Mathematics Knowledge Organiser

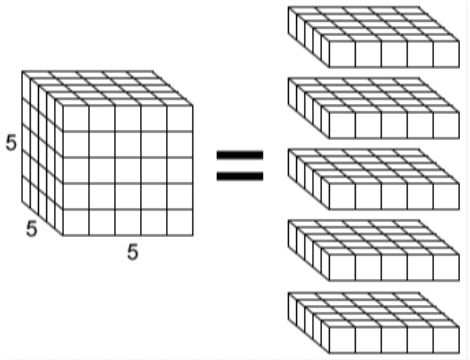
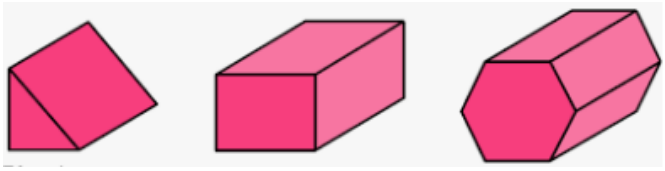
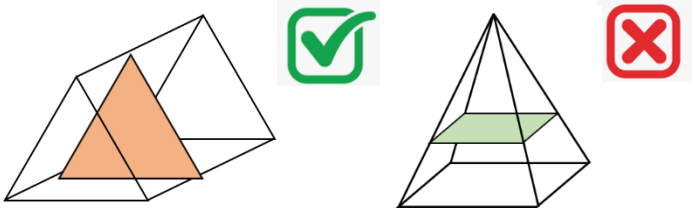
Year 9 – Summer T1

‘Volume’

The Knowledge for Progression:

- To know that volume of a prism = area of the cross-section x length.
- To know that volume is the number of cube units inside a 3D shape.

Speak Like a Mathematician

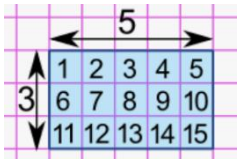
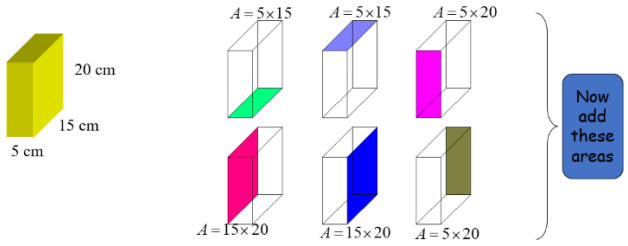
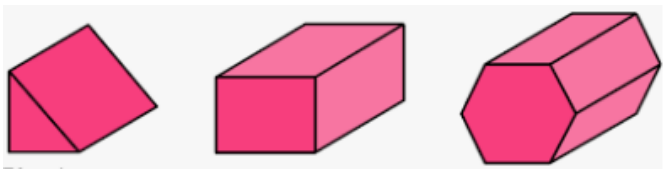
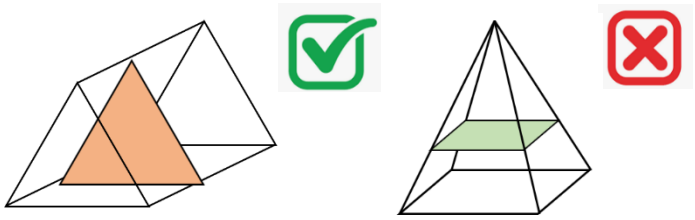
Key Word	Dual Coding	Definition
Volume		The number of cube units inside a 3D shape.
Prism		A 3D shape with a uniform cross section. The cross section is a polygon.
Uniform cross-section		The **same** face that runs through the length of a 3D shape.

‘Surface area’

The Knowledge for Progression:

- To know that surface area is the sum of the area of the faces of a 3D shape.
- To know that a face is a 2D side that makes up a 3D shape.
- To know that a prism is a 3D shape with a uniform cross section. The cross section is a polygon.
- To know that the uniform cross-section is the polygon that is runs throughout the prism.

Speak Like a Mathematician

Key Word	Dual Coding	Definition
Area		The space inside a 2D shape
Surface Area		The total area of all the faces of a 3D shape added
Prism		A 3D shape with a uniform cross section. The cross section is a polygon
Uniform cross-section		The **same** face that runs through the length of a 3D shape.

Mathematics Knowledge Organiser

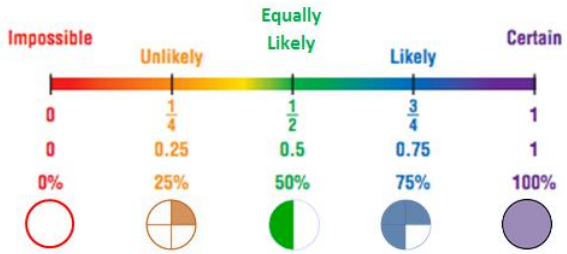
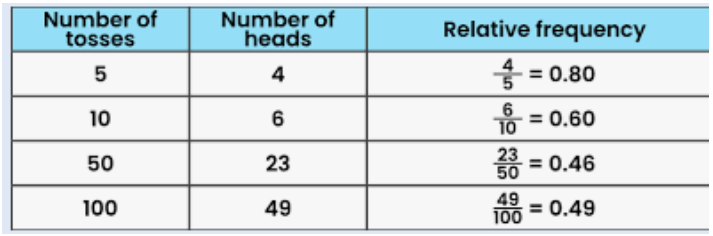
Year 9 – Summer T2

‘Probability’

The Knowledge for Progression:

- To know how to calculate a probability of an event occurring.
- To know how to complete a sample space diagram.
- To know how to calculate probabilities from tree diagrams.
- To know how to complete a probability tree diagram.
- To know how to calculate relative frequency.
- To know how to calculate the expectation of an event from its relative frequency.

Speak Like a Mathematician

Key Word	Dual Coding	Definition
Probability		The chance of an event happening
Relative Frequency		How often an event occures, divided by the total number of trials

‘Constructions’

The Knowledge for Progression:

- To know how to measure and draw line segments with a ruler accurately.
- To know how to measure and draw angles with a protractor accurately.
- To know how to use a compass accurately.