

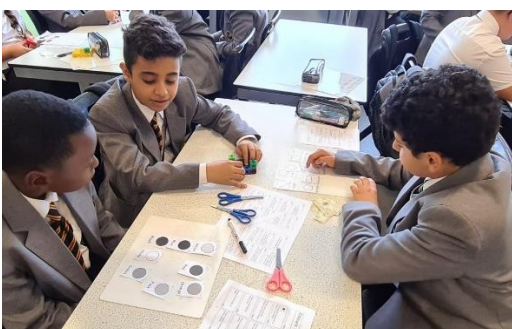
## Mathematics

Our core purpose at KS4 is to deliver an engaging and challenging curriculum through outstanding teaching and learning. We aim to give students the best opportunities to learn the KS4 curriculum, to have the best possible outcomes for their GCSE examinations in Year 11 and to make them confident and responsible members of the school and the wider community.

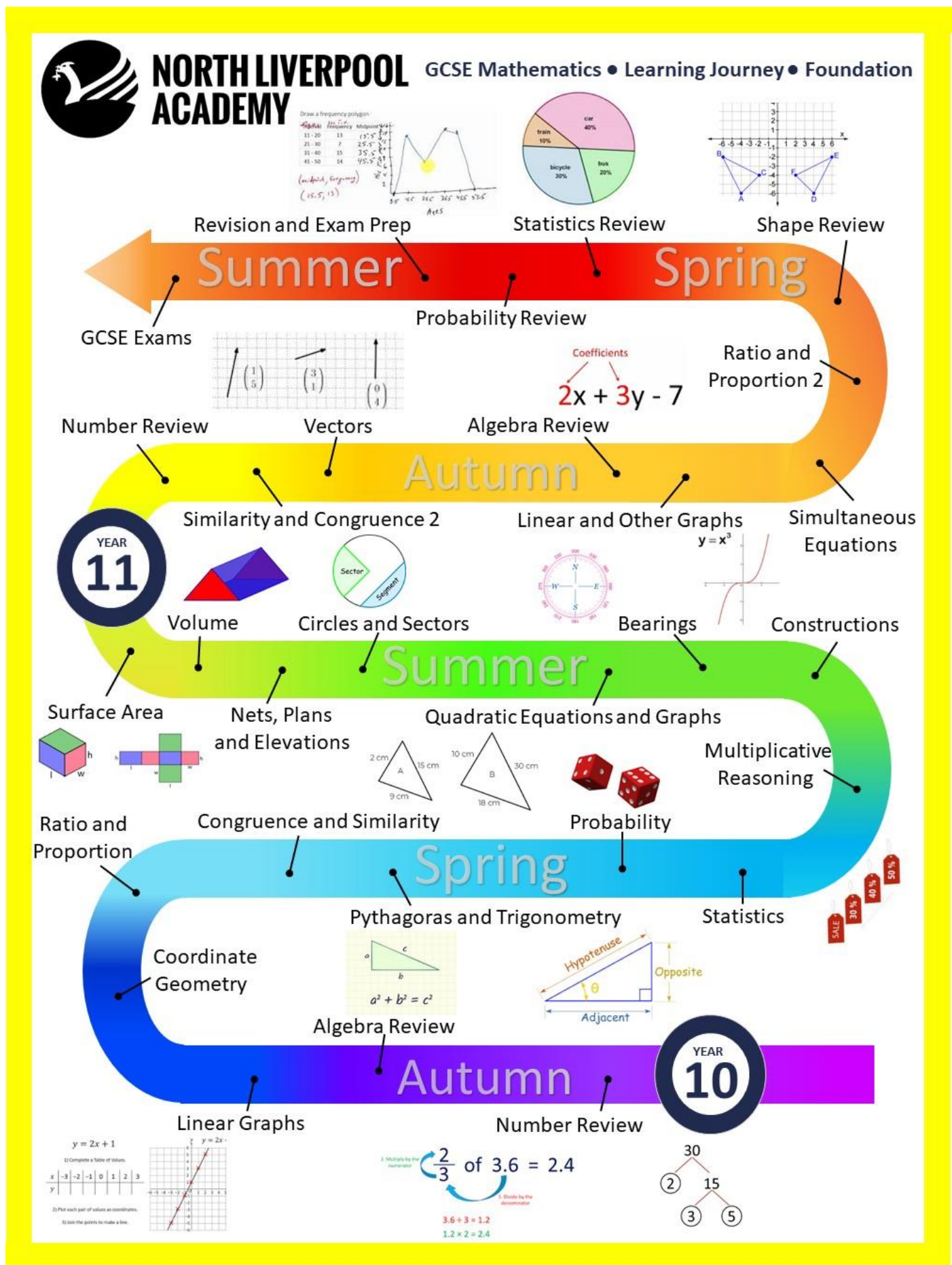


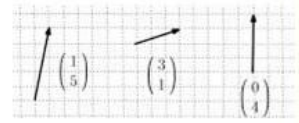
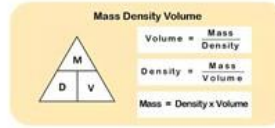
We follow Pearson Edexcel GCSE (9-1) which aims to provide evidence of students' achievements against demanding and fulfilling content. We provide a strong foundation for further academic and vocational study and for employment, and aim to give students the appropriate mathematical skills, knowledge and understanding to help them progress to a full range of courses in further and higher education.

