Y6-Y7 Maths Transition Booklet

Name _____

Primary School _____

Contents

Activity 1 - Language of Probability

Can you write the words in the correct place on the probability scale below?

Likely Evens Certain Unlikely Impossible

1. Place the following events in the correct places on the probability scale

i The winning ticket in a raffle will be an odd number.
ii The sun will set this evening.
iii An aeroplane will land on the school.
iv The temperature will drop below 0°C in December.
v You will meet a live dinosaur tomorrow.

2. Give an example of an outcome that

a is impossible
b is certain
c is unlikely
d is likely
e has an even chance of happening

3. Match the statements below with the words

Impossible Unlikely Evens Likely Certain

a A coin will land on tails.
b You will see a monster if you visit Loch Ness.
c The sun will rise tomorrow.
d I will throw a five or a six when I throw a die.
e You will live to be 199 years old.
f Someone will win the lottery jackpot this weekend.
g You will live to be 60 years old.

Activity 2 - Single Event Probability (Dice)

A standard dice has six faces. Each face denotes the numbers 1, 2, 3, 4, 5 and 6 as shown. The result of rolling a dice is the number on the upper face.

1. Roll a dice 30 times. Record the outcomes in a copy of the table shown.

Trial	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Outcome										

Trial	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th
Outcome										

Trial	21st	22nd	23rd	24th	25th	26th	27th	28th	29th	30th
Outcome										

2. Represent your results using a bar chart.

Questions

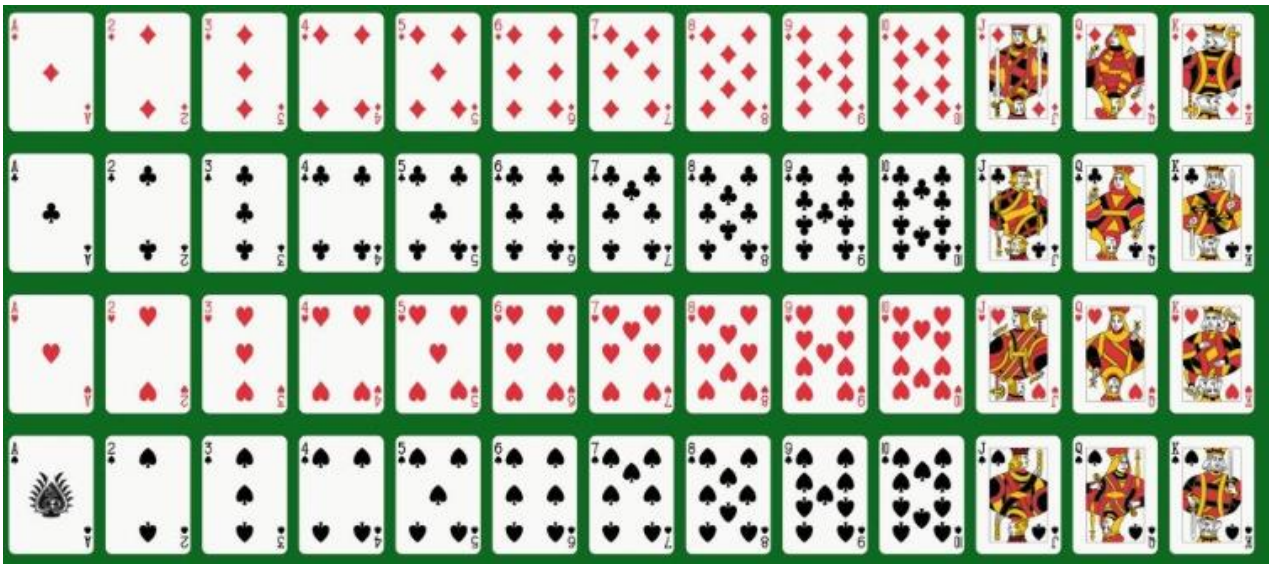
1. What are the possible outcomes?
2. Before a dice is rolled, are you able to predict correctly whether you will get a 6 or not?
3. In your results table, do you observe any pattern in the outcomes?
4. What fraction of your 30 rolls of the dice resulted in getting a 2?
5. Compare and discuss your results with your classmates. What do you notice?
6. From your observations, what is the chance of getting a 2?
7. From your observations, what is the chance of getting a 7?

