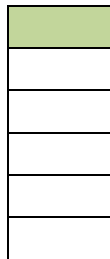
3/19 Add & subtract measures
- **The units must be the same**

Length – Example
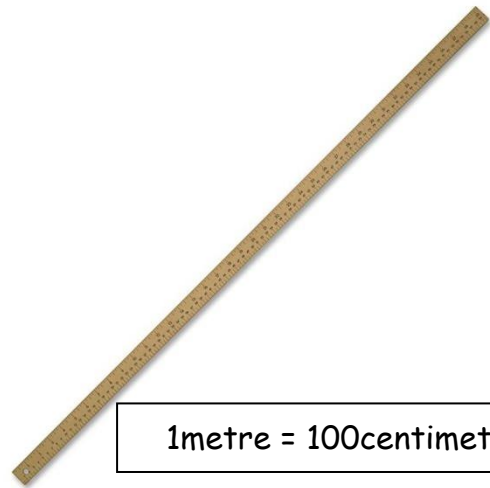
1metre = 100centimetres

1 centimetre = 10 millimetres

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

3cm   0.7cm
30mm   7mm

Mass – Example

1 kg = 1000g
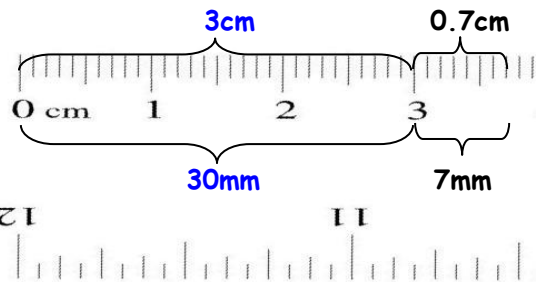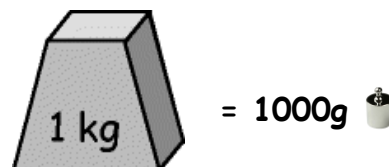
3kg – 450g
= 3000g – 450g
= 2550g
or 2kg 550g or 2.55kg

3/19 Add & subtract measures (continued)

Volume - Example

1litre = 1000millilitres

800ml + 720ml

= 1520ml

= 1 litre and 520ml

= 1.52 litres

3/20 Perimeter

PERIMETER is the distance round the outside of a shape

- **On a centimetre square grid – count round**
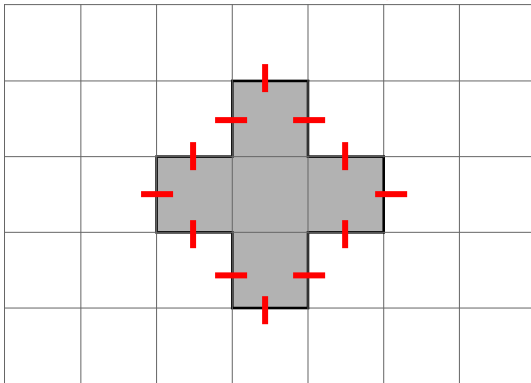
Perimeter of this shape = 12cm

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

6cm

4cm   4cm

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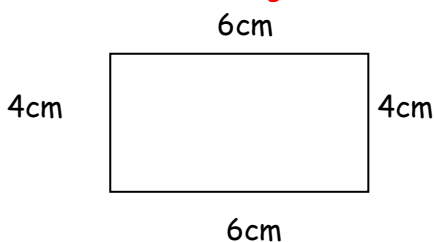
Perimeter of this shape = 6 + 4 + 6 + 4 = 20cm

3/21 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

     +2p   +20p   +50p   = 72p

£1.28   £1.30   £1.50   £2.00

3/22 Time
Analogue clock

Roman   Hindu-Arabic

12- and 24-hour clock
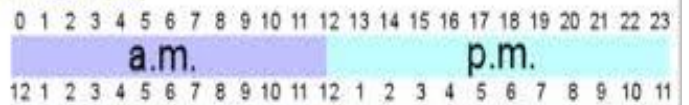
3/23 Time
Reading the time

