Planner

Surveys

- Knowing different forms that data can take
- Testing a theory
- Identifying inappropriate questions in a survey
- Sampling a population
- Using an appropriate grouped frequency table
- Constructing and using a two-way table

Keywords

You should know

explanation 1a | explanation 1b | online

1 Copy and complete the table.

Remember to include units with the data where appropriate.

The first row has been completed for you.

	Investigation	Three examples of data	Type of data (qualitative or quantitative)
a	The number of pupils in a class	26, 31, 29	Quantitative
b	The hair colour of pupils		
c	The time spent doing homework		
d	The distance from home to school		
e	The temperature of a spring day		
f	Your friends' opinion of TV watched last night		
g	The taste of last night's dinner		
h	The price of a bus ticket		

2 Copy and complete the table.

Remember to include units with the data where appropriate.

The first row has been completed for you.

	Investigation	Three examples of data	Type of data (discrete or continuous)
a	The temperature of a classroom	19 °C, 20.5 °C, 22 °C	Continuous
b	The shoe size of pupils in your class		
c	The amount of pocket money pupils get		
d	The height of teachers in your school		
e	The weight of school bags carried by pupils		
f	The number of pages in a textbook		
g	The time it takes pupils to get to school		
h	The speed of runners in a 100 m race		

3 Would you collect primary or secondary data to test these theories?

a Boys are taller than girls at secondary school.

b Most people in the UK have internet access at home.

c Girls spend longer on homework than boys.

d Parents of pupils in your school think that more homework should be set.

e Temperatures in Florida are hotter than in Britain.

explanation 2a explanation 2b

4 Lyn wants to find out about children's eating habits as part of her project on healthy eating. Here are some of the questions she used for her survey.

Explain what is wrong with each question.

a Are you fat? Yes ☐ No ☐ Not sure ☐

b What is your favourite food? Pizza ☐ Burger ☐ Other ☐

c How old are you? 1–5 ☐ 5–10 ☐ 10–15 ☐ 15–20 ☐

d Do you like fruit and vegetables? Yes ☐ No ☐

e What is your favourite TV programme?

f Fried food is bad for you. Do you like fried food? Yes ☐ No ☐ Some ☐

g On average, how many calories do you eat a day?

5 Graham wants to find out what snacks pupils in the school would like to buy in the school canteen at break.

He plans to ask just the pupils in his maths class.

Explain why this is not a good way to collect data for his survey.

6 Jackie is going to carry out a survey.

She wants to find out who uses the local supermarket.

She plans to stand outside the supermarket one weekday morning at 10a.m.

She will ask the people who come out of the supermarket to fill in a questionnaire.

Explain why this is not a good way to collect the data for her survey.

7 Mark is planning a new restaurant.

He carries out a survey to help him decide what type of restaurant to open.

He stands outside an Italian restaurant.

He asks people going in to fill in a questionnaire which asks about favourite restaurant food.

Explain why this is not a good way to find out people's favourite restaurant food.

explanation 3

8 A four-sided spinner is spun 20 times. These are the results.

2	3	3	1	3	4	4	3	1	2
3	3	2	4	1	3	2	2	4	1

a Copy the frequency table and record the results.

Number on spinner	Tally	Frequency
1		
2		
3		
4		

b Do you think this is a fair spinner? Explain why.

9 Ahmed asks pupils in his class which is their favourite sport.

He writes down their answers.

Hockey	Swimming	Football	Hockey	Netball
Football	Netball	Hockey	Swimming	Football
Football	Swimming	Football	Hockey	Hockey
Football	Football	Football	Netball	Swimming

a Copy and complete the frequency table for Ahmed's data.

Sport	Tally	Frequency
Hockey		
Football		
Netball		
Swimming		

b Which sport is the least popular?

c Which sport is the most popular?

10 Eloise counted the number of people in each of 30 cars.

These are her results.

1	2	2	1	3	5	3	2	1	2
4	1	1	3	2	2	4	3	5	2
1	1	3	4	2	3	2	2	1	1

Draw and complete a frequency table for her results.

explanation 4 online

11 Mrs Gold wrote down the marks scored in a test.

23	16	20	25	34	12	5	30	18
40	35	37	11	23	14	7	8	38
9	11	29	31	39	8	10	27	33

Copy and complete the grouped frequency table for Mrs Gold's data.

Test mark	Tally	Frequency
1–10		
11–20		
21–30		
31–40		

12 Jemilla measured the heights of the pupils in her class.

She wrote down their heights correct to the nearest centimetre.

156	158	165	152	172	155	163	160
176	165	160	169	170	172	153	154
161	168	159	155	169	175	166	151

Draw and complete a grouped frequency table for Jemilla's data.

Use the groups 150–154, 155–159, 160–164, 165–169, 170–174, 175–179.

13 Jora asked 30 of his friends how many DVDs they each had.

He wrote down their answers.

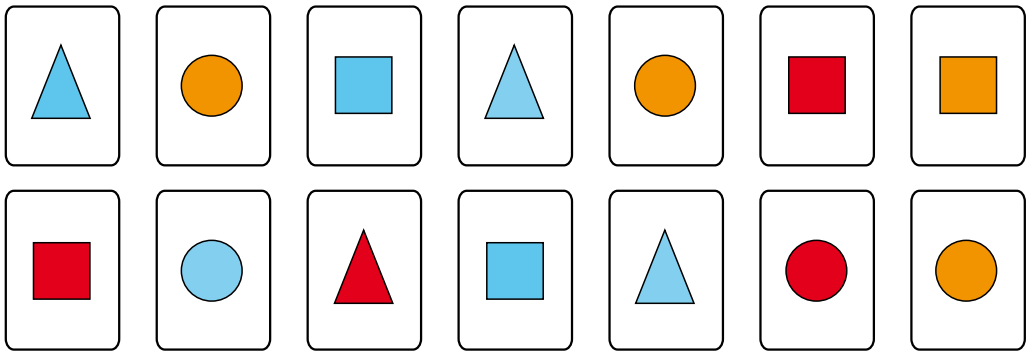
18	25	46	8	12	50	20	17	3	31
9	16	23	42	5	32	48	24	30	16
12	37	26	40	47	4	16	21	26	10

Draw and complete a grouped frequency table for Jora's data.

Use the groups 1–10, 11–20, 21–30, 31–40, 41–50

explanation 5

14 You have a set of 14 cards.



Record the number of cards showing different colours and shapes using this two-way table.

	Circle	Square	Triangle	Total
Blue				
Orange				
Red				
Total				

15 30 children were asked if they like tea.

	Boys	Girls	Total
Like tea	7		12
Do not like tea		4	
Total			30

a Copy and complete the two-way table.

b How many of the girls like tea?

c How many boys were there altogether?

16 Jill asked 80 adults whether they were left-handed or right-handed.

9 females are left-handed.

A total of 63 adults are right-handed.

There were 45 females altogether.

	Left-handed	Right-handed	Total
Female			
Male			
Total			

a Copy the table and show this information.

b Complete the table.

17 Bob asked 100 adults whether they preferred classical, rock or jazz music.

The two-way table shows some information from their answers.

	Classical	Rock	Jazz	Total
Female	22		8	42
Male		27		
Total	39			100

a Copy and complete the two-way table.

b How many males chose jazz?

c How many adults chose rock?