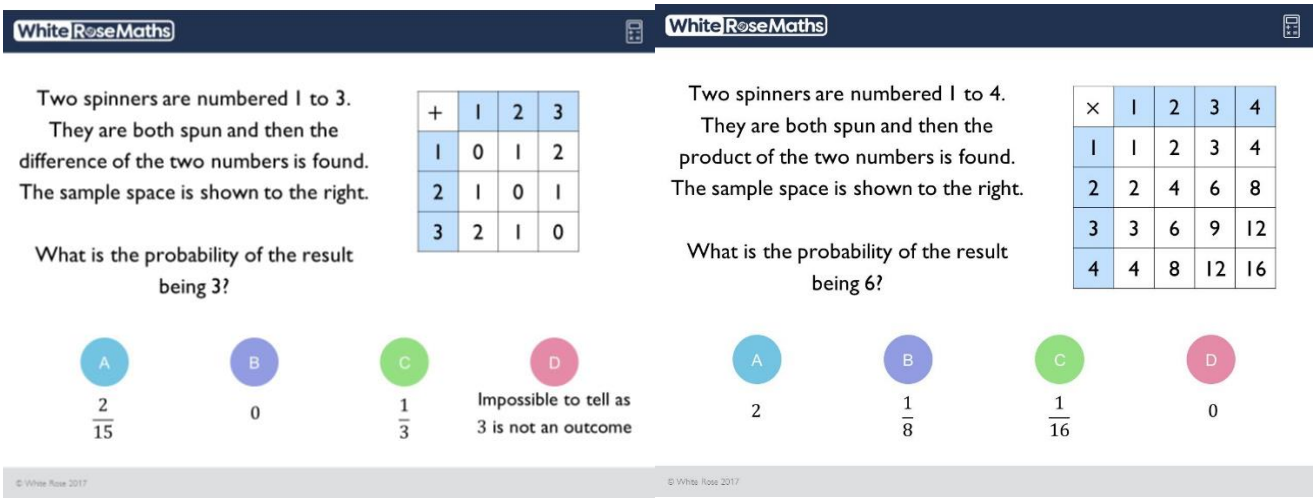
Probability part 2 – W/C 15th June 2020

Dear year 9,

I hope you are well and enjoying the new freedoms whilst staying safe ☺

We continue with the GCSE scheme of work; please make sure that you try your best on every task, keep up to date and remember that I am always here and happy to help!

Task 1: **Please answer these two diagnostic questions** in your class book to check your understanding on **sample space diagrams.:**



White Rose Maths

Two spinners are numbered 1 to 3. They are both spun and then the difference of the two numbers is found. The sample space is shown to the right.

What is the probability of the result being 3?

+	1	2	3
1	0	1	2
2	1	0	1
3	2	1	0

A $\frac{2}{15}$ B 0 C $\frac{1}{3}$ D Impossible to tell as 3 is not an outcome

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Two spinners are numbered 1 to 4. They are both spun and then the product of the two numbers is found. The sample space is shown to the right.

What is the probability of the result being 6?

×	1	2	3	4
1	1	2	3	4
2	2	4	6	8
3	3	6	9	12
4	4	8	12	16

A 2 B $\frac{1}{8}$ C $\frac{1}{16}$ D 0

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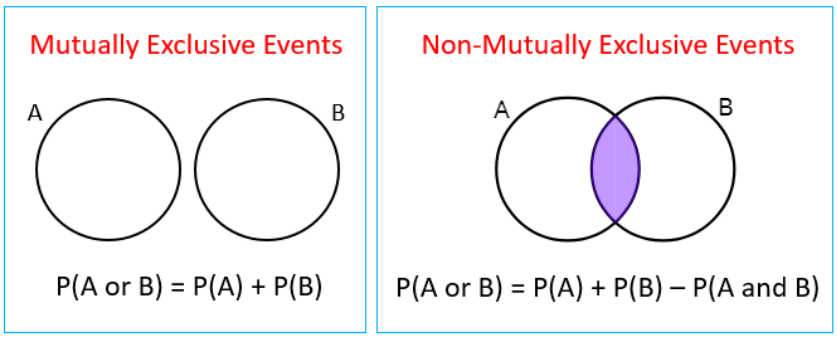
Ready for some fun Maths magic that you can use to impress your family and friends? Please watch this brilliant Numberphile video on the 21 card trick. See if you can master it, please let me know if you manage it, maybe you could even record yourself performing the trick?
https://www.youtube.com/watch?v=d7dg7gVDWyg