My Clock
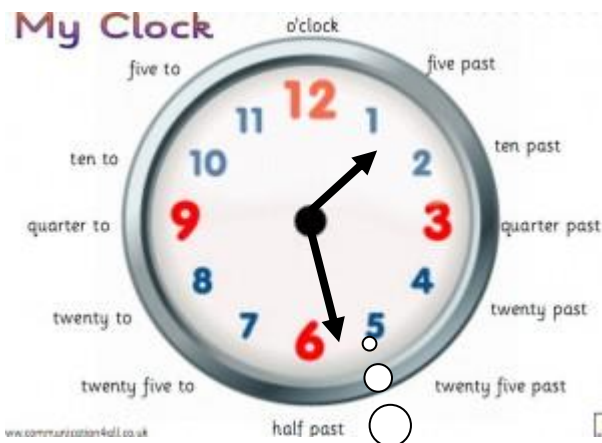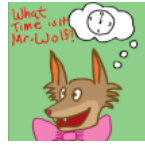
5 minutes between each number- so this time is 1:27 or we sav 27 minutes

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

3/24 Time – hours minutes, seconds
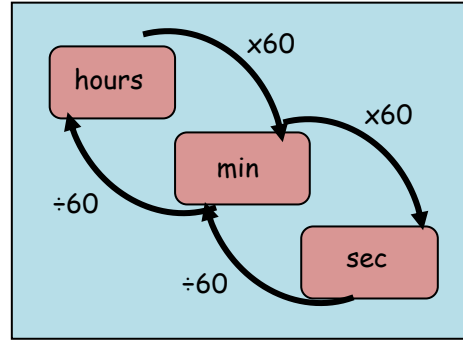
Months of the year

- 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

365.2422 days

365 days in a year
366 days in a leap year

Leap Year

366 days
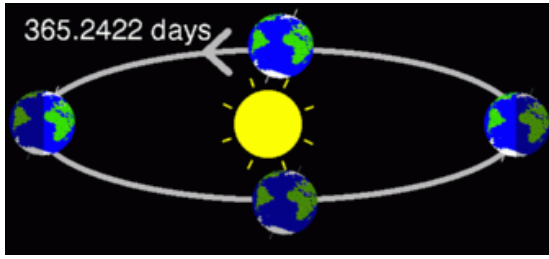
3/25 – <u>2D Shapes</u>

- **With 3 sides (Triangles)**

A   B   C   D
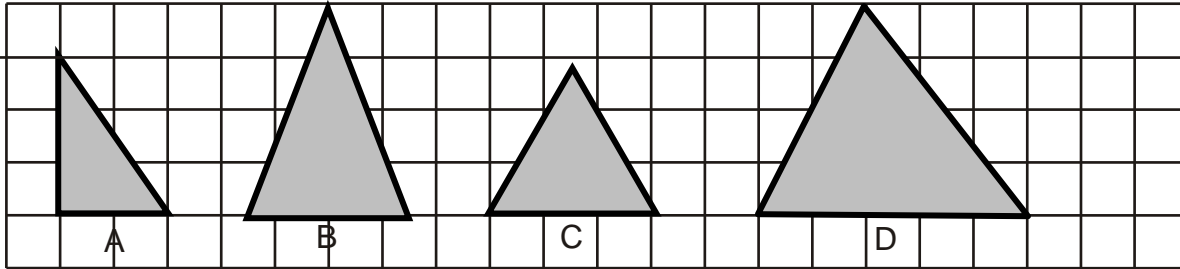
right-angled   isosceles   equilateral   scalene

- **With 4 sides (Quadrilaterals)**

A   B   C   D   E
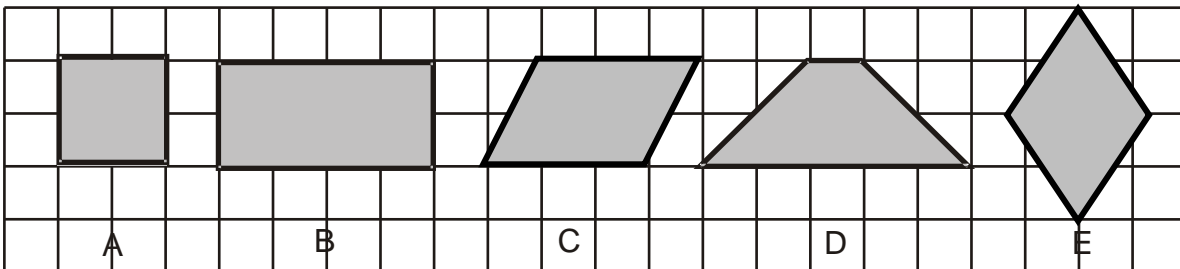
square   rectangle   parallelogram   trapezium   rhombus

