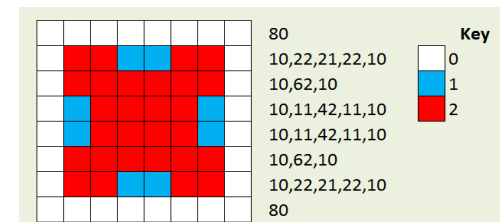
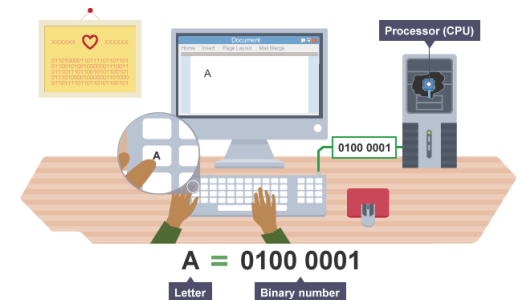
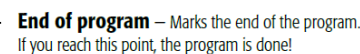


0	1	0	1	1	1	1	1
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REMOVE DETAILS
AND EXTRACT
RELEVANT
INFORMATION

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Can you remember how the numbers on the left represent the **'pixels'** on the right?

Year 7 Introduction to Computers Knowledge Organiser

Computer System

A basic, **complete**, and **functional** computer.

It will include all the hardware and software required to make it functional

INPUT → PROCESS → OUTPUT

Hardware

Computer hardware refers to the **physical parts of a computer and related devices**.

Internal hardware devices include motherboards, hard drives, and RAM.

Computer Components

Motherboard



Hard Disk Drive



CPU (Central Processing Unit)



Fan



PSU (Power Supply Unit)



RAM (Random Access Memory)



Types of Computer Storage

Storage is a **mechanism that enables a computer to retain data**, either temporarily or permanently. Storage is among the key components of a computer system and can be classified into several forms, although the types we cover are:

Internal Storage:

Most often refers to a **computer's internal** hard drive. This is the primary storage device used to store a user's files and applications. The computer's internal memory, **RAM (Random Access Memory)** and **ROM (Read Only Memory)** is also classed as internal storage.



External Storage:

Commonly referred to as an external drive, external storage is storage that's not part of the internal parts of a computer. These drives often connect to the computer using a connection, such as USB (Universal Serial Bus).



Common types of external storage are **Flash Drives (USB Sticks)** and **DVDs**.

Cloud Storage

Cloud storage is a cloud computing model in which data is stored on remote servers accessed from the internet, or "cloud".



Software

Computer software refers to the programs and other operating information used by a computer.

The main piece of software on a computer is the

Operating System

The part of the operating system we see on screen is known as the User Interface.

- Graphical User Interface (GUI).
The most popular type of system. They combine menu driven interfaces with icons.
- Command Line Interface (CLI).
Users need to learn the commands to make it work.
- Menu Driven Interface.
A list of options organised under various headings or menus

Most used Operating Systems (OS)

- Microsoft – Windows
- Apple – iOS
- Google - Android



Year 7 Online Safety Knowledge Organiser

E-safety

E-safety refers to staying safe online, this includes the use of the internet, social media sites and gaming.

Top tips for staying safe online:

1. Do not talk to strangers
2. Do not give out personal information
3. Make sure all social media accounts are set to private.

Cyberbullying

Cyberbullying is **"bullying for the 21st century, using email, text messages and the internet."**
(Richard Aedy, *ABC Radio National*)

Flaming

Flaming is the online act of posting insults, often laced with profanity or other offensive language on social networking sites.

Cyber Stalking

Cyberstalking is the use of the Internet or other electronic means to stalk or harass an individual, group, or organization.

Masquerading

Masquerading is an elaborate form of cyberbullying where the **bully** pretends to be someone who they are not. They might create

Malware

Malware is software that is specifically designed to disrupt, damage, or gain unauthorized access to a computer system. There are several different types of **malware**.

Viruses

A virus can be defined a piece of code which is capable of copying itself and typically has a detrimental effect, such as corrupting the system or destroying data.

Worms

A worm can be defined as a self-replicating program able to propagate itself across a network, typically having a detrimental effect.

Trojan Horses

A Trojan horse, or trojan, can be defined, as any malware which misleads users of its true intent. The term is derived from the Ancient Greek story of the deceptive Trojan Horse that led to the fall of the city of Troy.

Spyware

Spyware can be defined as a piece of software that is installed in a computer without the user's knowledge and transmits information about the user's computer activities over the Internet.

AI-Related Online Threats

Deep fakes

AI-generated videos or images that make people appear to say or do things they haven't. These can be used to spread lies or embarrass others.

AI Chatbots Used for Scams

Some scammers use AI to copy writing styles, impersonate people, or

10 Malware Protection Tips



1. Keep your operating system up to date. Always use the latest software version available. Out-dated programs often suffer from severe security vulnerabilities, which hackers take advantage of.
2. Install a firewall to ward off threats.
3. Use a virus scanner program to detect and reject possible security threats.
4. Create passwords that are at least 12 characters long. Longer passwords are harder to crack. In fact, the length of the password is more important than the use of special characters.
5. Choose a unique password for each of your digital accounts.
6. Only open emails from trusted senders. If you open a dubious looking email, do not click any links, and delete it straight away.
7. Never pass on personal data such as account or credit card data using email.
8. Use a trusted email provider and always send sensitive data encrypted.
9. Do not use public WLAN routers (unencrypted wireless networks).
10. Only install programs from trustworthy sources.

