CURRICULUM MAP – Information Technology/Computing

KEY STAGE 5

SUMMER 2
Computer science
To effectively prepare for your Computer Science exam and fill in any knowledge gaps, it's essential to focus on key topics such as algorithms, programming, and data structures.
IT User skills
Review past exam papers to become familiar with the format and types of questions. Develop effective time management, note-taking strategies, and techniques for answering multiple-choice and open-ended questions.

SUMMER 1
Computer science
To effectively prepare for your Computer Science exam and fill in any knowledge gaps, it's essential to focus on key topics such as algorithms, programming, and data structures.
IT User skills
Understand how to organize files and folders systematically on local drives and cloud services like OneDrive or Google Drive. Learn about different file formats, compression methods, and backing up data securely.

SPRING 2
Computer science
To effectively prepare for your Computer Science exam and fill in any knowledge gaps, it's essential to focus on key topics such as algorithms, programming, and data structures.
IT User skills
Review past exam papers to become familiar with the format and types of questions. Develop effective time management, note-taking strategies, and techniques for answering multiple-choice and open-ended questions.

SPRING 2
COMPUTER SCIENCE –
Develop your Python programming skills by mastering core concepts such as variables, data types, control structures (loops and conditionals), and functions. Apply these concepts to solve problems and write programs, preparing for more advanced projects or controlled assessments involving Python.
IT User Skills Design software
Students will learn how to create and edit digital media products such as images, audio, and video. They will focus on technical skills as well as understanding audience needs and copyright considerations.

SUMMER 1
Computer Science: Python Assessment
Begin working on a controlled assessment project using Python programming, applying programming concepts to solve a defined problem. Concentrate on writing efficient code, debugging, and thoroughly testing your program while documenting your development process to meet assessment criteria.
IT User Skills: Improving productivity using IT Part 1
This unit helps students plan and organise tasks by selecting the most efficient IT tools for the job. They will begin to evaluate their own choices and reflect on how IT supports productivity.

SUMMER 2
COMPUTER SCIENCE –
Focus on completing a controlled assessment project using the Python programming language. Develop problem-solving skills by designing, coding, testing, and evaluating a program that meets specific criteria, demonstrating proficiency in Python syntax and programming concepts.
IT USER SKILLS Improving productivity using IT Part 2.
Students will apply their knowledge to complete a project that requires effective use of multiple IT applications. They will review their work, identify improvements, and justify how their use of IT increased efficiency.

Y11

AUTUMN 1
Computer science (NA 24/25)
Study the fundamentals of computer networks, including the purpose and types of networks such as LANs and WANs. Learn about various network topologies (bus, star, ring, mesh) and understand their layouts, advantages, and disadvantages in real-world applications.
IT User skills
Review and refine previous controlled assessments by incorporating feedback to improve coding practices and problem-solving skills. Concentrate on project planning, documentation, and testing to elevate the quality of your coursework for higher achievement.

AUTUMN 2
Computer science
To excel in your Computer Science exam, it's important to thoroughly review core concepts such as algorithms, programming, data structures, and system architecture. Identifying any gaps in your understanding early allows you to focus your revision on those areas. Regularly practising problem-solving and coding will also build your confidence.
IT User skills
Review and refine previous controlled assessments by incorporating feedback to improve coding practices and problem-solving skills. Concentrate on project planning, documentation, and testing to ele vate the quality of your coursework for higher achievement.

SPRING 1
Computer science
To effectively prepare for your Computer Science exam and fill in any knowledge gaps, it's essential to focus on key topics such as algorithms, programming, and data structures.
IT User skills
sharpening IT user skills like word processing, spreadsheets, and presentations will enhance practical performance. For Controlled Assessments, aim to level up your skills by practising code efficiency, refining project documentation, and troubleshooting errors.

SPRING 1
COMPUTER SCIENCE –
Explore the fundamentals of cyber security, including common threats like malware, phishing, and hacking techniques. Learn about protective measures such as encryption, firewalls, secure passwords, and the importance of ethical practices to safeguard digital information and systems.
IT User Skills: Specialist software Part 2
Students will build on their previous work by applying specialist software to complete more advanced tasks. They will develop confidence in choosing the right tools and techniques for specific purposes.

