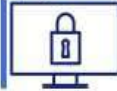


E-Safety

If you have any concerns or worries, please tell a trusted adult. You can also contact the police via www.ceop.police.uk/ceop-reporting/

What should I already know about keeping safe?



Privacy: Stay Safe. Be SMART!

Remember! The internet is never private. We need to protect our privacy.



Passwords

Your data – your privacy

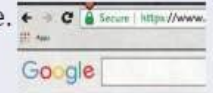


Check your settings and check the website

- ✓ A strong password helps keep your information private.
- ✓ Include: a mixture of lower case and upper case letters.
- ✓ Use numbers and symbols (@?E\$@)
- ✗ **Remember!** Don't share your password with others!
- ✗ **Remember!** Don't use easy to guess words like your name.

- **Be aware!** Websites and apps can collect and share information with other sites.
- **Be aware!** Many free apps may read and share private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others.
- **Be aware!** Information can be used to direct adverts to you.
- **Be aware!** Pop ups could direct you to inappropriate sites. Check the links.
- **Check!** Ask a trusted adult if you are asked about sharing your information.

- ✓ Use the settings within apps to increase privacy.
- ✓ Look at the address bar. Some browsers will show a padlock to show the site is secure.



What should I already know about privacy?



- ✗ Remember: we **never** share our full name with anyone online.
- ✗ Things like where we live or where we go to school should **never** be shared with strangers.
- ✗ Never share your passwords with other people.
- ✓ Ask a trusted adult to ensure your privacy settings are on so your location and profile are not public.
- ✓ Rather than use your name, use an alias (maybe your favourite cartoon character) for public profiles.

Use a variety of strong passwords. Use a mixture of letters, numbers and symbols.

Stay safe! Check your privacy settings, use an alias and don't share personal information.

Never meet unknown people you have met online.

Be SMART: make sure you're safe with privacy settings ON and tell a trusted adult if you are worried.

E-Safety

Online bullying. Be SMART!

Tell someone! Tell an adult if someone or something makes you worried or uncomfortable.

- **Report the unkind actions** to a teacher or the Learning Mentor at school. We will investigate the report carefully.
- **E-mail us:**
safeguarding@allsaintsfed.Derbyshire.sch.uk
- **Block the person** who is being unkind.
- Contact Childline: 0800 11 11
- Chat online to Childline:
www.childline.org.uk

What should I already know about age restrictions?

Use Net Aware to check the age restrictions

App aware

Net Aware

13+



16+



Communicating: safely and kindly



NEW LEARNING! Scam e-mail and phishing inapp

- Nearly everyone has an **email address**. Email is a useful tool at home and in work but **spam** and junk mail can be a problem. **Spam emails** offer all kinds of things like money, prizes and very low prices for products that are normally very expensive. **Check! Look before you click on any links!**
- Look out! Trying to trick someone into giving out information over email is called '**phishing**'. You might receive an email claiming to be from your bank or from a social networking site. They usually include a link to a fake website that looks identical to the real one. When you log in it sends your username and password to someone who will use it to access your real accounts.

What if I receive a scam or phishing e-mail?

- Forward it to report@phishing.gov.uk then delete the original e-mail. Tell a trusted adult.
- **The National Cyber Security Centre can help with phishing.**

Have you spotted a suspicious email?

If you have received an email which you're not quite sure about, forward it to the Suspicious Email Reporting Service (SERS):

report@phishing.gov.uk

The message might be from a company you don't normally receive communications from, or someone you do not know. You may just have a hunch. If you are suspicious, you should report it. Your report of a phishing email will help us to act quickly, protecting many more people from being affected.



NEW LEARNING! Check before sharing!

It can be upsetting when others share words, pictures or videos of you, without your permission. They may be misinterpreted. This could be unkind.

- **REMEMBER! Once content is shared online, it can be difficult to remove.**
- ✗ Do not share images or videos of others without their consent.
- ✗ Do not tag your friends into content unless you have their consent.



What should you do?

- ✓ Follow our online safety rules: be SMART!
- ✓ Capture bullying content as evidence (e.g screen-grab, URL, profile) to share with those who can help you.

What if you are concerned that an adult might be making inappropriate contact with you?

- ✓ Child Exploitation and Online Protection (CEOP) can help. Contact them immediately if you are concerned about inappropriate contact (i.e. being asked to send inappropriate images.).



Should I make a report to CEOP?

Binary & Denary

KEY VOCABULARY

Denary	Base 10 number system. Uses digits 0,1,2,3,4,5,6,7,8,9
Binary	Base 2 number system. Uses digits 0 and 1 only.

DENARY

Denary is the decimal number system that we are used to. It uses the numbers 0-9 and the column headings go up in powers of 10.

