Data – collecting data

Data is information. Data can be numbers or words.

Many different people use data in some way.
Teachers use data about their students, such as test scores, to help them improve. Your dentist keeps data about you, such as when you last had a checkup and which tooth might need filling. If you are planning your birthday party, you might collect data about your friends such as what they like to eat and drink.

1 **Meet Harley. Here is some data about him:**

- Harley's birthday is on the 9th of June.

- His lucky number is 3.

- His favourite colour is blue.

What questions was Harley asked to get this data?

_____

_____

_____

2 **Sometimes collecting data is to do with finding out peoples' preferences. For example, an ice cream shop might want data on which ice cream flavour their customers like the best so they can sell more ice cream. They might ask their customers some questions to find out about flavours. This is called a survey.**

a Put a ring around the question that will give the ice cream shop data that can help them sell more:
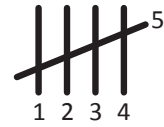
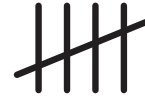'Do you prefer chocolate or caramel flavoured ice cream?'   **or**   'Do you like ice cream?'

b Explain why:

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The tally method is where we count in 5s. We put a stroke for each number and the fifth stroke is a line that goes diagonally through the set of 4.

However, we don't write down the numbers, we just use strokes like this:

4 **Count these tallies and write the total in the box at the end:**

a ‖‖‖ ‖‖‖ ‖‖‖ ‖‖‖ ‖‖‖

b ‖‖‖ ‖‖‖ ‖‖‖ ‖‖‖ ‖‖‖ |||

5 **Josie collected some data on favourite colours in her class.**

a Show Josie how to represent this data using tallies:

Favourite colours in 4B	
Red	|||||||||
Blue	||||||||||
Green	||||||||
Yellow	|||||

Favourite colours in 4B	
Red	
Blue	
Green	
Yellow	

b How many children are in 4B?

c Why do you think tallies are a good way of collecting data?

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Data – column graphs

Column graphs are a clear way of showing data. There is a vertical line that has numbers, and is called the scale. The horizontal line has the different categories that are being counted. There should always be a heading at the top so it's easy to see what the data is about.

1 **Answer the questions about the data shown on this column graph.**

Hair colour in 3H

a How many children have brown hair?

b Which colour hair do the smallest group of children have?

_____

c Which colour hair do most children have?

_____

d What do you notice about the number of children who have either red or black hair?
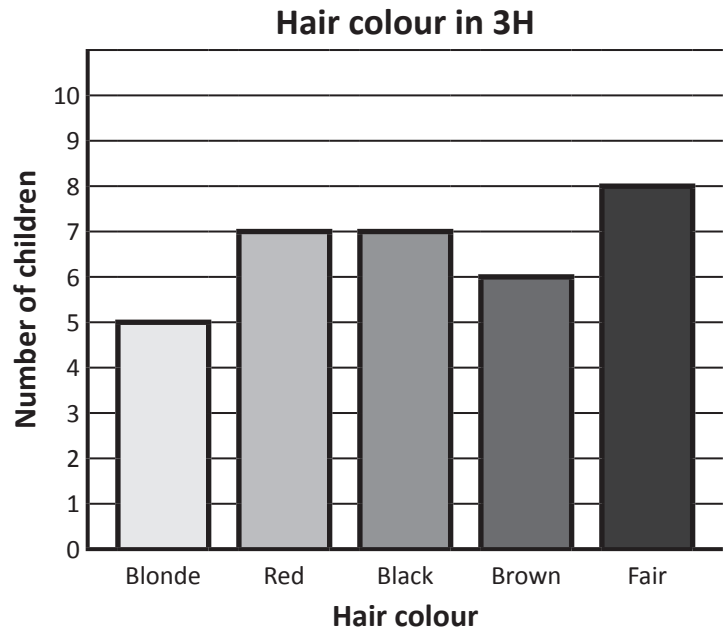
2 **A group of people were surveyed about their favourite fruit. Make a column graph from the data collected in the table. First write the number of tallies in the table:**