AUTUMN 2
Computer Science: Computer Systems
Study the core components of computer systems, including hardware (CPU, memory, storage devices) and software (operating systems, applications). Learn how these components interact to perform computing tasks, understanding concepts like data processing, system architecture, and the binary system that underpins computer operations.
IT User Skills: Specialist software Part 1:
This unit introduces students to specialist software used in real workplace settings, such as design, publishing, or project tools. They will explore features and functions that go beyond standard office applications.

AUTUMN 1
Computer Science: Algorithms
Explore the basics of algorithms as step-by-step solutions to problems. Practice designing and analysing simple algorithms to enhance logical thinking and problem-solving skills.
IT User Skills: Presentation software
Students will learn how to design and create engaging presentations using professional layouts, multimedia, and clear formatting. They will practise presenting information to different audiences, focusing on clarity, accessibility, and impact.

Y10

SUMMER 2
Design Projects: Unreal Engine Learning Outcomes: Create an advanced design project incorporating custom assets, interactive elements, and refined mechanics. Learn to optimise performance and polish visuals for a professional finish.
Projects: Submit a fully functional and visually polished game level with supporting documentation, including design rationale and testing results.
Online Safety Focus: Maintaining ethical practices in game design and recognising fair use of digital resources.

SUMMER 1
Creating Media: Group Project Learning Outcomes: Collaborate on a group project that integrates multimedia, coding, and design skills. Emphasise teamwork and project management.
Projects: Deliver a final group project with individual contributions documented and assessed.
Online Safety Focus: Developing an understanding of team collaboration tools and their safe usage.

SUMMER 1
Creating Media: Advanced 3D Design Learning Outcomes: Enhance 3D modelling skills by adding textures, lighting, and animations. Explore 3D printing applications.
Projects: Produce a detailed 3D model with textures and animations, accompanied by a short video demonstration.
Online Safety Focus: Posting personal information online safely.

SUMMER 2
Programming B: Python Projects Learning Outcomes: Develop advanced Python projects incorporating user interfaces, file handling, and error management.
Projects: Deliver a functional Python project, such as a text-based game or data management system, with supporting documentation.
Online Safety Focus: Recognising and mitigating malware threats.

Y9

AUTUMN 1
Computing Systems and Networks: Crash Course Computing Learning Outcomes: Explore the fundamentals of early computing systems, binary numbers, and their applications. Understand the basics of cybersecurity and computer networks.
Projects: Create a presentation on the history of computing, including key advancements and their societal impact.
Online Safety Focus: Understanding the role of online communities and maintaining safety in group interactions.

AUTUMN 2
Flowcharts and Programming (Computer Science) Learning Outcomes: Students will learn to recognise and use standard flowchart symbols, develop algorithmic thinking by breaking problems into logical steps, and design, test, and refine simple solutions.
Projects: Design a flowchart, present and explain their flowchart, showing how each step contributes to solving the problem
Online Safety Focus: Gaming
Explore the positive and negative impacts of online.

SPRING 1
AI: Concepts and Trends Learning Outcomes: Explore emerging AI technologies, such as autonomous systems and advanced data analysis tools. Discuss their ethical implications and societal impact.
Projects: Research and present on the future of AI, highlighting its potential and associated challenges.
Online Safety Focus: Addressing ethical considerations and bias in AI systems.

SPRING 2
Unreal Engine: Introduction to Games Development Learning Outcomes: Learn the basics of Unreal Engine, including its interface, asset management, and game development tools. Develop a simple game environment using pre-built assets.
Projects: Create a playable game level in Unreal Engine, showcasing the use of assets, lighting, and player interaction.
Online Safety Focus: Understanding intellectual property and licensing in game design.

SPRING 2
Programming A: Python for Beginners Learning Outcomes: Learn the fundamentals of Python programming, including data types, variables, loops, and functions.
Projects: Create a Python program that solves a real-world problem, such as a basic calculator or quiz.
Online Safety Focus: Understanding and preventing cyberbullying.

SPRING 1
AI: Advanced Concepts and Applications Learning Outcomes: Explore computer vision, natural language processing, and ethical considerations of AI in real-world applications.
Projects: Research and present on the use of AI in a specific industry, including benefits, challenges, and ethical concerns.
Online Safety Focus: Recognising bias in AI and ethical AI usage.

AUTUMN 2
Creating Media: 3D Modelling and Product Design Learning Outcomes: Explore the basics of 3D modelling using tools like SketchUp or TinkerCAD. Differentiate between organic and architectural design.
Projects: Develop a 3D model of a product or structure and explain the design choices in a short report.
Online Safety Focus: Understanding data privacy and security.

