CURRICULUM MAP – Information Technology/Computing

YARROW HEIGHTS SCHOOL

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

IT User Skills: Additive Manufacturing/Games Design

Study the fundamentals of additive manufacturing (3D printing), learning how to create digital 3D models and understanding the process of transforming them into physical objects. Additionally, explore the basics of games design, focusing on game mechanics, storytelling, and using introductory game development tools to create simple interactive games.

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.

SUMMER 1

IT User Skills: Games Design/Presentation Software
Study the basics of game design using presentation software or introductory game development tools, focusing on concepts like storytelling, character creation, and interactive elements. Learn to design and develop simple games or interactive presentations, incorporating multimedia elements and understanding user engagement principles.

Computer Science: Python Controlled 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.

SUMMER 2

IT USER SKILLS
Study how to create effective and engaging presentations using software like Microsoft PowerPoint or Google Slides. Learn to incorporate multimedia elements, apply design principles, and utilize advanced features such as animations, transitions, and collaboration tools to enhance presentations.

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.

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

IT User Skills: Additive Manufacturing
Study the principles of additive manufacturing (3D printing), learning how to design and prepare digital 3D models for printing. Understand the operation of 3D printers, explore different materials used, and learn how this technology is applied in various industries.

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.

AUTUMN 2

Video Editing ;
Finish any prior work from Autumn 1
Additive Manufacturing: Explore the basics of additive manufacturing (3D printing), including designing 3D models using software such as Tinker cad or SketchUp. Understand the process of preparing models for printing, operating a 3D printer, and learning about the applications and implications of this technology in various industries.

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.

AUTUMN 1

IT User Skills: Video Editing
Study the fundamentals of video editing, including importing and organizing video clips. Learn to create engaging videos by adding transitions, effects, and audio to effectively convey a message.

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.

Y10

SUMMER 2

Ingots Prep
(Digital Creativity)
Students look at the IT user skills units and engage with the units relevant to their IT qualification

Online Safety – Unit 4

SUMMER 1

Group Project
(Digital Creativity)
Whole class plan prepares and divide up jobs to undertake and a project from the INGOTS Units

Online Safety – Unit 4

SUMMER 1

Grand Designs
(Digital Creativity/Basics)
Products and 3d Printing
Using SketchUp
Finances
Spreadsheet Help
Sculptress intro
Assessment

SUMMER 2

(Digital Creativity/Computer Science)
Python Magic/Personal or Group Projects
Python fast food
RPS
Turtle
Plan it, Make it, Review it

Online Safety – Making a virus

Y9

AUTUMN 1

Crash Course Computing
Early computing:
Binary and numb
Cybersecurity
Computer networks
ROBOTS
Review/Feedback Online Safety – Online groups

AUTUMN 2

IT; Video Editing Introduction
Study the fundamentals of video editing, including importing and organizing video clips. Learn to create engaging videos by adding transitions, effects, and audio to effectively convey a message.

SPRING 1

AI
AI Concepts Natural Language Processing
Online Safety - AI Ethics and Bias AI and Data Analysis
AI and Autonomous Systems
AI and Future Trends Reflection and Assessment

SPRING 2

Introduction to Unreal
(Digital Creativity)
Market place and UI
3D File types
Mixamo (Animation)
Importing!!!
Naming is important
Review/Feedback Online Safety - Gaming

Online Safety – Posting personal info online

SPRING 2

Python (with code)
(Computer Science)
UI and interface
Correcting code
Data types
Defining functions
Online Safety – Cyberbullying
Correct that code

SPRING 1

AI
Introduce more advanced concepts and applications of AI.
Computer Vision and Image Recognition
Natural Language Processing (NLP) and Sentiment Analysis
AI and Robotics Advancements
AI and Data Ethics
AI in Healthcare

AUTUMN 2

3D modelling and product design
(Digital Creativity)
Organic vs Architectural Intro to Sculptress
Intro Sketchup
Project work
Review/Feedback
Online Safety – What happens to my data?