Favourite fruit		
Apples	✚✚✚✚	
Oranges	✚✚✚✚ I	
Bananas	✚✚✚✚ II	
Pears	✚✚✚✚ ✚✚✚✚	
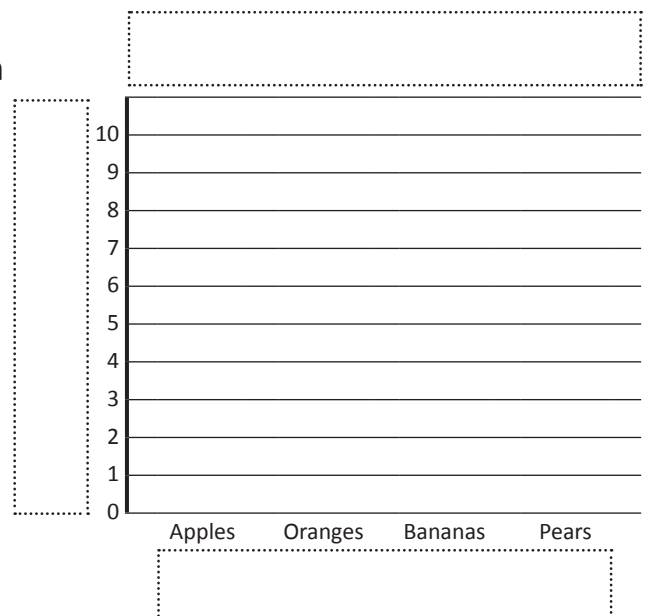
Data – column graphs

3 **3L were planning a healthy breakfast morning. They conducted a survey to find out the most popular option. The data they collected is shown in the table below:**

Breakfast options	Votes	Number of votes
Pancakes and fruit	ⅢⅢ ⅢⅢ ⅢⅢ ⅢⅢ ⅢⅢ	
Cereal with bananas and honey	ⅢⅢ ⅢⅢ	
Toast with boiled eggs	ⅢⅢ ⅢⅢ ⅢⅢ	
Fruit salad and yogurt	ⅢⅢ ⅢⅢ	

a What question did they ask?

_____

_____

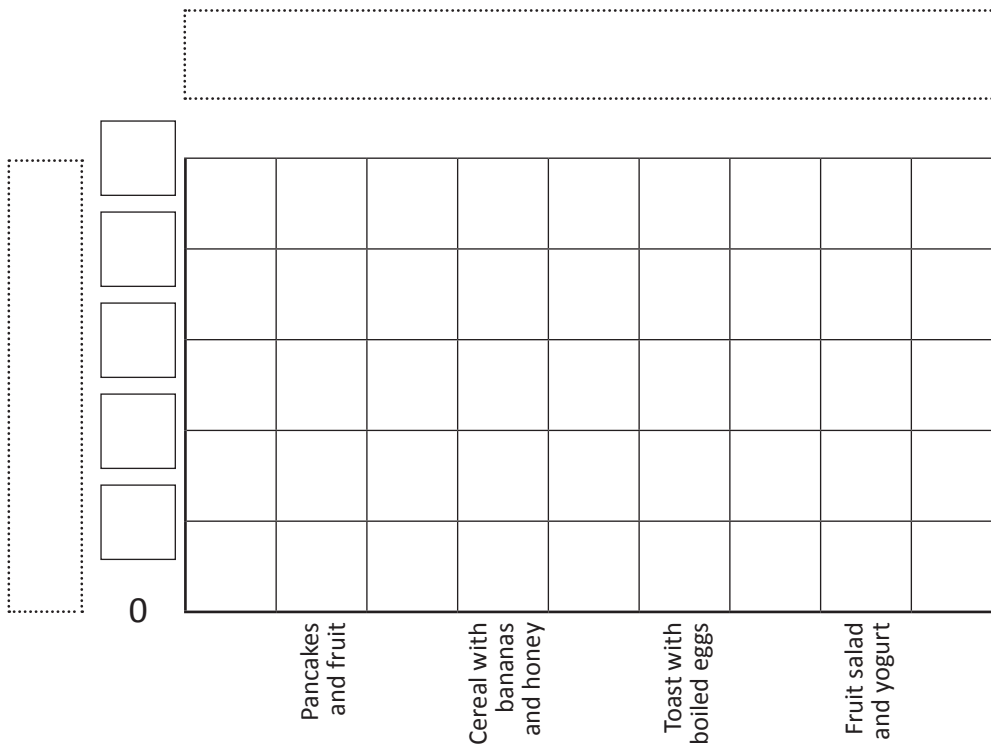**b** Work out the number of students from the tallies. Write this number in the last column in the table above.