AUTUMN 1
Computing Systems and Networks: Computer Fundamentals Learning Outcomes: Understand the evolution of computing systems and the differences between various types of computers. Learn the basics of binary and how data is represented digitally.
Projects: Create a timeline of computing advancements and a binary conversion worksheet.
Online Safety Focus: Networking risks and data protection.

Y8

SUMMER 2
Personal Projects Learning Outcomes: Plan and execute a personal or group project integrating skills learned throughout the year. Focus on problem-solving and creativity.
Projects: Deliver a project with documentation and a presentation explaining its purpose, process, and outcomes.
Online Safety Focus: Recognising and addressing fake news.

Summer 1
Programming A: Intermediate Typing and Coding Learning Outcomes: Improve typing skills and introduce structured programming concepts. Begin coding simple interactive projects using Python.
Projects: Complete a typing test and submit a Python script demonstrating use of loops and conditionals.
Online Safety Focus: Promoting respectful online communication.

Y7

AUTUMN 1
Computing Systems and Networks: What Are Computers? Learning Outcomes: Understand the basic components of a computer system and their functions. Explore different types of computers and how they are used in everyday life.
Projects: Create a labelled diagram of a computer with descriptions of each component.
Online Safety Focus: Understanding computer viruses and how to protect devices from them.

AUTUMN 2
Creating Media: Game Control Learning Outcomes: Design and implement simple game controls using flowcharts and programming concepts. Understand the role of loops, variables, and decision-making in game logic.
Projects: Develop a basic game using block-based programming, showcasing functional controls and feedback mechanisms Online Safety Focus: Understanding risks and benefits of online gaming.

SPRING 1
AI: Introduction to Artificial Intelligence Learning Outcomes: Explore the basics of AI and machine learning. Understand how AI impacts society, including ethical implications and applications in various fields.
Projects: Research and present on the role of AI in a chosen industry, highlighting both advantages and ethical challenges.
Online Safety Focus: Recognising email scams and phishing attempts.

SPRING 2
3D Design: Introduction to Industry and 3D Tools Learning Outcomes: Introduce students to industry-standard 3D design tools. Develop sculpting techniques using Sculptris and create 3D models in SketchUp.
Project: Week 1: Introduction to 3D tools and industry applications.
Week 2: Sculpting project using Sculptris.
Week 3-4: 3D modelling project in SketchUp.
Week 5: Online safety focus on sharing 3D content responsibly.

KEY STAGE 3

Y7

Summer Cycle A
MakeCode Arcade: Advanced Game Development
Pupils extend their coding abilities with MakeCode Arcade, independently developing more sophisticated games with advanced features.

E-safety Week – Intro to Social Media Safety
Children consolidate their understanding of responsible social media use, practising safe habits for future online interactions.

Summer 1 Cycle A
Design a Logo and Poster
Learners explore digital design by creating logos and posters, combining visual elements and text effectively for clear communication.

E-safety Week – Communicating Online
Children reinforce their understanding of respectful, responsible, and safe communication in online environments.

Spring 2 Cycle A
Create a Quiz with Forms
Children design and create digital quizzes using Google Forms, exploring question formats, data collection, and how to interpret responses clearly.

E-safety Week – Safe Searching Scavenger Hunt
Learners use child-friendly search engines, practising safe and responsible searching while distinguishing reliable information.

Y6

Spring 2 Cycle B
Create a Quiz with Forms
Children design and create digital quizzes using Google Forms, exploring question formats, data collection, and how to interpret responses clearly.

E-safety Week – Digital Footprint
Children explore the importance of maintaining a positive digital footprint, understanding how their online actions can impact their future.

Summer 1 Cycle B
Create a Class Podcast
Children collaborate to create a short, engaging podcast episode, enhancing audio recording, editing, and collaborative communication skills.

E-safety Week – CEOP (Child Exploitation and Online Protection)
Children learn about CEOP's role and explore clear ways to report online safety concerns to trusted adults.

Summer 2 Cycle B
MakeCode Arcade: Advanced Game Development
Pupils extend their coding abilities with MakeCode Arcade, independently developing more sophisticated games with advanced features.

E-safety Week – Introduction to Social Media Safety
Learners understand key risks and safe behaviours relating to social media platforms, reinforcing online safety awareness.

