Lesson plan

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| Topic 5 Equality and accessibility |
| Learning Objectives:   * Describe guidelines and current legislation designed to ensure the accessibility of IT systems |
| Content |
| Starter  PowerPoint guide: Topic 5 Equality and accessibility.pptx  The famous physicist Steven Hawking is an example of someone who was so severely disabled that he was almost completely paralysed and could not speak. Yet using specialised computer equipment, he was still able to work and communicate until his death in 2018 at the age of 75. He is buried in Westminster Abbey between Isaac Newton and Charles Darwin.  There is a tribute and video of part of his funeral service at:  <https://www.nbcnews.com/news/obituaries/stephen-hawking-s-ashes-buried-westminster-abbey-n883756>  Main  What is accessibility?  Discuss what is meant by accessibility and what might be involved for an individual, an employer and a website designer.  Barriers to effective use of IT  Blindness or partial sight, hearing related disabilities, motor impairment, cognitive impairment can make it difficult to use a computer system.  Ease of access settings  Software settings, for example in Windows, can make systems more accessible. See:  <https://edu.gcfglobal.org/en/computerbasics/using-accessibility-features/1/>  Accessibility is achieved through hardware and software.  Examples of software solutions are: high contrast, cursor/pointer size, magnifiers, colour filters, closed captions and audio such as text to speech.  Sticky keys allow keys to be ‘held down’ for the user, rather than having to hold down two keys at once.  Specialist hardware devices are often useful for ordinary users. For instance, wrist supports and ergonomic keyboards can prevent users from getting a disability from typing. Audio commands with a microphone are becoming increasingly common for users without disabilities due to their convenience. Amazon Alex, Google Home and others are examples of this.  Many other hardware devices exist such as foot controllers instead of mice.  The value of accessibility  Discuss the value of making computer systems that meet users’ needs. There is not only a moral and ethical obligation to do so, but there are several laws designed to ensure accessibility.  Ask students to do **Tasks 1**, **2** and **3** on the worksheet.  Topic 5 Worksheet 5  Topic 5 Worksheet 5 Answers  They can search for *Ease of Access* in Windows to view the special settings available.  Disability Discrimination Acts (1995, 2005)  These Acts were not specifically designed to ensure the accessibility of IT systems but apply to reasonable adjustments that all employers should make to ensure that workers with disabilities are not disadvantaged whilst undertaking their jobs.  Other adjustments that could be mentioned are offering employees appropriate training for overcoming, or helping others overcome their disabilities.  These acts have now been repealed and replaced by the **Equality Act (2010).**  Equality Act (2010)  The Equality Act gives similar rights to those that were in the Disability Discrimination Acts to other people with protected characteristics.  The full list of protected characteristics:   * Age * Disability * Gender reassignment * Marriage and civil partnership * Pregnancy and maternity * Race * Religion or belief * Sex * Sexual orientation   All people within these categories are entitled to equal treatment. This includes products, services and employment.  This is the legislation which enforces accessibility guidelines for disabled employees and job applicants.  See  The full act: <https://www.legislation.gov.uk/ukpga/2010/15>  Guidance to the act: <https://www.gov.uk/guidance/equality-act-2010-guidance>  Ask students to do **Task 4 on Worksheet 5**.  In Task 4, students are to look up the following site, which gives profiles of seven users with different disabilities.  <https://www.gov.uk/government/publications/understanding-disabilities-and-impairments-user-profiles>  Students then look in detail at two of the profiles and give an explanation of a barrier experienced and one way in which it can be overcome.  For an extended activity, or more able students, they could make notes on the profile and explain more details to the class.  The World Wide Web Consortium (W3C)  This is the organisation that sets standards for the web. For instance, it is in charge of the HTML and CSS standards.  HTML (Hypertext Markup Language) web pages (which end in *htm* or *html*) are written in what is known as a markup language. Rather than, for example, telling a webpage that some text is bold, instead, the page is marked up to describe the text. For example, it could require *emphasis* or a *heading*. It is then left to the web browser to determine how such text will be formatted. Chrome or internet explorer may make the text bold, whilst a speech browser may say the text louder.  CSS (Cascading Style Sheets) are used to describe the formatting and appearance of a web page. They can override the browsers default way of presenting the web page and add other features such as background images.  The Web Content Accessibility Guidelines (WCAG) are written by the Web Accessibility Initiative (WAI) which is part of the W3C.  Web accessibility  Most of what follows refers to legislation and guidelines for making websites accessible to all.  Under the Equality Act 2010, website owners are obliged to make a site accessible to disabled users and make reasonable adjustments to resolve any access issues. See:  <https://www.computerweekly.com/opinion/What-you-need-to-know-about-the-Equality-Act-2010>  Web content accessibility Guidelines 2.1 (WCAG 2.1)  These guidelines show how to make a website more accessible to people with disabilities.  There are many websites which will check to see if a website conforms to WCAG recommendations. For example:  <https://achecker.ca/checker/index.php>  The full WCAG 2.0 guidance is given here:  <https://www.w3.org/TR/WCAG20/>  British Standards Institute (BSI)  The British Standards Institute produces standards for many different professions and industries, including IT.  It publishes Codes of Practice for Web accessibility, and guidelines on how websites can be built to be accessible to disabled users.  BS numbers are given for each of the standards. For example:  Web accessibility (PAS 78)  Software testing (BS 7925)  Electrical wiring (BS 7671)  Fire detection (BS 5839)  It is likely that your classroom has a fire extinguisher inside or close by. The BS logo will be present to show that it conforms to the appropriate standard.  Open Accessibility Framework (OAF)  This set of guidelines is intended as an aid to software developers to build software applications that are accessible to people with disabilities.  The video at the link below explains the Framework in a clear, comprehensible way. It would be worth watching with students as it covers the six steps of the OAF.  <https://www.youtube.com/watch?v=qmTM_wypgWA>  Ask students to do **Task 5** on the worksheet.  Plenary  Review the names of all the different guidelines and legislation that are relevant to accessibility.  Give out **Homework 5**.  Topic 5 Homework 5  Topic 5 Homework 5 Answers |