

Year 10 Maths Learning Journey

Spring Term 6

Proportion and proportional change: Probability

Core knowledge	Reference
Know how to add, subtract and multiply fractions (R) "Why do we ensure fractions have a common denominator before adding or subtracting?"	<u>WORKSHEET</u>
Find probabilities using equally likely outcomes (R) "What makes events equally likely to occur?"	<u>WORKSHEET</u>
Use the property that probabilities sum to 1 (R) "What does the word 'complement/union/intersect' mean? Where is this represented on the Venn diagram?"	<u>WORKSHEET</u>
Using experimental data to estimate probabilities "Why is experimental probability different from theoretical probability?"	<u>WORKSHEET</u>
Find probabilities from tables, Venn diagrams and frequency trees "How do we know which cell value is the denominator when calculating a probability from a two-way table?"	<u>WORKSHEET</u>
Construct and interpret sample spaces for more than one event (R) "How many outcomes will there be in total? How do we know?"	<u>WORKSHEET</u>
Calculate probability with independent events "Give an example of a pair of independent events. Give an example of a pair of events that aren't independent"	<u>WORKSHEET</u>
Use tree diagrams for independent events "What are the different methods for finding the probability of 'at least one'? Which is the most efficient?"	<u>WORKSHEET</u>
Use tree diagrams for dependent events "Give me an example of two events which are dependent."	<u>WORKSHEET</u>
Construct and interpret conditional probabilities (tree diagrams) (H) "Why do the probabilities change between trials? How do they change?"	<u>WORKSHEET</u>
Construct and interpret conditional probabilities (Venn diagrams and two-way tables) (H) "What does 'given' mean? Which part of the Venn diagram/two-way table does this refer to"	<u>WORKSHEET</u>

Learning Checkpoints

LC Title	Completed	Dirt
Percentages and interest		

Key Vocabulary:

Array: An arrangement of objects, pictures, or numbers in rows and columns

Conditional probability: the probability of an event (A), given that another (B) has already occurred.

Denominator: In the notation of common fractions, the number written below the line

Dependent events: Two events are dependent when the outcome of the first event influences the outcome of the second event.

Equally likely: In an experiment (trial in statistics) the result is the outcome.

Estimate: To arrive at a rough or approximate answer by calculating with suitable approximations for terms **Event:** A possible outcome of a statistical trial, for example 'heads' when a coin is tossed.

Exact value: Exact value is where you cannot estimate the value you must be precise

Expectation: Known as the product of the probability of an event occurring, denoted P(x), and the value corresponding with the actual observed occurrence of the event.

Expected value: In probability theory, the expected value is a generalization of the weighted average.

Frequency trees: a way of organising information. They can then be used to solve probability problems. **Given:** The term "given" in probability is associated with conditional probability. It simply means the

probability of an event, if the event has already happened.

Independent events: Two events are independent if the occurrence of one event does not affect the chances of the occurrence of the other event.

LCM - the common multiple of two of more numbers which has the least value

Numerator: in the notation of common fractions, the number written on the top – the dividend (the part that is divided).

Outcomes: The result of a statistical trial

Product: The result of multiplying one number by another.

Relative frequency: How often something happens divided by all outcomes.

Sample space: The sample space is the set of all possible outcomes of a trial. The sum of all the probabilities for all the events in a sample space is 1.

Show: To show is to use numbers to demonstrate a certain property

Simplest form: A fraction that has been reduced fully.

Systematic: Having a pattern or order to the way you work

Tree diagram: a way of showing combinations of two or more events. Each branch is labelled at the end with its outcome and the probability is written alongside the line.

Two way tables: A table in which the rows represent the categories for one category variable, the columns

AUB

A union B

Complement of B

AnB

A intersect B