The Numberphile youtube channel is a wonderful thing to explore. I'd also like you to watch the following video on the classic 'Monty hall' dilemma. https://www.youtube.com/watch?v=4Lb-6rxZxx0 There are lots of other fantastic videos, perhaps find one that you like and send me an email to tell me what you enjoyed about it, I can then share some top tips with your classmates next week!

Task 2:

Last week you wrote up some key notes on the concept of ***mutually exclusive*** events. Please check your understanding by working through the Grade 3 and 4 Booster lesson and attached homework entitled **The Or Rule on Mymaths.** Please copy the key note below into your books, you may choose to write some extra key notes into your class book as you work through the Mymaths lesson ☺



Task 3:

Theoretical probability is what we ***expect*** to happen, whereas **experimental probability** is what actually happens when we conduct trials. Both values are still calculated the same way, using the number of possible ways an outcome can occur divided by the total number of outcomes. Please copy this key note into your books:

Experimental Probability vs. Theoretical Probability

Experimental Probability is found by repeating an experiment and observing the outcomes.

$$P(\text{event}) = \frac{\text{number of times event occurs}}{\text{total number of trials}}$$

Example:
A coin is tossed 10 times:
A head is recorded 7 times and a tail 3 times.

$$P(\text{head}) = \frac{7}{10}$$

$$P(\text{tail}) = \frac{3}{10}$$

Theoretical Probability is what is expected to happen based on mathematics

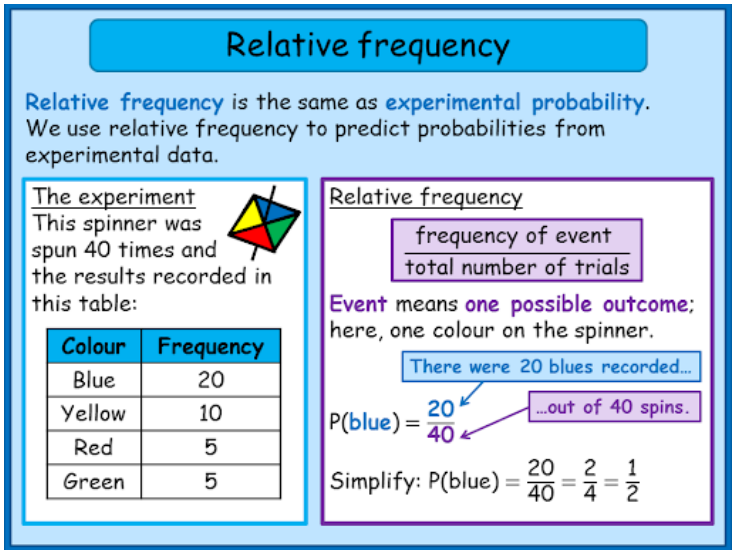
$$P(\text{event}) = \frac{\text{number of favorable outcomes}}{\text{total number of possible outcomes}}$$

Example:
A coin is tossed.

$$P(\text{head}) = \frac{1}{2}$$

$$P(\text{tail}) = \frac{1}{2}$$

The relative frequency of an event is defined as the number of times that the event occurs during experimental trials, divided by the total number of trials conducted; it is the SAME as the experimental probability! We use the relative frequency of events to make predictions. The more experimental trials the better as it will increase the reliability of the experimental probability! Please copy the following key note into your books:



Log onto your portal on **Mymaths** and complete the Grade 3 and 4 Booster lesson and homework that is set on **Relative Frequency**. You may choose to write some key notes into your class book.

Both diagnostic questions, both Mymaths tasks, key notes into books and exploring the probability links to be completed by Sunday 21st June. As always, if you have any difficulty then please get in touch with me via e-mail.

Sending very best wishes to you all,

Mrs Todd ☺