



Year 9

Computing

1. Computing for Business

STUDENT			
TEACHER			
CLASS			
TARGET GRADE		WORKING AT GRADE	

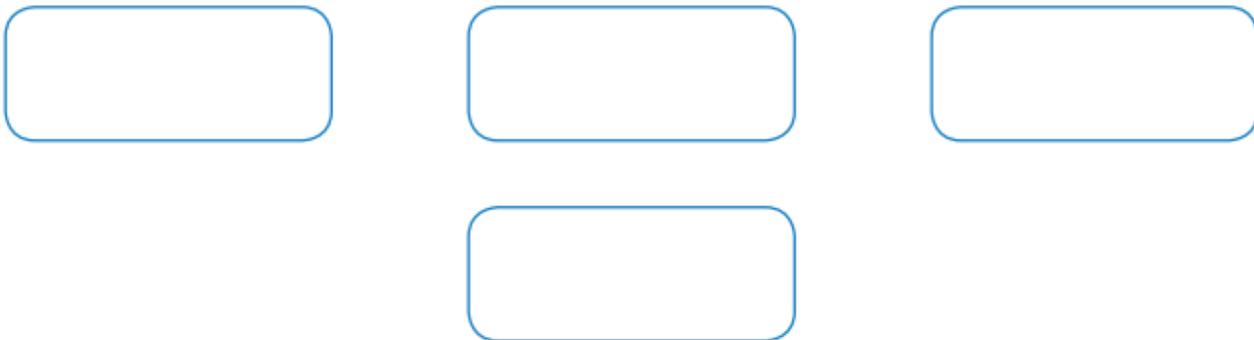
Lesson	Level	Learning outcome achieved	Tick
1	5	Achieved a level 4 in the baseline assessment	
	6	Achieved a level 5 in the baseline assessment	
	7	Achieved a level 6 in the baseline assessment	
2	5	I know how to construct static web pages using HTML and CSS.	
	6	I can justify the choice of and independently combine and I use multiple digital devices, internet services and application software to achieve given goals.	
	7	I can effectively design and create digital artefacts for a wider or remote audience.	
3	5	I know the function of the main internal parts of basic computer architecture.	
	6	I know the von Neumann architecture in relation to the fetch-execute cycle, including how data is stored in memory.	
	7	I know that processors have instruction sets and that these relate to low-level instructions carried out by a computer.	
4	5	I can evaluate the appropriateness of digital devices, internet services and application software to achieve given goals.	
	6	I can identify and explain how the use of technology can impact on society.	
	7	I can explain and justify how the use of technology impacts on society, from the perspective of social, economic, political legal, ethical and moral issues.	
5	5	I know data transmission between digital computers over networks, including the internet i.e. IP addresses and packet switching.	
	6	I know names of hardware e.g. hubs, routers, switches, and the names of protocols e.g. SMTP, iMAP, POP, FTP, TCP/IP, associated with networking systems.	
	7	I know the client-server model including how dynamic web pages use server-side scripting and that web servers process and store data entered by users.	
6	5	I know how search engines rank search results.	
	6	I can use technologies and online services securely, and I know how to identify and report inappropriate conduct.	
	7	I know that persistence of data on the internet requires careful protection of online identity and privacy.	
7	5	I can recognise ethical issues surrounding the application of information technology beyond school.	
	6	I can use technologies and online services securely, and I know how to identify and report inappropriate conduct.	
	7	I know that persistence of data on the internet requires careful protection of online identity and privacy.	
8	5	I can evaluate the appropriateness of digital devices, internet services and application software to achieve given goals.	
	6	I can evaluate the trustworthiness of digital content and consider the usability of visual design features when designing and creating digital artefacts for known audience.	
	7	I consider the properties of media when importing them into digital artefacts.	

1. Baseline assessment



Computer systems are often embedded in everyday devices. Name *one* of these. (1)

Complete the diagram to show *Input, Process, Output* and *Storage*. (5)



Give *three* examples of peripherals and state whether they are Input or Output. (3)

Self Assessment:

R A G



2. HTML and CSS—e-portfolio



This term you will be finding out about how computing is used in different businesses. Make a list of how different businesses might use computing below.