c Show this data on the column graph below:

Make sure that your graph has a heading and is labelled correctly. You need to complete the scale.

CHECK

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Pancakes and fruit

Cereal with bananas and honey

Toast with boiled eggs

Fruit salad and yogurt

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Data – picture graphs

Picture graphs use pictures to show how many items are in each category.

1 **This picture graph shows what a group of children saw on a mini-beast hunt.**

A key shows you what each symbol is worth.

CHECK

Worms	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Dragonflies	● ● ● ● ● ●
Snails	● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Butterflies	● ● ● ● ● ● ● ●

Key: ● = 1

a Give this picture graph a heading.

b How many butterflies did they see?

c How many more snails than dragonflies did they see?

d How many mini-beasts did they find in total?

2 **This picture graph shows the same data as the one above, but this time it has a different key.**

a Give this picture graph the same heading as the first graph.

b Add the symbols for the number of snails. Look at the key.

c Why is the second version of the graph better?

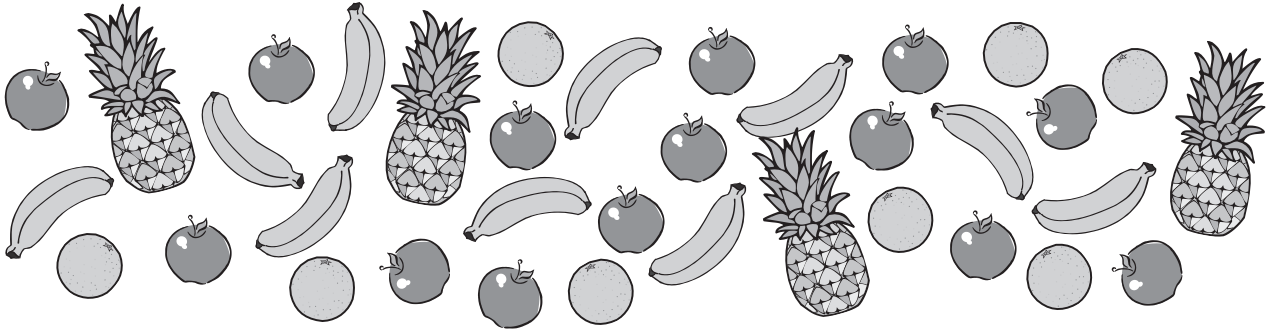| Worms	● ● ● ● ● ● ● ● ● ●
Dragonflies	● ● ●
Snails	
Butterflies	● ● ● ●

Key: ● = 2

Data – picture graphs

3 **Josie runs a juice bar and has just received a fruit delivery. Help Josie create a picture graph of what she has for her records.**

Heading:	
Bananas	
Apples	
Oranges	
Pineapples	

Key: ✔ = 2

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4 **This picture graph shows the birthdays in grade 3 for the first 4 months of the year. Complete the graph using all the clues below. What is the key?**

Heading:	
January	옷옷옷옷
February	
March	
April	

Clues:
- 16 birthdays in January
- 8 birthdays in February
- 12 birthdays in March
- 20 birthdays in April

Key: 옷 = ☐

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