Computing

ALDER
Community High School

Year 8

Cybersecurity		
Autumn 1	- Know that malware is any software designed for a malicious purpose - Know that computer misuse act prohibits making or sharing malware - Know that a trojan is malware that spreads across a device or network - Know that spyware is malware that captures data from user interactions and it back to the criminals - Know that ransomware is malware that encrypts files until a payment is made to the cybercriminals - Know that anti-malware is software that scans devices to find and remove malware on a device	**Key Vocabulary** Malicious Blackmail Malware Trojan Spyware Ransomware Antimalware
Ethical Issues		
Autumn 1	- Know that artificial intelligence is software that draws on huge volumes of data - often from the internet - Know that the data that artificial intelligence relies on may be biased or unreliable - Know that AI can be data driven or rule based and the differences between these - Know that the potential impacts of artificial intelligence relying on biased on unreliable data - Know that that computing devices are using increasing amounts of energy - Know a range of ways that the amount of energy used by computing devices could be reduced - Know that computing devices make up an increasing amount of E-waste - Know the potential impacts of increasing amounts of E-waste - Know a range of ways of reducing the amounts of E-Waste - Know that people are influenced by the content they engage with online - Know that people are influenced by the content we share online - Know that anyone can be an influencer, but that some are paid to influence people	**Key Vocabulary** Influencer Bias Streaming E- Waste

Programming using Python

- Know that variables can store different datatypes
- Know that the datatype used for a variable can be changed (casting)
- Know that authentication is used to confirm that the user is who they claim to be
- Know that trace table track the changes to the values stored by variables

Key Vocabulary

Methods
Iteration

Website Design using Adobe Dreamweaver

| Spring 1 | Know that websites are created using HTML code Know that websites are viewed using web browsers Know that HTML tags are used to mark up text and images in a website Know the function of a range of HTML tags (P,BR, H1-H6, IMG, FONT, BG) Know that embedded images are not stored in the webpage, rather the website links to the folder they are stored in. Know that embedded content from the internet is not stored in the webpage, rather the website links to the webpage they are featured on Know basic website design principles (simple navigation, use of colour, alignment, font, consistency and conventions) | **Key Vocabulary**
Navigation
Consistency
HTML, website, webpage
Web Browser
mark up, tags
Table, Alignment
Embed
Links/ Hyberlinks
Embed
Alignment |

3D-Design Using Sketch Up

Spring 2

- Know that the orbit tool allows users to rotate around the workspace
- Know that pan means to move from side-to-side across the workspace
- Know how to set up an account on Sketch-Up
- Know how to create a new file in Sketch-up
- Know how to use the orbit tool to rotate around the workspace
- Know how to use the zoom tool to zoom towards and away from the workspace
- Know how to use the pan tool to move from side-to-side across the workspace
- Know how to use the rectangle tool to add a shape to the workspace
- Know how to use the push-pull tool to drag 2D shapes into 3D
- Know how to use the push-pull tool to cut sections out of 3D objects
- Know how to use a combination of tools to create simple 3D objects in Sketch-up (e.g. chair, table)
- Know how to save projects online
- Know how to use the materials tool to add colour to objects
- Know how to use a combination of tools to create complex objects consisting of multiple smaller objects (e.g. complete room or building)
- Know how to import images into the workspace
- Know how to use the arc and circle tools
- Know how to duplicate elements of a project
- Know how to rotate objects

Key Vocabulary
Orbit
Zoom
Pan
Push-pull
Import
Material
Arc
Rotate

Databases using MS Access

Summer 1

- Know that database store data in a logical structure
- Know the difference between data and information
- Know the advantages of a digital database
- Know the disadvantages of a digital database
- Know that entities are the objects, places or people that the data stored is related to
- Know that fields are individual categories of data in a database
- Know that records hold all the data related to one entity
- Know that tables contain all the records together
- Know that validation means to check that a value is suitable or appropriate but cannot check if a value is correct
- Know that each field can only store one type of data (Text, number, Date/time, Yes/no, Currency, Autonumber)
- Know the uses of a range of datatypes
- Know that validation rules limit the data that can be entered based on a value range or list
- Know that the primary key is a field that contains unique data for every entity and so can be used to identify each entity
- Know that queries are complex filters that are used to find specific data in a database

Key Vocabulary
Category
Range
Currency
Unique
Filter, specific, criteria
Data, Database
Digital
Entity
Field
Record
Table
Validation
Datatype, AutoNumber
Primary Key
Query

Animation using Adobe Flash

Summer 2

- Know that animation is based on individual images shown in quick succession to give the visual impression of movement
- Know the stage is the area of the project that will be visible in the completed animation
- Know that elements should be converted to symbols
- Know that elements must be on individual layers so that they can be moved independently
- Know that symbols are stored in the library and can be reused
- Know that frames are individual images in an animation
- Know that keyframes are frames that have major changes to the number of objects or state of the stage and are represented with dots on the timeline
- Know that the timeline contains all the frames
- Know that fps determines how quickly the frames change in an animation
- Know that scenes are short animations that make up a larger project

Key Vocabulary
Elements
Animation
Stage
Layers
Library
Frames
Keyframes