

Max's Magnificent Math: Mastering Statistics

Learning objective: To interpret and present discrete and continuous data using bar charts, pictograms, and tables, and to solve comparison, sum, and difference problems.

Read each flashcard carefully. Use Max the monkey's logic to solve the problems. Remember to check your units, especially when calculating totals involving pounds (£).

What is a 'discrete' set of data?

Data that can only take specific, separate values, such as the number of apples in a basket (you cannot have half an apple in this context).

Max counts 12 shiny pebbles, 8 smooth shells, and 5 feathers. If he represents this in a tally chart, how many lines would he draw for the pebbles?

12 lines (grouped as two sets of five and two single lines).

In a bar chart, what does the 'scale' represent?

The scale shows the intervals used on the axis to represent the frequency of the data collected.

If a pictogram uses one symbol to represent 2 books, how many symbols are needed to show 7 books?

3 and a half symbols.

Zara sells 4 paintings for £5 each and 2 sketches for £3 each. What is the total sum of her sales?

£26 ($£20 + £6$).

Explain why it is important to label both axes on a bar chart.

Without labels, the viewer cannot identify what the data represents or what the scale is measuring.

Compare and contrast a bar chart and a pictogram.

Both display frequency. Pictograms use pictures to represent data, whereas bar charts use the height of columns against a numbered scale.

Justify your answer: Is the time taken to run a race discrete or continuous data?

Continuous, because time can be measured in smaller and smaller fractions of a second.

Max finds £12.50 in a charity box. If he adds £4.75 more, what is the new total?

£17.25.

What might happen if the scale on a bar chart starts at 10 instead of 0?

The bars would look shorter than they should, which could mislead the reader into thinking the values are closer together than they are.