



Year 7

Computing

1. Digital Life

STUDENT			
TEACHER			
CLASS			
TARGET GRADE		WORKING AT GRADE	

Lesson	Level	Learning outcome achieved	Tick
1	3	I can show an awareness of, and can use a range of internet services e.g. VOIP.	
	4	I can select, combine and use internet services.	
	5	I can evaluate the appropriateness of digital devices, internet services and application software to achieve given goals.	
2	3	Achieved a level 2 in the baseline assessment	
	4	Achieved a level 3 in the baseline assessment	
	5	Achieved a level 4 in the baseline assessment	
3	3	I can collect, organise and present data and information in digital content.	
	4	I can use criteria to evaluate the quality of solutions and can identify improvements making some refinements to the solution, and future solutions.	
	5	I can design criteria to critically evaluate the quality of solutions, I can use the criteria to identify improvements and can make appropriate refinements to the solution.	
4	3	I know what is acceptable and unacceptable behaviour when using technologies and online services.	
	4	I can show responsible use of technologies and online services, and I know a range of ways to report concerns.	
	5	I can recognise ethical issues surrounding the application of information technology beyond school.	
5	3	I know the difference between the internet and internet service e.g. world wide web.	
	4	I know the difference between physical, wireless and mobile networks.	
	5	I know data transmission between digital computers over networks, including the internet i.e. IP addresses and packet switching.	
6	3	I know what is acceptable and unacceptable behaviour when using technologies and online services.	
	4	I know the potential of information technology for collaboration when computers are networked.	
	5	I can recognise ethical issues surrounding the application of information technology beyond school.	
7	3	I know the difference between the internet and internet service e.g. world wide web.	
	4	I know how to effectively use search engines, and I know how search results are selected, including that search engines use 'web crawler programs'.	
	5	I know how search engines rank search results.	
8	3	I can create digital content to achieve a given goal through combining software packages and internet services to communicate with a wider audience	
	4	I can make judgements about digital content when evaluating and repurposing it for a given audience.	
	5	I know how to construct static web pages using HTML and CSS.	

1. Introduction to Computing

Activity: David has thought of some passwords. What is good or bad about the passwords he has thought of?



Password	Strengths or weaknesses
David (his name!)	
David11 (his name and age)	
Chips (the name of his pet fish)	
Pterodactyl (a word from the dictionary)	
Harry (the hero of his favourite film)	

The two most important things about a password are:



You will be using two websites throughout your time here at Ark William Parker Academy:

- www.Y7computing.weebly.com
- williamparker.edmodo.com



Can you find out how to use the following areas of Edmodo?

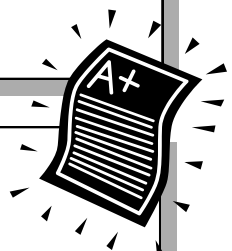
- Avatar
- Backpack
- Comment area
- Attaching documents and links to comments

Some people use a set of instructions every time they have to create a new password for a website. When you write instructions that a computer will follow this is called an **algorithm**.

Can you think of a set of instructions that you could use to help you set and remember the password for every website you set one for?



Why is Edmodo an appropriate website for us to use in school?



Self Assessment:

R A G

2. Baseline assessment



Computer Science Fields Word Search

A word search about Computer Science Fields.

Find these words!

