






KNOWLEDGE ORGANISER
BIG IDEA: Computer Science
TOPIC: Computing, Algorithms, Logic and programming

Key Word	Definition
Wired Communication	Wired communication refers to the transmission of data over a wire-based communication technology
Wireless Communication	Wireless Communication is a method of transmitting information from one point to other, without using any connection like wires, cables or any physical medium.
Bandwidth	Bandwidth measures the amount of data that can transfer through a communication channel over a given period of time
Emerging Technologies	Emerging technology is a term generally used to describe a new technology, but it may also refer to the continuing development of an existing technology
Decomposition	Breaking down a complex problem or system into smaller, more manageable parts
Abstraction	Focusing on the important information only, ignoring irrelevant detail
Pattern Recognition	Looking for similarities among and within problems
Algorithms	Developing a step-by-step solution to the problem, or the rules to follow to solve the problem

Historic Communication Methods

 Carrier pigeon 1167	 Semaphore 1791	 Telegram 1837
 Telephone 1876	 Email 1961	

IP Address

An IP address is made up of 4 groups of numbers between 0 and 255, each separated by a full stop. These are unique for every device on the internet. Typically, this would be the address of the router that connects to the internet.

Example:

192.168.5.43

Wired vs Wireless Communication

	Advantages	Disadvantages
Wired	Faster connection (little to no interference)	Cables can be a trip hazard and look unpleasant
	Higher bandwidth	More expensive and time-consuming to add devices, as each device needs cables
	Better security	Devices are in fixed positions (no portability)
Wireless	No trailing wires/no trip hazard	Lower bandwidth
	It is quick and cheap to connect new devices	Wireless connections can be weakened by walls and ceilings
	Allows portability	Less secure

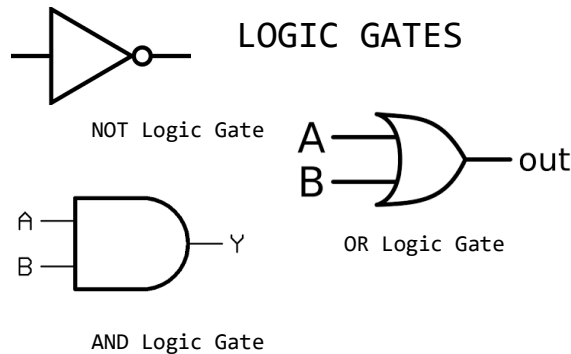
Data Packets

- Networks send and receive messages in small units of data known as 'packets'.
- A single message may be too large to fit in one packet. It is often split into many packets.
- Each packet contains a part of the message, an address of where it came from, and an address of where it is going. These addresses are known as 'IP addresses', and they are unique.

Truth Tables Output

Input A	Input B	Output Z
0	0	0
0	1	1
1	0	1
1	1	0

LOGIC GATES



Computing Pioneers

