



Computing Systems and Networks – The Internet

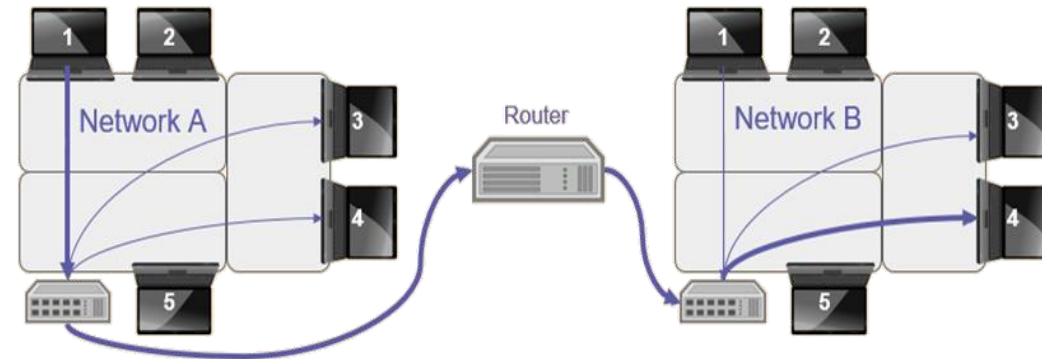
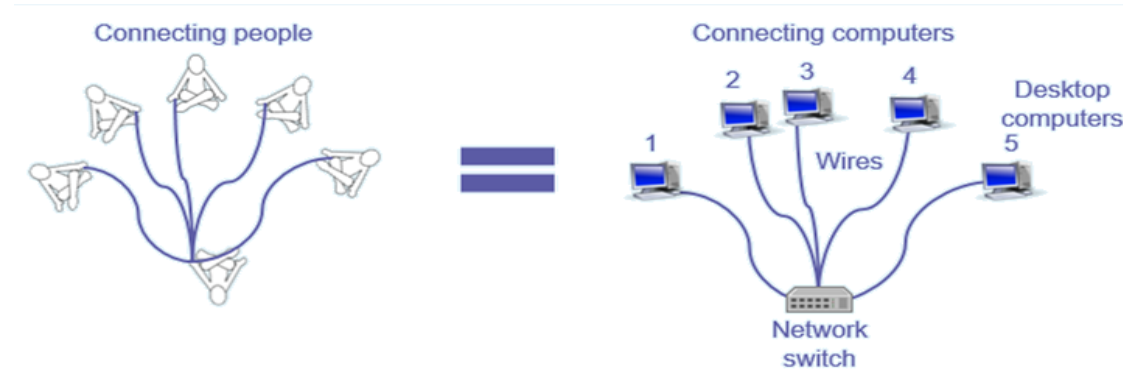
**YEAR 4
Term 1**

Key Vocabulary:

- networks
- connect
- World Wide Web
- internet
- global
- interconnection
- security
- content
- media
- websites
- web pages
- devices
- routers

Knowledge Building Blocks:

- To describe how networks connect to other networks.
- To outline how information can be shared via the World Wide Web.
- To recognise that the World Wide Web is part of the internet.
- To explain that the global interconnection of networks is the internet.
- To recognise the need for security on the internet.
- To describe how to access the World Wide Web.
- To describe the types of content/media that can be added, created and shared on the World Wide Web.
- To explain how the content of the World Wide Web is created, owned, and shared by people.
- To explain that the internet enables us to view the World Wide Web.
- To explain that the World Wide Web comprises of websites and web pages.
- To describe the current limitations of World Wide Web media.
- To evaluate the reliability of content and the consequences of unreliable content.
- To explain the benefits of the World Wide Web.



www.bbc.co.uk

This stands for
'World Wide Web'

This is the domain name
(bbc.co.uk)



Creating Media – Audio Editing

**YEAR 4
Term 2**

Key Vocabulary:

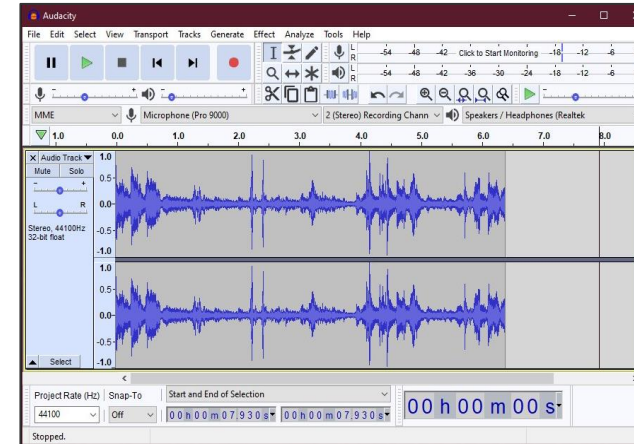
- sound
- recorded
- input/output device
- audio
- computer
- stored
- import
- project
- waveform
- delete
- section
- layered
- volume
- ownership
- copyright
- podcasts
- align
- layers
- voice tracks
- edit/trim
- evaluate

Knowledge Building Blocks:

- To identify that sound can be recorded.
- To identify that an input device is needed to record sound.
- To identify that output devices are needed to play audio.
- To record sound using a computer.
- To recognise that recorded audio can be stored on a computer.
- To recognise that audio can be edited.
- To play recorded audio.
- To import audio into a project.
- To recognise that sound can be represented visually as a waveform.
- To delete a section of audio.
- To recognise that audio can be layered so that multiple sounds can be played at the same time.
- To change the volume of tracks in a project.
- To consider the results of editing choices made.

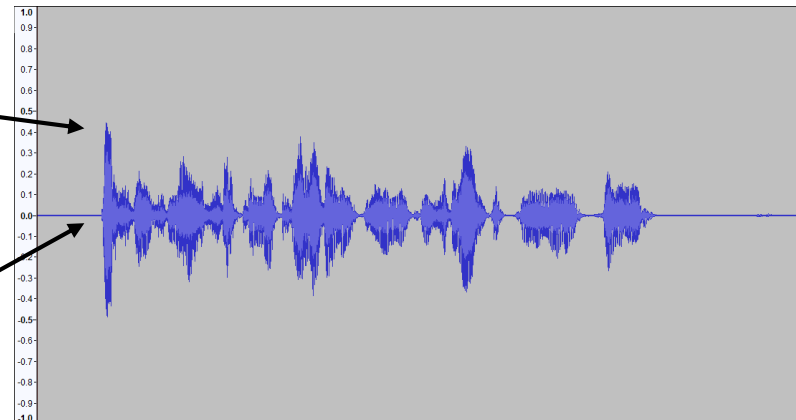
Application:

Audacity



Loudest

Quietest





Creating Media – Photo Editing

**YEAR 4
Term 3**

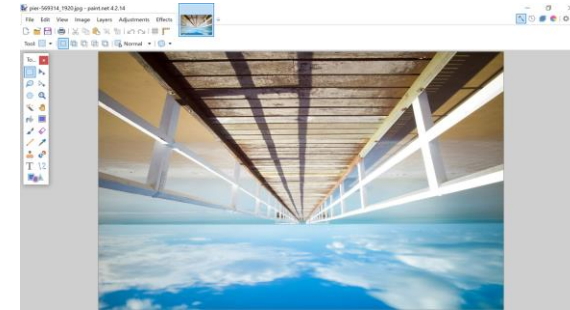
Knowledge Building Blocks:

- To recognise that digital images can be manipulated.
- To recognise that digital images can be changed for different purposes.
- To use an application to change the whole of a digital image.
- To use an application to change part of a digital image.
- To use an application to add to the composition of a digital image.
- To change the composition of a digital image by rotating and flipping.
- To change the composition of a digital image by cropping.
- To adjust colours of a digital image.
- To apply filters to a digital image.
- To apply effects to a digital image.
- To select part of a digital image.
- To use clone, copy and paste to change the composition of a digital image.
- To use cloning to retouch a digital image.
- To add text to a digital image.
- To choose the most appropriate tool for a particular purpose.
- To consider the impact of changes made on the quality of the image.