Algorithms

Applications

Artificial Intelligence

Compilers

Computer Graphics

Computer Programming

Computer Vision

Cryptography

Data Mining

Data Structures

Networking

Operating Systems

Programming Languages

Robotics

Scientific Computing

Software Engineering

Steganography

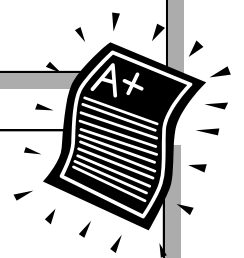
Type Theory

P	C	R	S	I	C	O	M	P	U	T	E	R	G	R	A	P	H	I	C	S	N	B	B	M
I	I	W	K	A	N	L	G	A	V	S	G	G	E	E	S	I	H	M	V	E	U	L	L	A
P	R	O	G	R	A	M	M	I	N	G	L	A	N	G	U	A	G	E	S	Y	D	N	E	U
S	E	A	N	Q	E	T	F	S	O	P	E	R	A	T	I	N	G	S	Y	S	T	E	M	S
G	E	A	P	Z	S	C	I	E	N	T	I	F	I	C	C	O	M	P	U	T	I	N	G	R
A	N	N	K	H	A	A	A	R	I	A	I	S	I	N	I	A	T	O	F	P	P	O	E	O
A	G	W	Z	L	N	O	D	A	T	A	M	I	N	I	N	G	A	E	T	D	T	E	E	V
B	J	O	U	E	R	N	B	I	I	D	L	N	I	O	S	P	G	V	G	L	I	O	L	D
R	T	S	A	C	O	M	P	U	T	E	R	P	R	O	G	R	A	M	M	I	N	G	I	R
S	I	A	G	J	F	T	O	T	T	O	I	P	R	S	O	X	O	R	O	O	R	A	T	O
N	R	A	F	D	C	K	M	I	O	F	S	B	A	T	E	O	I	D	G	G	T	B	N	L
U	E	S	E	D	A	L	G	O	R	I	T	H	M	S	O	R	U	L	P	E	E	B	K	N
J	I	R	I	J	R	N	R	I	A	A	P	P	L	I	C	A	T	I	O	N	S	D	A	E
N	A	R	T	I	F	I	C	I	A	L	I	N	T	E	L	L	I	G	E	N	C	E	I	T
O	Q	R	O	B	O	T	I	C	S	M	T	D	A	E	U	E	L	E	T	O	G	I	Z	W
Q	S	T	E	G	A	N	O	G	R	A	P	H	Y	T	U	N	A	Y	Q	I	J	U	N	O
B	D	C	Y	H	P	A	R	G	O	T	P	Y	R	C	I	I	R	U	Q	U	C	O	A	R
T	O	E	F	N	D	A	N	C	O	M	P	U	T	E	R	V	I	S	I	O	N	A	A	K
I	S	O	A	A	D	O	B	A	E	I	I	I	T	A	R	E	P	N	R	L	N	F	O	I
N	L	R	E	G	E	I	R	H	N	A	I	E	E	R	E	R	E	B	G	J	B	P	I	N
T	Y	P	E	T	H	E	O	R	Y	U	N	S	K	N	A	E	T	I	D	I	D	H	O	G
U	U	A	P	R	O	R	A	I	A	O	T	R	D	A	I	N	I	A	T	D	C	T	O	T
E	L	Y	I	C	O	M	P	I	L	E	R	S	I	D	O	U	M	E	I	I	I	I	C	A
R	L	J	S	E	R	U	T	C	U	R	T	S	A	T	A	D	G	C	I	R	O	N	G	F
D	G	N	I	R	E	E	N	I	G	N	E	E	R	A	W	T	F	O	S	D	L	R	E	E

A free word search puzzle from Freewordsearches.net

Self Assessment:

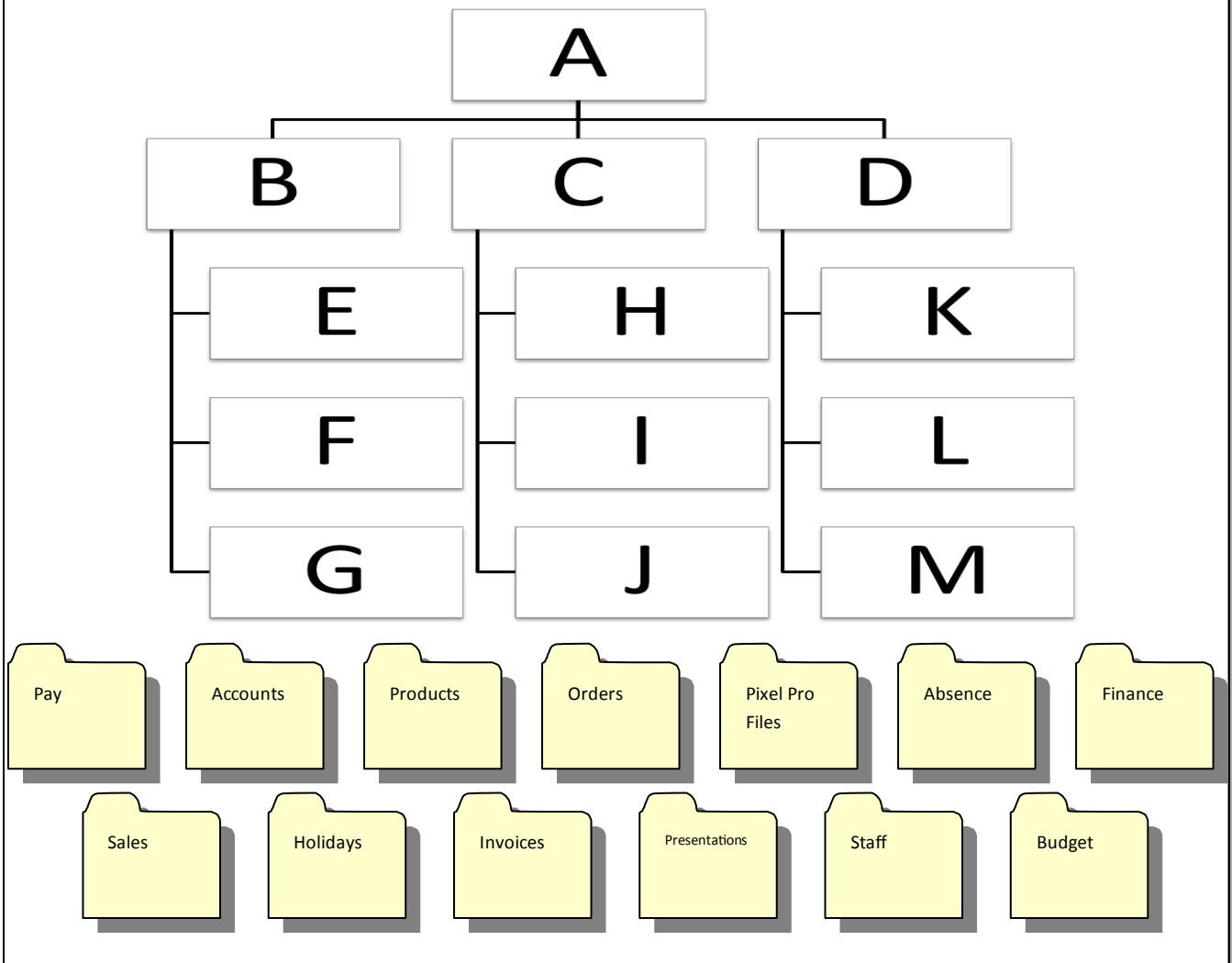
R A G



3. Housekeeping



Pixel Pro is a small computer games company with 5 employees. Below is a diagram of how their directories are organised on their shared network area; can you work out which folder goes where?