The Maths curriculum allows students to build the knowledge, skills and understanding whilst engaging in team work activities, maths treasure trails, competitions and contextual problem solving. Students participate in workshops from external providers such as FMSP and the University of Liverpool.



The curriculum path is differentiated to either Higher or Foundation and also within topics in order to match the pace and challenge with the needs of the students and their learning journeys enable them to cover a wide variety of topics as they progress along the learning path:





### Summer

Revision and Exam Prep

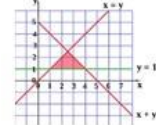
Ratio and Proportion Review

Vectors

GCSE Exams



Probability and Statistics Review



Geometry Review

Transforming Functions

Number Review

Algebra Review

Inequalities and Regions

### Autumn

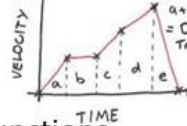
YEAR 11

Surds and Indices

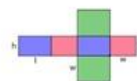
$$\sqrt{5} \times \sqrt{7} = \sqrt{35}$$

$$\sqrt{5} \times \sqrt{5} = \sqrt{25} = 5$$

Velocity Time Graphs



Distance Travelled



Algebraic Proofs

Surds and Indices

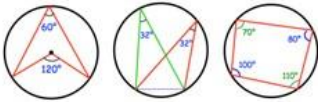
Functions

Perimeter, Area, Volume

Statistics

### Summer

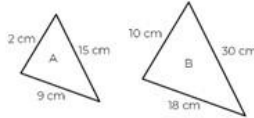
Circle Theorems



Iteration

Algebraic Fractions

Multiplicative Reasoning



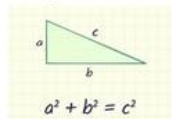
Ratio and Proportion

Congruence and Similarity

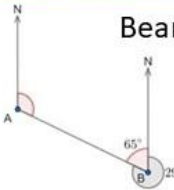
Trigonometry

### Spring

Pythagoras' Theorem



Bearings and Constructions



Fractions and Decimals

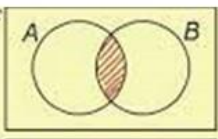
Quadratic Equations

YEAR 10

Probability

Linear Equations

$A \cap B$



$$\begin{array}{r} 2x + 2y = 16 \\ -(x + 2y = 13) \\ \hline x = 3 \end{array}$$

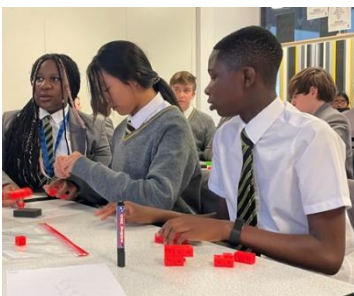
The maths topics covered in the scheme of work are as follows and are differentiated to meet the needs of the students, whilst ensuring that every child is challenged and stretched and can meet their full potential:

### Year 10

Linear Equations  
Quadratics  
Probability  
Fractions and Decimals  
Ratio and Proportion  
Congruence and similarity  
Pythagoras and Trigonometry  
Nets, Surface Area, Bearings and constructions  
Multiplicative Reasoning  
Statistics Review  
Perimeter, Area and Volume  
Algebraic fractions  
Iteration  
Surd and Indices  
Circles, Sectors and Cylinders

### Year 11

Number Review-retention, embed, stretch and problem solve  
Similarity, Congruence and Vectors  
Algebra Review-retention, embed, stretch and problem solve  
Ratio Proportion Review-retention, embed, stretch and problem solve  
Shape Review-retention, embed, stretch and problem solve  
Probability Review-retention, embed, stretch and problem solve  
Statistics Review-retention, embed, stretch and problem solve



## Learning through Experiences in Maths

In order to enhance the provision of Maths beyond the curriculum, our students benefit from the following experiences:

- Various ASMP talks: How maths is used in different roles, Space!, Maths is everywhere
- University of Liverpool Maths Club (monthly)
- UKMT Maths challenge individual and team
- Liverpool Maths Society lectures
- MEM Maths challenges individual and team

- ASMP Maths Feast
- Maths Inspiration show
- Bespoke support from Martin Bamber
- SAM festival
- External speakers for specific Maths careers

