Bishop Heber High School

Subject	Year	Term
Further Maths	12	1

Topic

Complex Numbers, Roots, Series, Matrices, Algorithms & Graph Theory, Linear Programming

Content (Intent)

Prior Learning (Topic) GCSE

- What a complex number is and how to perform calculations involving them.
- Perform calculations involving matrices & understand their uses in solving geometrical problems
- Roots of polynomials
- Sums of series
- Introduction to Algorithms
- Using linear programming to solve problems

Future Learning (Topic) Proof, Vectors, Volumes of Revolution, Critical Path Analysis, Allocation Problems, Flows in Networks, Game Theory

What Knowledge and Skills will be taught (Implementation)	How will your understanding be assessed & recorded (Impact)
• Understand the modulus & argument • Perform arithmetic with complex numbers • Understand the properties of roots of polynomials • Understand sigma notation and use formulae to sum certain series	Formal Homework (Core Maths & Decision Maths) Ongoing self-assessment
• Understand what an algorithm is and how to use them to solve sorting problems, find shortest routes and minimum connectors	
• How to plot a complex number on an Argand Diagram and solve loci problems • Perform matrix arithmetic and calculate inverses	Formal Homework (Core Maths & Decision Maths) Ongoing self-assessment **Summative Assessment 1**
• Use algorithms to solve route inspections problems • Write inequalities to fit real-life problems, solve and represent them graphically	

How can parents help at home?

Formal Homework (Core Maths & Decision Maths)
Encourage use of MyMaths
Ongoing self-assessment

Helpful further reading/discussion (including Reading and Vocabulary Lists)

Reading

Textbooks (ISBN)

Core Pure Mathematics Book 1: 9781292183336
Decision Mathematics 1: 9781292183299
Decision Mathematics 2: 9781292183305

Website: https://qualifications.pearson.com/en/qualifications/edexcel-a-levels/mathematics-2017.html#tab-AlevelFurtherMathematics

Vocabulary Lists

Modulus
Traversable
Argument
Isomorphic
Conjugate
Eulerian
Determinant
Algorithm