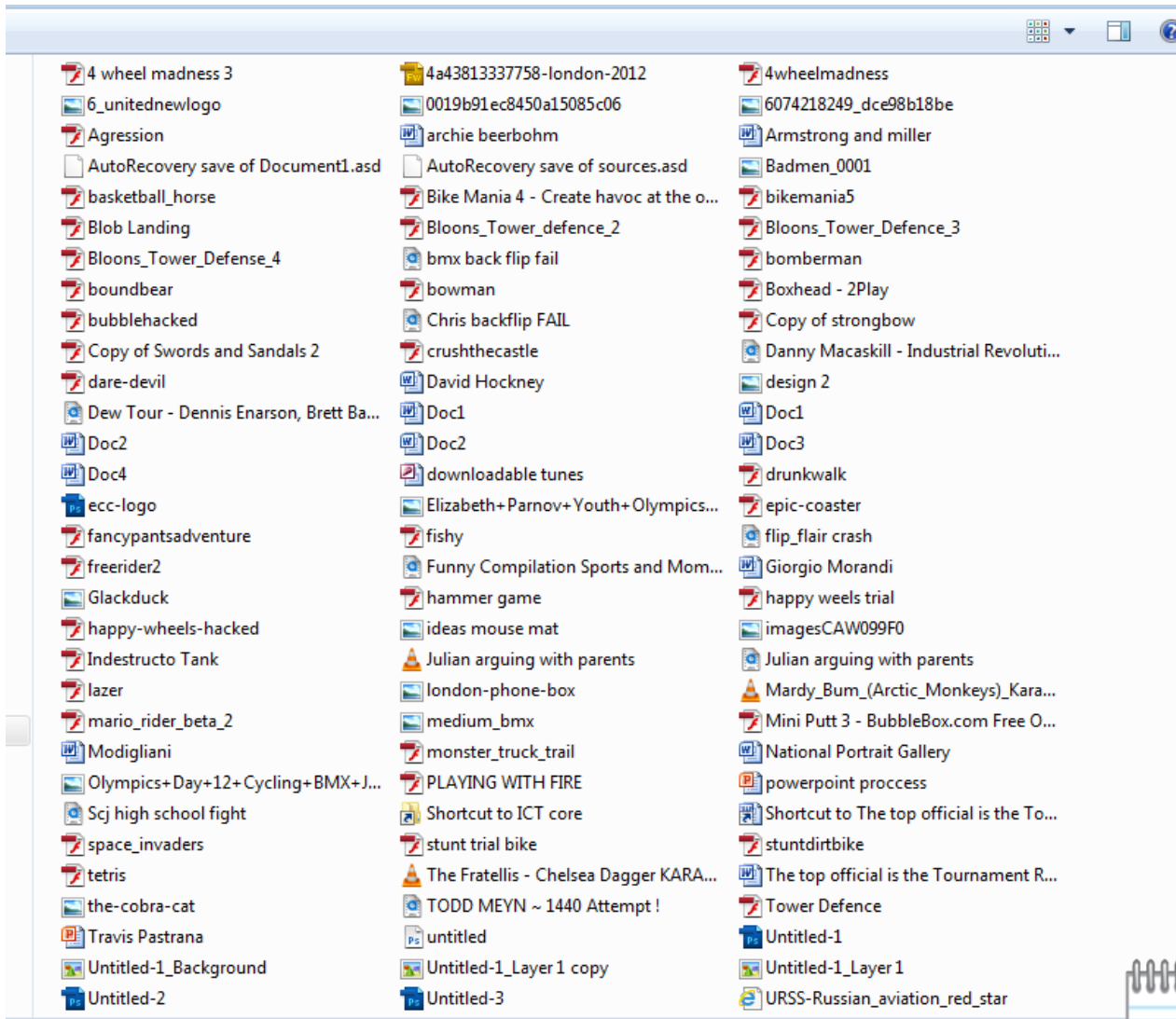
It is important to name your files appropriately so you can find them later, sometimes you will need someone else to find the file—in this case it is even more important that they can find the file!



Can you make some suggestions for file names for each of the following file descriptions:

1. Presentation about Volcanoes Paul created for his Geography homework
2. Database containing address and date of birth details of all of Jane's friends so she knows when to send them a birthday card
3. Video file of last years school pantomime 'Cinderella'
4. Last months accounts contained in a spreadsheet file

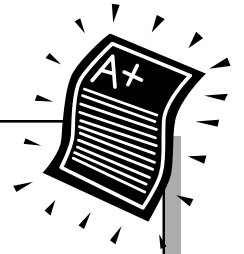
- 1.
- 2.
- 3.
- 4.



Above is screenshot of Liam's files he has stored on his school M drive. Can you see 4 problems with how he has stored them?

- 1.
- 2.
- 3.
- 4.

What suggestions would you make to Liam to help him to organise his files more appropriately?



Self Assessment:

R A G

4. Digital Footprint



Make a list of all of the internet services that you have used in the last week (this includes websites, apps, uploads and downloads - in fact anything that you would have needed an internet connection to do!).

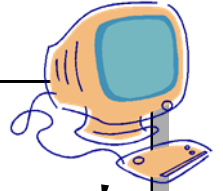


When you use the internet you need to be careful about what you disclose—this is because whatever you put up online can be seen by anyone and can be difficult to remove! Your computer also keeps a record of where you have been—this is called your **digital footprint**.

Draw around your foot and using the list of internet services you wrote down for the do it now activity fill in your digital footprint.

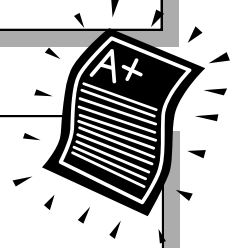


Create a presentation explaining how to keep your digital footprint positive and why this is important. Submit your presentation on Edmodo.



