Year 8 - Data Handling Cycle

Essential knowledge

- Set up a statistical enquiry
- Design and criticise questionnaires
- Draw and interpret multiple bar charts and line graphs
- Represent and interpret grouped quantitative data
- Find and interpret the range

Key Vocabulary

Hypothesis: an idea or question you want to test
Sampling: the group of things you want to use to check your hypothesis
Primary Data: data you collect yourself
Secondary Data: data you source from elsewhere e.g. the internet/ newspapers/ local statistics
Discrete Data: numerical data that can only take set values
Continuous Data: numerical data that has an infinite number of values (often seen with height, distance, time)
Average: a measure of central tendency – one value that represents all.

Prior learning links

Bar Charts and Line Graphs (Y7)

Types of Data (Y8 Autumn Term)

Statistical Enquiry

Write a suitable hypothesis → Design a Data Collection Sheet → Pros/Cons of Sampling → Pros/Cons of Primary/ Secondary Data

Grouped or Ungrouped Categories

Data Title	Tally	Frequency
	𝍸	

Total in that group

Types of Data

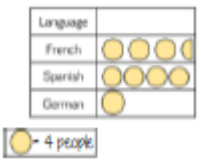
Primary Data is collected by you e.g. a questionnaire or survey that you get people to fill in. This makes it more reliable but is also time-consuming.

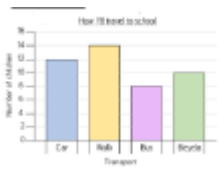
Secondary Data is sourced from somewhere else e.g. a library, newspaper or the internet. This is easy to gather, but might not be as trustworthy.

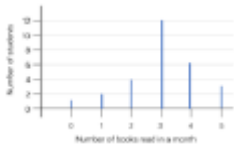
Discrete Data can only hold certain values, such as shoe size (can only be full or half sizes).

Continuous Data is measured and can hold any value e.g. a distance or time.

Pictograms, Bar and Line Charts







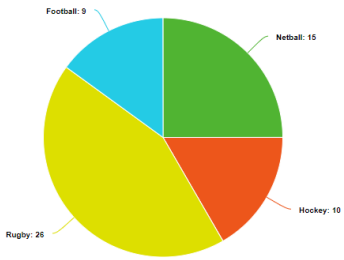
Pictogram –
. Remember to include a key
. Visually identify mode

Bar Chart –
. Title
. Gap between bars
. Label and scale axes
. Discrete Data

Line Chart –
. Gap between bars
. Label and scale axes
. Discrete Data

Pie Charts

Sport	Frequency
Netball	15
Hockey	10
Rugby	26
Football	9



A circle has 360°.
26 out of 60 people preferred rugby.

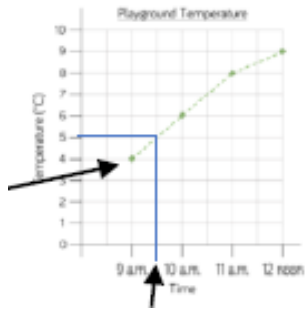
$\frac{26}{60}$ x 360 = 192° **or** $\frac{26}{60} = \frac{\quad}{360}$ (x 6)

Measure 192° with a protractor

Line Graphs

Record information then join with straight lines.

Usually shows change over a time, relating one piece of data compared to another.



Can be used to make estimates e.g. 5° at 9:30am

Year 8 - Data Handling Cycle

Prior learning links

Express the following statements as a ratio:

"For every 6 dogs, there are 8 cats"

"For every teacher, there are 5 pupils"

Express the following diagram as a ratio of red counters to green to blue:

Key Vocabulary

Define the following key words:

Discrete Data -

Primary Data -

Average -

Types of Data

Label the following categories of data as discrete or continuous:

. Height of a Tree

. Age (in years)

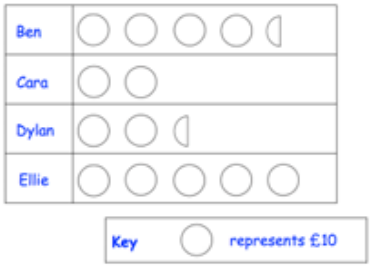
. Shoe Size

. Amount of Pets

. Time it takes to run a race

Pictograms and Bar Charts

Answer the following questions:

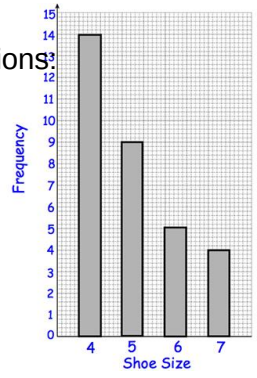


(a) How much did Dylan Raise for charity?

(b) How much more did Ben raise than Cara?

(c) How much money was raised in total?

Answer the following questions:



(a) What was the modal shoe size?

(b) How many people wear a size 6 or a size 7?

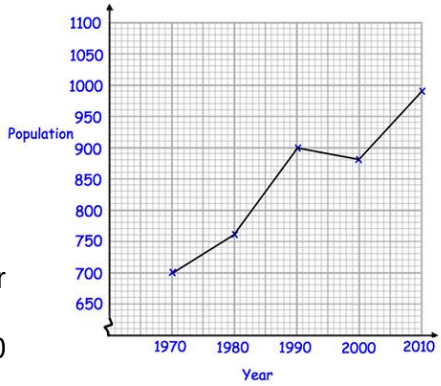
Pie Charts

Calculate the value of the angle each dog would represent on a pie chart.

Breed	Frequency
Spaniel	11
Poodle	7
Greyhound	4
Jack Russell	14

Line Graphs

Answer the following questions:



(a) What was the population in 1980?

(b) How much greater was the population in 2010 than in 1970?

(c) What was the population drop between 1990 and 2000?