Numeracy Key Facts Booklet

Useful Websites

http://www.whizz.com/ (Maths Whizz)
http://www.mathszone.co.uk/
http://www.bbc.co.uk/bitesize/ks1/maths/
http://www.bbc.co.uk/schools/websites/4_11/site/numeracy.shtml
https://www.mathsisfun.com/
http://www.topmarks.co.uk/
http://www.primaryhomeworkhelp.co.uk/maths/

iPad apps

- Maths age 4-6
- Numberjacks
- SplashLearn
- Marble Math Junior
- Kids Math
- The Math Tree

P4 Numeracy

Number

Counting with your child on a daily basis can dramatically support their understanding of the number system and place value. By the end of the foundation stage, most children are expected to count in 3's, 4's, 6's, 8's, 10's and 100's from any given number. E,g. count in 3's starting from 4– 4, 7, 10 ….

Counting everyday whilst undertaking daily activities at home, can help develop your child's fluency of numbers and become familiarised with counting in different steps but not always starting at 0 or 1.
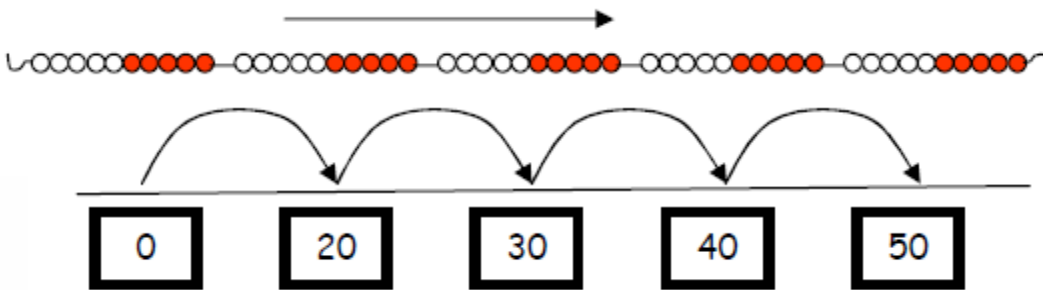
By the end of P4, most children will be able to count in multiples of 2, 3, 4, 5, 6, 7, 8, 9 and 10. Using knowledge of multiplication calculations, children will begin to use formal written methods to record their work, including the use of arrays. At home, you can support your child by practising reciting multiplication tables.

- Know number before, after and between up to 999 and count forwards and backwards in 1s, 2s, 5s and 10s within 999
- Round numbers within 999 to the nearest 100 and to the nearest 10.

If the rounding number is followed by **1, 2, 3, or 4**, keep the tens place the same and turn all the following numbers zero.

③<u>2</u> ⟶ 3 0

4⑤<u>4</u> ⟶ 4 5 0

If the rounding number is followed by **5, 6, 7, 8, or 9**, add 1 to the tens place and turn all the following numbers zero.

③<u>6</u> ⟶ 4 0

4⑤<u>8</u> ⟶ 4 6 0

- Mentally add or subtract 9 or 11 to any number within 100
- Mentally add or subtract 19, 29, 39 etc from any number, answers within 100.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Adding 9

eg. 22 + 9 =
22 + 10 = 32
32 – 1 = 31

Adding 11

eg. 55 + 11 =
55 + 10 = 65
65 + 1 = 66

Number

Your child will be using formal methods for addition and subtraction, using the number line and column method to add and subtract, up to 4 digits. Re-grouping strategy will be reinforced to your child, which is required to subtract using the column method.

At home, practising the number bonds to 100 and 1000 will significantly sup-port your child, reinforcing the learning from school. When your child is ready, practising using the formal column method for addition and subtraction will reinforce learning.

```
   48
 + 36
   ¹
 ____
   84
```

```
 -3    -4        -20
 47   50   54              74
```
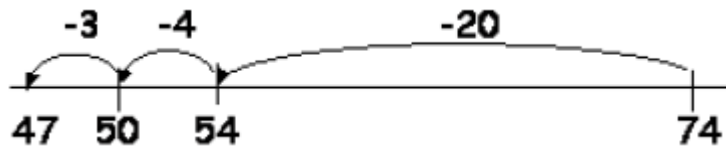
```
   ³4̶ ¹3
 -  2 7
 _____
   1 6
```

By the end of P4, most children will be able to divide numbers to 100, the concept of 'remainders' will be consolidated using objects and pictures. Children will be encouraged to begin to formally record their work, showing an understanding of multiplication tables to support dividing. They will also use repeated subtraction to

divide. At home, encourage your child to use multiplication facts to think about the corresponding division facts. Practising fact families (see the example below), to recall multiplication and division facts.