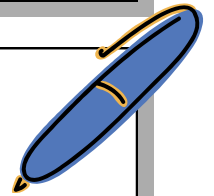
Self Assessment:

R A G



STRENGTH	TARGET	ACTION	GRADE

Green Pen Activity:



5. The Internet



Can you work out which URL suffix belongs to which country?

.de

United Kingdom

.ge

Estonia

.uk

Luxembourg

.ie

Germany

.lu

Georgia

.nz

Spain

.es

Ireland

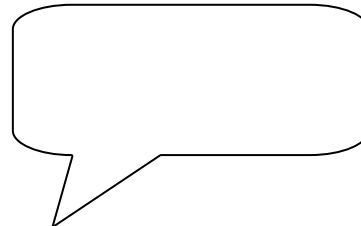
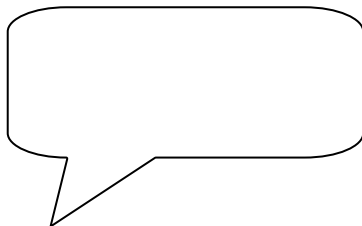
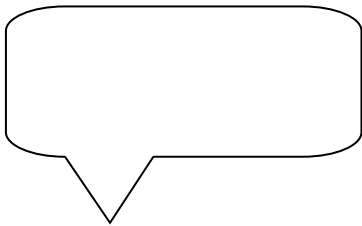
.ee

New Zealand

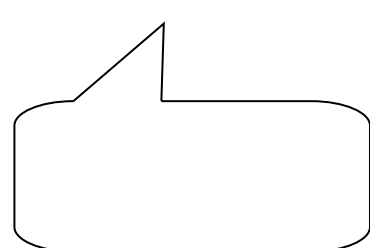
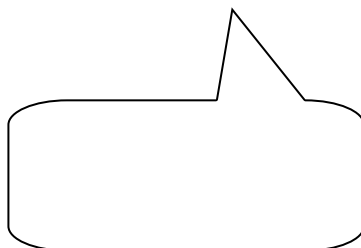
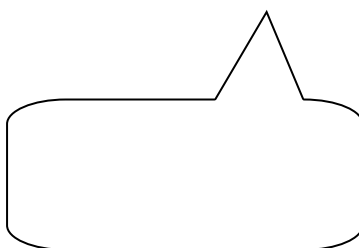
Every webpage on the internet has a unique address, this address called a **Universal Resource Locator** or **URL** for short.



Can you find out what each of the parts of a URL are called?



<http://www.maps.google.co.uk/index.html>



Write down the URL of your favourite website below:



Your computer (in fact anything you connect to the internet) has an address too! This is called your Internet Protocol address or IP address for short. This is how your computer is identified when you access internet services. Visit the following website to find out your IP address:

www.whatismyipaddress.com



Find out the IP address of your computer and write it below:

Internet services and the internet are two different things, explain below what the difference is between them and how each is used.



Computers need to be connected to a network in order to access the internet.



There are three main types of network—can you work out what type of network each of these definitions are referring to?

Computer **networks** that are not connected by cables of any kind . This uses **radio waves** to connect devices such as laptops to the Internet.

This is a _____ network.

Connects devices to the Internet or other **network** using cables. The most common use cables connected to Ethernet ports on the **network** router on one end and to a computer or other device on the cable's opposite end.

This is a _____ network.

A **wireless network** distributed over land areas called cells, each served by at least one fixed-location transceiver, known as a cell site or base station.

This is a _____ network.

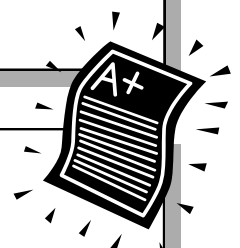
Computers use something called packet switching to transfer data via a network. This is also how you access websites. Explain below how this works.



Blank area for explaining packet switching.

