

Keyword	Key questions
Target Audience	How can you find information on the internet?
Research	How can you limit the number of results you are getting for your searches?
Search Engine	What is a house style
Website Address	What is a business card used for ?
Reliability	What information should be on a business card ?
import	What makes a good TV advert?
Export	

Year 7 Lake Garda



What will you do ?

In this unit the pupils perform research into the area surrounding Lake Garda in Italy. They need to plan a house style and content for several different types of documents for a travel agent. They create the documents and a 30 second TV advert from the clips provided and finally evaluate the work they have produced.



A business card is used to pass information to potential customers about how they can contact the business's representative . It is a credit card sized document with the contact details on it that can be kept in a wallet. They need to have all the contact details included such as name of the representative, company name, address, email address, phone number, website address etc.

Make your T.V advert

- You need to create your TV advert. Make sure you follow these steps:
- Import video clips.
- Trim the clips as necessary.
- Add the transitions.
- Add the titles.
- If you are using sound clips, add the sound and trim it as necessary.
- Regularly save your work in your Video folder with a sensible name.

Evaluate your work.

Find strengths and weaknesses in each others' TV adverts. Give constructive criticism of each others' TV adverts and suggest improvements they can make. Make a second version of your TV advert for a different target audience.



Keyword	Definition
Project	A collection of sprites, scripts, backgrounds, and sounds that is used as the basis for creating Scratch applications.
Sprite	A two-dimensional image drawn on a transparent background that can be moved around the stage. You can change its appearance using different costumes.
Blocks	Programming commands that you snap together to create a program in Scratch.
Costumes	Alternate appearances of your sprite.
Repeat Blocks	Blocks that allows you to repeat scripts multiple times.

Year 7 Scratch



The Button Screen:

This is where all of the buttons, or “blocks” that you can use to piece together on the code screen. At the top of the screen, there are eight different categories of buttons to select from. Clicking on any of these will show all the buttons in that category on the Button Screen.

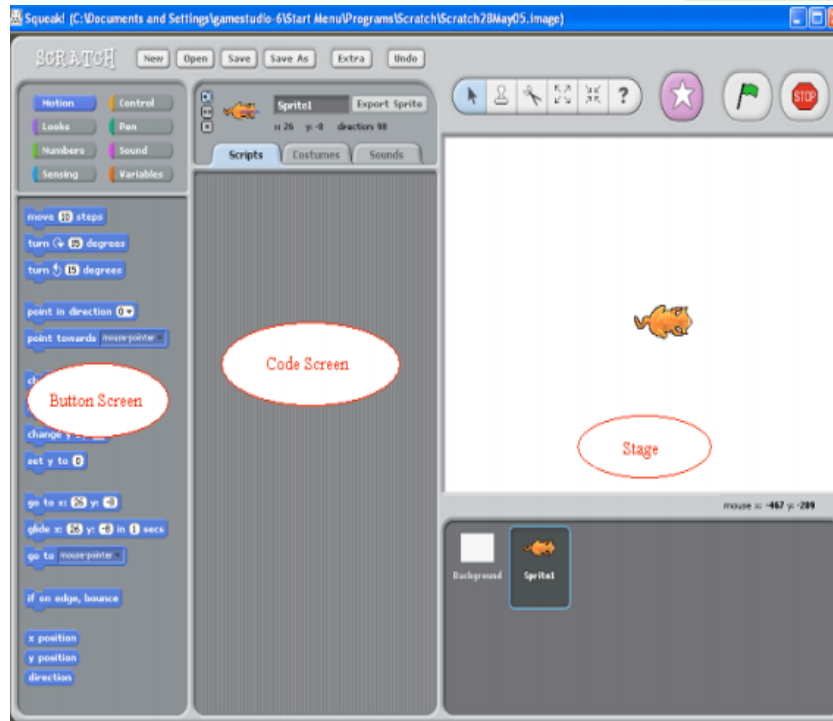
Variables
A variable is used to store data for use in your program.

Variables can be used to store lots of different types of data such as names, numbers and scores.

The data stored in a variable can be changed or “varied” depending on certain conditions within a program.

The Stage:

This is where you can see your game, or progress on your game played out. It shows your background, as well as all your Sprites. Sprites are any characters or objects which you want to be able to program



The Code Screen

This is the area where you piece blocks together to “write” code. The code is basically an instruction recipe, which tells your Sprites what to do

Stage
The stage is the background of the project. Scratch uses co-ordinates to position different elements around the screen.

Different backgrounds can be imported or you can create your own.

Sprites
A sprite is a character or object in your game or animation.

In order to give the impression that a character is moving you can change the sprites' costume.

Loops
Loops are used as a way of repeating instructions. Also known as iteration.

Repeats a certain number of times. Repeats an instruction forever.

IF Statements
IF statements can be used to select different scripts of a program depending on a condition. Also known as selection.

Operators
Operators are used for changing or comparing data. They can add, subtract, multiply and divide data.

They can also check if values are less than, greater than, or equal to other values.