- **With 5 sides (Pentagons)**   **With 6 sides (Hexagons)**
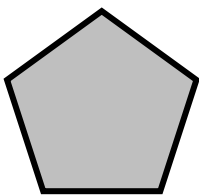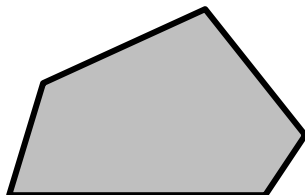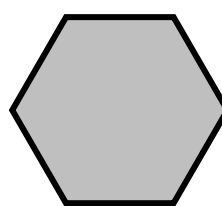
regular   irregular   regular   irregular
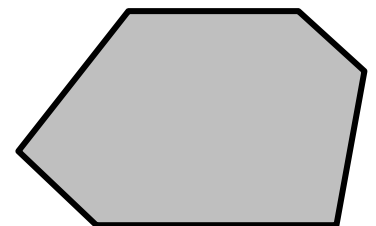
3/25 – <u>3D Shapes</u>
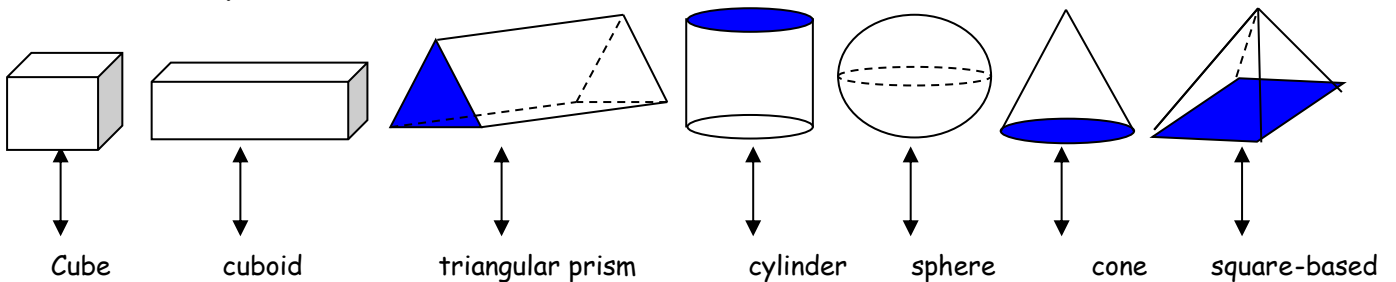
Cube   cuboid   triangular prism   cylinder   sphere   cone   square-based

Pyramid

- **Nets**
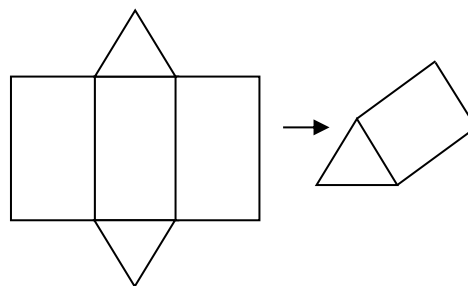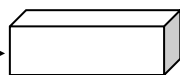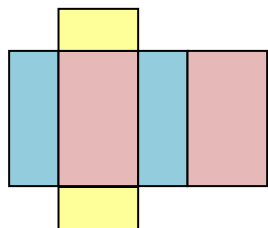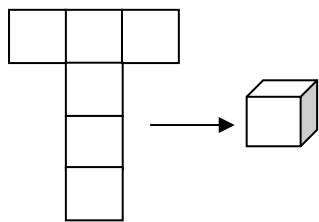
3/26 Angle

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

arm
angle
arm
vertex

- **Angles in shapes**

Triangle - 3 angles
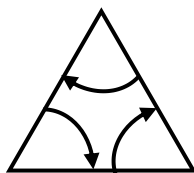
Quadrilateral - 4 angles
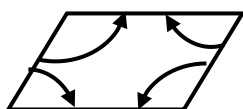
Pentagon – 5 angles
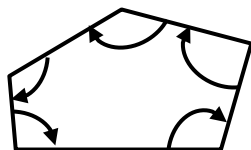
- **Names of angles**

ACUTE angles are less than 90^0
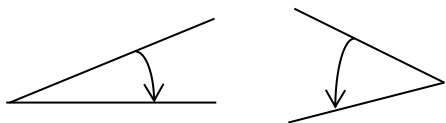
RIGHT angles are exactly 90^0

A square for 90^0 angle
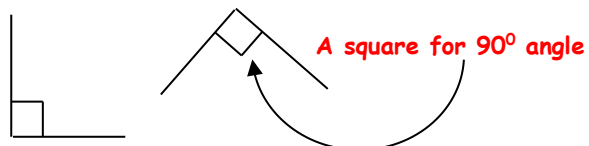
OBTUSE angles are bigger than 90^0

