

6.2.1 Statistical Displays

Name: _____ Class: _____ Date: _____

KEY WORDS time series

<!-- Session 2 native-skill companion -->

Objective

Practise statistical displays within the labelled native lessons. Public original tasks; locally authored answer guidance.

1 Key knowledge and worked examples

■ Choosing displays, pie charts and time series · Foundation

Use separate bars for categories, vertical line charts for discrete numerical values and time-ordered lines for a time series. Pie-chart sector angle is frequency/total×360°. A pictogram needs a stated key and honest fractional symbols. Label axes/units and choose a scale that does not conceal the relevant variation. Continuous grouped distributions need histograms rather than categorical bars.

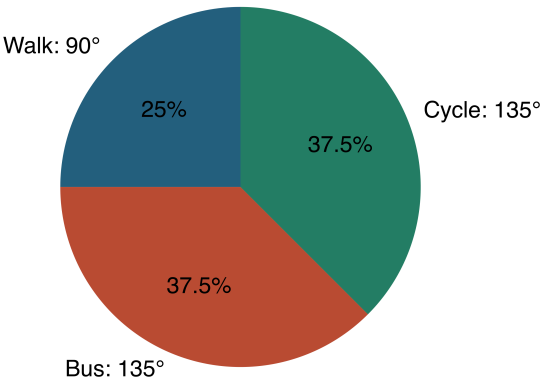
$$\theta = \frac{f}{n}360^\circ$$

Of 40 students, 10 walk, 15 take the bus and 15 cycle. Pie angles are 90°,135°,135°, summing to 360°. With one pictogram symbol representing five students, the groups use 2,3,3 symbols. If one symbol instead means four students, ten walkers need 2.5 symbols. A daily attendance time series 32,35,33,36,34 can be joined in weekday order; the largest count is 36 and its range is 4. A frequency table for number of siblings 0,1,2,3 uses those numbers as positions on a vertical line chart, rather than treating widths as probabilities.

A pie chart must represent a complete total with non-overlapping categories. Pictogram keys control the count, not decorative icon size. A truncated axis may exaggerate a small difference; read the scale before comparing.

AQA S2 covers tables, categorical bars/pies/pictograms, discrete vertical lines and time-series tables/graphs. Explain why the representation fits the variable and the question.

40 students: frequencies determine sector angles



Original native-lesson illustration; labels belong to its worked example.

2 Practice

2.1 (Foundation) Find pie angle for 10 of 40 students.

2.2 (Foundation) Find pie angle for 15 of 40.

2.3 (Foundation) Find pictogram symbols for 10 students if each represents 4.

3 Exam-style questions

3.1 Decide whether this claim is true. Justify with a concrete calculation or counterexample: A line graph is always the best display for unrelated categories.

Solutions

2.1 $10/40 \times 360 = 90^\circ$.

2.2 $15/40 \times 360 = 135^\circ$.

2.3 $10/4 = 2.5$ symbols.

3.1 False. Counts for red, blue and green cars are unrelated categories. A bar chart compares their frequencies without implying a continuous path or ordered trend.

Local review guidance: show the chosen method; give the checked result; explain the condition or failed shortcut. This is authored classroom guidance.