WORKSHEET

Percentage tables

1 A group of spectators at the Australian Open tennis tournament were surveyed.

	Plays tennis	Does not play tennis	
Right-handed	65	32	97
Left-handed	14	9	23
	79	41	120

 a What is the percentage of spectators who play tennis?

 b What is the percentage of right-handed spectators?

 c What is the probability of being a left-handed tennis player?

 d What is the probability that a tennis player is left-handed?

2 A recent survey asked local residents whether they approved of Brisbane City Council's decision to stop the building of townhouses and apartments in their area.

	Approved	Disapproved	
Local renter	23	79	102
Local home owner	102	37	139
	125	116	241

 a What is the percentage of residents who are home owners?

 b What is the percentage of residents who approved the council's decision?

 c What is the probability that a person who approved the council's decision is a home owner?

 d What is the probability that a renter disapproves the council's decision?

3 This table shows the accuracy results for a new type of allergy test being trialled on children.

	Accurate	Not accurate	
Allergic	7	1	8
Not allergic	39	3	42
	46	4	50

 a What percentage of children tested are allergic?

 b What percentage of children tested showed an accurate result?

 c What is the probability of a child testing accurately if they are not allergic?

 d What is the probability that a child who is allergic shows an inaccurate result?

nelsonnet

4 A market researcher interviewed 80 people about their preference of chocolate brands. Of the 35 males, 18 preferred Chocbury, while 7 of the females preferred other brands.

   a Complete a two-way table of this information.

   b Calculate percentages and state any noticeable patterns in the results.

5 A group of 80 teenagers were surveyed about the use of hair products when washing their hair. Of the 48 girls surveyed, 41 used conditioner after shampooing their hair, while 29 boys only shampooed and used no conditioner.

   a Complete a two-way table of this information.

   b Calculate percentages and state any noticeable patterns in the results.

6 A medical trial into the effectiveness of a new medication was carried out by testing the response to the drug of 200 patients. Of the 115 females who took part in the trial, 48 females responded positively to the medication, while 55 males showed no response to the medication.

   a Complete a two-way table of this information.

   b Calculate percentages and determine if the success of the medication depends on gender.

7 At the 2018 Commonwealth Games held on the Gold Coast, Australia won 80 gold and 59 silver medals, India won 26 gold and 20 silver medals and Canada won 40 silver and 27 bronze medals. In total, Australia won 198 medals and Canada won 82 medals. Between the 3 countries, 106 bronze medals were won.

   a Complete a two-way table for this information.

   b If a country's success is measured by the number of gold medals obtained, rank the 3 countries according to their success.

   c Calculate percentages and comment on whether you think the number of gold medals is a fair measure of how successful a country is.

8 This table shows the results from a market survey of customers for their preferred style of mobile phone case.

		Preferred phone case style				
		Black or white	**Coloured**	**Patterned**	**Novelty or branded**	
Gender and age	Male ≤ 18	30%		0%	2%	35%
	Male > 18	10%	4%			15%
	Female ≤ 18	7%	3%		19%	
	Female > 18			9%		18%
		48%	12%		27%	100%

   a Complete the percentage table.

   b What is the probability that a customer is a female over 18 who prefers a patterned phone case?

   c Find the probability that a female over 18 prefers a patterned phone case.

   d Find the probability that a customer who prefers a coloured phone case is a female 18 or under.

   e From 120 customers, how many would you expect to be males 18 or over who prefer a black or white case?

   f From 80 customers, how many would you expect to be males under 18 who prefer a black or white case?

Answers

1 a ≈ 66%

   b ≈ 81%

   c ≈ 12%

   d ≈ 18%

2 a ≈ 58%

   b ≈ 52%

   c ≈ 82%

   d ≈ 77%

3 a 16%

   b 92%

   c ≈ 85%

   d ≈ 13%

4 a

		Chocolate brand preferred		
		Chocbury	**Other brand**	
Gender	**Male**	18	17	35
	Female	38	7	45
		56	24	80

   b

		Chocolate brand preferred		
		Chocbury	**Other brand**	
Gender	**Male**	51.4	48.6	100
	Female	84.4	15.6	100
		70.0	30.0	100

Females prefer Chocbury rather than other brands of chocolate, while males do not really have a clear brand preference.

5 a

		Hair products used		
		Shampoo and conditioner	**Shampoo only**	
Gender	**Boys**	3	29	32
	Girls	41	7	48
		44	36	80

b

		Hair products used		
		Shampoo and conditioner	**Shampoo only**	
Gender	**Boys**	9.4	90.6	100
	Girls	85.4	14.6	100
		55	45	100

When washing their hair, most boys will use only shampoo, while the majority of girls will use shampoo and conditioner.

6 a

		Effectiveness of new medication		
		Positive response	**No response**	
Gender	**Males**	30	55	85
	Females	48	67	115
		78	122	200

b

		Effectiveness of new medication		
		Positive response	**No response**	
Gender	**Males**	35.3	64.7	100
	Females	41.7	58.3	100
		39	61	200

The new medication was only effective in less than half of the patients tested. There was, however, more success with female patients than male patients, with an additional 6.4% of females showing a response to the drug.

7 a

		Medal tally at 2018 Commonwealth Games			
		Gold	**Silver**	**Bronze**	
Country	**Australia**	80	59	59	198
	India	26	20	20	66
	Canada	15	40	27	82
		121	119	106	346

b Australia, India then Canada.

c

	Medal tally at 2018 Commonwealth Games			
	Gold	**Silver**	**Bronze**	
Australia	40.4	29.8	29.8	100
India	39.4	30.3	30.3	100
Canada	18.3	48.8	32.9	100
	35	34.4	30.6	100

(Row label: Country)

Although ≈ 40% of Australia's and ≈ 39% of India's medals were gold, only ≈ 18 % of Canada's medals were gold. Measuring the success of a country by the total number of medals and weighting the worth of each colour of medal could be a fairer method.

8 a

	Preferred phone case style				
	Black or white	**Coloured**	**Patterned**	**Novelty or branded**	
Male ≤ 18	30%	3%	0%	2%	35%
Male > 18	10%	4%	1%	0%	15%
Female ≤ 18	7%	3%	3%	19%	32%
Female > 18	1%	2%	9%	6%	18%
	48%	12%	13%	27%	100%

(Row label: Gender and age)

b 9%

c 50%

d 25%

e 12 customers

f 24 customers.