Activity 3 – Equally Likely Outcomes (Playing Cards)

Probability is:

When all of the outcomes of a situation are **equally likely**,

$$\text{the probability of an event} = \frac{\text{number of ways the event can happen}}{\text{total number of outcomes}}$$



3 Jayne picks a card from a standard pack of 52 playing cards.
Find the probability that her card is:

- **a** the Seven of Diamonds
- **b** an Ace
- **c** not an Ace
- **d** a Spade
- **e** not a Spade
- **f** a King, Queen or Jack.

Can you show these probabilities on a probability scale?

Activity 4 - Single Event Probability

Higher or Lower

Card												
Higher												
Lower												
Guess												
√ or X												

1. Lay out one suit of a deck of cards (13 cards) face down in a line.
2. Turn over the first card, write it in the table and cross it off on the list of cards above.
3. Write in the table underneath the card you have written the probability of the next card being both Higher and Lower. Write the probabilities as fractions.
4. Use the probabilities you have written to make a guess whether the next card you turn over is Higher or Lower than the previous card.
5. ✓ or ✘ to say if your guess was correct or incorrect.
6. Now repeat the process for the second card you have turned over.
7. Keep repeating the steps until you have turned over all the cards.
8. What do you notice about the probabilities? (Identify 3 things)

Example

The first 2 cards turned over were:  then 

Card	5	8										
Higher	$\frac{9}{12}$											
Lower	$\frac{3}{12}$											
Guess	H											
√ or X	✓											

Activity 5 Challenge - Single Event Probability

Consider how we find probability when answering these questions, especially equally likely outcomes.

True, false or unsure?

A

When you roll a fair six-sided die, it is harder to roll a six than a four.

D

When two coins are tossed there are three possible outcomes: two heads, one head or no heads. The probability of two heads is therefore $\frac{1}{3}$.

E

There are three outcomes in a football match: win, lose or draw. The probability of winning is therefore $\frac{1}{3}$.

Answers

A – _____

_____

D – _____

_____

E – _____

_____

Sheet 1

1. Calculate 15 x 1000	2. Calculate 2500 ÷ 10
3. Round 72 to the nearest 10	4. Work out 238 + 67
5. Work out 469 – 35	6. Calculate 275 x 83 (show your working)
7. Calculate 243 ÷ 3 (show your working)	8. Work out 7^2 + 6 x 5
9. List all the factor pairs of 24	10. Find the Lowest Common Multiple of 4 and 12
11. Write the next two terms of this sequence: 4, 6, 8, 10…….	12. What is $\frac{1}{2}$ as a decimal?