Fact family for 2 x 8 = 16

2 rows

4 columns

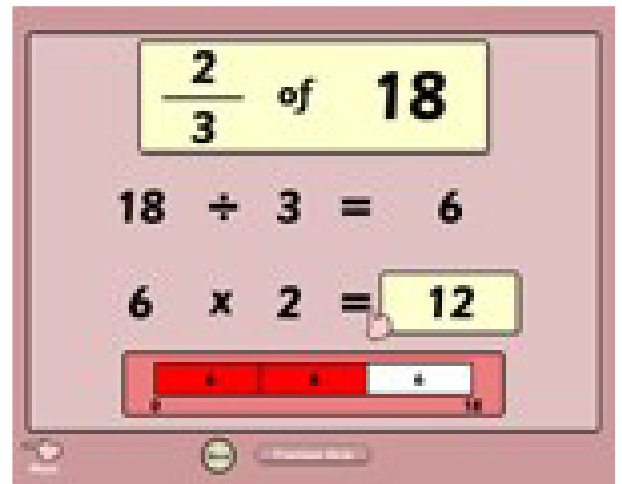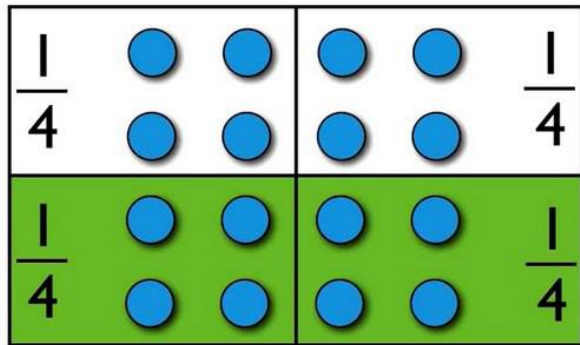
2 x 4 = 8

8 apples
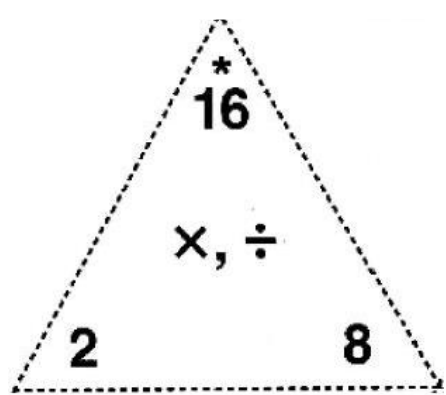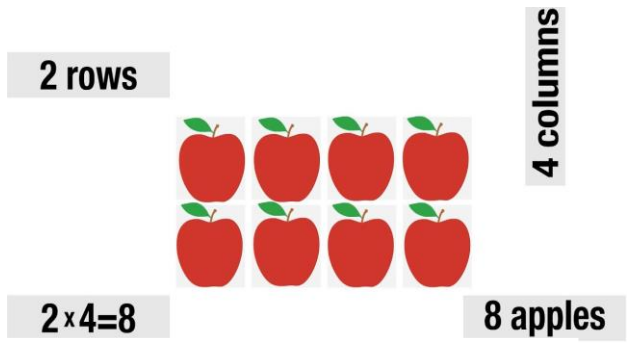
Multiplication array example

Here are some key number facts your child should learn throughout P4:

- Doubles and halves to 50
- Know with quick recall multiplication facts for 2, 5, 10, 3, 4, 6, 7, 8, 9 and apply in problem-solving situations.
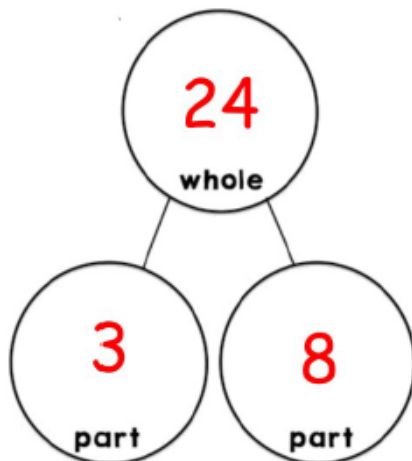
Multiplication Chart 1-100

x	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

By the end of P4, most children will be able to find half, quarter, 3/4, and 1/3 of objects, amounts and quantities. Children will be linking their knowledge of division to find fractions of amounts and quantities. Children will be able to identify simple equivalent fractions– to 1/2, 1/4 and 1/3.

