## 18. [Statistics / Probability]



- Find the value of each picture by checking the key or scale.
- Count the number of pictures in the row or column as asked by the question.

A. 4





The scale is 1 picture = 1 year Arts MedicineScience MedicineEngineering  $D_{2}C_{3}C_{4}$ There are 4 pictures in the engineering row.

Each = 1 year

1



a) How many eyes does a bee have?



c) Which sport has a goal worth 6 points?



b) How many main islands make up New Zealand?





d) Which flower has 3 petals?

| Flowe | er Petals | Key: 🗊 | = 1 petal |
|-------|-----------|--------|-----------|
|       |           |        |           |
| Iris  | Daffodil  | Rose   | Buttercup |
|       |           |        |           |

| Sk | ill 18.2 Recognising tally marks.  |       | MM2.2 11223344<br>MM3.1 11223344                             |
|----|--|-------|--|
| •  | Count or draw one dash for one value.<br>Draw four dashes and a crossways dash to<br>Counting by 5s helps. | repre | esent 5.<br>  = 1<br>   = 2<br>    = 3<br>    = 4<br>    = 5 |
| Q. | Use tally marks ( ) to show the number 12.   | Α.    |  |
| a) | What number is shown by the tally marks?   | b)    | What number is shown by the tally marks?                     |
| c) | What number is shown by the tally marks?   | d)    | What number is shown by the tally marks?                     |
| e) | What number is shown by the tally marks?   | f)    | What number is shown by the tally marks?                     |
| g) | Use tally marks ( ) to show the number 3.  | h)    | Use tally marks ( <b> </b> ) to show the number 11.          |
| i) | Use tally marks ( <b> </b> ) to show the number 7.   | j)    | Use tally marks ( <b> </b> ) to show the number 12.          |
|    | NumberTally7   |       | NumberTally12  |
| k) | What number is shown by the tally marks?   | I)    | What number is shown by the tally<br>marks?<br>Tally Number  |

**Skill 18.3** Interpreting and completing tables with tally marks (1).

- Count the tally marks and write the number.
- Draw tally marks for the given number.
- **a**. Complete the tally table.

#### **Lighthouse Survey**

| States      | Tally        | Number |
|-------------|--------------|--------|
| Connecticut | .₩ſ          | 5      |
| New Jersey  | JHT JHT IIII |        |
| Delaware    |              | 4      |
| Washington  | JHT          |        |

a) Complete the tally table.

### Vehicle Type Passing School

| Vehicle       | Tally    | Number |
|---------------|----------|--------|
| Sedan         | JHT IIII | 9      |
| Station Wagon | JHT I    | 6      |
| Minivan       |          | 3      |
| Convertible   | Ш        | 5      |

### c) Complete the tally table.

#### Drive - a - thon

| Driver        | Lap Tally | Number |
|---------------|-----------|--------|
| F. Alonso     | JHT III   |        |
| G. Fisichella |           | 11     |
| A. Suzuki     | JHT IIII  |        |
| M. Schumacher | JHT I     |        |

### e) Complete the tally table.

#### Books in a series

| Series               | Tally   | Number |
|----------------------|---------|--------|
| Underland Chronicles | Ш       |        |
| Deltora Quest        | JHT III | 8      |
| Mary Poppins         | JHT     |        |
| The Bliss Bakery     |         |        |

# A. Lighthouse Survey

| States      | Tally        | Number |
|-------------|--------------|--------|
| Connecticut | Щ            | 5      |
| New Jersey  | JHT JHT IIII | 14     |
| Delaware    | 1111         | 4      |
| Washington  | JHT II       | 7      |

Count the number of tally marks for New Jersey and Washington. Write their totals in the number column.

2

Draw 4 tally marks for Delaware.

**b)** Complete the tally table.

### People per square kilometre

| Country | Tally        | Number |
|---------|--------------|--------|
| Norway  | JHT JHT IIII |        |
| Bolivia | JHT 11       | 7      |
| PNG     | JHT JHT      | 10     |
| Iceland |              |        |

d) Complete the tally table.

#### Frequency of 2, 3, 4, 5 as factors of the numbers 1 to 10

| Factor | Tally | Number |
|--------|-------|--------|
| 2      | Ш.    |        |
| 3      |       | 3      |
| 4      |       | 2      |
| 5      |       |        |

f) Complete the tally table.

