

Stratified Sampling



- 1) Ellen wants to do a survey with Years 9, 10 and 11 at her school.
The table shows the number of students in each of these year groups.

Year 11	Year 10	Year 9
750	700	900

Ellen takes a sample of 50 students stratified by year group.

Work out the number of students from Year 10 in the sample.



- 2) The table shows information about the year groups of 1000 students in a school.

Year group	7	8	9	10	11	12	13
Number in year	157	180	166	140	132	114	111

Tony takes a sample of 50 of these students, stratified by year group.

Calculate the number of Year 8 students he should have in his sample.



- 3) The table shows information about Ben's collection of 652 coins.

Country	France	Spain	Germany	Italy	Total
Number of coins	240	182	133	97	652

Ben takes a sample of 50 coins stratified by country.

Work out the number of coins from Italy in this sample.



- 4)

	Male	Female
Lower sixth	399	602
Upper sixth	252	198

The table gives information about the number of students in the two years of a sixth form.

Amy wants to interview some of these students.

She takes a random sample of 70 students stratified by year and by gender.

Work out the number of students in the sample who are male and in the lower sixth.

Stratified Sampling



- 1) The table below shows the number of employees in each section of a company.

Department	Managerial	Sales	Technical	Production
Number of employees	18	45	288	549

A survey on job satisfaction is to be carried out.

- a) Explain why a simple random sample of employees is unsuitable.
- b) A stratified random sample of 100 is used. Complete the table below to show how many employees from each department will be included.

Department	Managerial	Sales	Technical	Production
Number of employees in sample				



- 2) MathsWatch High-School has 798 pupils.
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- The size of each year group is shown below.

Year Group	Boys	Girls
7	77	72
8	74	79
9	72	74
10	93	107
11	85	65

The headteacher wants to find out the opinions of the pupils on changing the timing of the school day. A stratified sample of 80 pupils is taken.

- a) Complete the table below to show the numbers of pupils to be sampled.

Year Group	Boys in Sample	Girls in Sample
7		
8		
9		
10		
11		

The table below shows the number of pupils in the sample who answered YES to a change in the timing of the school day.

Year Group	Boys in Sample who answered YES	Girls in Sample who answered YES
7	2	3
8	3	5
9	2	1
10	1	4
11	0	1

- b) Use the table to estimate the percentage of pupils in the school who would answer YES to the question.