COMPUTING & ICT—Year 08 Knowledge Organiser: Networks and Logic Tables (Autumn 2)

Summary

In this unit, students will learn about **networks** and **truth tables.**

A **network** is created when more than one device is connected together. A network can be a small collection of computers connected within a building (e.g. a school, business or home) or it can be a wide collection of computers connected around the world.

The main purpose of networking is to share data between computers. A file has to be broken up into small chunks of data known as **data packets** in order to be transmitted over a network. The data is then re-built once it reaches the destination computer. **Protocols** are used to control how data is transmitted across networks.

The table used to represent the Boolean expression of a **logic gate function** is commonly called a **Truth Table**. A logic gate truth table shows each possible input combination to the gate or circuit with the resultant output depending upon the combination of these input(s).

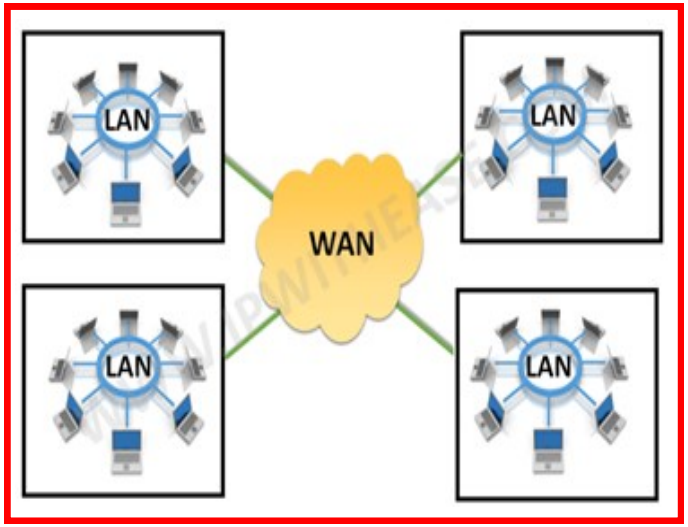
Key Vocabulary

File server	A networked **computer** that provides shared storage, it can be accessed by workstations on the same network.
Input device	Input devices, like a keyboard, allow us to put raw data in a computer which it processes to produce outputs.
LAN	**L**ocal **A**rea **N**etwork covers a small area such as one site or building, e.g. a school.
Network	A network is a number of computers linked together to allow the sharing of resources.
Output device	A device used to output data or information from a computer, e.g. a monitor or printer.
Server	A computer that holds data to be shared with other computers. A web server stores and shares websites.
Truth Table	The table used to represent Booleans expression of a logic gate function is commonly called a Truth Table.
WAN	**W**ide **A**rea **N**etwork covers a large geographical area. Most WANs are made from several LANs connected together.
Workstation	A computer connected to a network.

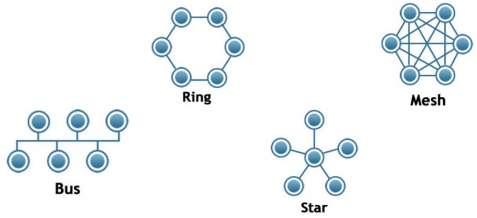
LAN's and WAN's

A school network is usually a local area network (**LAN).** LANs are often connected to a wide area network (**WAN**). for example a school network could be connected to the internet.

WAN's can be connected together using the internet, leased lines, Bluetooth or satellite links.



Network Topologies



Network Topologies

AND

INPUT		OUTPUT
A	B	
0	0	0
1	0	0
0	1	0
1	1	1

OR

INPUT		OUTPUT
A	B	
0	0	0
1	0	1
0	1	1
1	1	1

NAND

INPUT		OUTPUT
A	B	
0	0	1
1	0	1
0	1	1
1	1	0

NOR

INPUT		OUTPUT
A	B	
0	0	1
1	0	0
0	1	0
1	1	0

NOT

INPUT	OUTPUT
A	
0	1
1	0