$$\frac{1}{4} \quad \bullet \bullet \quad \bullet \bullet \quad \frac{1}{4}$$

$$\frac{1}{4} \quad \bullet \bullet \quad \bullet \bullet \quad \frac{1}{4}$$

$$\frac{2}{4} \text{ of } 16 = 8$$

$$\frac{2}{3} \text{ of } 18$$

$$18 \div 3 = 6$$

$$6 \times 2 = 12$$

You can help your child by consolidating these number facts; learning and practising them at home using the **'part, part, whole' model.**

24
whole
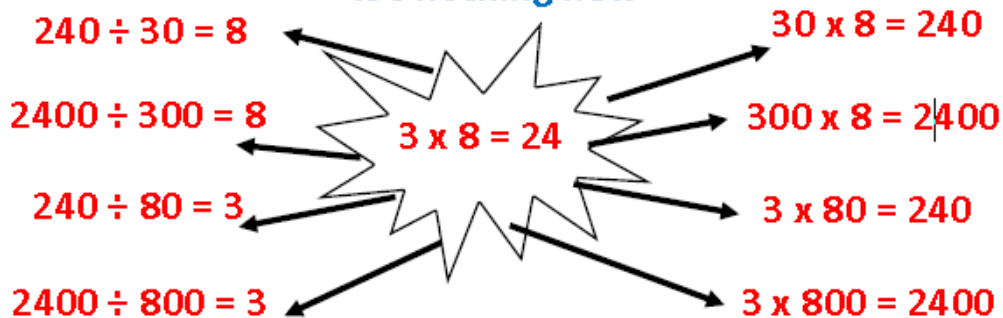
3
part

8
part

Fact family:

3 x 8 = 24

8 x 3 = 24

24 ÷ 3 = 8

24 ÷ 8 = 3

It's nothing new

240 ÷ 30 = 8

2400 ÷ 300 = 8

240 ÷ 80 = 3

2400 ÷ 800 = 3

3 x 8 = 24

30 x 8 = 240

300 x 8 = 2400

3 x 80 = 240

3 x 800 = 2400

- Find different ways of paying exact amounts within £1.00, e.g. using the least number of coins, or using a specific number of coins.

 = £1

 = £1

- Calculate estimated costs by rounding prices to the nearest pound, 50p or 10p as appropriate.
- Calculate in the context of money, using addition, subtraction and multiplication with amounts up to £10.00- e.g. finding the total cost of sweets chosen by 3 people, then the change required from £10.00, including using knowledge that 100p = £1.

2/20 Bills and change

To add amounts of money

$$24p + 32p$$
$$=20p + 4p + 30p + 2p$$
$$=20p + 30p + 4p + 2p$$
$$=50p + 6p$$
$$=56p$$

To find change from £1

Subtraction method	Add-on method
£1 – 56p	56p + 4p = 60p
= £1 – 50p – 6p	60p + 40p = £1
	= 4p + 40p
= 50p – 6p	= 44p
= 44p	

- Understand links between fractions of a set and division. (e.g. finding how many objects make "half" of a total set is equivalent to dividing the total number by 2).
- Extend understanding to include wider range of fractions (quarters, thirds, sixths, eighths etc) using both whole shapes and sets of objects.

2/15 & 16 Fractions
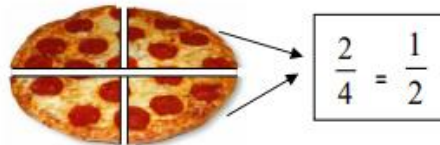
To work out a half
Split into two equal parts
YES   NO!!!!

10sweets ÷ 2 = 5sweets
OR $\frac{1}{2}$ of 10 = 10 ÷ 2 = 5

To work out a quarter
Split into four equal parts

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

8 strawberries ÷ 4 = 2 strawberries
OR $\frac{1}{4}$ of 8 = 8 ÷ 4 = 2

Measures

By the end of P4, most children will be able to accurately measure length. Children will be exposed to other units of measure for distance, mass and length.

