

Impacts of Digital Technology

Keyword	Definition
Ethical	Moral principles that govern the behaviour of a group or individual
Environmental	The impact that the manufacturing and use of computers have on the environment
Legislation	The set of laws that have been passed by Parliament affecting computers
Digital divide	The difference between those who have and don't have access to technology
E-Waste	Discarded electronic appliances such as mobile phones, computers and televisions
Data Protection	Looking after the personal data of people
Cookies	A small text file created by a website that is stored in the users computer

Wearable Technologies

Virtual reality headsets (Oculus Rift, Google Daydream View, Microsoft HoloLens)

Touch sensitivity can be added to clothing to control smartphones and electronics can be added to shoes to automatically fasten them

Exoskeletons allow people to work more safely or have additional strength

Materials in a Motherboard

Lifecycle of a Smartphone

1. Mining for raw materials
2. Manufacture
3. Purchase and use
4. Recycling centre
5. Reprocessing plant

Raw materials in computer components

- Hard disk**
 - Aluminium
 - Steel
 - Fibreglass
 - Plastic
- Game controller**
 - Plastic
 - Rubber
 - Lithium
- USB cable**
 - Copper
 - Plastic
- CPU**
 - Fibreglass
 - Aluminium
 - Gold
- Heat sink**
 - Aluminium
- RAM**
 - Fibreglass
 - Gold

Computer based implants

Pacemakers control irregular heart rhythms

Cochlear implants restore hearing for deaf people by taking electric signals straight to the hearing nerve

Brain implants are a new development that can be linked to exoskeletons allowing quadriplegics to walk

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Renewable vs Non-renewable

Plastic	Non-renewable
Steel	Non-renewable
Gold	Non-renewable
Copper	Non-renewable
Aluminium	Non-renewable
Fibreglass	Non-renewable
Diesel	Non-renewable
Water	Renewable

Lawful data processing reasons

Lawful reason	Meaning	Example
Consent	A person has agreed to their data being used	A tick box to consent to receive a newsletter
Contract	Processing is needed for a contract	A contract for buying a house
Legal obligation	Processing the data is needed to meet the law	Keeping tax records
Vital interests	Processing is needed to protect someone's life	A teacher gives a collapsed student's name to a paramedic
Public task	For performing an official task	A criminal court
Legitimate interests	There is a clear benefit to the user or company	Processing customer data

The Data Protection Act (2018) – Your Rights

The right to view data stored about you by organisations for free – previously it cost up to £10

You must consent to having marketing sent to you – this consent must be 'opt-in'

The right to withdraw consent – mailing lists have an unsubscribe link for this

The right to make changes to your data if it is inaccurate

The right to be forgotten – allows you to delete your personal data

Impacts of e-waste

Very harmful to humans and the environment if not processed correctly

Lithium batteries can catch fire and may be hard to recover

If components cost too much to recover they go to landfill

Mining materials damages the environment

Ways to reduce the impact

Make devices that can be fixed with modular components

Use removable batteries

Use modern recycling facilities

Computer Misuse Act (1990) – Offences

Unauthorised access to computer material

Unauthorised access with intent to commit or facilitate a crime

Unauthorised modification of software or data

Making, supplying or obtaining anything which can be used in computer misuse offences

Copyright, Designs and Patents Act (1988)

Inventions are covered by patents - A patent prevents anyone else using the invention for 20 years

Copyright protects books, video, music and software - Copyright typically lasts 70 years after publication or an author's death. Copyright lets an author or musician decide how their work should be used

Data storage

The data is kept accurate and up to date

It is not kept any longer than necessary

It must not be transferred to other countries unless they can keep it protected

Customers must be told of a data breach within 72 hours of it happening

