4.1. Probability

Remember

Some events are impossible.

Some events are certain.

An event that is likely to happen is probable.

An event that is unlikely to happen is improbable.

You can use a line to show how likely it is that an event will happen.

Look and learn

- Probability: a measure of how likely it is that something will happen
- Likelihood: another word for 'probability'.
- Chance: if something is impossible, it has no chance of happening; if it will happen; it is certain.

You can use a probability line to show the chances of an event happening.

1. What is the likelihood of the following events happening?
Use the words 'likely' and 'unlikely'.

a) When you roll a dice you will get a number less than 6.

b) Someone in your class will lose a shoe this term.

c) It will rain today.

Make up three statements of your own and say whether they are likely or unlikely.

2. Look at this probability line. Use it to help you answer the following questions.

3. Vincent is using a spinner. What are the chances that:

a) he scores an odd number?

b) he scores an even number?

c) he scores less than 5?

d) he scores a number greater than 6?

4. Write a sentence using each word.

likely .....

unlikely .....

◆ This spinner has 8 equal sectors.

So, there are 8 possible outcomes:

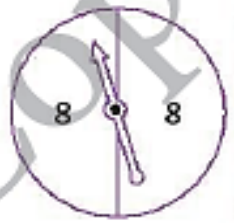
landing on 1, 2, 3, 4, 5, 6, 7, 8

Some impossible outcomes are:

landing on 9, 10, 11, 12, ...

◆ This spinner has 2 equal sectors.

Landing on 8 is certain.

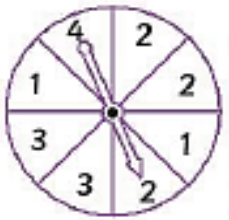


◆ This spinner has 8 equal sectors.

Landing on 1 and landing on 3 are equally likely.

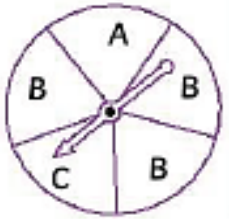
Landing on 4 is less likely than landing on 1 or 2 or 3.

Landing on 2 is more likely than landing on 1 or 3 or 4.



1. a) Which letter is the pointer most likely to land on?

.....



b) On which of 2 letters is the pointer equally likely to land on? .....

c) Write a statement about the spinner using the words 'less likely'.

.....

2. Suppose the pointer on this spinner is spun.

a) List the possible outcomes.

b) Compare the likelihoods of the outcomes.

Use the words 'more likely', 'equally likely', or 'less likely.'

.....

.....

.....

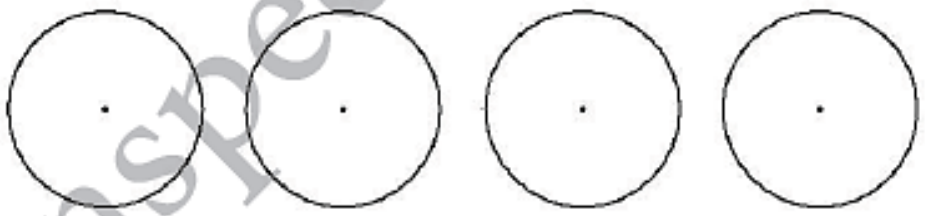
3. Colour each spinner so that:

A) landing on red is more likely than landing on yellow.

B) landing on green and landing on purple are equally likely.

C) landing on brown is impossible.

D) landing on orange is less likely than landing on blue.



5.1. Line graphs

You can draw a line graph to show changes, for example, this one shows changes in temperature over time.

Fatima was ill during March. This graph is her temperature chart.

Intermediate points on a line graph may or may not have meaning. In this case, points are joined to show trends.

a) A normal body temperature is 37°C. What date did Fatima become ill?

b) What was her highest temperature?

c) How many days did it take for her temperature to return to normal? Start counting from when her temperature reached the highest point.

The graph shows how the temperature changed during part of a cold morning.

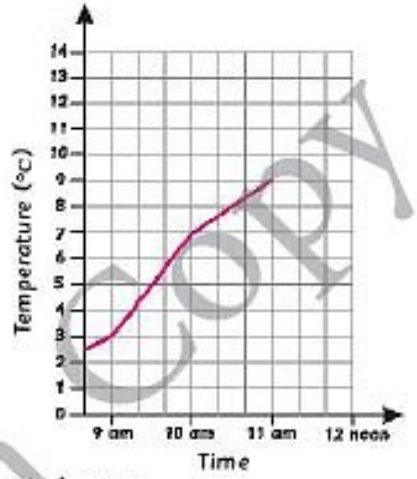
What was the temperature at 9 am?

.....

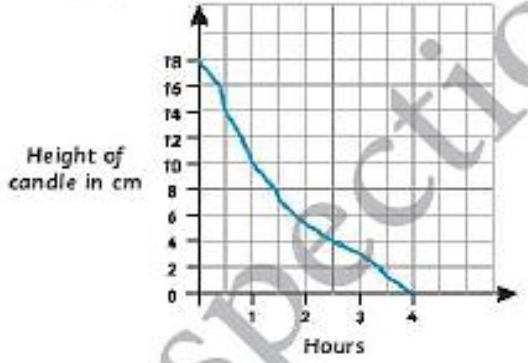
At what time did the temperature reach 7° C?

.....

The temperature at 12 noon was 13°C. Mark this on the graph.



This graph shows the height of a candle as it burns.



a) How tall was the candle when it was first lit?

b) How many centimetres of candle burned in the first hour?

c) What is the height of the candle after 2 hours?

d) How long does the candle take to burn down from 18 cm to 4 cm?