An e-portfolio is:



You have created your folder structure for your e-portfolio and using CSS and HTML set up a basic template to use for your e-portfolio this term.



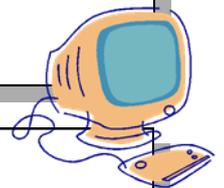
Why do you have to use a specific folder structure when constructing websites?

What does CSS stand for and what is it used for?

What does HTML stand for and what is it used for?

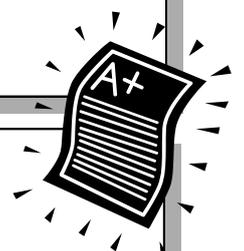
What software will you use to create your e-portfolio and why?

To evidence your work screenshot your CSS and HTML code and explain what you have changed to create your e-portfolio template. Screenshot your completed design. For level 7 make sure you explain how you have made your e-portfolio suitable for the audience.



Self Assessment:

R A G



3. Features and purposes of computing devices

In its simplest terms a computer is a device that can receive, manipulate, store and output data. Sometimes we refer to this as input / process / output.



Complete the input / output tables for each process.

Input	Output
1	3
3	
5	
6	

Process: Multiply by 2, add 1

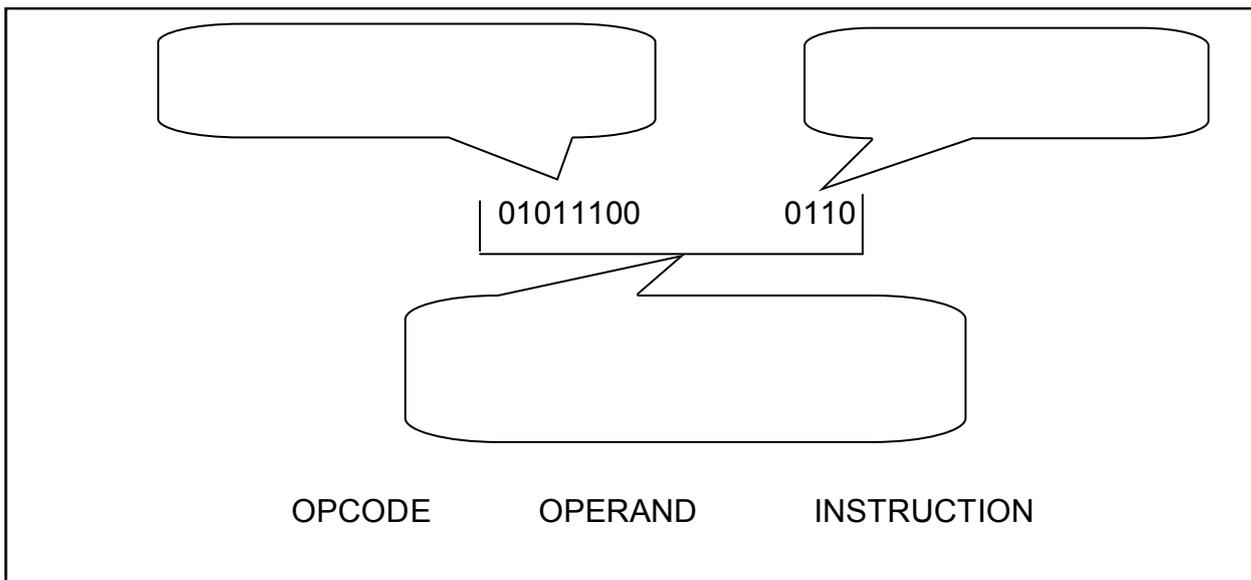
Input	Output
18	
22	8.8
36	
	20

Process: Divide by 2.5

Input	Output
1	7
	9
4	
6	

Process: Multiply by 2, add 5

When you input data the computer creates an instruction which tells the computer how the data should be acted upon.

