

performance of networks Client-server vs peer-to-peer networks Hardware needed to connect computers to a LAN The internet as a world wide collection of computer networks Star & mesh networks String class: Functions And Procedures

The purpose of ROM in a computer system The purpose of RAM in a computer system Virtual memory Secondary storage The need for secondary storage Common types of storage Storage devices & storage media Advantages & disadvantages of different storage devices. Iteration: for loop, while loop, repeat loop

The purpose of the CPU Common CPU components and their function Von Neumann architecture How common characteristics of the CPU affect their performance Clock speed Cache size Number of cores The purpose and characteristics of embedded systems Examples of embedded systems The use of basic programming constructs used to control the flow of a program Sequential Programming

Understand how a bitmap graphic is made up of individual pixels. Explain the need for image metadata. Understand how sound is sampled and stored in digital form Explain the need for compression Describe the difference between lossy and lossless compression The use of three basic programming constructs used to control the flow of a program; Sequence, Selection and Data types

GCSE taster week

Abstraction

Decomposition

problem solving

STRAND 1: ABSTRACTION

STRAND 2: ALGORITHMS AND

COMPUTATIONAL THINKING

Understand the principles of

Fundamentals of text-based

Functions of the Math unit

Sequential programming &

Selection & Boolean operators

Testing & debugging programs

programming language variables,

data types, operators, type casting

computational thinking

Algorithmic thinking

Pattern recognition

STRAND 1: ABSTRACTION

STRAND 2: ALGORITHMS AND

COMPUTATIONAL THINKING

Understand the principles of

Understand flowchart symbols

complete, and refine algorithms

Understand arithmetic operators

Write algorithms in pseudocode

GUI design and interface, GUI

Introduction of text-based

programming language

Sequential programming

Create, interpret, correct,

computational thinking

Algorithmic thinking

Pattern recognition

using flowcharts

and variables

properties

Abstraction

Decomposition

ology on tl **Environmental Issues** Discuss the impacts of digital technology on the environment. Legislation & Privacy Discuss the impacts of digital technology on wider society. Principles of Computational Thinking (Abstraction, Decomposition, pattern recognition and algorithmic thinking) and programming fundamentals (variables operators, constants, inputs and outputs)

Make Guided Choices selections - Computer Science

> STRAND 4: DATA STORAGE & EXECUTION UNITS Understand what a database is. Display a knowledge of the uses and advantages of a database. Knowledge of basic concepts and terms (field, record, primary key) Understand how to design a database Distinguish between different types of data in a database table. Populate the database with quality data Understand how to find the right information using databases and websites. Understand how to build searches using Boolean logic. Define the terms bit, nibble, byte, kilobyte, megabyte, gigabyte, terabyte and petabyte Link these measurements to computer components and specifications. Compare different laptop specifications in terms of megabyte, gigabyte, terabyte Understand that data needs to be converted into a binary format to

be processed by a computer.

tables

Understand ASCII and UNICODE

YEAR

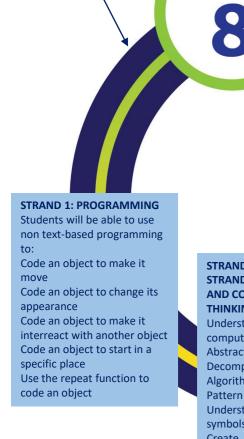
STRAND 3. PROGRAMMING Introduction of text-based programming language GUI design and interface, GUI Properties Fundamentals of text based programming language variables, data types, operators, type casting Functions of the Math unit Sequential programming & problem solving Selection & Boolean operators Testing & debugging programs

Year 8s run Microbit club

YEAR

¥ 🕈

Microbit Club – one group per half term



STRAND 1: ABSTRACTION STRAND 2: ALGORITHMS AND COMPUTATIONAL THINKING Understand the principles of computational thinking Abstraction Decomposition Algorithmic thinking Pattern recognition Understand flowchart symbols Create, interpret, correct, complete, and refine algorithms using flowcharts Understand arithmetic operators

Ambassador STRAND 7:CREATIVE USE OF ICT STRAND 8:ICT FOR AN AUDIENCE STRAND 7:CREATIVE USE OF ICT STRAND 9:CYBER AWARENESS STRAND 8:ICT FOR AN AUDIENCE Create digital content to achieve a STRAND 9:CYBER AWARENESS Create digital content to achieve a given goal Recognize the audience when creating digital content Combine at least 2 applications in a creative project Analyse content used in creative projects Make judgements about digital content for a different audience Evaluate the appropriateness of digital devices and software Recognize ethical issues surrounding IT use Threats to personal data and how to mitigate them STRAND 6: DATA STORAGE AND EXECUTION Understand how digital data is

Sign up to be a Computing

represented and stored. information. Describe how to use a search engin Assess the validity of different websites. Analyse the reliability information on the Internet. Understand searching techniques. Understand what a database is Display a knowledge of the uses and advantages of a database Knowledge of basic concepts and terms (field, record, table) Understand how to design a database Distinguish between different types of data in a database table. Understand the key features of a database table Gain knowledge and understanding of how to apply

filters to a database and be

able to manipulate a database.

given goal Recognize the audience when creating digital content Combine at least 2 applications in a creative project Analyse content used in creative projects Make judgements about digital

content for a different audience Evaluate the appropriateness of digital devices and software

Recognize ethical issues surrounding IT use Threats to personal data and how to mitigate them

Differentiate between data and

STRAND 5: COMPUTER COMPONENTS Identify how have electronic computers developed over time.

data storage. internal computer components. to set up a network. topologies. Computing works. storage applications.

Describe the purpose of hardware and software. Describe different methods of Describe the function of Name the hardware required Describe different network digital content Understand how Cloud Identify different Cloud content Understand how to store data on the Cloud (OneDrive) audience Understand how to use Class

Notebook in Teams as a

software application.

STRAND 7,8,9 CREATIVE USE OF ICT, ICT FOR AN AUDIENCE, CYBER AWARENESS Obtain content from the WWW using a web browser Use a variety of software to present digital content Creates digital content for an audience Create, store, and edit digital content Independently organises

of digital devices and software

Collects, organises, and presents data in digital Make judgements about digital content for a different Evaluates the appropriateness

AUDIENCE, CYBER AWARENESS Understand the need to keep personal information private Know what to do if contacted by a stranger or sees inappropriate content Recognise unacceptable behaviour online Show a range of ways to report inappropriate content/contact Recognise ethical issues surrounding IT use

STRAND 7,8,9 CREATIVE USE

OF ICT, ICT FOR AN

YEAR