Internet

- Interconnected computer networks which follow the *Internet Protocol Suite*
- Operates on a global scale
- Network of networks which can be local or global in scale
- Used to link computers worldwide

Servers and clients

- Everything using the internet is either directly or indirectly connected to a series of cables underground which link the computers and networks together
- Servers connected to these cables can communicate directly
    - Servers are simply computers which are connected to these cables directly
    - They hold important data such as webpages which are just files stored on the serverï¿½s hard drive
    - Each server has its own unique internet protocol (IP) address, like an actual address, this is used to identify the servers and help them to find one another
- Most computers are not servers since they are not connected directly to the internet, instead these computers are called clients
    - Clients connect to the internet indirectly through Internet Service Providers (ISP)

Sending and receiving data

- To access a certain webpage, the client must communicate with the ISP which links it to the appropriate server which holds the desired webpage
- Another example is that of email. For this, the client connects to the appropriate email providerï¿½s server, composes the email and sends it. The email server then sends it to the other email providerï¿½s server. When the recipient connects to their email providerï¿½s server, they receive the email on their client computer
- When data is sent across the internet, the data is broken into smaller pieces called packets which are reassembled when they arrive at their location
- Not only servers have IP addresses, but everything connected to the internet, indirectly or directly has an IP address
- Anywhere two or more parts of the internet intersect, a router is needed
- To send information, a packet is sent to the router which can be sent directly to the destination by referencing the IP address

Pros

- Easy communication between computers
- Easy file sharing
- Connects people all over the world without being physically near each other
- Information becomes readily available
- Opens up new services and options which would be unavailable otherwise

Cons

- Security becomes an issue
- Private information is at risk of being stolen
  - This can lead to identity theft, credit fraud, etc.
- Dependency on internet can cause problems, especially when internet connection fails