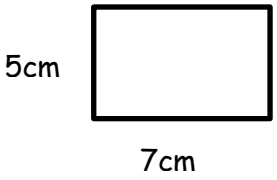
Sheet 1 continued

13. Calculate $\frac{1}{5} + \frac{3}{10}$

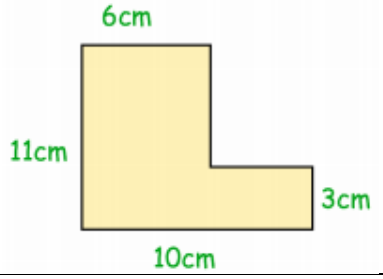
14. Find $\frac{3}{5}$ of 60

15. What is $\frac{3}{20}$ as a percentage?

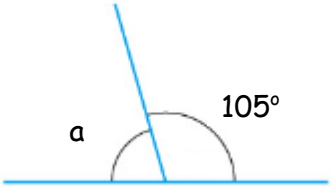
16. Find the perimeter of this shape



17. Find the area of this shape



18. Find the missing angle



19. What fraction of the cars are green?

Colour	Frequency
Blue	15
Green	8
Red	21
Yellow	3

20. Find the mean of these numbers:
6, 2, 4, 8

Feedback

Mark (/20):_____ **EBI:** Use feedback to improve Questions_____

Sheet 2

1. Calculate 190 x 1000	2. Calculate 12000 ÷ 100
3. Round 256 to the nearest 10	4. Work out 495 + 158
5. Work out 582 - 74	6. Calculate 392 x 38 (show your working)
7. Calculate 464 ÷ 4 (show your working)	8. Work out 6^2 + 3 x 8
9. List all the factor pairs of 42	10. Find the Lowest Common Multiple of 6 and 15
11. Write the next two terms of this sequence: 3, 7, 11, 15…….	12. What is $\frac{1}{4}$ as a decimal?

WWW: Improvement shown on Questions:_____

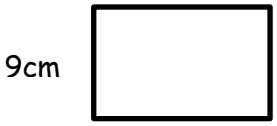
Sheet 2 continued

13. Calculate $\frac{2}{3} + \frac{1}{6}$

14. Find $\frac{4}{7}$ of 63

15. What is $\frac{1}{10}$ as a percentage?

16. Find the perimeter of this shape



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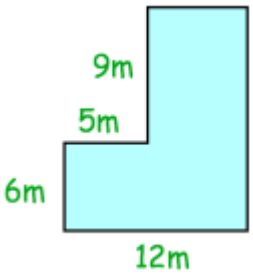

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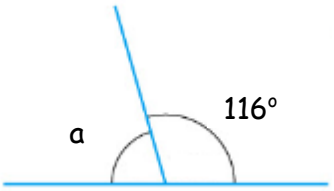


19. What fraction of the cars are blue?

Colour	Frequency
Blue	15
Green	8
Red	21
Yellow	3

20. Find the mean of these numbers:
7, 9, 2, 5, 7

Feedback

Mark (/20):_____ **EBI:** Use feedback to improve Questions_____

Sheet 3

1. Calculate 290 x 100	2. Calculate 130 ÷ 10
3. Round 254 to the nearest 100	4. Work out 592 + 86
5. Work out 178 – 85	6. Calculate 128 x 42 (show your working)
7. Calculate 994 ÷ 7 (show your working)	8. Work out 9^2 + 15 x 3
9. List all the factor pairs of 60	10. Find the Lowest Common Multiple of 12 and 9
11. Write the next two terms of this sequence: 5, 11, 16, 21…….	12. What is $\frac{1}{5}$ as a decimal?

WWW: Improvement shown on Questions:_____

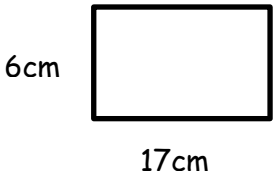
Sheet 3 continued

13. Calculate $\frac{1}{4} + \frac{5}{12}$

14. Find $\frac{2}{9}$ of 27

15. What is $\frac{3}{4}$ as a percentage?

16. Find the perimeter of this shape



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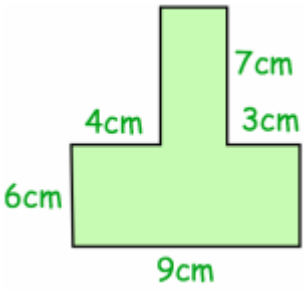
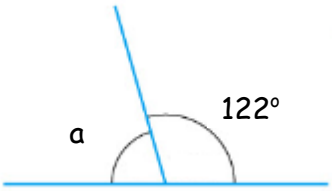