#### **Eyelets in shoes**

| Shoe Type        | Tally        | Number |
|------------------|--------------|--------|
| Runner           | JHT JHT IIII |        |
| Boat shoe        |              | 4      |
| School shoe      |              | 8      |
| Men's dress shoe |              |        |

g) Complete the tally table for the days of rain in May 2012:

Canberra - 4, Perth - 9, Brisbane - 8, Adelaide - 13

### Days of rain in May 2012

| City     | Tally | Number |
|----------|-------|--------|
| Canberra |       |        |
| Perth    |       | 9      |
| Brisbane |       |        |
| Adelaide |       |        |

 i) Complete the tally table. How many goals were kicked in the 2011 AFL grandfinal?

### Total goals in the 2011 AFL grandfinal

| -       |         | -      |
|---------|---------|--------|
| Quarter | Tally   | Number |
| 1st     | JHT III |        |
| 2nd     |         | 9      |
| 3rd     |         | 8      |
| 4th     | Ш       |        |
|         |         |        |

K) Complete the tally table. How many vowels are in this word from Mary Poppins?

### 'Supercalifragilisticexpialidocious'

| Vowel | Tally | Number |
|-------|-------|--------|
| а     |       | 3      |
| e     |       |        |
| i     |       |        |
| 0     |       |        |
| u     |       |        |
|       |       |        |
|       |       |        |

 n) Complete the tally table for the average sunlight hours per day in Paris.

January - 2, April - 6, July - 8, October - 4

#### Average sunlight hours per day in Paris

| Month   | Tally | Number |
|---------|-------|--------|
| January |       | 2      |
| April   |       |        |
| July    |       |        |
| October |       |        |

 j) Complete the tally table. How many vowels are in Shakespeare's longest word?

### 'Honorificabilitudinitatibus'

| Vowel | Tally | Number |
|-------|-------|--------|
| а     |       | 2      |
| i     |       |        |
| 0     |       |        |
| u     |       |        |
|       |       |        |

I) Complete the tally table. How many tiles in a Scrabble set are vowels?

AIAAIUAIAOIAIAOUIAAE EOEUEEEIOOEEEOEEEIIO OU

| Scrabble tiles | Tally    | Number |
|----------------|----------|--------|
| А              | JHT IIII | 9      |
| E              |          |        |
| Ι              |          |        |
| 0              |          |        |
| U              |          |        |
|                |          |        |

Skill 18.4 Interpreting bar graphs (1).

- Find the value of each line space by checking the scale on the side of the graph. OR
- Compare the height (or length) of each bar.
- **a**. Which country has the shortest men?



a) How many engines does a Fokker FX11 have?



c) For how long should a mouse live?



A. Vietnam



Compare the height of each man. The shortest man is in the 'Vietnam' column.

b) Which animal has 8 senses?



d) For how long was World War II?







#### What is the height of the g) Rainbow Lorikeet?



Which country has the tallest i) women?



**h)** Which country has the shortest women?

\$1

10¢

5¢

8 7

6 5 4

3 2

1

0

\$2



How high is the River Red Gum? i)



| Sk | ill 18.5 Recognising the likelihood of a certain, uncertain, possible, im                                   | n eve<br>poss | ent as likely, unlikely, MM2.2 11 22 3 44<br>MM3.1 11 2 2 3 3 44<br>ible (1).                           |
|----|---|---------------|---|
| Q. | What is the chance<br>"A tourist will visit Alaska<br>tomorrow."<br>A) possible<br>B) impossible            | Α.            | <b>A</b><br>Alaska is a possible tourist destination.<br>Alaska is not an impossible place to<br>visit. |
| a) | What is the chance<br>"Some of your classmates will get<br>jobs in computers."<br>A) likely<br>B) unlikely  | b)            | What is the chance<br>"If this month is April last month<br>was March."<br>A) certain<br>B) uncertain   |
| c) | What is the chance<br>"The nectarine is sweeter than the<br>peach."<br>A) certain<br>B) uncertain           | d)            | What is the chance<br>"A volcano will erupt at<br>Ayers Rock tomorrow."<br>A) possible<br>B) impossible |
| e) | What is the chance<br>"You go to hospital at least once<br>in your life."<br>A) likely<br>B) unlikely       | f)            | What is the chance<br>"Raj, who is 11, will be 8 next<br>birthday."<br>A) possible<br>B) impossible     |
| g) | What is the chance<br>"Supermarkets will give away free<br>groceries tomorrow."<br>A) likely<br>B) unlikely | h)            | What is the chance<br>"The cat is faster than the dog."<br>A) certain<br>B) uncertain                   |



Skill 18.6 Interpreting picture graphs where one picture represents many MM2.2 11 22 B 4 data values (1).

A. 6

- Find the value of each picture by checking the key or scale.
- Multiply the number of pictures by the key value. OR Count by that number.
- **a.** How many strings does an electric guitar have?





a) How many strings does a mandolin have?