Keyword	Definition
Audio sample	A digital representation of a sound.
Sample rate	How many samples of data are taken per second. This is normally measured in hertz.
Downloading	To copy a file from the internet onto your computer or device.
File formats	The way that a specific file type is saved, eg. a picture file is different from a text document.

Year 7 Audacity



What do we do ?

In this unit pupils will learn how sound is digitized and stored on computers. They will learn basic sound editing techniques and how to add sound effects and mix tracks. Ways of creating different sound effects (the job of a “foley artist”) are described. Pupils will undertake a creative project to analyse, plan, record and edit a short sound file. This could take the form of a radio advertisement or short podcast.

Common features

- Record, playback and edit audio
- Cut and trim - remove audio from the start or end, or choose the best bit and delete the rest.
- Remove background noise, e.g. hissing.
- Normalise or remove spikes and dips in volume
- Save or output audio in different file formats and at different quality settings.
- Tag audio – add information about the audio to the file, e.g. author and credits

Digitizing sound

How do we turn an analogue wave (constantly changing value) into a digital format (a set of numbers)?

Sound sampling

We need to sample it regularly (take a measurement of the wave height). We can then list the samples as numbers.

Sampled data

```

sample-data.txt - Notepad
File Edit Format View Help
sample-data.txt: 1 channel (mono)
Sample Rate: 44100 Hz, Sample values in dB scale.
Length processed: 500 samples (0.00227 seconds)

-20.80206
-21.38919
-22.21281
-23.12089
-23.88046
-25.17911
-25.14214
-25.84905
-26.12012
-27.48547
-29.27624
-29.36177
  
```

Digital audio

Sounds created on a computer exist as digital information encoded as audio files. Sound input through a microphone is converted to digital for storage and manipulation. Digital sound is broken down into thousands of samples per second. Each sound sample is stored as binary data.



- Microphone measures change in air pressure
- Microphone translates air pressure into electrical voltage
- Analogue to Digital Converter digitises the electrical voltage to bytes of information
- Computer displays the digitised sound for manipulation

Audio file formats

Audio can be recorded in several different file formats, the most common ones are:
 ?MP3 ?AAC ?WMA ?WAV ?FLAC ?OGG
 Podcasts are usually in MP3 format because of the format’s relatively small file size.

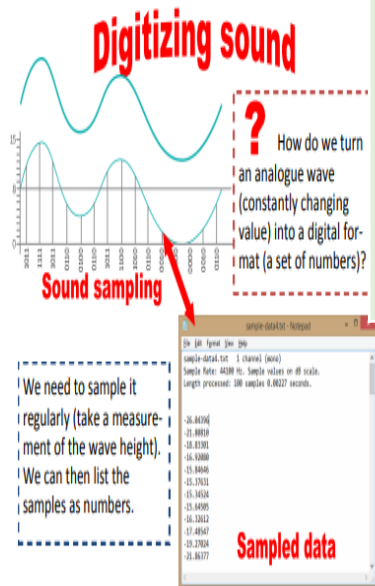
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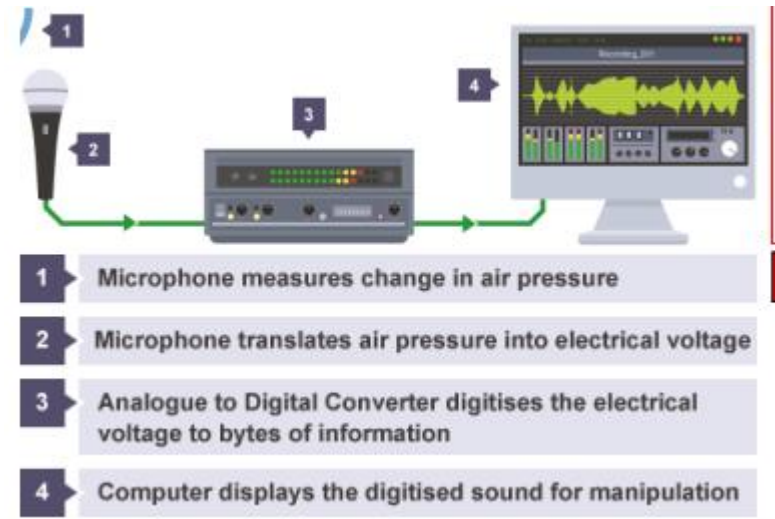


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Input Devices

An input device is a piece of hardware that can be used to enter data into a computer



Output Devices

An output device is a piece of hardware that can be used to represent information in a variety of ways



Year 7 Networking and Hardware

Components

Computer components are all the different internal parts of a computer system that help it to operate. Each component has its own purpose and functions.

Central Processing Unit

The CPU is the brain of the computer. It does all the processing and calculating for the computer.



Heat sink

A heat sink is used to draw heat away from important components such as the CPU that can get quite hot. If a component gets too hot then it won't be able to perform its job as well.



Motherboard

The motherboard is what connects all the other components. It helps keep them secure and allows the components to communicate.



Power Supply

A power supply helps to convert electricity to a suitable voltage to power the computer safely.



Hard Drive

A Hard Drive is where all the computers long term data is stored i.e. data you want to keep for in the future, such as your own documents, music, films and games.



Random Access Memory

RAM is where temporary data is stored while the computer is currently being used. Once a computer is switched off this data is lost



Network Interface Card

A network interface card (NIC) enables a computer system to connect to a network. Some allow access wirelessly.



Explain what a Computer is. (Definition of a computer)

Identify a range of components of a PC (e.g. motherboard, RAM, hard drive etc)

Explain what an 'Input' device is and give examples of them.

Explain what an 'Output' device is and give examples of them.

Assessment Topics

What you need to know...

Explain the purpose of a range of computer components.

Explain how Input devices, CPU, Hard Drive, RAM and Output devices all work together.

Explain how the CPU works






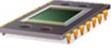






Explain what a CPU is.

Explain what clock speed is and explain the clock speed of a modern day CPU.

Explain what happens during the process of opening a program.



www.computerscienceuk.com

Body Part	Description	Computer Part
	1. The case of the computer holds everything together similar to the way your skeleton keeps your body together!	
	2. Just like your heart pumps blood around your body, the power supply pumps electricity around the computer.	
	3. The processor is like your brain , it's where all the processes are carried out (like thoughts in your head)	
	4. The motherboard is like your central nervous system it sends messages to all of the components inside the computer like your nerves send signals to different parts of your body.	
	6. The hard drive is where all of your documents, pictures, programs etc. are stored on the computer, similar to all of the long term memories in your brain.	
	7. Random Access Memory (RAM) is where the computer stores the current task that is being carried out. This is like your short term memory when you are thinking about what you are about to say or what you have just eaten.	

Keyword	Definition
WAP	Wireless Access Point. The point to which a wireless-enabled device connects to a network. It normally connects to or is built into a router.
Hub	The role of a hub is to allow communication between multiple devices in a network. They are used in LAN networks. Hubs will send a copy of the packets received to all devices on a network. When the devices receive packets they will either accept or reject them, they use the destination IP address to do this
Router	A router is designed to route packets across wide area networks such as the internet. It will pass packets between other routers until the final destination is reached. Modern routers have built in WAP and switches.
Fibre Optic	A cable which transmits light at the speed of light to send binary code. Not subject to interference from neighbouring cables
Wireless	A commonly used connection as it gives portability to devices and required minimal alteration to buildings. Easy to add new devices to the network.

Key vocabulary	
World Wide Web	Collection of webpages connected together by hyperlinks, using the Internet (usually shortened to WWW).
Internet	A global network of computers all connected together.
Webpage	A hypertext document connected to the World Wide Web.
Website	A collection of webpages with information on a particular subject.
Web browser	The software which displays a webpage or website on a computer.
Uniform Resource Locator (URL)	An address that identifies a particular file or webpage on the Internet.
HTML	Hyper Text Markup Language - describes and defines the content of a webpage.
Web script	A type of computer programming language used to add dynamic features to a webpage.
Multimedia	Content that uses a combination of different types of media - for example, text, audio, images.
Hyperlink	A link from a hypertext document to another location, activated by clicking on a highlighted word or image.
Hotspot	An area on a computer screen which can be clicked to activate a function, especially an image or piece of text acting as a hyperlink.
Navigation	The elements of a website that allows the user to move around the website. This is usually in the form of a menu or hyperlinked text or buttons.
JPG	The main file type used for images on the World Wide Web - uses lossy compression.
PNG	Another type of image file used on the World Wide Web – supports transparency and uses lossless compression.

Year 7 HTML and CSS



What is HTML?

HTML stands for Hypertext Markup Language, the language used to make webpages.

What is CSS?

CSS stands for Cascading Style Sheets
CSS describes how HTML elements are to be displayed on screen, paper, or in other media

HTML Tag	Definition – what does it do?
<html>	Root of a HTML document
<body>	Contents of the page
<head>	Information about a page
<title>	Tab title / defines title
<h1>, <h2>, <h3>	Headings
<p>	Paragraph
	Image
<a>	Anchor (used in hyperlinks with href)
, 	Ordered/unordered list
	List item
<table>	Creates and defines table
<tr>	Table row
<td>	Table data
	Bold
 	Linebreak
<div>	Divider
<!-- -->	Comment
CSS script	Definition – what does it do?
color	Font colour
text-align	Horizontal alignment
background-color	Changes background colour
background-image	Change background image
background-repeat	Changes the background to stay in place or move when scrolled



HTML and CSS in action...

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4 <title>My Website</title>
5 </head>
6 <body>
7 <p>Here is some text</p>
8 </body>
9 </html>

```

Font size, font style

Between these curly brackets, any code added will change the appearance of the paragraph tags.

Please notice the 'Colon' and 'Semi Colon'.

Font-size: 20pt; Enlarges the size of the text

Font-family: Kristen ITC; Sets the font of the text.