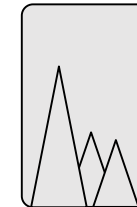
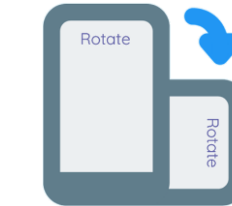
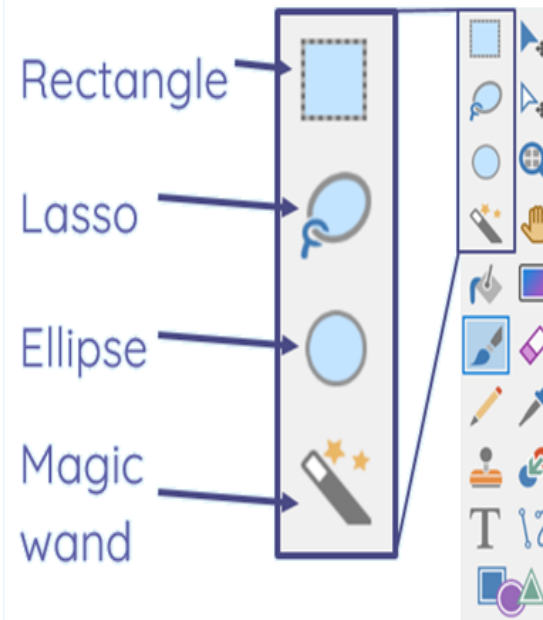
Application:



Paint.net



Editing Techniques:



Key Vocabulary:

- digital images
- composition
- rotating
- flipping
- cropping
- adjust
- colours
- filters
- effects
- clone
- select
- copy
- paste
- retouch
- text
- tool
- editing
- filters
- duplicated
- publication

Key Vocabulary:

- table
- data
- logged
- sensors
- input devices
- data collection
- digital device
- collect samples
- data logger
- data points
- information
- programme
- attribute
- export
- Formats
- physical world
- parallels
- intervals
- download
- files
- review

Knowledge Building Blocks:

- To suggest questions that can be answered using a table of data.
- To identify data that can be logged over time.
- To identify that sensors are input devices.
- To recognise that a sensor can be used as an input device for data collection.
- To use a digital device to collect data automatically.
- To choose how often to automatically collect data samples.
- To explain that a data logger captures 'data points' from sensors over time.
- To use a set of logged data to find information.
- To use a computer programme to sort data by one attribute.
- To export information in different formats.

Examples of Data collection:



Fitness tracker	
Day	Steps
Sunday	10307
Monday	12139
Tuesday	9844
Wednesday	12015
Thursday	7053
Friday	11413
Saturday	4341



Temperature reading (in degrees Celsius)

Sound reading (in decibels)



Light sensor

Light reading (in lux)

Sound sensor

Temperature sensor



Sockets to connect external sensors



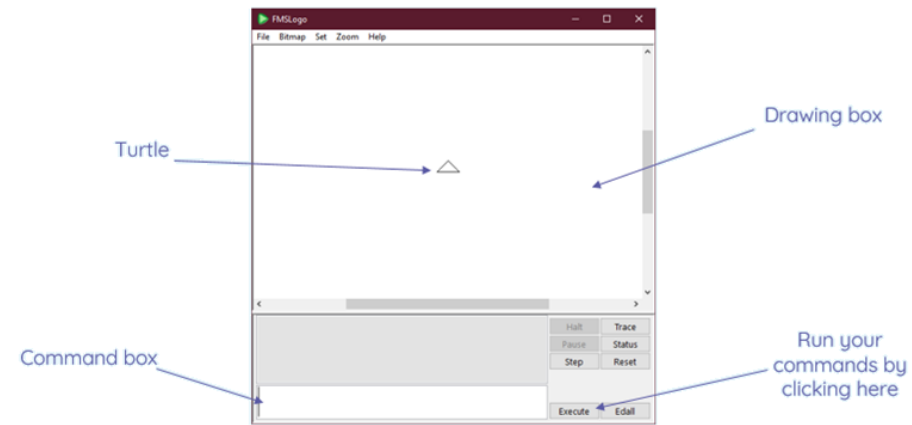
Programming A – Repetition in Shapes

**YEAR 4
Term 5**

Knowledge Building Blocks:

- To relate what 'repeat' means.
- To identify everyday tasks that include repetition as part of a sequence, e.g. brushing teeth, dance moves.
- To list an everyday tasks as a set of instructions including repetition.
- To explain that we can use a loop command in a programme to repeat instructions.
- To identify patterns in a sequence.
- To identify a loop within a programme.
- To explain that in programming there are indefinite loops and count-controlled loops.
- To explain that an indefinite loop will run until the programme is stopped.
- To explain that you can programme a loop to stop after a specific number of times.
- To identify patterns in a sequence, e.g. 'step 3 times' means the same as 'step, step, step'.
- To use an indefinite loop to produce a given outcome.
- To use a count-controlled loop to produce a given outcome.
- To justify when to use a loop and when not to.
- To plan a programme that includes appropriate loops to produce a given outcome.
- To explain the importance of instruction order in a loop.
- To recognise tools that enable more than one process to be run at the same time.
- To create two or more sequences that run at the same time.
- To recognise that not all tools enable more than one process to be run at once.

Application:



Commands:

- FD 100 – Forward 100 (moves forward 100 steps)
- BK 100 – Back 100 (moves back 100 steps)
- RT 90 – Right 90 (turns right 90°)
- LT 90 – Left 90 (turns left 90°)
- CS – Clear screen

Key Vocabulary:

- repeat
- sequence
- instructions
- loop
- command
- patterns
- programme
- count-controlled
- outcome
- Tools
- Logo
- code
- algorithms
- debug
- numbers
- shapes
- symbols
- trace
- predict
- modify
- values
- code snippet
- decomposition



Programming B – Repetition in Games

**YEAR 4
Term 6**

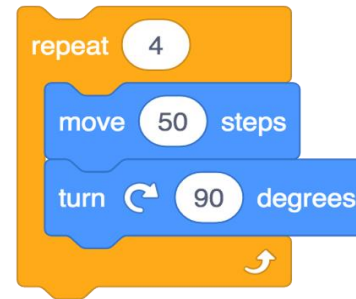
Key Vocabulary:

- repeat
- sequence
- instructions
- loop
- command
- programme
- patterns
- outcome
- instruction
- blocks
- shapes
- count-controlled
- code
- Scratch
- animation
- costume
- appearance
- Sprite
- event
- green flag
- evaluate
- add/re-use/modify
- algorithms

Knowledge Building Blocks:

- To relate what 'repeat' means.
- To identify everyday tasks that include repetition as part of a sequence, e.g. brushing teeth, dance moves.
- To list an everyday tasks as a set of instructions including repetition.
- To explain that we can use a loop command in a programme to repeat instructions.
- To identify a loop within a programme.
- To identify patterns in a sequence.
- To explain that in programming there are indefinite loops and count-controlled loops.
- To explain that an indefinite loop with run until the programme is stopped.
- To explain that you can programme a loop to stop after a specific number of times.
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- To use an indefinite loop to produce a given outcome.
- To use a count-controlled loop to produce a given outcome.
- To justify when to use a loop and when not to.
- To plan a programme that includes appropriate loops to produce a given outcome.
- To explain the importance of instruction order in a loop.
- To recognise tools that enable more than one process to be run at the same time.
- To create two or more sequences that run a the same time.
- To recognise that not all tools enable more than one process to be run at once.

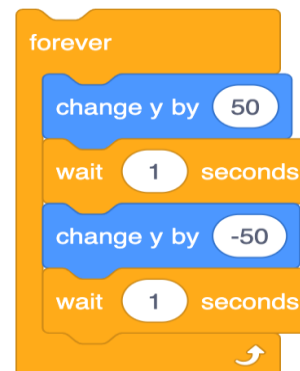
Code Snippet:



Infinitive Loop:



Repetition Loop:



Count-controlled Loop:

