Bishop Heber High School

Subject	Year	Term
Further Maths	**13**	**2**

Topic

Further Calculus, Differential Equations, Transportation & Allocation Problems, Flows in Networks, Dynamic Programming, Decision Analysis, Game Theory

Content (Intent)

Prior Learning (Topic) Complex Numbers, Polar Co-ordinates, Algorithms on Graphs, Series, Hyperbolic Functions, Linear Programming, Critical Path Analysis

- Calculus involving inverse trigonometric functions
- Transportation Problems and Allocation Problems
- Dynamic Programming
- Decision Analysis
- More complex integration problems

Future Learning (Topic) Differential Equations, Game Theory, Recurrence Relations

What Knowledge and Skills will be taught (Implementation)	How will your understanding be assessed & recorded (Impact)
• Further develop integration skills to deal with undefined values, use partial fractions and calculate the mean value of a function • Differentiate inverse trigonometric functions and integrate using trigonometric substitution • Calculate volumes of revolution about both the x and y-axes for more complex functions	**Mock Exams** Formal Homework (Pure Maths & Decision Maths) Ongoing self-assessment
• Find solutions to transportation problems using the North West Corner & Stepping Stone Methods • Formulate both transportation problems & allocation problems as linear programming problems	
• Find general and particular solutions of first order differential equations by using an integrating factor • Solve second order differential equations of the form y'' + ay' + by = f(x) where f(x) is a polynomial, exponential or trigonometric function	Formal Homework (Pure Maths & Decision Maths) Ongoing self-assessment
• understand the terminology and principles of dynamic programming & use to solve problems presented in network or table form • Construct and use a decision tree, and calculate expected monetary values • Reduce a pay-off matrix using a dominance argument and determine optimal strategies	

How can parents help at home?

Check assessment record in formal assessed homework books.
Encourage use of MyMaths

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

Textbooks (ISBN):
Core Pure Mathematics Book 2: 9781292183343
Decision Mathematics 1: 9781292183299
Decision Mathematics 2: 9781292183305
Website: https://qualifications.pearson.com

Vocabulary Lists
Dummy
Degeneracy
Unbalanced
Discontinuous
Sources
Sinks
Capacity
Node
Definite