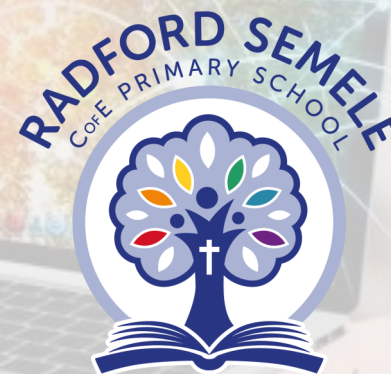# Year 5 Computing

Knowledge Organisers
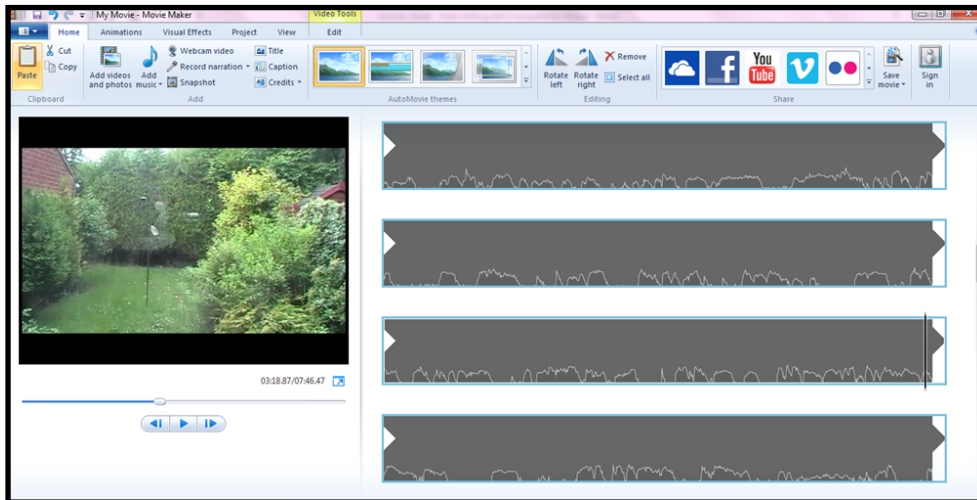
Computing Knowledge—Year 5—Autumn 1 - Filming

Online Safety and Digital Literacy

It is important to know how to create a strong password that cannot be guessed by anyone else. Free apps and services may read and share private information, such as friends lists, contacts, images, videos, geolocation. Different apps may ask for permission to access different private information, and it is important to recognise these.

Identity online can be copied, modified or altered. It is important to make responsible choices about having an online identity, depending on the context. Trusted adults can help you with this, as well as with permissions and information.

Vocabulary

Script	The written text of a play, film or television show.
Source	Where something comes from; where information was found
Import	To bring something in from another place e.g. video into editing software
Edit	To make any changes or alterations before the final product
Documentary	A factual report on a subject

- Film making involves several stages, including pre-production, filming and editing
- Documentaries are a factual report on a subject
- It is necessary to plan the script as well as any props that are needed before filming takes place
- Any information that has been researched for a script needs to be credited
- When filming, it is important to be mindful of surroundings and nearby sound
- Filmed clips can be imported into software so that it can be edited
- Clips can be edited in software to make a finished product, including adding sound and transitions
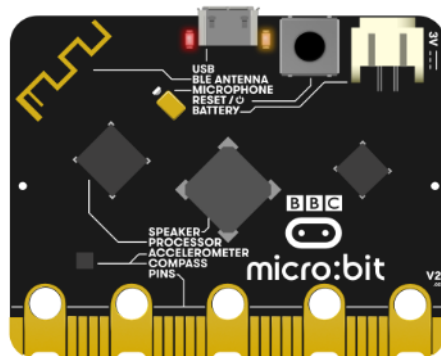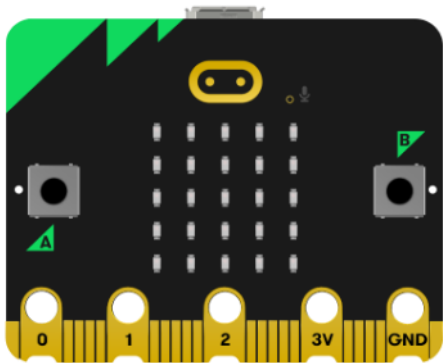
Computing Knowledge– Year 5—Autumn 2-Micro:Bit

Online Safety and Digital Literacy

There are multiple forms of technology-specific communication such as emojis, memes and GIFs. Some people we communicate with online may which to do us or our friends harm, but this is not our fault. We need to know who we can talk to if we are feeling uncomfortable or unsafe online.

It is also important to recognise the difference between joking with someone and making them feel hurt.