18. Find the missing angle



19. What fraction of the cars are red?

Colour	Frequency
Blue	15
Green	8
Red	21
Yellow	3

20. Find the mean of these numbers:
10, 15, 11

Feedback

Mark (/20):_____ **EBI:** Use feedback to improve Questions_____

Sheet 4

1. Calculate 170 x 100	2. Calculate 230 ÷ 100
3. Round 3 to the nearest 10	4. Work out 693 + 284
5. Work out 739 – 273	6. Calculate 735 x 23 (show your working)
7. Calculate 685 ÷ 5 (show your working)	8. Work out 3^3 + 7 x 8
9. List all the factor pairs of 36	10. Find the Lowest Common Multiple of 14 and 6
11. Write the next two terms of this sequence: 3, 11, 19, 27…….	12. What is $\frac{3}{4}$ as a decimal?

WWW: Improvement shown on Questions:_____

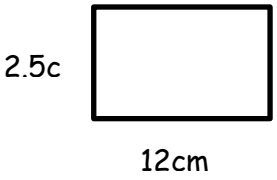
Sheet 4 continued

13. Calculate $\frac{1}{6} + \frac{13}{18}$

14. Find $\frac{4}{11}$ of 77

15. What is $\frac{12}{40}$ as a percentage?

16. Find the perimeter of this shape



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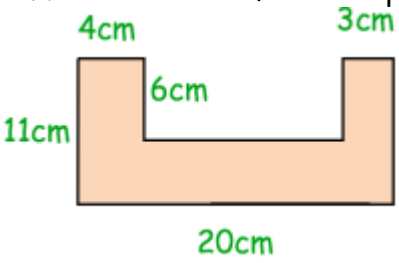
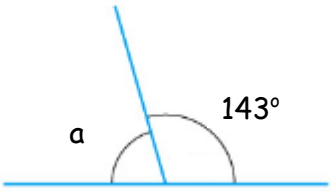


18. Find the missing angle



19. What fraction of the cars are green or blue?

Colour	Frequency
Blue	15
Green	8
Red	21
Yellow	3

20. Find the mean of these numbers:
6, 2, 5, 7, 1, 7

Feedback

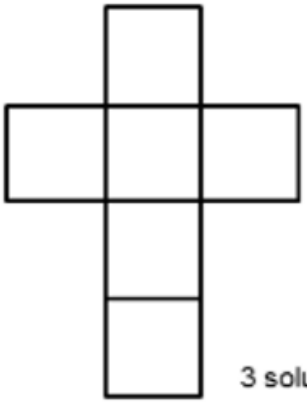
Mark (/20):_____ **EBI:** Use feedback to improve Questions_____

Assessment & Progress Record

Question		WWW	EBI
1.	Multiply by 10, 100 and 1000		
2.	Divide by 10, 100 and 1000		
3.	Round values to the nearest 10, 100 and 1000		
4.	Add numbers without a calculator		
5.	Subtract numbers without a calculator		
6.	Multiply numbers without a calculator		
7.	Divide numbers without a calculator		
8.	Use the correct order of operations for calculations		
9.	Find factor pairs of a number		
10.	Find Lowest Common Multiple of two numbers		
11.	Continue a linear sequence		
12.	Write a fraction as a decimal		
13.	Add fractions with different denominators		
14.	Find a fraction of an amount		
15.	Convert a fraction to a percentage		
16.	Calculate the perimeter of rectangles		
17.	Calculate the area of compound shapes		
18.	Find missing angles on straight lines		
19.	Interpret data in tables		
20.	Calculate the mean of a set of data		

Challenge 1

Using all the numbers 1, 2, 3, 4, 5 and 6 once only each can you put them in this grid so that the sum of the column (vertical) is the same as the sum of the row (horizontal)?



3 solutions

Challenge 2

Write down any 3 different single digit numbers.

Use these to make all the different 2 digit numbers that you can (no repeats like 33 etc.)

Find the sum of all the 2 digit numbers.

Find the sum of the three single digit numbers you chose.

