

Our Lady Queen of Peace

Catholic High School

Curriculum Overview

Year 8 Computing

Careers

Local Market Information

BAE Systems
Microsoft
Apple

Skills

Communication
Teamwork
Problem Solving
Time Management
Creativity
Resilience
Computational thinking
Critical Thinking

Jobs

Software Engineer
Ethical hacker
Information Security officer
Web Developer
Software developer
Cryptographer
Digital Forensic Investigator.

Knowledge & Understanding

Subject Specific Literacy Development

Cultural Capital / Enrichment Opportunities

Topics (Bigger Picture)

Knowledge (Key Concepts)

Recall & Retrieval Practice Focus

Key Vocabulary

Half Term 1 Computational thinking and Problem Solving

Computational thinking

Decomposition
Pattern Recognition
Abstraction
Algorithms
Problem solving strategies

Key word definitions

This topics keywords,
Last topic key words._

Misconceptions

Students will be questioned on common misconceptions identified in previous lessons and work produced. Quiz style questions and mini whiteboard activities.

Freya Models

Students to complete Freya models activity linked to keyword taught in previous lessons or previous topics.

Flowcharts and Algorithms

Flowcharts symbols
Sequence
Decision
Inputs and outputs
Algorithm design

Pseudocode and problem solving

Writing Pseudocode
Breaking down problems
Testing Solutions
Refining Algorithms.

Computational Thinking,
Decomposition,
Pattern Recognition,
Abstraction,
Algorithm, Problem, Solution, Process, Logic, Strategy, Flowchart, Algorithm, Sequence, Decision, Input, Output, Process, Symbol, Start, End

Mega Days
Extra-Curricular Activities
Personal Development Day visitors.

	Knowledge & Understanding			Subject Specific Literacy Development	Cultural Capital / Enrichment Opportunities
	Topics (Bigger Picture)	Knowledge (Key Concepts)	Recall & Retrieval Practice Focus	Key Vocabulary	
Half Term 2 Python Programming	Variables and Data Types	Variables Inputs and outputs Data Types Writing simple programs	<u>Key word definitions</u> This topics keywords, Last topic key words._ <u>Misconceptions</u> Students will be questioned on common misconceptions identified in previous lessons and work produced. Quiz style questions and mini whiteboard activities. <u>Freya Models</u> Students to complete Freya models activity linked to keyword taught in previous lessons or previous topics.	Python, Variable, Input, Output, String, Integer, Float, Data Type, Syntax, Selection, Iteration, If, Else, Loop, For Loop, While Loop, Boolean, List, Function	
	Selection and Iteration	If Statements FOR loops WHILE loops Decision Making			
	Lists and Functions	Lists Functions Modular programming Testing and Debugging			
Half Term 3 Spreadsheet Modelling and data Analysis	Advanced Formulae	IF Statements Formulae Functions Cell Referencing	<u>Key word definitions</u> This topics keywords, Last topic key words._ <u>Misconceptions</u> Students will be questioned on common misconceptions identified in previous lessons and work produced. Quiz style questions and mini whiteboard activities. <u>Freya Models</u> Students to complete Freya models activity linked to keyword taught in previous lessons or previous topics.	Spreadsheet, Formula, Function, IF Statement, Cell Reference, Absolute Reference, Relative Reference, Calculation, Data, Model, Analysis, Data, Trend, Chart, Graph, Visualisation, Interpretation, Dataset, Filter, Sorting., Budget, Forecast.	
	Data Analysis	Analysing Data Creating Charts Identifying Trends Interpreting Information			
	Financial Modelling	Budgets Forecasting Scenario Planning Decision Making			
Half Term 4 Imedia Comic Books creation	Comic Conventions	Purpose of comics Audience Layout Visual Storytelling	<u>Key word definitions</u> This topics keywords, Last topic key words._	Comic, Audience, Storyboard, Narrative, Layout, Panel, Speech	