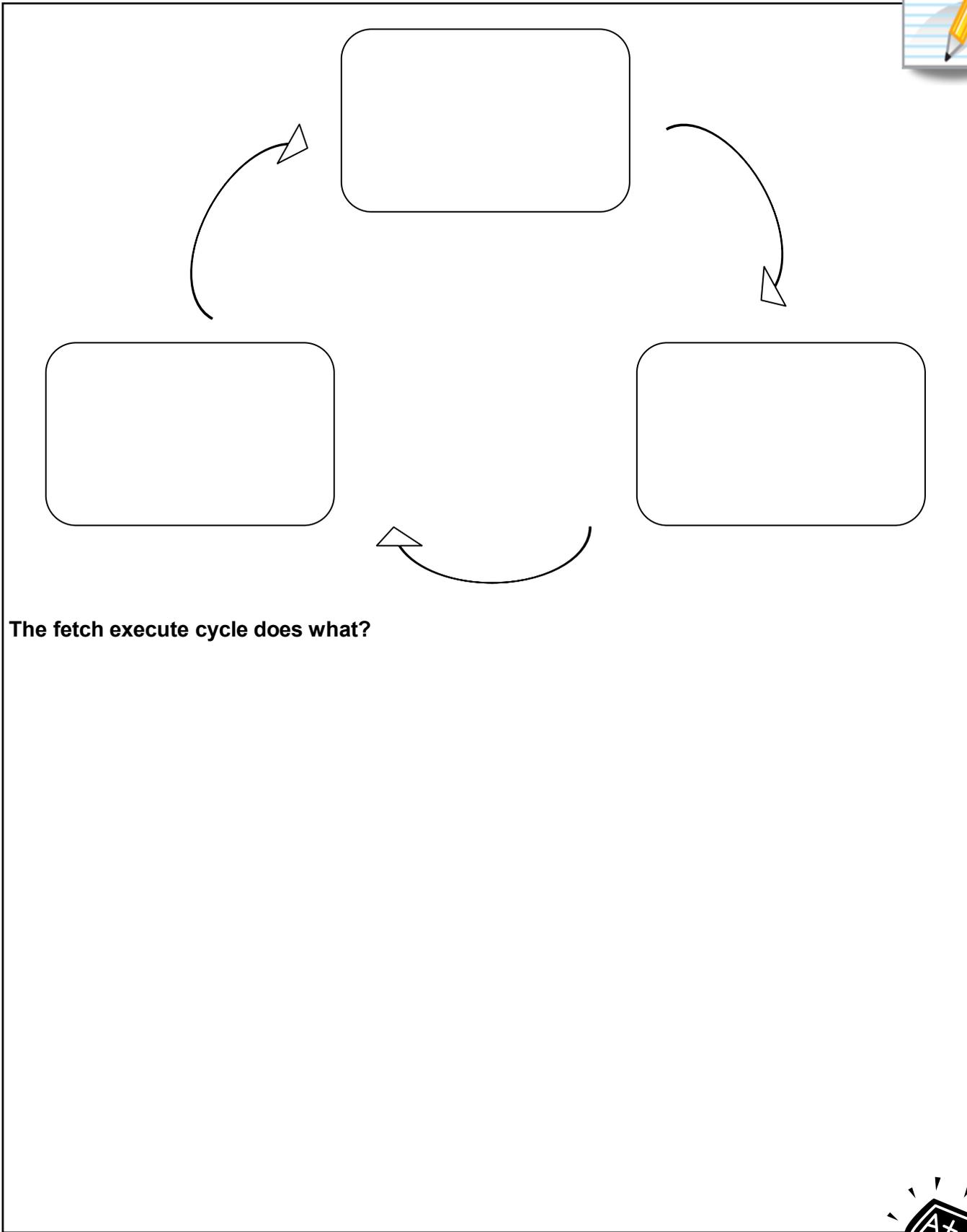


When you input data you do this via an input device, name 2 input devices:

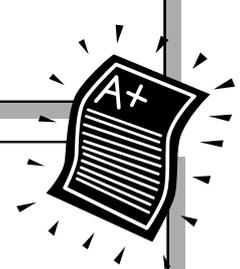


When you output data you do this via an output device, name 2 output devices:

Once the computer has the instruction this is stored. When it is needed for processing the following happens:



The fetch execute cycle does what?



