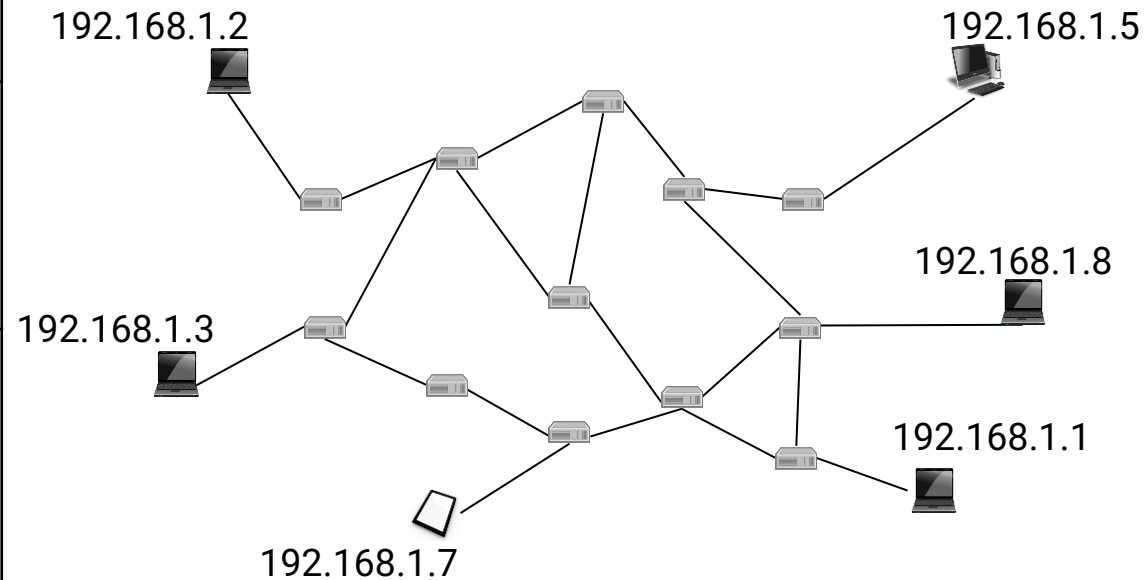


Computing Knowledge Organiser Year 5: We are Collaborators

Concept- **Computer Networks**

Key Vocabulary	Definition
Computer System	A combination of hardware and software that can have data input to it, which it then processes and outputs. It can be programmed to perform a variety of tasks.
Transfer	To move from one place to another.
IP Address	A unique string of characters that identifies each computer using the Internet Protocol. Data can be sent from one computer to another using these.

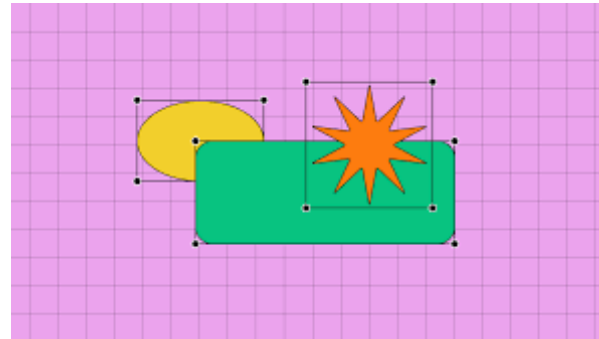
A representation of how computer networks are connected.



Computing Knowledge Organiser Year 5: We are Artists

Concept- **Communication**

Key Vocabulary	Definition
Vector drawing	Vector drawings are a form of computer graphics in which visual images are created directly from geometric shapes, such as points, lines, curves and polygons.
Complexity	The state or quality of being intricate or complicated.
Alignment	The arrangement of details along the grid lines, edges, or centre, creating visual order and consistency.



Computing Knowledge Organiser Year 5: We are Bloggers

Concept- **Communication**

Key Vocabulary	Definition
VLOG	What is vlogging? Vlogging (short for “video blogging”) can be about nearly anything. Vlogs can be criticism, comedy or educational videos. However, all vlogs and vloggers have one thing in common: They showcase the personality of their creators.
Podcast	A podcast is a program made available in digital format for download over the Internet. For example, an episodic series of digital audio files that a user can download to a personal device to listen to at a time of their choosing. Podcasts are primarily an audio medium.

Who is No 1 vlogger in UK?

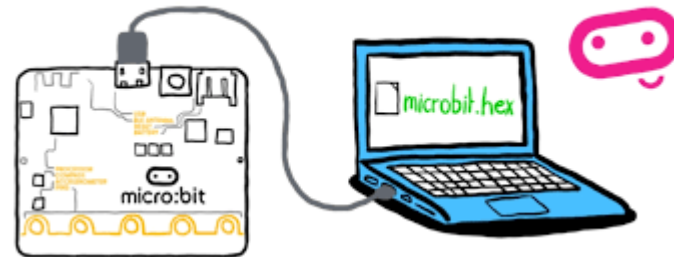
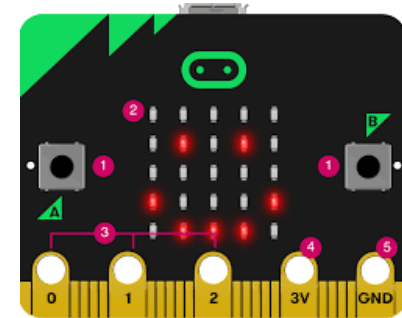
PewDiePie. PewDiePie, one of the most popular British YouTubers, has made a name for himself as a gaming guru. Known to his family as Felix Kjelberg, his sharp and witty gaming commentary on Minecraft and his full playlist of playthroughs have earned him 111M (yes, you read that correctly) subscribers.



