Networks: From semaphores to the Internet

What is a network?

A network is when two or more devices are connected together to allow them to communicate and share resources.

What is a protocol?

A protocol is a set of rules for transmitting data between devices, such as HTTP, or HTTPS.

What is the internet?

The Internet is a worldwide network of computers, whereas the web is the collection of web pages found on the Internet.

Packets:

Packet switching is when messages are broken up into very small pieces, called packets. Each packet consists of two parts:

- header - this includes the sender's and recipient's IP addresses, the packet number, the total number of packets the message contains, plus the details of any protocols used
- payload - this is part of the actual message itself. The packets are sent individually across the network and put back together to reform the message at the other end.

Packet header	
Sender IP	192.1.5.8
Receiver IP	205.9.4.3
Sequence	1 of 3
Payload	"How"

Web Addresses:

URL' stands for 'Uniform Resource Locator'.
It is the address of a World Wide Web page and is sometimes called the 'web address'.

IP Addresses:

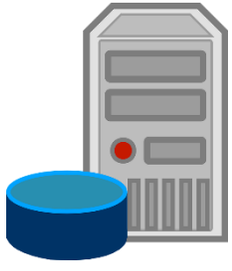
Every device on the internet has a unique IP address. The IP address is included in a data packet.

This is an example of an IP address:

192.168.5.43

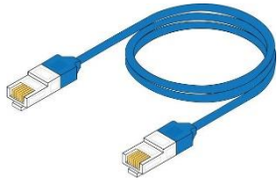
Network Hardware:

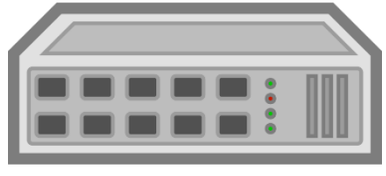
Router



Server

Network Cable





Hub

Computing Department Knowledge Organiser: Year 7 Networks

Task 1 Wired vs. Wireless:

A wired network is one where the devices in the network are connected using cables.

A wireless network is a computer network that makes use of Radio Frequency (RF) connections between devices in the network.

Copy and complete this table in your home learning book, adding advantages of wired and wireless networks:

Advantages of Wired Networks	Advantages of Wireless Networks

Task 2 Web Addresses:

Identify the protocol, and domain name in this web address:

Write a web address of your choice into your home learning book and identify the protocol and domain name of it.

Task 3 Network Hardware:

Look at the network hardware images on the previous page. Draw them into your home learning book and write a description of what each device does on a network.

- Router
- Server
- Network Cable
- Hub

Task 4 LAN and WAN

A LAN is a Local Area Network, which is a network connected over a small geographical area e.g. a house.
A WAN is a Wide Area Network, which is a network connected over a large geographical area, e.g. an international company.

Draw and label a LAN and a WAN in your home learning book.

Can you name the largest WAN?

Task 5 e-Safety when using the internet

Create a top tips poster which contains at least 5 tips to keep year 7s safe when using the internet.

Add images to your poster and colour it in.