Self Assessment:

R A G

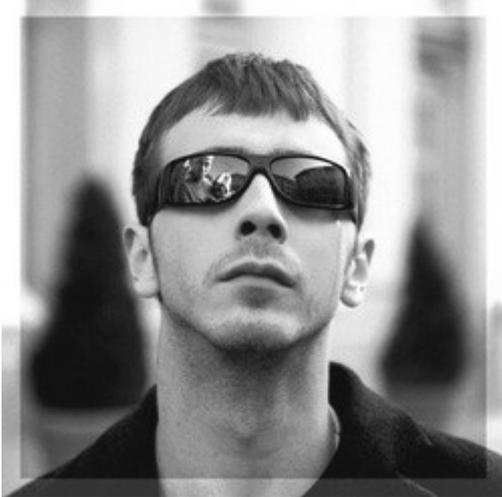
4. Assistive technologies

Below are some input/ output devices—can you identify what disability each assists with?





All of the devices are examples of:



Michael Smith is blind, he wants to buy a computer that he can use to browse the internet and also take note while he is in lectures.

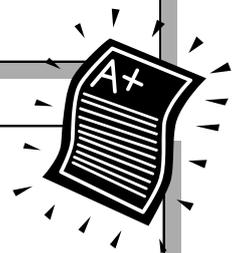




Sarah May works in an office and has been given a budget of £500 to buy a new computer for her desk. She will be mainly using it for email, spreadsheet and database tasks



A large, empty rectangular box with a thin black border, intended for a detailed response or analysis.

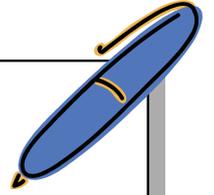


Self Assessment:

R A G

STRENGTH	TARGET	ACTION	GRADE

Green Pen Activity:



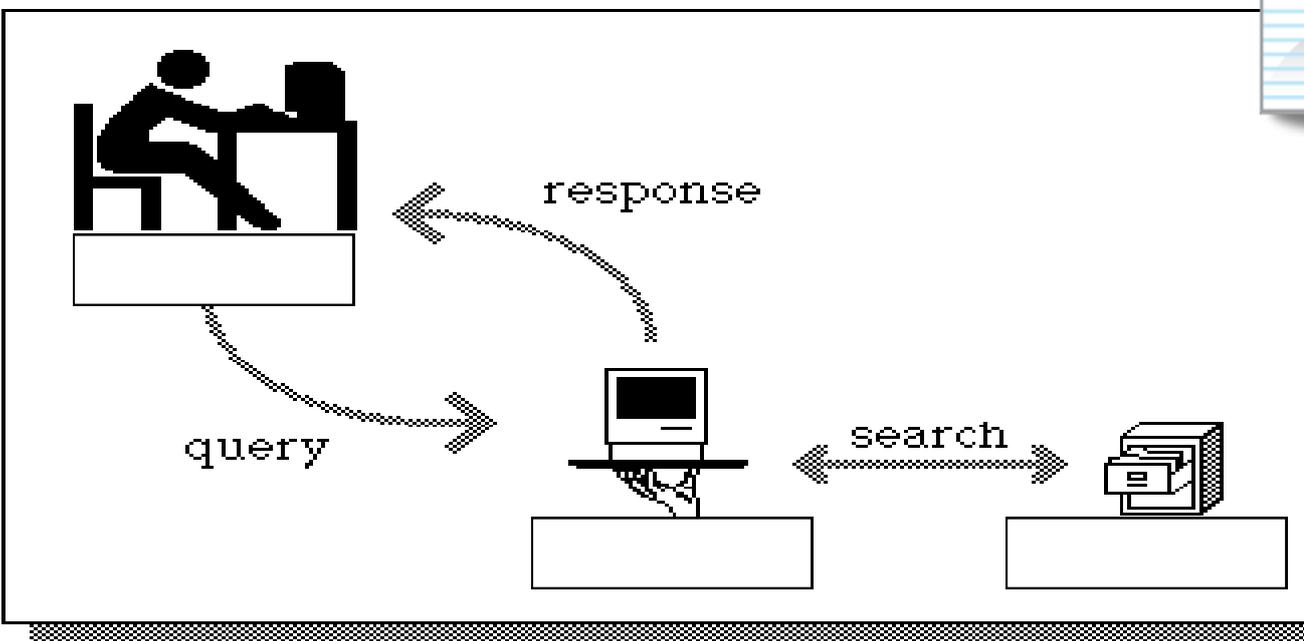
5. Client—Server—Model



The client—server—model is often used on websites that collect information. Design a form that could be used to collect the data of people wanting to sign up for a movie streaming service.

Blank area for designing a form to collect data for a movie streaming service sign-up.

Complete the diagram to show how the client-server model works.



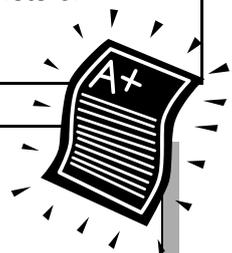


What would the words query and search be changed to if the client-server model was being used with a form?

Using the internet to help you—can you match up the term, abbreviation and description correctly?



Term		Abbreviation		Description
Point of Presence		NAP		The protocol which takes data from a user's application program and passes it to the IP for transfer across the internet. The reverse operation is performed at the destination computer, i.e. the TCP reassembles the data (from individual packets) and forwards them to the user's application program. The close relation with the IP means that the terms are usually used in combination, i.e. TCP/IP.
Network Access Point		TCP		A standard protocol which allows files to be transferred between two computers on a TCP-based network. It is commonly used to download programs to your computer from other servers and to upload web pages that you have created to the server that is hosting them on the internet.
Internet Protocol		ISP		An access point to the internet. Normally, it is a location which contains all of the hardware which allows internet users access to the internet. An Internet Service Provider (ISP) may operate several PoPs in their area to allow good access to the internet.
Transmission Control Protocol		FTP		An interchange between networks within the internet. It allows ISP's to interconnect with each other
File Transfer Protocol		IP		Direct connection to the internet would be very costly and so ISPs provide a cost-effective gateway for people and organisations to get onto the internet. In the UK there are many ISPs, with some of the most popular ones being BT (British Telecom), Virgin Media and Sky.
Internet Service Provider		POP		The protocol used to route packets of information across the internet



Self Assessment:

R A G

6. Searching for information: Search engines

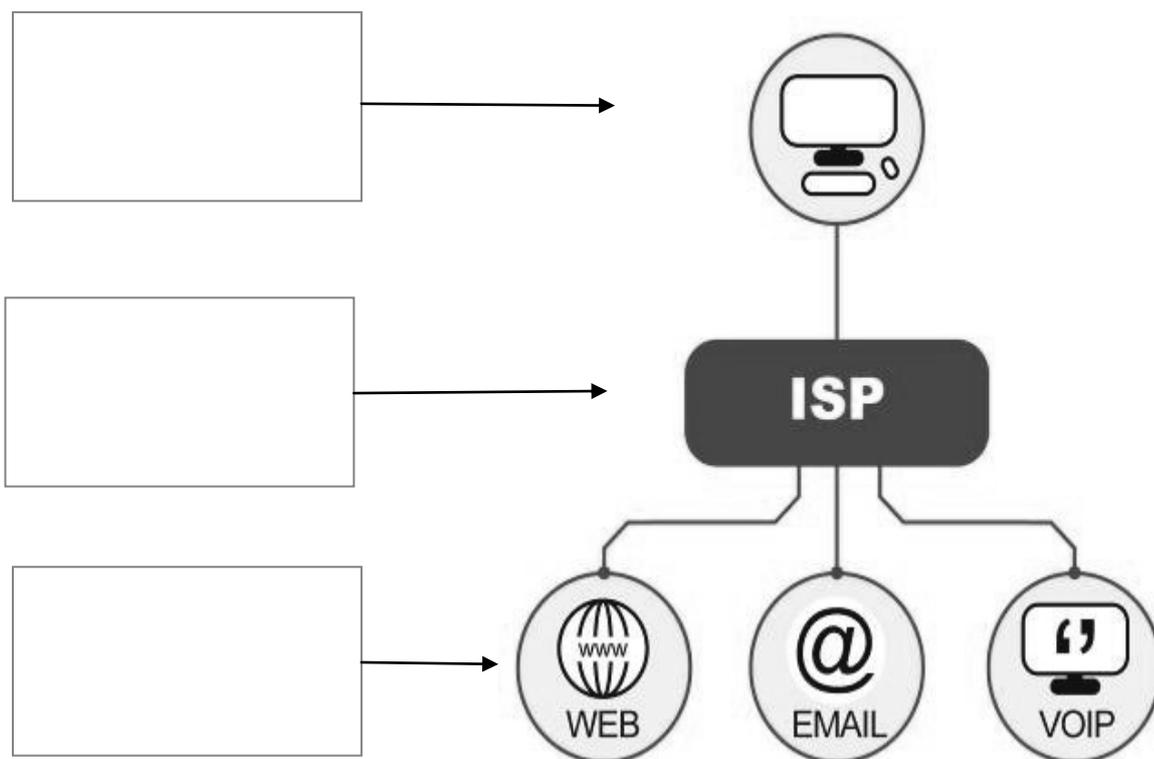


Internet Service Provider

An Internet Service Provider (ISP) is a company which provides access to the internet for individuals or other companies (e.g. BT).

An ISP will have many servers to do different things depending on the size of the company and amount of customers, e.g. one for outgoing email, one for incoming email, and may well have several for general net traffic, users' details, search engines, user web pages, etc.

Using the information from the paragraph above, complete the diagram below.



You will have used a search engine lots of times to find out information but do you know how one works. Go to www.google.co.uk/insidesearch/howsearchworks/thestory/ and answer the question below.



How do search engines rank results?

Every search engine uses different algorithms for both searching for information and sorting it, the following activity will demonstrate the results of these differences.



You've been asked to use a search engine to research Thomas Edison's invention of the light bulb. Below, write some keywords you can use to search the Web for this topic. Remember to include any possible Boolean operators that will make your results more precise.

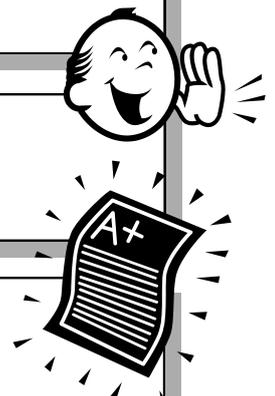
Choose three search engines from Yahoo, Google, MSN, AOL, etc Use each search engine to find Web pages related to your topic. Which site gave you the greatest number of hits?

Which site gave you the least number of hits?

Which sites gave you the most useful hits for your topic?

Describe your experiences in working with these search engines.

The European Union has enshrined in law a persons 'right to be forgotten'. Some people believe that this ruling should not have been made law. Research this law and what this allows a person to do. Investigate both sides of the argument ready for a class discussion.



Self Assessment:

R A G

7. Copyright and data protection



The data protection act protects the data held about you. The school holds information about you, make a list of the data you think the school has about you.

State three reasons why it is easier to misuse data that is stored on a computerised information system rather than a manual system.



Draw lines to link these three terms to the correct definitions.



Data Subject	A person or organisation that stores personal data.
Data Controller	An individual who is the subject of personal data.
Personal Data	Information about a living individual who can be identified.



Here are some pieces of information. Some are personal data and some are not. By each piece of information say whether or not you think it is personal data and then explain your answer.

