

FACTFILE: GCSE DIGITAL TECHNOLOGY



Unit 1

ETHICAL, LEGAL AND ENVIRONMENTAL IMPACT OF DIGITAL TECHNOLOGY ON WIDER SOCIETY: HEALTH AND SAFETY



Introduction

Learning Outcomes

Students should be able to:

- Demonstrate an understanding of digital technology-related health and safety issues, including repetitive strain injury (RSI), back strain and eye strain
- Identify the measures that both the employee and employer should take to promote good health and safety practice in the workplace

Digital technology-related health and safety issues

The law stipulates that employers have a duty to manage health and safety aspects of their working environments, minimising the risk of their employees being harmed.

The use of computers can lead to long-term health issues and employers must be vigilant about common causes of health problems, such as:

- Heating and lighting
- Furniture
- Computer hardware
- Noise
- Toxins

Repetitive Strain Injury (RSI)

RSI can present itself in areas anywhere from the neck down along the shoulder and arm to the fingers. On-going movement of the muscles and tendons within these body parts leads to pain, stiffness, swelling, weakness or numbness in the affected areas. RSI can be caused by continuous use of the mouse and keyboard. Gamers may develop the condition in their hands from intense overuse of a joystick.

Preventing, reducing and managing RSI can involve:

- Taking regular breaks
- Moving and changing sitting position regularly
- Exercise
- Using ergonomic keyboards and mice or switching to joysticks
- Choosing furniture that supports good posture and is adjustable
- Use wrist rests

Back Strain

Poor posture at an office desk, when using a portable device or a gaming console can lead to immobilising back problems where the muscles in the spine become inflamed or tight.

Back strain amongst computer users can be prevented or managed by:

- Choosing adjustable furniture with good lumbar (lower back) support
- Making an effort to sit with good posture
- Exercise
- Regular breaks involving getting up and moving around
- Use foot rests

Eye Strain

Continuous exposure to computer screens and working where glare affects the screen can leave your eyes blurry and cause headaches.

Eye strain can be prevented and managed by:

- Getting regular eye tests, which employers have a duty to provide in some circumstances
- Using anti-glare screen technology
- Adjusting screens so that they do not reflect glare
- Setting the screen's brightness and contrast to appropriate levels
- Managing incoming sunlight with blinds, curtains and screens

Measures that an employer should take

Employers by law should provide a safe working environment for an employee. They should:

- Install fire extinguishers (powder and CO₂)
- Train staff and practise drills
- Provide ergonomically designed furniture
- Make sure there is sufficient desk space
- Pay for regular eye tests
- Provide suitable lighting
- Keeping equipment in good repair
- Avoiding trailing wires
- Disallowing the overloading of sockets
- Having electrical infrastructure and equipment checked regularly
- Dispose of damaged WEEE (Waste Electrical and Electronic Equipment) properly
- Enable the temperature to be controlled to avoid stress and discomfort
- Use anti-static carpet or provide anti-static straps to dissipate any static build-up
- Disallow snacking around electrical equipment
- Keep plants away from computers if they must be watered

Exam Questions

- Q1 Construct a 3-column, 4-row table and complete it using the following headings in the first row:
- Health Concern
 - Key Causes
 - Two Preventative Measures
- Q2 (a) Expand the acronym RSI.
 (b) Explain what an employee can do by themselves to reduce RSI.
 (c) Explain an employer's responsibilities relating to RSI.
 (d) *"An employer cannot be held responsible for an employee developing RSI".*
 Do you agree? Argue your own point of view on this statement.
- Q3 Draw a sketch diagram to illustrate good posture of a computer user.
- Q4 Outline a range of measures that can be implemented to reduce the likelihood of employees developing eye strain.
- Q5 A newly-established company is setting up a small office for 4 employees. Write out a shopping list of items they ought to have in order to make their office a healthier, safer office.
- Q6 Name 3 health conditions that can be avoided or reduced by taking breaks from ongoing computer use.

Bibliography

BCS Glossary of Computing and ICT, 13th ed., BCS Academy Glossary Working Party

<http://www.nhs.uk/Conditions/Repetitive-strain-injury/Pages/Introduction.aspx> [Accessed 9/1/17]

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