AUTUMN 1

Computer Fundimentals Intro
(Digital Basics)
Different Types of computers.
Binary Help Sheet
Extra Secret Messages
Networking
Network Simulation Tool
Review/Feedback Online Safety – Networking

Y8

SUMMER 2

Personal Projects
(Digital Creativity)
Plan it
Make it
Revisit/Review it
Online Safety – Fake News

SUMMER 1

Digital Imaging
(Digital Creativity)
Intro to Digital imaging
Lote of Layers
Tools
Naming and saving
Assessment

Online Safety – Online Advertising

Y7

AUTUMN 1

What are Computers?
(Digital Basics)
Hardware
How much does it cost?
What is inside a PC
RAM VS ROM
Build a PC workshop
Review/Feedback Online Safety – Computer viruses

AUTUMN 2

Game Control
(Computer Science)
Flow charts
Motion
Loops
Variables
Virtual Pets
Self-assessment review Online Safety - Gaming

SPRING 1

AI
Introduction to AI Machine Learning Basics
AI in Society AI and Creativity
E-Safety and AI AI and Robotics
Reflection and Assessment

SPRING 2

Typing and fine motor skills (Digital Basics)
Intermediate typing.com lessons.
Week by week games and competition. Competition

Online Safety – Email scams

KEY STAGE 3

Y7

SUMMER 2

6. Programming B – Repetition in games

Online Safety – Copyright and ownership

SUMMER 1

5. Creating media – Photo editing

Online Safety – Privacy and security

SPRING 2

4. Data and information – Data logging

Online Safety – Managing information online

Y6

SPRING 2

4. Data and information – Data logging

Online Safety – Managing information online

SUMMER 1

5. Creating media – Photo editing

Online Safety – Privacy and security

SUMMER 2

6. Programming B – Repetition in games

Online Safety – Copyright and ownership

AUTUMN 1

1. Computing systems and networks – The Internet

Online Safety – Online relationships

AUTUMN 2

2. Creating media - Audio production

Online Safety – Online reputation

SPRING 1

3. Programming A – Repetition in shapes

Online Safety – Online Bullying

Y5

SPRING 1

3. Programming A – Repetition in shapes

Online Safety – Online Bullying

AUTUMN 2

2. Creating media - Audio production

Online Safety – Online reputation

AUTUMN 1

1. Computing systems and networks – The Internet

Online Safety – Online relationships

SUMMER 2

6. Programming B - Programming quizzes

Online Safety – Copyright and ownership

SUMMER 1

5. Creating media - Digital music

Online Safety – Privacy and security

Y4

SUMMER 1

5. Creating media - Digital music

Online Safety – Privacy and security

SUMMER 2

6. Programming B - Programming quizzes

Online Safety – Copyright and ownership

Autumn 1

1. Computing systems and networks – IT around us

Online Safety – Online relationships

AUTUMN 2

2. Creating media – Digital photography

Online Safety – Online reputation

SPRING 1

3. Programming A – Robot algorithms

Online Safety – Online Bullying

SPRING 2

4. Data and information – Pictograms

Online Safety – Managing information online

Y3

SPRING 2

4. Data and information – Pictograms

Online Safety – Managing information online

SPRING 1

3. Programming A – Robot algorithms

Online Safety – Online Bullying

AUTUMN 2

2. Creating media – Digital photography

Online Safety – Online reputation

AUTUMN 1

1. Computing systems and networks – IT around us

Online Safety – Online relationships

SUMMER 2

6. Programming B - Programming quizzes

Online Safety – Copyright and ownership

SUMMER 1

5. Creating media - Digital music

Online Safety – Privacy and security

Y2

AUTUMN 1

1. Computing systems and networks – IT around us

Online Safety – Online relationships

AUTUMN 2

2. Creating media – Digital photography

Online Safety – Online reputation

SPRING 1

3. Programming A – Robot algorithms

Online Safety – Online Bullying

SPRING 2

4. Data and information – Pictograms

Online Safety – Managing information online