116°
112°
168°
105°
94°
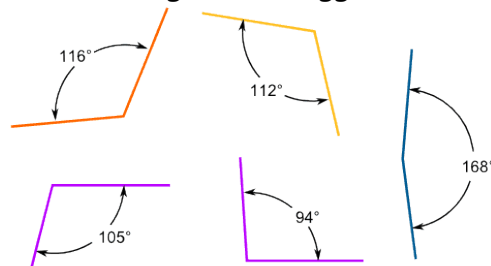
3/27 Right angles
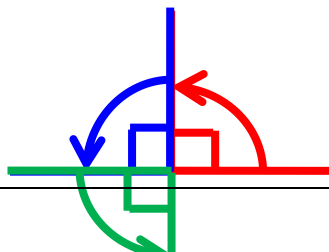ONE right angle measures exactly 90^0
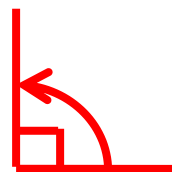
TWO right angles measure exactly 180^0
This is called a half-turn
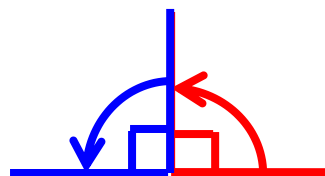
THREE right angles measure exactly 270^0
This is called three quarters of a turn
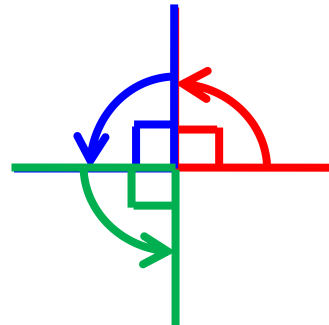
FOUR right angles measure exactly 360^0
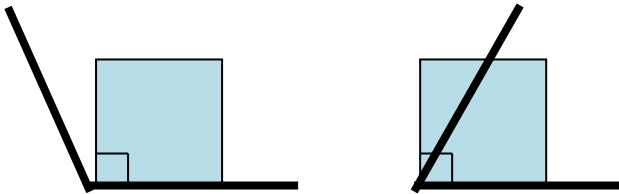This is called a full or complete turn

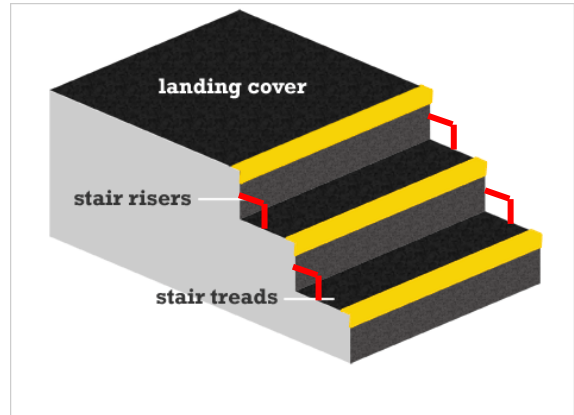**To check if an angle is bigger or smaller than a right angle, use a square corner**

This angle is greater than a right angle
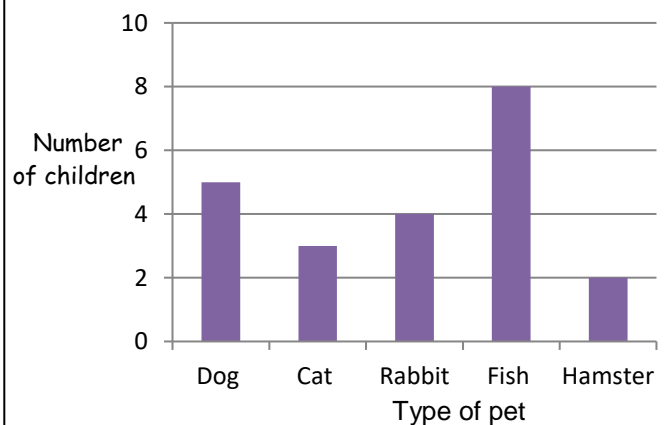
This angle is less than a right angle

3/28 Types of Lines

The Horizon is a _horizontal_ line

This cliff face is a _vertical_ line

The running track is _parallel_ lines (never meet)

landing cover

stair risers

stair treads

The rise & tread are _perpendicular_ lines (meet at 90⁰)

3/29 Bar charts

Frequency table to show pets owned by Year 3

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

A bar graph to show pets owned by Year 3

Number of children

Type of pet

10

8

6

4

2

0

Dog   Cat   Rabbit   Fish   Hamster

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

3/30 Solve answers to questions

- **Bar chart in 3/29**

(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 3/29**

(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