Computing Knowledge Organiser Year 5: We are Solar Sensors

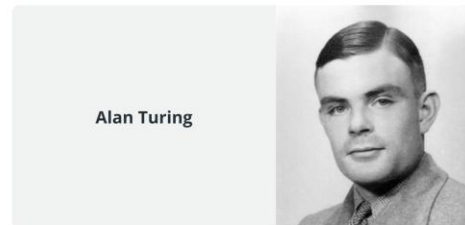
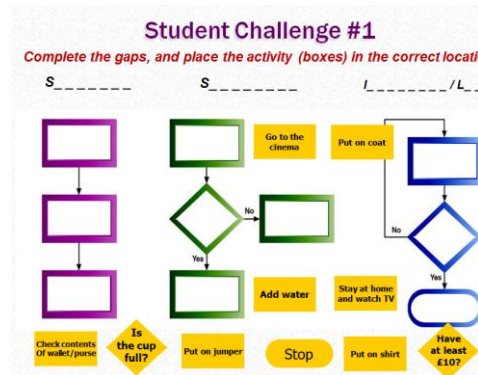
Concept- Programming

Key Vocabulary	Definition
Micro-bit	A micro:bit is a tiny, pocket-sized computer.
Sensor	A sensor is a device that detects and responds to some type of input from the physical environment
Programming	The process or activity of writing computer programs



Concept- Programming

Key Vocabulary	Definition
Task	This is what is needed
Design	This is what it should do.
Code & running code	This is what is done and how it is done



Alan Turing

Programming Constructs



if

This construct only executes the code statements in the group if a condition has been met.

```
if varHeight > 1.8:
```

else

This construct only executes if the condition of the if statement has not been met

```
if username == "Jack":
else:
```

elif

This construct allows us to provide further conditions to an if statement to execute different code.

```
if myScore >= 90:  
elif myScore >= 80:
```

while

This condition controlled loop executes its code if a condition is met. After reaching the last statement it checks the condition before starting again.

```
while varCount<10:
    varCount += 1
```

for

This condition controlled loop executes its code then checks to see if the condition is met, if so it starts again.

```
for i in range(0,10):  
    print(i)
```

try

This will allow a section of code to execute with some protection if it crashes. Can be used to manage situations where crashes are likely.

```
try:
    value = int(input())
```

except

- Defines exactly what the program should do if it encounters a crash in a try construct. It is important to report back a sensible error message to the user.

```
except Exception:
    print("Error")
```

subroutine

This is a section of code within a larger body of code. It performs a specific task and is run. We would use this for code we want to use many times, or to make the logical flow simpler.

```
def sub(myVar):  
    return myVar+1
```

recursion

This is a subroutine that calls itself.
It will keep creating versions of
itself until it reaches a base case
where it will start returning values
and moving back up the stack of
instances of the subroutine.

```
def sub(myVar):  
    return sub(myVar-1)
```

Key

Selection

These constructs are used to select whether code is executed depending on a condition.

Iteration

A group of instructions is repeated for a set number of times until a condition is met

Error Checking

Where code is allowed to execute and crash without killing the entire program

Modularisation

Where code is separated into logical groups and used repeatedly

 cointelegraph.com

Alan Turing

Alan Turing was a British mathematician and computer scientist who contributed significantly to the growth of [artificial intelligence](#), cryptography and computer science. He helped decipher the Enigma code during World War II and introduced the idea of the Turing Machine, a theoretical representation of a computer.

Computing Knowledge Organiser Year 5: We are Cryptographers

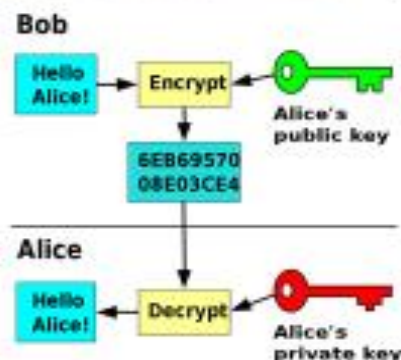
Concept- Online Safety

Key Vocabulary	Definition
Public key cryptography	Public-key cryptography, or asymmetric cryptography, is the field of cryptographic systems that use pairs of related keys. Each key pair consists of a public key and a corresponding private key. Key pairs are generated with cryptographic algorithms based on mathematical problems termed one-way functions.
code	a <u>system</u> of words, letters, or <u>signs</u> used to <u>represent</u> a message in <u>secret</u> form, or a <u>system</u> of numbers, letters, or <u>signals</u> used to <u>represent</u> something in a <u>shorter</u> or more <u>convenient</u> form:
encryption	the <u>process</u> of changing <u>electronic information</u> or <u>signals</u> into a <u>secret code</u> (= <u>system</u> of <u>letters</u> , <u>numbers</u> , or <u>symbols</u>) that <u>people</u> cannot <u>understand</u> or use without <u>special equipment</u> :



James Ellis

Conceived of the possibility of "non-secret encryption", now more commonly known as public-key cryptography



Flow diagram illustrating the sequence

The two types of PKC algorithms are RSA, which is an acronym named after this algorithm's inventors: Rivest, Shamir and Adelman, and Digital Signature Algorithm (DSA). PKC encryption evolved to meet the growing secure communication demands of multiple sectors and industries, such as the military. PKC is also known as public key encryption, asymmetric encryption, asymmetric cryptography, asymmetric cipher, asymmetric key encryption and Diffie-Hellman encryption.