Chapter 34 Chance pg178-182

Monday pg178

Chapter 34: Chance – The language of chance

impossible	possible	certain

1. Use one of the above words to predict the **chance** of the following happening.

   (a) The principal will come into the classroom today. _____

   (b) Your friend will have a birthday next month. _____

   (c) Your friend will have a birthday next year. _____

   (d) There will be no advertisements on television tonight. _____

   (e) The moon and sun will swap positions. _____

   (f) The grass on the football pitch will grow a blue colour. _____

   (g) A giraffe will teach in this school next year. _____

   (h) The traffic light will turn green after red. _____

Even chance
When there are two possible outcomes and both are **equally** likely to happen, this is called an **even chance** or a 50/50 chance.

Ariana has an even chance of picking the green cube.

2. Which of the following has an **even chance** of happening?

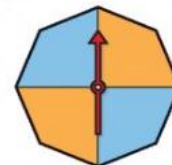   (a) When I turn this playing card over it is a red card.

   (b) I will choose a green cube.

   (c) Liam will catch the ball.

   (d) The arrow will stop on orange.

impossible	possible	certain	even chance

3. Use one of the above words to predict the **chance** of the following happening.

   (a) We will win our next camogie match. _____

   (b) It will rain next week. _____

   (c) Barcelona will be renamed Madrid. _____

   (d) The next baby born in Ireland will be a girl. _____

   (e) The River Lee will continue to flow through Cork City. _____

   (f) If I throw a die, I will throw an even number. _____

Chance – Probability

What is the chance of tossing a 'tail'?
- There are two possible outcomes – 'heads' or 'tails'.
- Both outcomes have an equal or even chance.
- There is a **one in two chance**.
  → 1:2 or $\frac{1}{2}$ or 50/50

What is the chance of throwing a 3?
- There are six possible outcomes
  1 2 3 4 5 or 6 .
- All outcomes have an equal chance.
- There is a **one in six chance**.
  → 1:6 or $\frac{1}{6}$

1. If you throw a regular 6-sided die, what is the **chance** of:

(a) throwing a 2? ____ : ____ or ▢/▢

(b) throwing a 5? ____ : ____ or ▢/▢

(c) throwing a 4? ____ : ____ or ▢/▢

(d) throwing a 0? ____ : ____ or ▢/▢

(e) throwing an odd number? ____ : ____ or ▢/▢

(f) throwing a 9? ____ : ____ or ▢/▢

(g) throwing a multiple of 3? ____ : ____ or ▢/▢

(h) throwing a multiple of 2? ____ : ____ or ▢/▢

We measure the chance of something happening by using **probability**. We can place events on a probability line to illustrate this.

| impossible | even chance | certain |

As we move from left to right on this line, there is a greater likelihood of an event happening.

2. Place the following statements on the appropriate part of the **probability lines**.

(a) The sun will set tonight.

| impossible | even chance | certain |

(b) Fuel prices will rise next year.

| impossible | even chance | certain |

(c) A crocodile will escape from the zoo.

| impossible | even chance | certain |

(d) School will close for a week in February.

| impossible | even chance | certain |

(e) It will snow in Donegal in December.

| impossible | even chance | certain |

(f) I will win a race against my friend.

| impossible | even chance | certain |

Chance

1. Aaron's uncle has promised to do **one** special activity with him next Saturday. He has suggested the following activities from which Aaron must choose. Aaron's uncle placed the activity names in a box. Aaron then had to choose an activity from the box while blindfolded.

swimming	bowling	tennis	archery	football

(a) There is a _____ in _____ chance they will go swimming.

(b) Write the probability of them going swimming as a fraction. $\frac{\Box}{\Box}$

(c) What is the probability of one of their activities involving a ball? _____ in _____

(d) Write this probability as a fraction. $\frac{\Box}{\Box}$

(e) Imagine you were given the same five choices. Copy the following probability line into your copybook and place the activities on it in order, according to your preference.

uninterested   interested

2. Six friends were arguing over how to spend their Saturday afternoon. They decided to each write their preference on a card. The cards were then placed in a jar. They all agreed that they would take part in the first activity to be chosen **at random** from the jar!

(a) The chance of them going to the shopping centre is _____ in _____.

(b) Write this probability as a fraction. $\frac{\Box}{\Box}$

(c) There is a _____ in _____ chance that the friends will go to the cinema.

(d) Express this probability as a fraction. $\frac{\Box}{\Box}$

(e) What is the probability that all these activities will be free of charge? _____ in _____

(f) What is the probability that they will **not** go to the cinema? _____ in _____

(g) What is the probability that they will go ice-skating? _____ in _____

3. Write the probability of picking a yellow cube from the following jars while blindfolded.
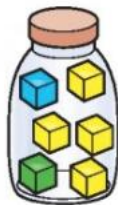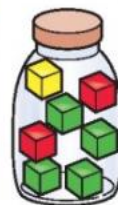
(a)   (b)   (c)   (d)

_____ : _____ or $\frac{\Box}{\Box}$ _____ : _____ or $\frac{\Box}{\Box}$ _____ : _____ or $\frac{\Box}{\Box}$ _____ : _____ or $\frac{\Box}{\Box}$
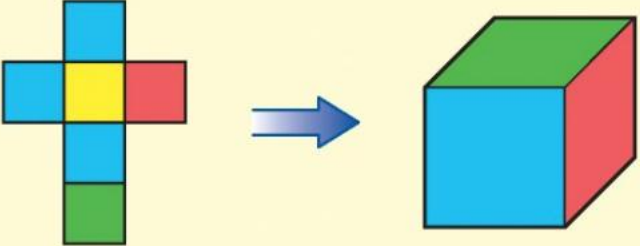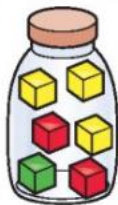
Chance

Here is a good experiment with which to explore probability with a partner.

Step 1: Make a die.
(i) Cut out a cube net.
(ii) Colour:
  • 3 sides blue
  • 1 side red
  • 1 side yellow
  • 1 side green

Step 2:
(i) Throw the die 12 times.

(ii) Use a tally to record which colour is facing up after each throw.

(iii) Express each final result as a fraction of the number of throws.

(iv) Repeat the experiment 2 more times. Record the results on these separate result charts.

To make it interesting, use coloured unifix cubes to predict the outcome before conducting each experiment.

Experiment 1				
Tally				
Fraction				

Experiment 2				
Tally				
Fraction				

Experiment 3				
Tally				
Fraction				

Step 3: Record your results on these pie charts which are already divided into twelfths.

Experiment 1   **Experiment 2**   **Experiment 3**

Think and discuss.
• Did all three experiments give the same results?
• Were your predictions close or accurate?
• Can we rely on chance always going in our favour?