Vocabulary

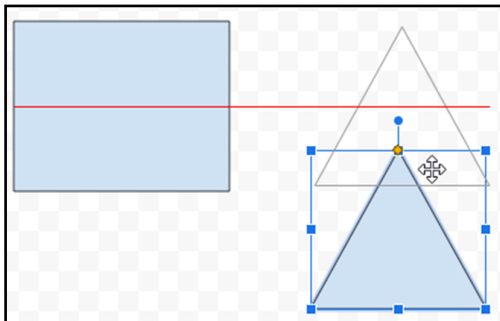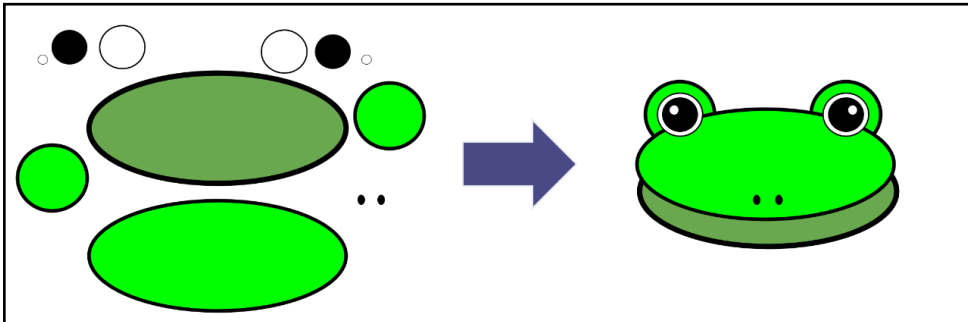|	
Trace	Following code or a program to work out what it does and identify any problems.
Variable	A value that can be set and changed
Sensor	Senses change in its environment and sends that information to a computer.
Selection	When a program makes a decision or answers a question.
Condition	If '___' is true, then the program will follow one action, if it's not then it will follow a different one

- The Micro:bit is an input, process, output device that can be programmed.
- If, then, else programs are used to direct the flow of a program.
- Coding for Micro:bit is programmed on the computers and then downloaded onto the devices.
- Coding can be tested and debugged on a laptop before testing it on the Micro:bit.
- The Micro:bit can be used as a sensor.

Online Safety and Digital Literacy

There are multiple search technologies available for us to use, such as search engines, voice-activated search etc. These each come with benefits and limitations. Some technology can limit the information that we are presented with such as voice-activated searching only giving one result.

It is important to evaluate digital content and explain how to make choices about what is trustworthy. The internet can draw us to information for different agendas such as pop-up or targeted ads.

Vocabulary

Vector drawing	A drawing that is made on a computer using lines and shapes which are put together.
Object	Each element of a vector drawing.
Layering	Placing objects on top of each other in specific orders to achieve the desired image.
Grouping	Collecting objects together so they can all be moved, resized etc.
Align	Lining images up precisely to each other, often using guides

- Vector drawings are made up of simple shapes and lines.
- Each element of a vector drawing is called an object.
- Objects can be moved, reshaped, resized and duplicated.
- Grids can be used to improve consistency in drawings.
- Layers are used to create effective vector drawings.
- Vector drawings can be grouped and ungrouped in order to make resizing and moving easier.
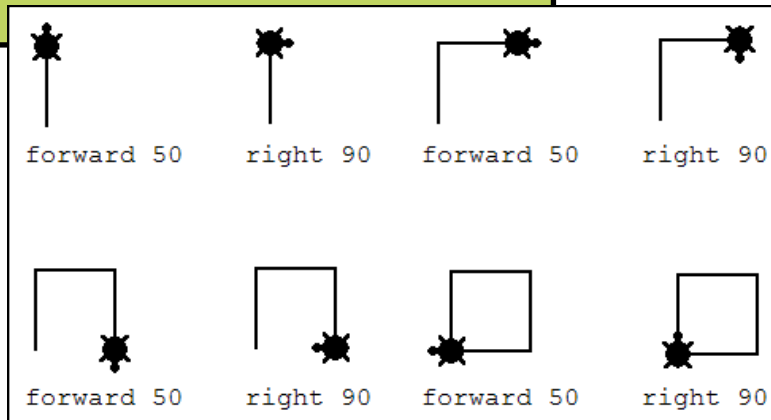
Computing Knowledge—Year 5—Spring 2— Programming with Logo

Online Safety and Digital Literacy

People can be involved in online communities and might collaborate constructively with others and make positive contributions, such as in gaming communities or social media groups. We can get help if we are having problems from a trusted adult. It is also important to recognise how we can support others who are having difficulties online.