Self Assessment:

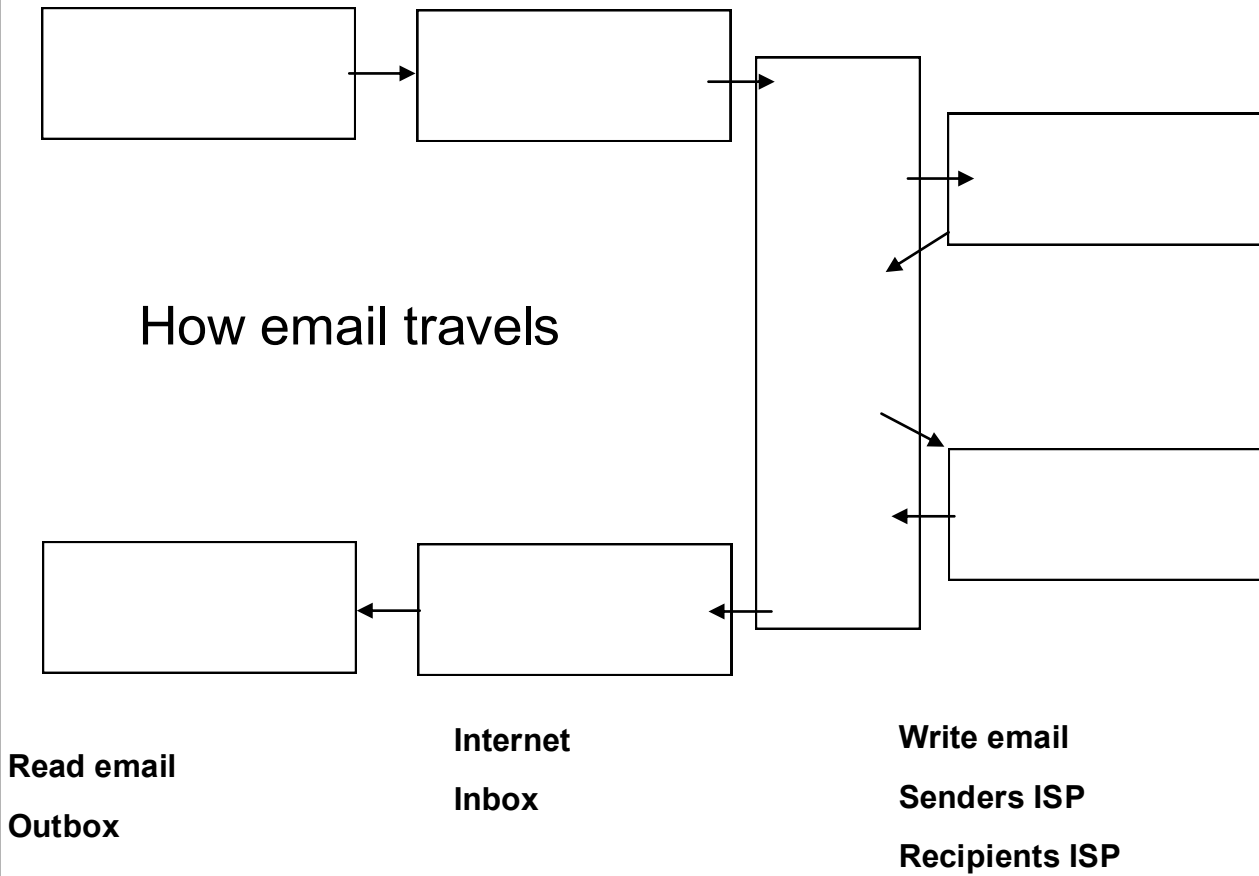
R A G



6. Communicating Online



Using what you learnt last lesson complete the diagram below:



My school email address is:



The rules for how you should communicate online is known as **netiquette**. Can you think of 4 rules that you should follow when using the school email system?



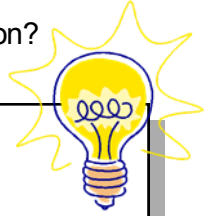
1.

2.

3.

4.

Your teacher will ask you to contribute your netiquette rules to an online wall. Why is this a good way of sharing information? How does being connected to a network help collaboration? How else could people collaborate on a piece of work—write your thoughts below:



A large, empty rectangular box with a black border, intended for writing answers to the questions above.

Michael has been receiving some nasty emails from someone from school. Can you remind him what the 4 safety rules are?



A large, empty rectangular box with a black border, containing the following text on the left side:

- S.
- A.
- F.
- E.

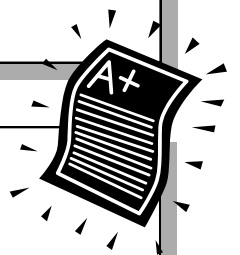
Another potential risk of communicating online is that you might download a virus. Research a virus, how it damages your computer, how to remove the virus and for extra points how to avoid getting one in the first place! Write your findings below.