100 (Hundreds)	10 (Tens)	1 (Units)
2	3	8
2 lots of 100	3 lots of 10	8 lots of 1

BINARY

Binary uses the numbers 0 and 2. The column headings go up in power of 2:

128	64	32	16	8	4	2	1
0	1	0	0	0	1	1	1

$$64 + 4 + 2 + 1 = 71$$

UNITS OF DATA IN COMPUTER SYSTEMS

UNIT	VALUE	SIZE
bit (b)	0 or 1	1/8 of a byte
nibble	4 bits	1/2 a byte (a nibble... get it?!)
byte (B)	8 bits	1 byte
kilobyte (kB)	1000 ¹ bytes	1,000 bytes
megabyte (mB)	1000 ² bytes	1,000,000 bytes
gigabyte (gB)	1000 ³ bytes	1,000,000,000 bytes
terabyte (tB)	1000 ⁴ bytes	1,000,000,000,000 bytes
petabyte (pB)	1000 ⁵ bytes	1,000,000,000,000,000 bytes

BINARY PLACE VALUES

BASE Exponent	2 ⁷	2 ⁶	2 ⁵	2 ⁴	2 ³	2 ²	2 ¹	2 ⁰
PLACE VALUE	128	64	32	16	8	4	2	1

Network Topologies

Mesh networks

In a **mesh topology** there is no central connection point. Instead, each **node** is connected to at least one other node and usually to more than one. Each node is capable of sending messages to and receiving messages from other nodes. The nodes act as relays, passing on a message towards its final destination.

There are two types of mesh topology:

- full mesh topology
- partial mesh topology

Mesh networks are becoming increasingly popular due to their efficiency.

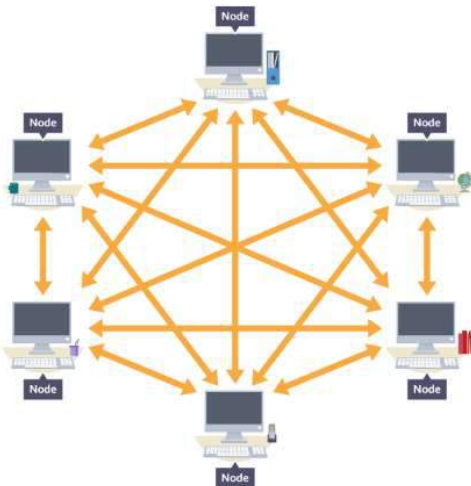
Advantages and disadvantages of using a mesh topology

Having nodes arranged in a mesh topology brings some benefits:

- messages can be received more quickly if the route to the intended recipient is short
- messages should always get through as they have many possible routes on which to travel
- multiple connections mean (in theory) that no node should be isolated
- multiple connections mean each node can transmit to and receive from more than one node at the same time
- new nodes can be added without interruption or interfering with other nodes

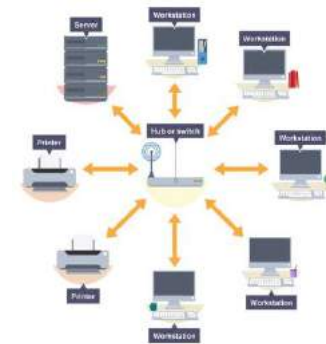
However, mesh topologies also have their disadvantages:

- full mesh networks can be impractical to set up because of the high number of connections needed
- many connections require a lot of maintenance



Star networks

In a **star topology** all **nodes** indirectly connect to each other through one or more **switches** or **hubs**. A hub broadcasts a message across the whole **network**, whereas a switch sends the message to the intended recipient only. The switch or hub acts as a central point through which all communications are passed. Star topologies are used in many networks, large and small.



Advantages and disadvantages of using a star topology

The advantages of a star topology are:

- Each node is separately connected. Therefore, the failure of one node or its link, also known as **transmission media**, does not affect any other nodes.
- New nodes can be added to the network simply by connecting them to the switch.
- Star networks tend to have higher performance, since a message is passed on only to its intended recipient.

The disadvantages of a star topology are:

- the whole network fails if the switch fails, since no node can communicate
- a wired star topology requires a lot of cable - in a large network this can be expensive

Logic Gates & Truth Tables

Logic gates use **Boolean** operators. The most common Boolean operators are **AND, OR and NOT**. Each operator has a standard symbol that can be used when drawing logic gate circuits.

AND gate

An **AND** gate usually has two inputs. **AND** tells us that both **Input A AND Input B** have to be 1 (or ON) in order for the output to be 1. Otherwise the output is 0.

The Boolean expression can be written as $Q = A \text{ AND } B$.

The truth table would look like this:

Input A	Input B	Input Q
0	0	0
0	1	0
1	0	0
1	1	1

Logic gate diagrams would look like this:



An **OR** gate has two inputs. **OR** tells us that **EITHER Input A OR Input B** has to be 1 (or ON) in order for the output to be 1. Otherwise the output is 0.

The Boolean expression can be written as $Q = A \text{ OR } B$.

The truth table would look like this:

Input A	Input B	Input Q
0	0	0
0	1	1
1	0	1
1	1	1

Logic gate diagrams would look like this:



A **NOT** gate has just one input. **NOT** tells us that Input A has to be 0 (or OFF) in order for the output to be 1. Otherwise the output is 0. A **NOT** gate is sometimes called an inverter.

The Boolean expression is written as $Q = \text{NOT } A$.

The truth table would look like this:

Input A	Input Q
1	0
0	1

Logic gate diagrams would look like this:

