



**Starter**

How could you make the results of a sample more reliable?

**Top Tips! Learn these important definitions:**

- Population: The entire group of people, animals or the things about which we want information
- Sample: A part of the population that we actually collect information from
- Census – this is when data is collected from every member of the population
- Bias sample: This occurs when the views of every individual or group of individuals are not considered in the sample

**Skills:**

1. Explain a method to obtain a systematic sample in order to interview 10 workers out of a sample of 600.
  
2. Wil wants to find out what people in his town think about the sports facilities on offer. He plans to stand outside the sports centre one Monday morning in order to complete a questionnaire. Carol tells Wil that his survey will be biased.
  - a) Give one reason why the survey will be biased.
  
  - b) Describe one change Wil could make to the way in which he is going to carry out his survey so that it will be less biased.

**Examination Question: 2014 Summer Link -AIM U1 Higher Qu 6**

A survey is to be carried out to find the popularity of buying books with various age groups of the general population. The survey is carried out by asking people questions as they come out of a book shop. Two questions from the survey questionnaire are shown below.

1. How old are you? Put a tick in the box.	under 20 <input type="checkbox"/> 20 to 30 <input type="checkbox"/> 30 to 40 <input type="checkbox"/> older than 40 <input type="checkbox"/>
2. Do you buy books? Put a tick in the box.	Yes <input type="checkbox"/> No <input type="checkbox"/>

Explain why this may be a biased survey. [1]

State a criticism about the design of question 1 in the survey. [1]

Write a question with a selection of answer boxes, to find out how much people are prepared to pay for a paperback book. [2]

**Assessment for Learning**

**Video / QR code**



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How could you make the results of a sample more reliable?

**Increase the sample size.**

**The bigger the sample, the more reliable the data will be.**

**Widen the scope of the population.**

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**Skills:**

1. Explain a method to obtain a systematic sample in order to interview 10 workers out of a sample of 600.

$600 \div 10 = 60$

**Workers could be interviewed at the following intervals:**

**60, 120, 180, 240, 300, 360, 420, 480, 540, 600**

2. Wil wants to find out what people in his town think about the sports facilities on offer. He plans to stand outside the sports centre one Monday morning in order to complete a questionnaire. Carol tells Wil that his survey will be biased.

- a) Give one reason why the survey will be biased.

**Might not get a fair sample if the survey is only carried out on a Monday morning.**

- b) Describe one change Wil could make to the way in which he is going to carry out his survey so that it will be less biased.

**Will could consider doing the survey outside locations other than the sports centre.**

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2. Do you buy books? Put a tick in the box.	Yes	<input type="checkbox"/>
	No	<input type="checkbox"/>

Explain why this may be a biased survey. [1]

**Reason, e.g. outside the bookshop**

State a criticism about the design of question 1 in the survey. [1]

**Two boxes if you are 30**

Write a question with a selection of answer boxes, to find out how much people are prepared to pay for a paperback book. [2]

**Suitable question with at least 3 boxes, no overlaps or gaps and prices from a low value upwards (to maybe £20) considered or a number of boxes given but concentrated at lower prices**

