

Specifying a problem, planning and collecting data

As outcomes, Year 8 pupils should, for example:

Design and use simple two-way tables. For example, design, read and compare the cells in two-way tables such as:

- Method of transport to different shopping centres

	Car	Bus	Train	Walk	Coach	Other
Local centre						
Town centre						
Out-of-town development						

- Method of transport and distance to school

Distance (km)	Car	Bus	Train	Walk	Coach	Other
0–0.5						
0.5–1						
1–1.5						
1.5–2						
2–2.5						
2.5–3						
3+						

Collect data as planned from secondary sources or by carrying out a survey or experiment, involving observation, data-logging using ICT, or questionnaire.

For plans, see pages 248–53.

As outcomes, Year 9 pupils should, for example:

Design and use two-way tables. For example:

- Use a two-way table to highlight the difference between male and female smoking patterns in the UK in different age groups, and any trends visible over time.

1986			1986			1976		
Age	Male %	Female %	Age	Male %	Female %	Age	Male %	Female %
18–19	25	32	18–19	30	31	18–19	38	35
20–24	43	37	20–24	41	38	20–24	48	44
25–34	38	33	25–34	37	35	25–34	48	41
35–49	30	30	35–49	37	33	35–49	49	44
50–59	27	26	50–59	34	34	50–59	49	45
60+	17	18	60+	28	22	60+	40	42

UK smoking and age distribution 1976–1996

- The cost of an old Barbie doll depends on both its condition and whether or not it is in the original box. The table shows what percentage of the original cost the secondhand value retains.

Condition	Boxed	Not boxed
Excellent	100%	65%
Good	80%	32%
Poor	50%	15%

By considering the percentage lost by not having its original box, examine the claim that the importance of the box increases with the doll's condition.

Gather data as planned from specified secondary sources, including printed tables and lists from ICT-based sources. Identify what extra information may be required to pursue a further line of enquiry.

For example:

- As part of a study in science of car engine sizes, discuss whether the published value for bhp or 'torque' may be a better measure of 'power' than engine size.
- When designing a questionnaire about fairly-traded goods, include some questions on social or moral attitudes for later analysis.
- As part of a study of development indicators, discuss whether:
 - features relating to development are particular to the countries selected or are representative of wider trends;
 - some measures appear not to vary as much as others, and may be less useful as indicators of development.

Respond to problems of unavailable data, or data that relate to different dates, or that are organised in different ways (e.g. some appearing in tabular form, some in graphical form, some in summarised form), for example, by estimating the required comparable value.