

Year 11F Term 1 - Multiplicative reasoning, Constructions, Loci and Bearings

Year group: 11H	Subject: Multiplicative reasoning, Constructions, Loci and Bearings
Prior learning- linked to National curriculum	
Rationale	
Vocabulary:	<p><u>Multiplicative reasoning:</u> Percentage, Increase, Decrease, Rate of Change, Growth, Decay, Compound</p> <p><u>Constructions, Loci and Bearings</u> Accurate, Plans, Elevations, Construction, Bi-sector, SAS,ASA, SSS, RHS, Loci, Bearings, Clockwise.</p>
Cultural Capital:	<p><u>Multiplicative reasoning:</u></p> <p><u>Constructions, Loci and Bearings:</u></p>
Key assessments- name the assessments	<p><u>Multiplicative reasoning:</u> Percentage change Growth and decay Compound Measures</p> <p><u>Constructions, Loci and Bearings</u> Plans and elevations Accurate drawings Constructions</p>

	<p>Loci Bearings Unit wrapper covering the above topics</p>
<p>What do children know/ can do now (EDSM)</p>	<p><u>Multiplicative reasoning:</u> Emerging students will understand the process of percentage change. In addition they will be able to calculate Speed, given distance and time.</p> <p>Mastered students will be able to apply the process of percentage change to real life situations, will be able to evaluate when a problem is a growth or decay problem and find any of; speed, distance or time, given the other two.</p> <p>Constructions, Loci and Bearings Emerging students will understand</p> <p>Mastered students will be able to apply</p>
<p>What amendments are you going to make following evaluation of this module?</p>	

TOPICS in RED- Grade 1 - 3

TOPICS in AMBER - Grade 4

TOPICS in GREEN - Grade 5

Multiplicative Reasoning

- Calculate a percentage profit or loss.
- Express a given number as a percentage of another in more complex situations.
- Find the original amount given the final amount after a percentage increase or decrease
- Find an amount after repeated percentage change.
- Solve growth and decay problems.
- Solve problems involving compound measures. With some green questions
- Convert between metric speed measures.
- Calculate average speed, distance and time.
- Use formulae to calculate speed and acceleration.
- Use ratio and proportion in measures and conversions.
- Use inverse proportions.

Constructions, Loci and Bearings

- **Recognise 3D shapes and their properties.**
- **Describe 3D shapes using the correct mathematical words.**
- **Understand the 2D shapes that make up 3D objects.**
- **Identify and sketch planes of symmetry of 3D shapes.**
- **Understand and draw plans and elevations of 3D shapes.**
- **Sketch 3D shapes based on their plans and elevations.**
- **Make accurate drawings of triangles using a ruler, protractor and compasses.**
- **Identify SSS, ASA, SAS and RHS triangles as unique from a given description.**
- **Identify congruent triangles**
- **Draw diagrams to scale.**
- **Correctly interpret scales in real-life contexts.**
- **Use scales on maps and diagrams to work out lengths and distances.**
- **Know when to use exact measurements and estimations on scale drawings and maps.**

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| <ul style="list-style-type: none">● Draw lengths and distances correctly on given scale drawings.● Accurately draw angles and 2D shapes using a ruler, protractor and compasses.● Construct a polygon inside a circle.● Recognise nets and make accurate drawings of nets of common 3D objects. |
| <ul style="list-style-type: none">● Draw accurately using rulers and compasses.● Bisect angles and lines using rulers and compasses. |
| <ul style="list-style-type: none">● Draw loci for the path of points that follow a given rule.● Identify regions bounded by loci to solve practical problems. |
| <ul style="list-style-type: none">● Find and use three-figure bearings.● Use angles at parallel lines to work out bearings.● Solve problems involving bearings and scale diagrams. |