Your notes

GCSE Statistics: revision notes

# Types of data

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## Qualitative and quantitative

- Qualitative (categorical) data is described in words, such as eye colour or favourite sport.
- **Quantitative data** is numerical, such as height or number of siblings.
- **Ordinal data** is categorical data with a clear order, such as small, medium and large, or exam grades.

## Discrete and continuous

- **Discrete data** can only take particular values, usually counted, such as the number of goals scored or shoe sizes.
- **Continuous data** can take any value in a range, usually measured, such as height, mass or time. It is always rounded when recorded.

## Bivariate data and variables

- Univariate data has one variable for each item. **Bivariate data** has two variables for each item, such as each student's height and arm span.
- The explanatory (independent) variable is the one that may cause a change. The response (dependent) variable is the one that changes. In "does revision time affect test score?", revision time is explanatory and test score is the response.

## Grouping data

- Large amounts of raw data can be grouped into class intervals, such as $150 \leq h < 160$.
- For **continuous data**, class boundaries show exactly where one class ends and the next starts. The class width is the difference between them (here 10) and the midpoint is halfway (here 155).

- Grouping makes data easier to read, but the exact raw values are lost, so averages can only be estimated.

## Key terms

| | |
|---|---|
| **Qualitative data** | Data described in words. |
| **Quantitative data** | Numerical data. |
| **Discrete data** | Data that can only take particular values. |
| **Continuous data** | Data that can take any value in a range. |
| **Ordinal data** | Categorical data with a clear order. |
| **Bivariate data** | Data with two variables for each item. |
| **Explanatory variable** | The variable that may cause a change in another. |
| **Response variable** | The variable that changes in response. |

## Quick questions

Cover the answers and test yourself: remembering is what makes it stick.

1. What type of data is "favourite colour"?
2. What type of data is "number of pets"?
3. What type of data is "time to run 100 m"?
4. Which is ordinal data?
5. What is bivariate data?
6. In "does temperature affect ice cream sales?", which is the explanatory variable?
7. What is the class width of $20 \leq m < 35$?
8. What is the midpoint of the class $40 \leq t < 50$?

### Answers

1. Qualitative
2. Discrete
3. Continuous
4. T-shirt sizes: small, medium, large
5. Data with two variables for each item
6. Temperature
7. 15
8. 45

## What to do next

**Practise 10 questions on this topic**

**Try 3 exam questions, with mark schemes**

**Read the lesson, one step at a time**

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