

## Impacts of digital technology

### Ethical issues

Ethics are moral principles, or rules, which govern a person's attitudes and behaviour. Ethics apply to the use of computers as much as they do to other things in life. Ethical issues in computing include:

- Ensuring public safety
- Security of data

### Cultural issues

The introduction of computers has changed society, sometimes for the better, sometimes for the worse. 'Cultural issues' is the term used for computer matters that have an effect on the nature and culture of society. Some of these issues include:

- The digital divide
- The changing nature of employment

### Environmental issues

- Resources are needed in order for computers to be produced, distributed and used. Metals and plastics are used to manufacture components, while energy is expended in distributing equipment and in using it.
- Many computers, such as web servers, domain name servers and data centres, need to be left running continuously. This requires lots of energy to maintain.
- Many computer components are either hard to recycle or contain toxic materials, such as lead.

### Privacy issues

As more and more services become digitised users are worried about the amount of data organisations and governments gather. Eg Google Maps stores all data locations permanently unless opted out. Google know exactly where their users are, have been and for how long. This data is used for helpful purposes but it could also potentially be abused.

## Legislation relevant to Computer Science

### The Data Protection Act 2018

This law protects your data when used by companies and organisations. Personal data must be:

Fairly & lawfully processed	Obtained for legitimate purposes
Adequate, relevant & not excessive	Accurate & up to date
Not be kept longer than necessary	Handled securely.

### Computer Misuse Act 1990

There are three separate parts to the Act:

1. It is illegal to access a computer unless you have permission to do so.
2. It is illegal to access data on a computer when that material will be used to commit further illegal activity, such as fraud or blackmail.
3. It is illegal to make changes to any data stored on a computer when the user does not have permission to do so.

### Copyright Designs and Patents Act 1988

The **Copyright, Designs and Patents Act 1988** exists to protect peoples' creations. When a person creates something, they own it. What they create might include:

- a picture, drawing or photograph
- a video, television programme or film
- text, such as a book, article or report
- a game

## Software licences

Open Source	Proprietary
Free of copyright Generally free Source code is public Source code can be modified Possible online support from peers. Support may not be available No guarantee of quality	Copyright protected May have a fee or subscription licence Source code is not public Updates from manufacturer only Can be expensive Cannot be modified Licence can limit number of installs