- Develop an appreciation of the capacity of 1 litre, 1 kg and 1 m.
- Estimate and measure using the litre as a standard unit., using "benchmarks" to help estimation, e.g. a 1 litre milk or juice carton, a 2 litre lemonade bottle.
- Discuss how to weigh items more accurately – use kg and grams.
- Discuss how to measure the capacity of containers more accurately – use litres and millilitres.

Topic 8 · Lesson 6 — Estimating and Comparing Capacity Using Litres

You can use litres to measure how much a container holds.

This bottle holds about 1 litre of water.

This mug holds less than 1 litre.

This vase holds about 1 litre.
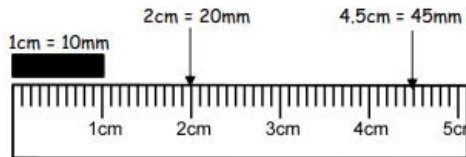
This paint tin holds more than 1 litre.
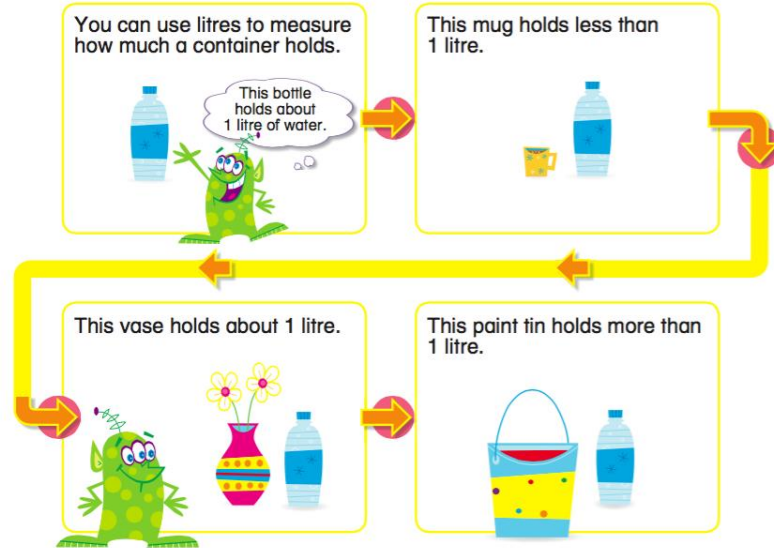
- Estimate and measure the weight of lighter objects in multiples of 100 grams.
- Estimate and measure the capacity of smaller containers in multiples of 100 millilitres.

Units of measure

METRIC units of length are:

Millimetre (mm)
↓
Centimetre (cm)
↓
Metre (m)
↓
Kilometre (km)

2cm = 20mm   4.5cm = 45mm

1cm = 10mm

1cm   2cm   3cm   4cm   5cm

- A big stride is about a metre

- Distance to Dublin is measured in kilometres

Áth Cliath Km
DUBLIN 18

METRIC units of mass are:

Gram (g)
↓
Kilogram (kg)

1 kilogram(kg) = 1000grams(g)

- An apple weighs 150grams

- Baby chimp weighs 3kg

- Know the number of days in each month.

Months of the year

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

- the "knuckle method"

January February March April May June July August September October November December

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)

- Calculate start, finish, durations, how long until? How long since? using multiples of 5 minutes, including counting through the hour.

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

My Clock

o'clock
five to   five past
ten to   ten past
quarter to   quarter past
twenty to   twenty past
twenty five to twenty five past
half past

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

Shape and Space

By the end of P4, most children should be able to recognised 2D and 3D shapes and begin to use more mathematical language to describe the properties of these shapes. They will be able to recognise right angles within 2D shapes, beginning to estimate and measure other angles. At home, using the correct language when talking about household objects or when going shopping can develop their language and understanding.

- Recognise and describe an increasing range of 2D shapes to include triangles, quadrilaterals.
- Understand and use "left", "right" to describe direction of turn.
- Identify right-angles in the environment.
- Identify angles in 2D shapes which are greater than or less than a right angle.
- Understand definition of prism and that many 3D shapes are also prisms, defined by their end-face shape. (e.g. a cuboid with a square end-face is also a prism).
- Recognise and describe an increasing range of 3D shapes, to include pyramid, prisms.