	Knowledge & Understanding			Subject Specific Literacy Development	Cultural Capital / Enrichment Opportunities
	Topics (Bigger Picture)	Knowledge (Key Concepts)	Recall & Retrieval Practice Focus	Key Vocabulary	
	Creating a comic Book	Planning pages Combining text and images Design Principles Copyright awareness	<u>Misconceptions</u> Students will be questioned on common misconceptions identified in previous lessons and work produced. Quiz style questions and mini whiteboard activities. <u>Freya Models</u> Students to complete Freya models activity linked to keyword taught in previous lessons or previous topics.	Bubble, Caption, Character, Genre, Copyright, Typography, Design, Image, Text, Layout, Visual Communication, Content, Graphic, Composition, Evaluation, Feedback	
	Evaluating digital products	Reviewing work Gathering feedback Improving designs Fitness for purpose			
Half Term 5 Emerging technologies	Artificial Intelligence	What AI is Machine Learning Real-world Applications Benefits and risks	<u>Key word definitions</u> This topics keywords, Last topic key words._ <u>Misconceptions</u> Students will be questioned on common misconceptions identified in previous lessons and work produced. Quiz style questions and mini whiteboard activities. <u>Freya Models</u> Students to complete Freya models activity linked to keyword taught in previous lessons or previous topics.	Artificial Intelligence, AI, Machine Learning, Algorithm, Data, Automation, Model, Prediction, Training Data, Bias, Virtual Reality, Augmented Reality, VR, AR, Environment, Interaction, Technology, Ethics, Privacy, Security.	
	Virtual Reality and Augmented Reality	VR and AR Immersive technologies Real-world applications Future developments			
	Ethics and Future of Technology	Ethical Issues Privacy Security Future Careers			
Half Term 6 Digital interfaces and user experience	What makes a good interface?	User needs Accessibility Interface design User experience	<u>Key word definitions</u> This topics keywords, Last topic key words._	Interface, User Experience, UX, Accessibility, Audience, Navigation, Layout,	
	Wireframing and planning	Planning layout	<u>Misconceptions</u>		

	Knowledge & Understanding			Subject Specific Literacy Development	Cultural Capital / Enrichment Opportunities
	Topics (Bigger Picture)	Knowledge (Key Concepts)	Recall & Retrieval Practice Focus	Key Vocabulary	
		User journeys Wireframes Structure	Students will be questioned on common misconceptions identified in previous lessons and work produced. Quiz style questions and mini whiteboard activities. <u>Freya Models</u> Students to complete Freya models activity linked to keyword taught in previous lessons or previous topics.	Design, Functionality, Consistency, Prototype, Evaluation, Feedback, Testing	
	Creating and evaluating prototypes.	Design Solution Testing Interfaces Gathering feedback Refining designs.			

Key Assessments			
When	What will be assessed?	Why is this being assessed?	How will results be stored & students receive feedback?
Half Term 1	Key Piece – Flowchart Solution to a Real-World Problem: Demonstrate decomposition, algorithm design, use of flowchart symbols and logical problem-solving skills. Assessment Skills: Problem Solving, Computational Thinking, Logical Reasoning, Algorithm Design, Evaluation.	To understand starting points in Year 7 students. To identify misconceptions or gaps in knowledge that need to be retaught and where 1:1 support is needed.	Students will self-assess their work by going through the checklist given at the start of the activity.
Half Term 2	Key Piece – Python Adventure Game: Demonstrate programming skills using variables, selection, iteration, lists and functions to create an interactive game. Assessment Skills: Programming, Computational Thinking, Debugging, Problem Solving, Creativity.	To develop a good understanding of what students already know from KS2. To identify misconceptions or gaps in knowledge that need to be retaught and where 1:1 support is needed.	Students will self-assess their work going through the answers as a class.
Half Term 3	Key Piece – Event Budget Spreadsheet Model: Demonstrate the use of advanced formulae, data analysis and financial modelling to solve a real-world problem. Assessment Skills: Data Analysis, Spreadsheet Skills, Problem Solving, Numerical Reasoning, Evaluation.	To identify misconceptions or gaps in knowledge that need to be retaught and where 1:1 support is needed. To get a clear understanding of knowledge students have come with from KS2.	
Half Term 4	Key Piece – Digital Comic Book: Demonstrate understanding of visual communication, audience requirements, design principles and digital content creation. Assessment Skills: Creativity, Communication, Design, Planning, Evaluation.	To identify misconceptions or gaps in knowledge that need to be retaught and where 1:1 support is needed. To develop students writing skills and ensuring they are able describe and explain an answer in full.	Students will self-assess their own assessments going through the questions as a class. Key Piece will be marked by the teacher and feedback will be given through Teams.
Half Term 5	Key Piece – Emerging Technology Presentation: Demonstrate understanding of modern technologies, their applications and their impact on society. Assessment Skills: Research, Communication, Critical Thinking, Evaluation, Digital Literacy.	To identify misconceptions or gaps in knowledge that need to be retaught and where 1:1 support is needed. Develop students' confidence when presenting and Oracy skills when giving feedback to their peers.	Students will receive verbal feedback from both the teacher and their peers.
Half Term 6	Key Piece – Mobile App Interface Prototype: Demonstrate understanding of user needs, interface design, accessibility and user experience principles.	To identify misconceptions or gaps in knowledge that need to be retaught and where 1:1 support is needed.	Students will self-assess their own assessments going through the questions as a class.

	Assessment Skills: Design, Creativity, Communication, Evaluation, User-Centred Thinking.	To develop students writing skills and ensuring they are able describe and explain an answer in full.	Key Piece will be marked by the teacher and feedback will be given through Teams.
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