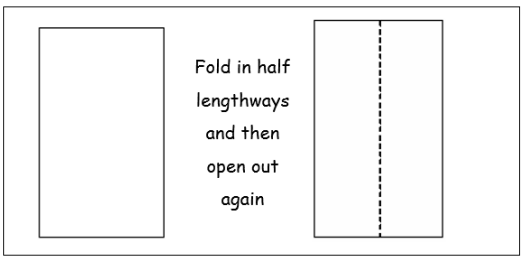
Divide the bigger number by the smaller one. What do you get?

Try it again with a different set of numbers. What happens?

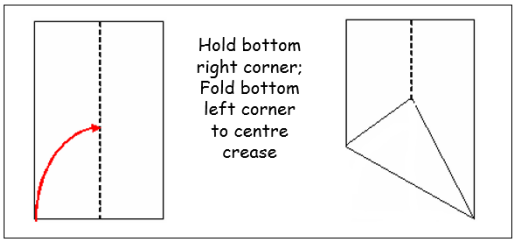
Challenge 3

Can you make an equilateral triangle out of a sheet of A4 paper? Try to follow the instructions below:

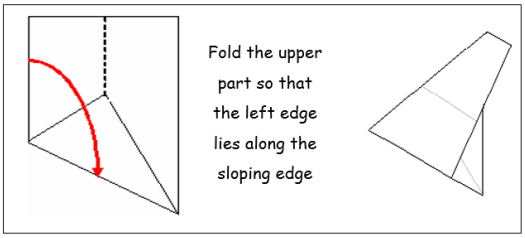
Equilateral Triangle Step 1



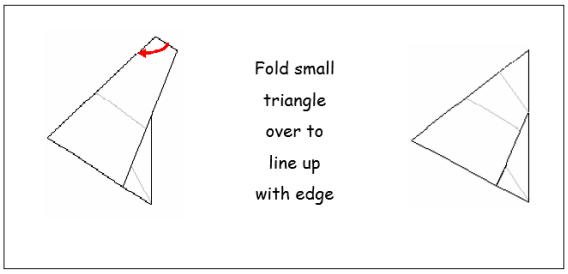
Equilateral Triangle Step 2



Equilateral Triangle Step 3



Equilateral Triangle Step 4



Challenge 4

A little monkey had 60 peaches.

On the **first** day he decided to keep **34** of his peaches.
He gave the rest away. Then he ate one.

On the **second** day he decided to keep **711** of his peaches.
He gave the rest away. Then he ate one.

On the **third** day he decided to keep **59** of his peaches.
He gave the rest away. Then he ate one.

On the **fourth** day he decided to keep **27** of his peaches.
He gave the rest away. Then he ate one.

On the **fifth** day he decided to keep **23** of his peaches.
He gave the rest away. Then he ate one.

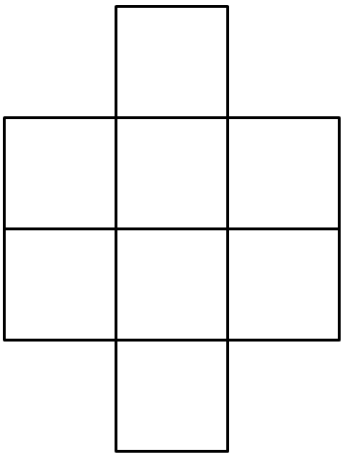
How many did he have left at the end?

Challenge 5

Use the numbers 1 to 8 to fill the spaces in this grid according to the following rules:

1. You have to use all the numbers from 1 to 8.
2. Each number can only be used once.
3. No 2 consecutive numbers can be next to (above or below, left or right, or diagonal from each other.)

   (For example 5 cannot be next to 6, 7 cannot be next to 8.)



Challenge 6

there are 30
rabbits (4 legs) and ducks (2 legs)
both together in a field

counting their feet,
there are 94 altogether

how many of each are there?