- (a) A person's bank account number.
- (b) The name and address of a company.
- (c) A graph showing the number of people in your class who like each of five different flavours of crisps.

Write down four rules (or principles) that any data controller must obey.

Write down two rights that a data subject has.

Identify two limitations of the Data Protection Act.

Describe the role of the Data Commissioner?

What is the exemption to the term 'Rights of Subject Access'?

What do you know about copyright law? Use the information you find at the Web site listed below to complete the sentences on this page. Read each sentence. Tick the phrase that best completes each sentence. - <http://www.templetons.com/brad/copymyths.html>



Copyright law protects

- all written creative works.
- all original thoughts and ideas.
- only creative works that have copyright symbols.

Copyright law protects the rights of

- the U.S. government.
- the authors of creative works.
- manufacturers of copying machines.

Copyright law refers to the right to decide

- how a creative work is used.
- who uses a creative work.
- what a creative work is.

Copyrighted works can be copied only

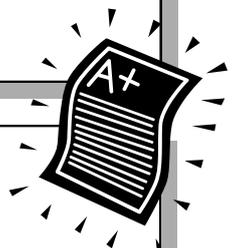
- if they are posted online.
- with the author's permission.
- if the author is dead.

Fair use means that copyrighted work can be used without permission

- for certain educational purposes.
- if the author doesn't know it's being used.
- if no money is charged for copies of the work.

Self Assessment:

R A G



8. End of term assessment



As your end of term assessment you are going to demonstrate what you have learnt this term by adding information to the eportfolio you created in lesson 1.

Plan what information you will put on each page below:

Page 1| Title:

Information:

Page 2| Title:

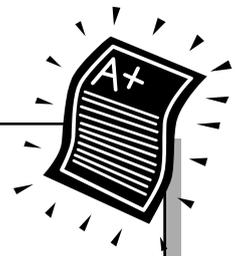
Information:

Page 3| Title:

Information:

Page 4| Title:

Information:

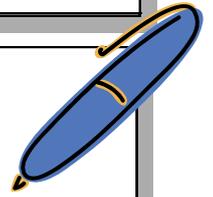


Self Assessment:

R A G

STRENGTH	TARGET	ACTION	GRADE

Green Pen Activity:



Keywords



Braille keyboard	An input device with a small number of keys that can be used to enter characters as a combination of these keys.
Computer system	All the parts that make a computer work, including the hardware, software and data. This may not be a traditional computer.
Data Protection Act -1998	The UK law that tells organisations how they must protect the personal data of real people.
Fetch–Execute cycle	The process by which programs are run on a computer. The processor repeatedly fetches the instructions of the program from memory and executes them.
File transfer protocol (ftp)	An agreed system and set of rules that allow different programs to transfer files across different computers over the internet.
Environmental issues	Issues concerned with whether something is good or bad for the environment.
Ethical issues	Issues concerned with whether something is morally right or wrong in itself.
Input device	A device that allows data to be entered into a computer by transforming it into an electronic form.
Output device	A device that takes data which has been processed by the computer and translates it a human readable form.
Storage device	A device that stores data in a binary form for use later.
Braille printer	An output device that produces Braille documents by impressing raised dots on a sheet of paper.
Eye tracker	An input device that allows a user to control a computer by moving their eye, for example by working out what the user is looking at on a display.
Input device	A device that is used to enter data into a computer. It takes data that a user presents and converts it into binary code.
Domain name	Name assigned to a resource on the internet.
HTML	Hypertext Markup Language. The language used to define pages on the world wide web and similar networks.
Internet	An international network of networks.
Instruction set	The total collection of instructions that a processor can carry out.
Protocol	Rules/standards for devices to communicate.
TCP/IP	Transmission control protocol/internet protocol
Operand	The part of an instruction that identifies the data to be handled by the operator.
Operator	The part of an instruction that tells the processor what to do.
Output device	A device that presents the result of processing. It converts binary data into a form which can be read by a user, or into binary data into a form which can be read by a user, or into a result in the external world.