Autumn Cycle A
Information Technology – Files and Folders
Children enhance their understanding of file management by organising and saving documents clearly into folders. They learn to locate, open, and manage digital files independently.

E-safety Week – What devices are online?
Children explore online devices, identifying risks and appropriate safety practices when using internet-connected technology.

Spring 1 Cycle A
Create a Quiz with Forms
Children design and create digital quizzes using Google Forms, exploring question formats, data collection, and how to interpret responses clearly.

E-safety Week – Digital Footprint
Children explore the importance of maintaining a positive digital footprint, understanding how their online actions can impact their future.

Y5

Spring 1 Cycle B
Create a Quiz with Forms
Children design and create digital quizzes using Google Forms, exploring question formats, data collection, and how to interpret responses clearly.

E-safety Week – Digital Footprint
Children explore the importance of maintaining a positive digital footprint, understanding how their online actions can impact their future.

Autumn Cycle B
Microsoft Skills, Emails, and Google Classroom
Pupils develop proficiency in using Microsoft software, email communications, and Google Classroom. They build everyday skills for effective digital communication and task management.

E-safety Week – Internet Safety Poster
Children create digital posters reinforcing internet safety messages, demonstrating clear awareness of staying safe online.

Summer 2 Cycle A
Scratch Jr – Programming for Young Children
Learners use Scratch Jr to create simple animations and stories, building foundational programming skills through interactive digital play.

E-safety Week – Virus and Malware
Children learn basic facts about computer viruses and malware, including how to stay safe from them.

Summer 1 Cycle A
Digital Feelings Book
Learners express different emotions by creating digital feelings books using photographs, drawings, and emojis. They practice basic digital literacy and emotional expression.

E-safety Week – Communicating Online
Children learn simple yet crucial rules for communicating respectfully and safely online.

Y4

Summer 1 Cycle B
Create an Audio Story
Children create short audio stories, recording their voices clearly and adding pictures digitally. They explore storytelling through spoken language.

E-safety Week – CEOP (Child Exploitation and Online Protection)
Children explore what CEOP does and how it helps keep them safe online.

Summer 2 Cycle B
Scratch Jr – Programming (Continued)
Children extend their Scratch Jr skills, creating more detailed stories and animations and exploring deeper programming concepts.

E-safety Week – Virus and Malware (Continued)
Children reinforce their understanding of viruses and malware, consolidating safe practices to protect their digital work.

Autumn Cycle A
Information Technology – Opening, Saving, Naming Documents & Intro to Internet
Children develop essential digital file-management skills by practising opening, saving, and naming documents. They are introduced to the internet and basic online navigation.

E-safety Week – What devices are online?
Children learn what makes devices 'online' and explore simple rules for staying safe using internet-connected devices.

Spring Cycle A
Technology Around Us
Pupils identify and discuss common technology around them at school and home, exploring how these devices help us daily. They begin to recognise the role technology plays in their lives.

E-safety Week – Digital Footprint
Children learn that online actions leave permanent traces and why maintaining positive online behaviour is essential.

Spring 2 Cycle A
Google Slides: All About Me (picture edition)
Learners express themselves by creating digital slides with pictures about their lives and interests. They develop skills in using Google Slides independently.

E-safety Week – Safe Searching Scavenger Hunt
Children practice safe searching skills using child-friendly search engines, recognising trustworthy online content.

Y3

Spring1 Cycle B
Digital Pictograms (Class Survey)
Pupils collect basic data from class surveys and represent it digitally in pictograms. They interpret and discuss the results clearly.

E-safety Week – Talking online: Who can you trust?
Children discuss identifying trusted adults for talking about online worries or uncertainties.

Spring1 Cycle B
Mini Programmers: Bee-Bot & Friends
Children develop basic programming skills, guiding Bee-Bots or digital robots through practical mazes using simple commands. They explore sequencing and debugging practically.

E-safety Week – Search Engine: What is it?
Children explore the purpose of search engines and simple ways to search safely online.

Autumn Cycle B
Information Technology – Typing, Logging In, and Identifying Symbols
Children build foundational skills logging onto computers and identifying key software icons. They practice correct typing finger placement using Typing.com.

E-safety week – What devices are online?
Children learn what makes devices 'online' and explore simple rules for staying safe using internet-connected devices.

Y2