Vocabulary

Repeat	Ordering a program to repeat an instruction within a limit
Loop	A way of asking a program to repeat an instruction or set of instructions
Indefinite loops	Loops that continue until the program is stopped
Count-controlled loops	A repeated sequence of events for a set number of times
Sequence	A set of instructions as part of a program

```
> to square
repeat 4[fd 100 rt 90]
end
```


forward 50   right 90   forward 50   right 90

forward 50   right 90   forward 50   right 90

- It is important to recognise patterns and loops in a sequence, as well as recognising their purpose
- Programs can use either indefinite loops, which continue until the program is stopped, or count-controlled loops, which have a set limit placed on them
- Not all tools enable more than one process to be run at once
- Using both indefinite and count-controlled loops, we can produce a given outcome
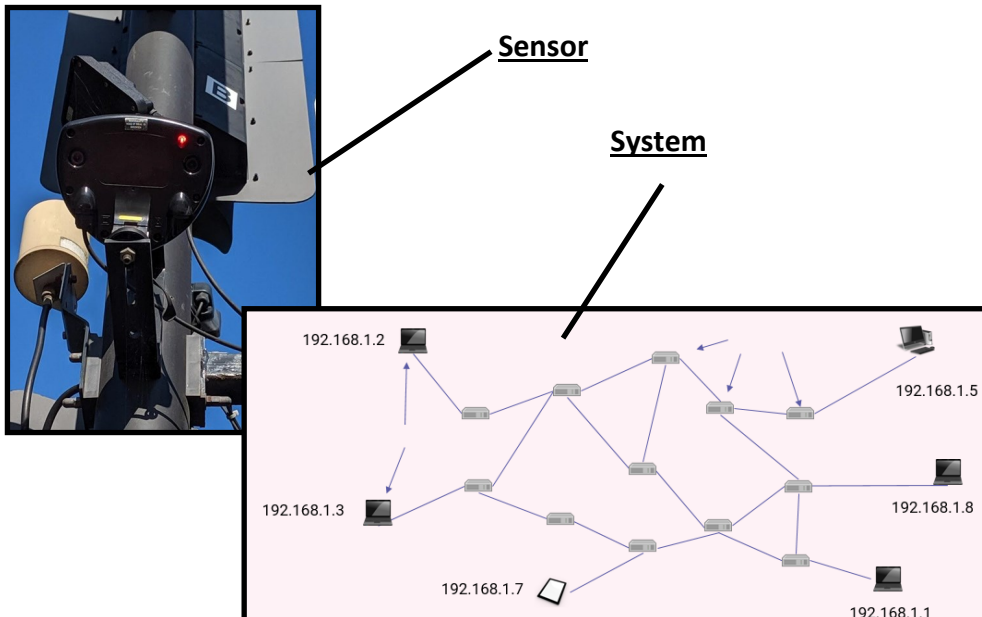- We can also create two or more sequences that run at the same time

Online Safety and Digital Literacy

We can search for information about individuals online. Information about anyone online can be used by others to make judgements about that individual. This judgement may be incorrect as the information may be incorrect. It is important to carefully consider when researching.

We need to assess when it is acceptable to use the work of others. Some content is permitted to be reused.

Vocabulary

Networks	When more than one device is connected through the internet; for file sharing
System	Different parts working together for different purposes
Sensors	Detects and responds to input from environment around
Protocol	Set of rules for sending data between devices
Process	A computer program taking place for a purpose

Sensor

System

192.168.1.2
192.168.1.5
192.168.1.3
192.168.1.8
192.168.1.7
192.168.1.1

- Devices can be linked and work together in systems for different purposes
- Sensors provide an input to computers, detecting and responding to the physical world
- These sensors can be used as part of a system to provide information and, in some cases, start a process
- Computer systems don't have to be near each other; instead, they can use the Internet to communicate with each other
- Systems use protocols to make sure they are 'hearing' each input.
- Networks can be used to work collaboratively with others
- Plagiarism is when someone copies or steals work they did not create without permission

Computing Knowledge– Year 5—Summer 2—Databases

Online Safety and Digital Literacy

Technology can affect health and well-being both positively and negatively. There are several strategies, tips and advice we can use to promote health and well-being with regards to technology.

There are both benefits and risks to accessing information about health and well-being online and we need to balance this with talking to trusted adults and professionals. Some apps and games may request or take payment for additional content and we need to make sure that permission is gained from a trusted adult before purchasing.

Vocabulary

Database	A collection of structured information or data
Attribute	Key characteristic that describes a certain category within a database
Field	A set of values within a database with the same data type
Criteria	A standard or condition that needs to be met
Records	Collection of fields about the same person, item or object

Country Name	South Africa
Area	1,221,037 km^2
Population	54956900
Language	Afrikaans
Flag	
Currency	South African Rand

Age = 16 AND
Boarded = Southampton

- Computer programs can be used to organise data in different ways
- Tools can be used to select data in order to answer questions, including by ordering
- Operands such as 'AND' or 'OR' can filter data or refine data selection
- Computer programs can compare data visually
- We can search for different attributes or values in order to answer a given question
- We can also use multiple criteria to search data in order to answer a question