3/25 – 2D Shapes

- **With 3 sides (Triangles)**
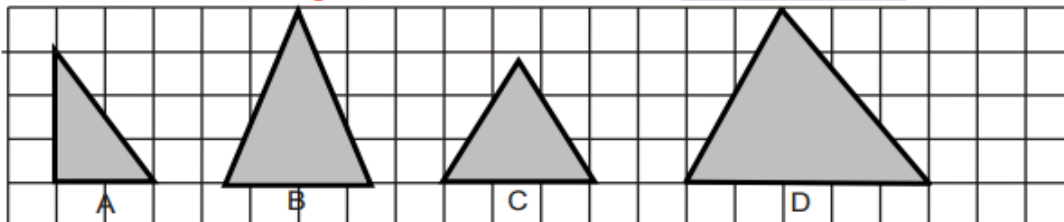
| right-angled | isosceles | equilateral | scalene |

- **With 4 sides (Quadrilaterals)**
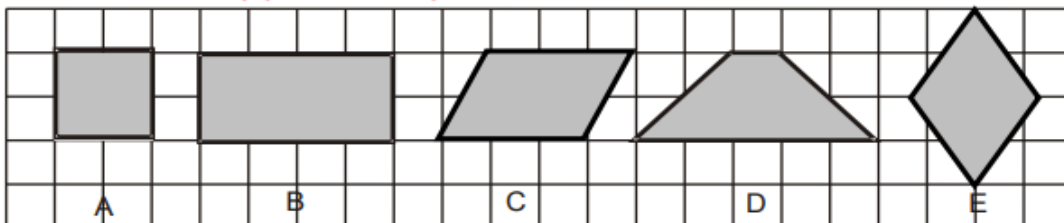
| square | rectangle | parallelogram | trapezium | rhombus |

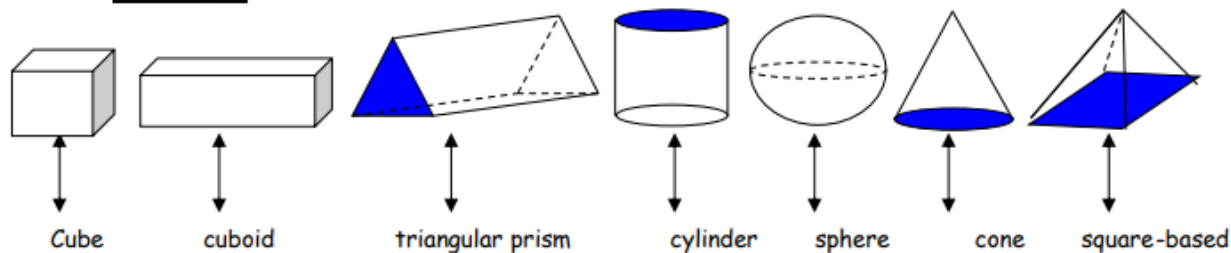- **With 5 sides (Pentagons)**   **With 6 sides (Hexagons)**

| regular | irregular | regular | irregular |

3/25 – 3D Shapes

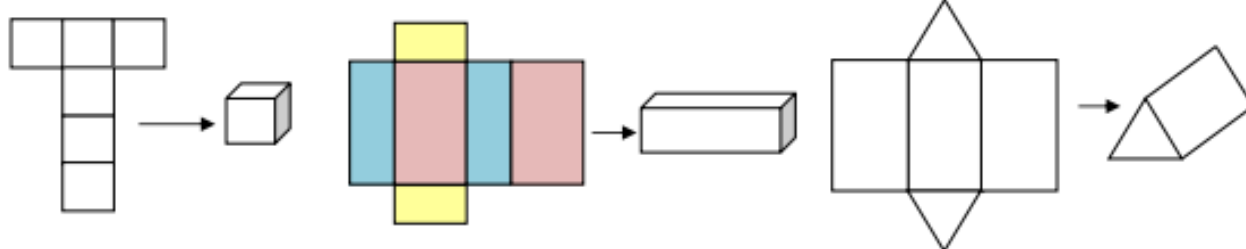| Cube | cuboid | triangular prism | cylinder | sphere | cone | square-based Pyramid |

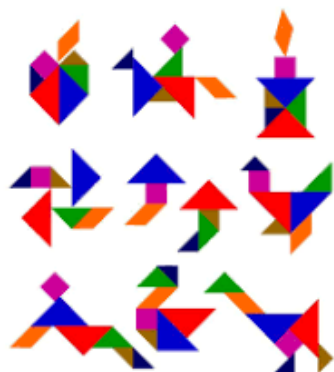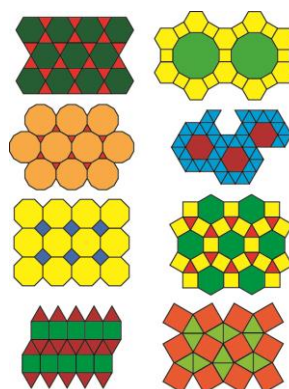## Nets

- Identify which 2D shapes will tessellate and which will not.

Tangrams

Tessellations

- Understand that there are always two ways to turn towards a particular direction e.g. ¼ turn clockwise or ¾ turn anticlockwise will have the same effect.
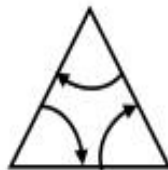- Understand and use term "right- angle" to describe corners in 2D shapes.

3/26 Angle

- An angle is an amount of turn

arm
angle
arm
vertex

- Angles in shapes

Triangle - 3 angles

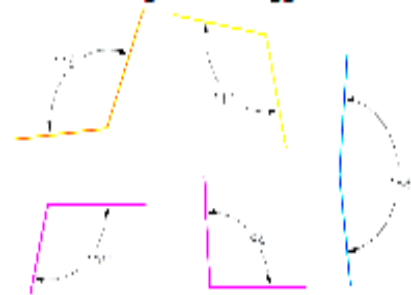Quadrilateral - 4 angles

Pentagon – 5 angles

- Names of angles

ACUTE angles are less than 90^0

RIGHT angles are exactly 90^0

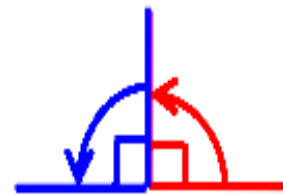A square for 90^0 angle
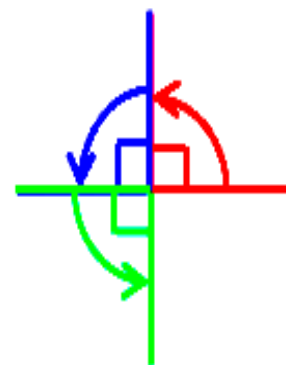
OBTUSE angles are bigger than 90^0

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

Data Handling

- Understand terms vertical axis and horizontal axis.
- Interpret given and self-constructed bar charts.
- Investigate statements to see if they are true or false using data handling skills to identify and collect data, display data graphically and interpret results.
- Discuss the labelling of the frequency axis on bar charts. Identify situations where labelling may not be in ones (e.g. where the frequency is too great for the axis to fit on the page).
- Discuss, draw and label bar charts which require scales, using paper and ICT. Interpret results and draw appropriate conclusions.
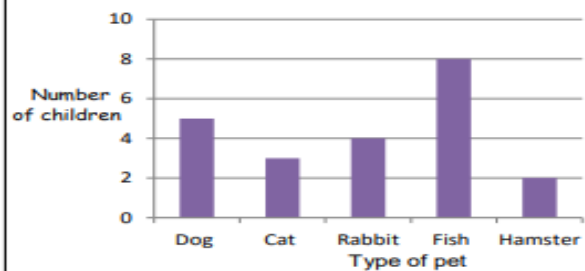
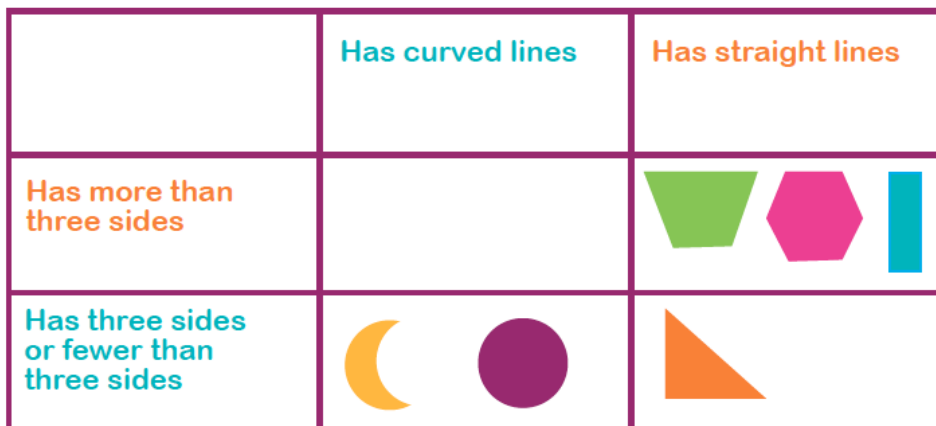The Horizon is a _horizontal_ line

This cliff face is a _vertical_ line
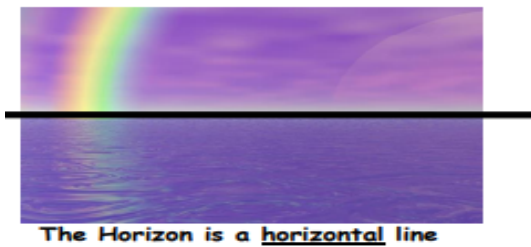
3/29 Bar charts
Frequency table to show pets owned by Year 3

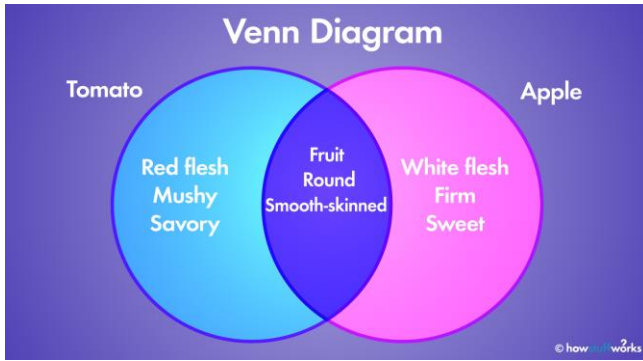| Type of pet	Tally	Number of pets
Dog	HIIT	5
Cat	III	3
Rabbit	IIII	4
Fish	HIIT III	8
Hamster	II	2

A bar graph to show pets owned by Year 3

- Construct own Tree, Venn and Carroll diagrams and use to sort sets of objects, shapes, pictures or numbers etc for two criteria.
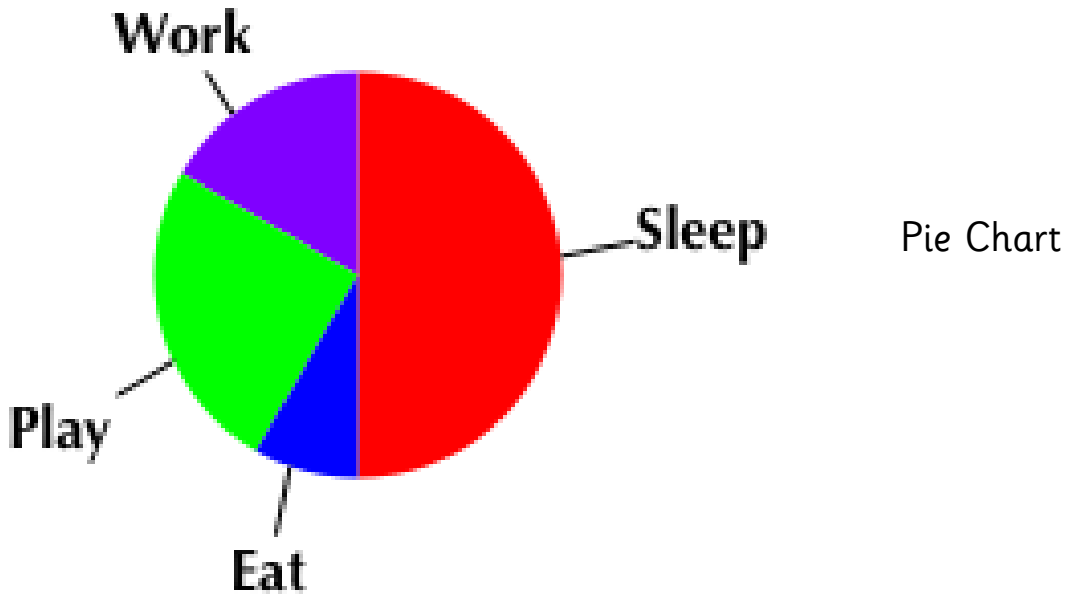
	Has curved lines	Has straight lines
Has more than three sides		
Has three sides or fewer than three sides		

Carroll Diagram

Venn Diagram

- Understand and interpret simple pie charts with up to 4 sectors, by comparing size of sectors.

Pie Chart

Good luck and happy learning!