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Curriculum Planning Template

Subject: Maths Year 10 Ability Foundation

Half Term 6 / weeks	**Week 1-2**	**Week 3-4**	**Week 5**	**Week 6**	
Topic	Unit 28 – Circles	Unit 29 – Direct Proportion and Ratio	Unit 30 – Vectors	Unit 31 – Tree Diagrams	Reteach and Retention
Topic overview **Pupils will learn…**	To handle all aspects of circle based areas and volume questions	To apply earlier ratio and proportion skills in context allowing amounts to be changed given ratios including currencies.	To use and understand vectors including basic proof	To draw and use tree diagrams to find and identify probabilities of events	Focus on the process of reteach and retention, knitting together the learning in reaction to the assessments completed
Components	• To label parts of a circle. • To calculate the area and circumference of a circle. • To calculate the area and perimeter of sectors. • To calculate the volume and surface area of a sphere. • To calculate the volume and surface area of a cylinder.	• To simplify ratio • To express ration in the form 1:n and n:1. • To divide an amount into a given ratio. • To use direct proportion to solve problems. • To convert currencies. • To set up problems involving direct or inverse proportion. • To use graphs to solve direct and inverse proportion problems.	• To use vector notation. • To draw a column vector. • To calculate the sum or difference of two vectors. • To combine vectors by addition. • To be able to find the magnitude of a vector.	• To draw a probability tree diagram. • To use a tree diagram to calculate conditional probability. • To use and draw probability tree diagrams without replacement.	Staff complete a program of adaptive reteaching on specific topics based on the individual/class needs within their groups. Regular assessments are used to identify gaps in learning. Any gaps found are then addressed in lessons to help support learning and retention. Clear areas for improvement are monitored by individual staff and at a departmental level.
What pupils should already know (prior learning components)	Students should know the formula for calculating the area of a rectangle. Students should know how to use the four operations on a calculator.	Students should know the four operations of number. Students should have a basic understanding of fractions as being ‘parts of a whole’.	Students will have used vectors to describe translations and will have knowledge of Pythagoras’ Theorem and the properties of triangles and quadrilaterals.	Students should know how to add and multiply fractions and decimals. Students should have experience of expressing one number as a fraction of another number.	All the half term content will have been covered by this point. Staff will use departmental tracking documents to analyse the gaps in learning from the most recent assessments and all previous assessments. The ability to structure and breakdown a problem-solving question as exemplified in the TFI questions throughout the course.
Transferrable knowledge (skills)	The topic will build pupils’ confidence with basic shape and the use of basic formula. These skills will be used again when asked to complete multistep area and	The handling ratios is revisited throughout KS4 with many multi step questions incorporating this skill. This unit looks at all of these skills cementing this knowledge with a	The basic vector skills looks to allow visual representations of mathematical ideas to be seen and the use of Pythagoras and trig will be revisited. Proof elements of this unit	This builds on the basic probability covered earlier and a emphasis should be given to notation to support work on sets and further probability later in KS4.	This activity should serve to highlight and address areas of weakness in teaching and learning or retention. This early intervention to understand

	volume questions and in density. The use of exact value of pi continues the use of accuracy in answers that builds on the work including surds.	focus on currency at the end of the unit that is a life skill.	remind students of what is needed for mathematical proof and how a reasoned response is needed for a rigorous proof		specific key areas for improvement or development. This should help to build confidence and improve students' ability to answer these and directly sequential problems.
Key vocabulary pupil will know and learn	Circles, Centre, Radius, Diameter, Chord, Tangent, Circumference, Arcs, Sectors, Segments, Area, Pi form, Volumes, Surface area, Spheres, Cylinders,	Divide, Share, Ratios, Simplify, Express, Ratios, Direct proportion, Exchange rates, Currency, Inverse proportion, Graphs,	Vectors, Notation, Colum vectors, Magnitude, Scalar, Substitution, Pythagoras,	Tree diagram, Probability, Conditional, Unconditional, Replacement,	
Assessment activities	Year 10 Half Term Test 13 Homework 28 – Circles	Year 10 Half Term Test 13 Homework 29 – Direct Proportion and Ratio	Year 10 Half Term Test 13 Homework 30 – Vectors	Year 10 Half Term Test 13 Homework - 31 – Tree Diagrams	AFL and adaptive teaching will continue to support staff to assess the address areas.
Resources available	Maths watch clips: 116, 117, 118, 149, 167, 169	Maths watch clips: 40, 41, 42, 105, 106, 107, 199	Maths watch clips: 174, 219	Maths watch clips: 59, 151, 175	Before any assessments are completed, revision and guidance materials are provided for students to assist in independent study.
Notes **Why this topic is important…**	The unit starts with the recap of basic areas and volumes before moving to spheres and cylinders. This should include partial spheres and then into prisms. Questions including "melting down" should also be looked at to support density style questions.	Students move through a series of ratio basis skills including simplification and sharing. Students should be able to move forward and back through these differ questions to aloe students to use these skills in later multistep questions. The unit should look at currency and the changing and comparison of "value" when purchasing as a life skill to end the unit.	This unit starts with students understanding the idea of column form for vectors that should have first been seen in transformations. This use if the vector form should be both developed through diagrammatic and calculations to find resultant vectors and the vector comments of magnitude and direction. The unit fishes with vector proof with students requiring to understand vector paths and the implications this has.	Students should recap probability notation before being introduced to simple tree diagrams with replacement. A clear emphasis of the and or rules should be shared with students ensuring the notation is again stressed before moving to no replaced and conditional probabilities. Discussions of the best way to draw diagrams should be given to allow students to plan out the "end results" before starting the visual problem.	This is an important point in the curriculum plan that enables individual teachers to review the gaps in learning for the classes they teach. The half-termly assessments are used to track students' progress and enable teachers to react quickly to any gaps in knowledge and prepare students for the next assessment. The feedback and modelling of the exam answers enables students to pick up exam techniques and the ability to communicate effectively.