Year 9 Pathway G

COMPUTER SCIENCE

Hardware, memory & storage

You will be able to:

Justify the use of a range of input/output devices for different environments.

Summarise the functions of the Central Processing Unit.

Compare and contrast the usage of different secondary storage mediums for specific roles.

Discuss differences between RAM and ROM within a Computer System.

Explain the balance between Virtual Memory and RAM in the speed of a computer.

Forms of attack

You will be able to:

Evaluate what attackers could do or access from eavesdropping on the school network.

Discuss why an attacker may want to use Identify Spoofing (IP Address Spoofing) on a network.

Explain what would happen to a network during a 'Denial of Service' attack.

Compare and contrast the effectiveness of Man-in-the-Middle attacks and Phishing Scams.

Discuss what punishments are available for attacks under the Computer Misuse Act.

Boolean logic & truth tables

You will be able to:

Explain why different logic gates are needed in a computer system.

Evaluate what inputs are required to be for the output of an AND gate to be on.

Evaluate what inputs are required to be for the output of an OR gate to be on.

Compare and contrast the purpose of the NAND and NOR gates.

Create accurate truth tables from multiple logic diagrams.

Python programming

You will be able to:

Justify the use of programming techniques within a section of code.

Identify required programming concepts from a given scenario.

Create a program that incorporates nested programming concepts.

Create a program that meets a given brief efficiently, using a variety of iteration techniques.

Evaluate how successfully a program meets a given brief.

3D Design: Project Wordsley

You will be able to:

Evaluate the global impact of e-waste.

Evaluate the effectiveness of the sustainability features of your design and how they would contribute to a sustainable future.

Evaluate how sustainable your design is by considering a range of environmental factors, including its carbon footprint.

Create a complex 3D model which successfully incorporates a range of tools.

Analyse the completeness in relation to your original design aims.

Year 9 Pathway R

COMPUTER SCIENCE

Hardware, memory & storage

You will be able to:

Explain the use of a range of input/output devices for different environments.

Explain the functions of the Central Processing Unit.

Discuss how different secondary storage mediums are used for specific roles.

Explain how RAM and ROM are used within a Computer System.

Describe why Virtual Memory is required when RAM is full.

Forms of attack

You will be able to:

Discuss what attackers could access from eavesdropping on the school network.

Explain why an attacker may want to use IP Address Spoofing on a network.

Describe what would happen as a result of a 'Denial of Service' attack.

Explain how effective a 'Man-in-the-Middle attack would be on a network.

Explain what punishments the Computer Misuse Act could lead to.

Boolean logic & truth tables

You will be able to:

Explain the purpose of a logic gate in a computer system.

Explain what inputs will make the output on in the AND gate.

Explain what inputs will make the output on in the OR gate.

Explain the difference between the NAND gate and the NOR gate.

Create truth tables from logic diagrams with two symbols.

Python programming

You will be able to:

Explain how programming concepts are used within a section of code.

Describe how a given scenario could be tackled, sometimes offering programming concepts.

Create a program that uses nested IF statements.

Create a program that meets a given brief with some demonstration of efficiency.

Explain how successfully a program meets a given brief.

3D Design: Project Wordsley

You will be able to:

Discuss the negative impact that e-waste has on the environment

Describe how your design is sustainable, in terms of production, materials used and energy sources.

Incorporate a range of environmental considerations into your design.

Create a 3D model which makes effective use of a range of tools.

Discuss how successful your design is in meeting the original project brief.

Year 9 Pathway O

COMPUTER SCIENCE

Hardware, memory & storage

You will be able to:

Describe how input/output devices can be used in different environments.

Describe the functions of the Central Processing Unit.

Explain how 2 different storage mediums are used for specific roles.

Categorise statements based on whether they are RAM or ROM within a Computer System.

Describe what a computer would do it RAM became full.

Forms of attack

You will be able to:

Explain what an eavesdropping attack is.

Explain what IP Address Spoofing is.

Describe what would happen in a 'Denial of Service' attack.

Describe what a 'Man-in-the-Middle' attack is.

Explain the punishments that are outlined within the Computer Misuse Act.

Boolean logic & truth tables

You will be able to:

Describe the need for logic gates to carry out calculations.

Describe the role of the AND gate as requiring both inputs to be on.

Describe the role of the OR gate as requiring both inputs to be on.

Describe the effect the NOT gate has on an input.

Complete truth tables from logic diagrams with two symbols.

Python programming

You will be able to:

Identify the use of programming techniques within a section of code

Describe how a given scenario could be tackled

Create a program that uses nested IF statements

Create a program that meets a given brief

Explain the parts of a program that meet the needs of a given brief

3D design: Project Wordsley

You will be able to:

Explain ways to reduce e-waste.

Explain ways which a design could be sustainable.

Explain how your design would be environmentally friendly.

Create a 3D model which utilises simple shapes to create a larger design.

Explain ways which your design could further meet the project brief.

Year 9 Pathway W

COMPUTER SCIENCE

Hardware, memory & storage

You will be able to:

Identify a range of input/output devices that would be used within a specific environment.

Define the functions of the Central Processing Unit.

Describe how 2 different storage mediums are used for specific roles.

Identify one feature of RAM and one feature of ROM within a Computer System.

Identify the effect of full RAM on a computer system.

Forms of attack

You will be able to:

Describe what an eavesdropping attack is.

Describe what an IP Address Spoofing attack is.

Describe what would happen in a 'Denial of Service' attack.

Identify features of a 'Man-in-the-Middle' attack.

Identify the three offences outlined in the Computer Misuse Act.

Boolean logic & truth tables

You will be able to:

Identify that logic gates carry out operations in a computer system.

Identify the symbol for the AND gate.

Identify the symbol for the OR gate.

Identify the symbol for the NOT gate.

Complete the outputs on a truth table for a logic diagram with two symbols.

Python programming

You will be able to:

Identify the use of selection techniques within a section of code.

Describe the steps that may be taken to tackle a given scenario.

Create a program that uses selection correctly.

Create a program that meets a given brief.

Describe which parts of a given brief have been met by a program.

3D Design: Project Wordsley

You will be able to:

Define the term e-*waste*.

Define the term *sustainability*.

Consider ways which your design could have a positive impact on the environment.

Create a 3D model, which makes use of simple shapes.

Identify good points and bad points about your final design.