Instruments: number of strings



c) How long does it take to digest an orange?
 Digestion time



- - $2 \times 3 = 6$
  - 3 pictures = 6 strings
- b) Which flower has 4 petals?Flower Petals



**d)** How many hours does it take to drive from Melbourne to Sydney?



Skill 18.6 Interpreting picture graphs where one picture represents many data values (2).

f)

e) Which newborn weighs 6 kg?
 Weight of a newborn



g) In which year were 8 legends stamps issued?



 Which city is a one and a half hour flight from Sydney?



How much does the book cost?



Equator 💥 💥 🏹

each i = 2 hours | each i = 1 hour

j) How many more teams in the AFL than the A-League?

### Players on the field



#### Skill 18.7 Comparing the chance of two events.

- Count the number of chances for the first event.
- Count the number of chances for the second event.
- Compare the number of chances of each event.
- a. Two jars contain chocolates.
  A chocolate is chosen from each jar without looking. From which jar does a dark chocolate have no chance of being chosen?





 a) Two jars contain chocolates. A chocolate is chosen from each jar without looking. From which jar does a white chocolate have a greater chance of being chosen?

B)





c) Each wheel is spun once. On which wheel does the letter 'L' have a lesser chance of being spun?



e) Two jars contain chocolates. A chocolate is chosen from each jar without looking. From which jar is a dark chocolate sure to be chosen?



### а. *В*

Event 1: Jar A contains 4 dark chocolates  $\Rightarrow$  4 chances

Event 2: Jar B contains 0 dark chocolates  $\Rightarrow$  0 chances

**b)** Two jars contain chocolates. A chocolate is chosen from each jar without looking. From which jar does a white chocolate have no chance of being chosen?



 d) Each wheel is spun once. On which wheel does letter 'Z' have a greater chance of being spun?



 f) Each wheel is spun once. On which wheel do the letters 'X' and 'Z' have equal chance to be spun?







# Skill 18.9 Representing data from tables as bar graphs and data from bar graphs as tables (2).

c) Use the table to complete the graph.

Chambers of the heart



e) Use the graph to complete the table.



g) Use the graph to complete the table.



d) Use the table to complete the graph.

#### Length of School Summer Holidays



f) Use the table to complete the graph.



n) Use the graph to complete the



Transformers

| Sk | Skill 18.10Describing the degree of likelihood of an event.MM2.211223344MM3.111223344  |    |   |
|----|--|----|---|
| •  | Hint: Think about the worst possible outcome.<br>Add 1 to the worst possible outcome.  |    |   |
| Q. | The iPod is on shuffle mode. It has<br>50 songs, 40 of which Mae likes.<br>To how many songs does Mae<br>need to listen, to be certain she<br>hears a song she likes?  | Α. | <b>11</b><br>There are 40 songs Mae likes.<br>There are 10 songs Mae does not like.<br>The worst that can happen is that Mae<br>hears all 10 songs she does not like first.<br>So it could be the 11th song Mae listens<br>to that is the first of the ones she likes.<br>10 + 1 = 11 |
| a) | A money bag contains<br>10 twenty-cent coins and<br>19 fifty-cent coins. A coin is<br>randomly selected. How many<br>coins do you have to choose to<br>make sure you have a<br>fifty-cent coin?                  | b) | Andrew has 7 one-dollar coins<br>and 5 two-dollar coins in his<br>pocket. He picks up a coin<br>without looking. How many coins<br>does Andrew have to pick to<br>make sure he has a<br>one-dollar coin?  |
| c) | The iPod is on shuffle mode. It has<br>30 songs, 25 of which Verve likes.<br>To how many songs does he need<br>to listen, to be certain he hears a<br>song he dislikes?  | d) | A store has 20 batteries and 6 do<br>not work. How many batteries do<br>you have to check to make sure<br>you have a battery that works?  |
| e) | There are 12 pillow cases in our<br>linen cabinet. Four are pink.<br>Mum reaches inside the cabinet<br>in the dark. How many pillow<br>cases does she need to take out<br>to make sure she has two<br>pink ones? | f) | There are six pairs of runners in<br>the back of Mike's closet.<br>Because the closet is dark, how<br>many individual runners must he<br>take out of the closet to make<br>sure he has a matching<br>pair of runners?   |
| g) | The iPod is on shuffle mode. It has<br>25 songs, 5 of which Zac does not<br>like. To how many songs does<br>Zac need to listen, to be certain<br>he will hear a song he does not<br>like?                        | h) | A store has 50 boxes of cereal.<br>There is a pedometer in 23 of<br>these boxes. How many boxes do<br>you have to buy to make sure you<br>have a box with a pedometer<br>inside?  |



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