Curriculum Journey - Computing

Holyhead
Teach What Matters

Year 13 Computer Science

Revision

3.0 Programming project
Analysis of the problem - Design of the solution - Developing the solution - Evaluation

2.2 Problem solving and programming
Programming techniques - Computational methods

2.3.1 Algorithms
Big O notation - stacks - queues - trees - linked lists - depth-first (post-order) and breadth-first traversal of trees

2.1 Elements of computational thinking
Thinking abstractly - Thinking ahead - Thinking procedurally - Thinking logically - Thinking concurrently

2.3.1 Algorithms
Sorting and Searching algorithms - Dijkstra's shortest path algorithm - A* algorithm

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Knowledge	Attributes / Character	Skills	Experiences

• NEA Programming project
• Elements of computational thinking
• Problem solving and programming
• Algorithms
	• Confidence
	  ○ Praise effort
	  ○ Embrace challenging learning
	  ○ Autonomy and decision-making
	  ○ Oracy - Turn and Talk, Think, Pair, Share
	• Organisation
	  ○ Handbook
	  ○ Folder checks
	  ○ PLC
	  ○ Regular use of Google classroom
	• Resilience
	  ○ Developing problem solving skills
	• Empathy
	  ○ Group work
	  ○ Peer assessment
		• Computational thinking
		• Problem solving
		• Mathematics relevant to computer science
		• Literacy
		  ○ Use of key terminology in technical writing
		• Creativity
		• Planning
		• Attention to detail
		• Organisation
		• Design for purpose
		• Communication for various audiences
		• Time management
			• Opportunities to develop programming skills
			• Visit to Bletchley Park
			• Bebras Challenge