A large, empty rectangular box with a thin black border, intended for the student to write their research findings.

Self Assessment:

R A G



7. How search engines work



Use the words below to complete the paragraph

mobile	adult	may not	know
report	personal details	limit	anyone
never	social networking sites	identify	nickname
link	know		

When you use the Internet to communicate with other people it is important to remember that the person you are communicating with _____ be who they say they are. You should _____ arrange to meet anyone you do not know whom you have met on the Internet

You should not give out _____ or photographs that would allow anyone to _____ you. Use a suitable _____ instead.

If you receive any inappropriate messages you should tell an _____ about it.

Most social networking, instant messaging, chat and blogging sites will have a _____ that you can use to _____ any inappropriate messages. Use a password to _____ who can join your blog and learn how to block access to your _____ phone.

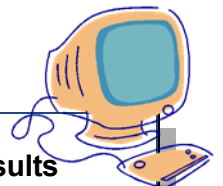
You should only invite people you _____ to use your sites. Do not reply to any contacts from people you do not _____ .

Do not put anything on a social networking site unless you want _____ to be able to see it.

A search engine is an example of an



To reduce the number of results a search returns you can use Boolean search terms (Boole was an English Mathematician who lends his name to the search term). The main ones you will use are AND, OR and NOT. Lets try it out! Use the following search terms and make a note of the number of results.



Boolean search term	Search string	Number of results
AND	Dog AND Cat	
OR	Dog OR Cat	
NOT	Dog -Cat	

Google has other tricks that you can use to reduce the number of results you get—can you find out about two of them and explain them below



Search term	What this does

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 questions below.



The world wide web is made up of more than how many pages?

How does a search engine navigate from page to page?

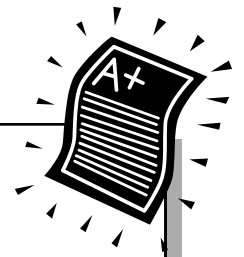
Where are the results of this stored?

What kind of things does Google have algorithms for?

What is an algorithm?

Are the results displayed in a random order?

How many factors are used to rank results?



Self Assessment:

R

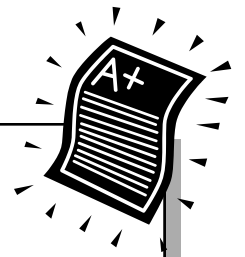
A

G

8. End of term assessment

You are going to be creating a digital artefact about one of the topics that you have learnt this term, for example this could be e-safety, how the internet works or how search engines work. Use the space below to create a spider chart to plan what you need to include in your assessment piece.



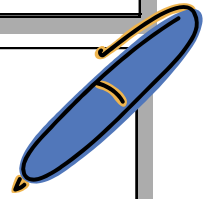


Self Assessment:

R A G

STRENGTH	TARGET	ACTION	GRADE

Green Pen Activity:



Keywords



Virtual Learning Environment (VLE)	A computer system that helps teachers by allowing them to provide learning resources to pupils and monitor their progress.
AND gate	A logic gate that has two inputs. If both inputs are '1' it will output '1', otherwise it will output '0'.
NOT gate	A logic gate that has one input. If the input is '0', its output is '1'. If the input is '1', its output is '0'.
OR gate	A logic gate that has two inputs. If either or both of the two inputs is '1', its output is '1'.
File transfer protocol (ftp)	An agreed system and set of rules that allow different programs to transfer files across different computers over the internet.
Firewall	A utility or device that monitors the traffic between a computer and the internet and only allows connections that are authorised.
Malware	Any program, such as viruses, worms, trojans and adware, that are designed to be harmful to the computer on which they are run.
Adware	A program that repeatedly and disruptively displays advertisements on a user's computer.
Anti-malware	A utility that searches for and removes any malware on a computer.
Antivirus	A utility that searches for and removes any viruses on a computer.
LAN	Local area network
Packet	A unit of data sent on a packet switching network.
WAN	Wide area network
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.
IP address	Internet protocol number: the unique number that identifies a resource on the internet.
Protocol	Rules/standards for devices to communicate.
Router	A device that connects networks.
TCP/IP	Transmission control protocol/internet protocol
Algorithm	A set of rules specifying a how to solve a problem.