Year 7 Scratch Knowledge Organiser

What is programming

Programming is writing computer code to create a program, in order to solve a problem. Programs consist of a series of instructions to tell a computer exactly what to do and how to do it.

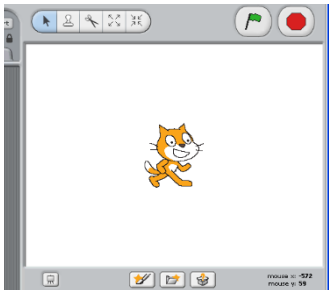
Sprite

A sprite is a character or object that can be created and coded in Scratch



Stage

The **stage** is where a Scratch project is physically run, so when one plays a game, the **stage** is the window in which it is run.



Scratch's coordinate system uses 2 **coordinates**, "**X position**" and "**Y position**", to determine the location of a sprite on the stage. The "**X position**" value determines the horizontal location of the sprite and the "**Y position**" value determines the vertical location or height.

COMPUTATIONAL THINKING

DECOMPOSITION

BREAK DOWN DATA AND PROBLEMS INTO SMALLER PARTS

PATTERN RECOGNITION

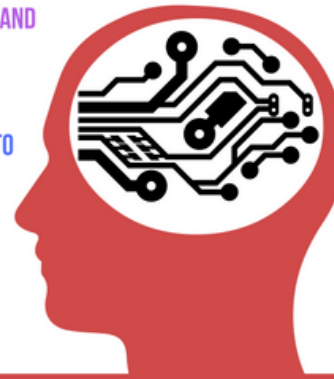
OBSERVE PATTERNS AND TRENDS IN DATA

ALGORITHMS

DETERMINE WHAT STEPS ARE NEEDED TO SOLVE A PROBLEM

ABSTRACTION

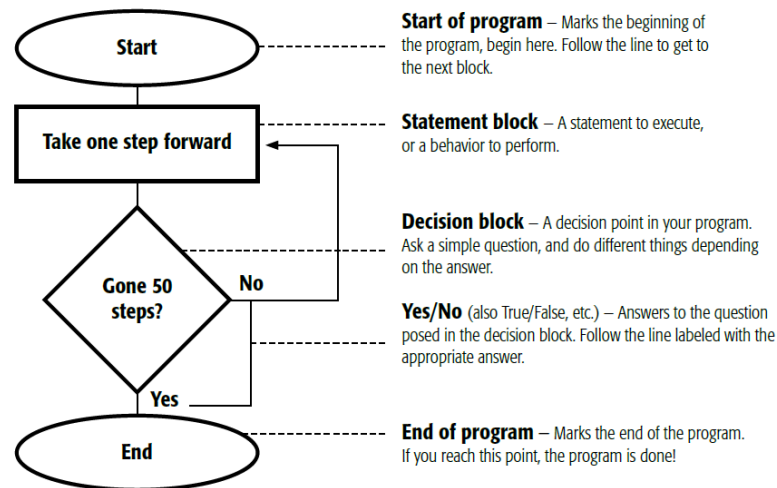
REMOVE DETAILS AND EXTRACT RELEVANT INFORMATION



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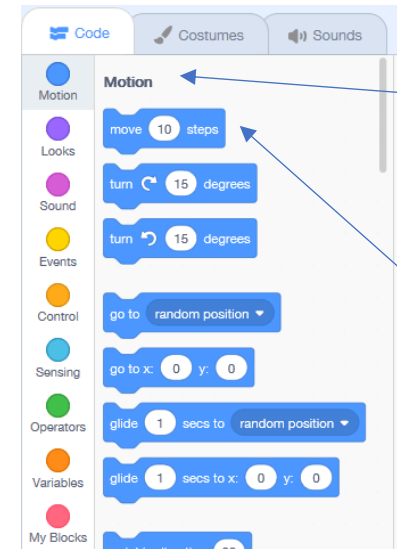
Flowcharts

We use flowcharts to help us put instructions in order.



Code Block

Blocks are colour coded into different sections and are used to program the sprites

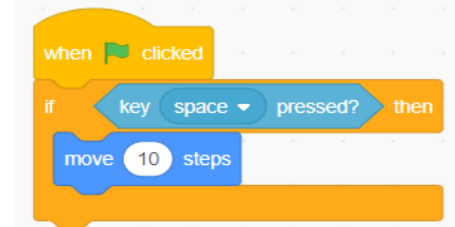


Shown are some of the '**Motion**' blocks such as '**move 10 steps**'

Sequences

You program a **sprite** by joining two or more **blocks** together. You must make sure the order of events is correct when building sequences.

What will the sequence below do to the sprite?



ANSWER: