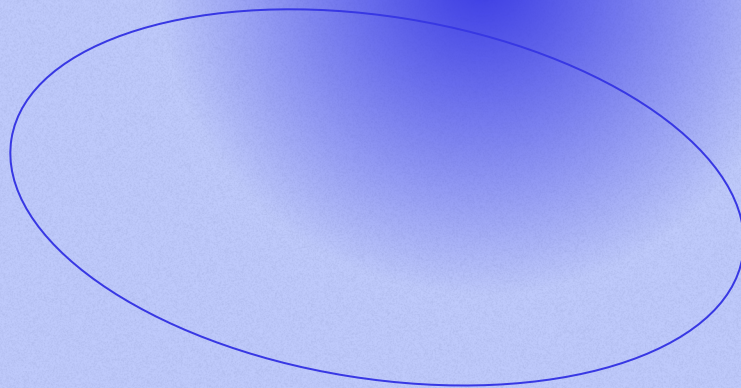# Ethical Practices Emerging Technologies

Environmental Stewardship and Sustainability

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By Khant Min Thaw
ICS4U Unit 4 Act 5

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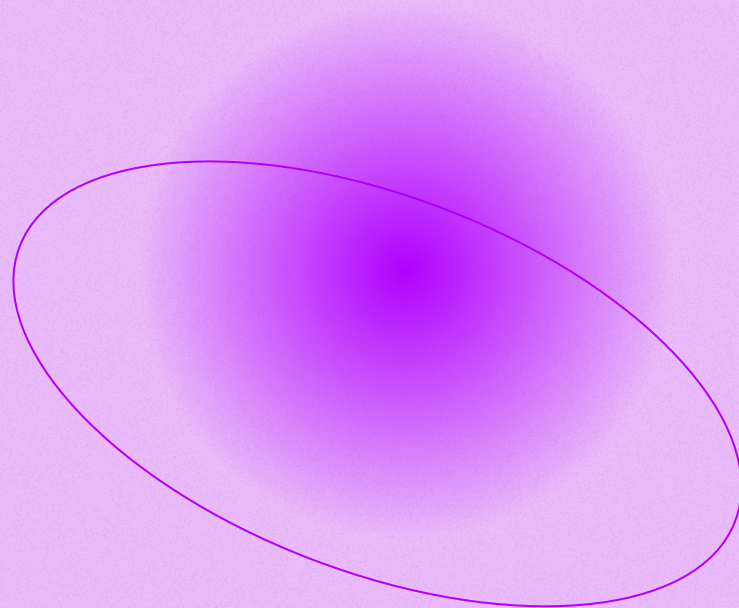
01

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Part A

Negative Effects of Computer Use on Environment

I. Creation of Waste
  - Discarded hardware components

II. Unnecessary printing of emails
  - Harmful chemicals from ink cartridges
  - Cutting down trees for paper
  - Carbon Emission

III. Heavy Power Consumption
  - High energy consumption
  - Generation and transmission of energy affects the environment

I. https://en.wikipedia.org/wiki/Electronic_waste
II. https://techengage.com/is-printing-bad-for-the-environment/
III. https://www.eia.gov/energyexplained/electricity/electricity-and-the-environment.php

Measures that help reduce the impact of computers on the environment

I. Lab regulations
- Helps the hardware last longer
- Helps avoid breaking computers

II. School Policies
- Prevents high power consumption
- Avoid computer waste

III. Paperless Workplace
- Saves trees

IV. Computer Recycling or Reuse
- Prevents Computer Waste

I. https://www.hccc.edu/administration/its/computer-labs-rules-regulations.html
II. https://www.hccc.edu/administration/its/computer-labs-rules-regulations.html
III. https://www.vizitorapp.com/blog/how-to-save-the-environment-by-going-paperless/
IV. https://greengroundswell.com/e-waste-reduce-reuse-repair-recycle/2013/06/07/
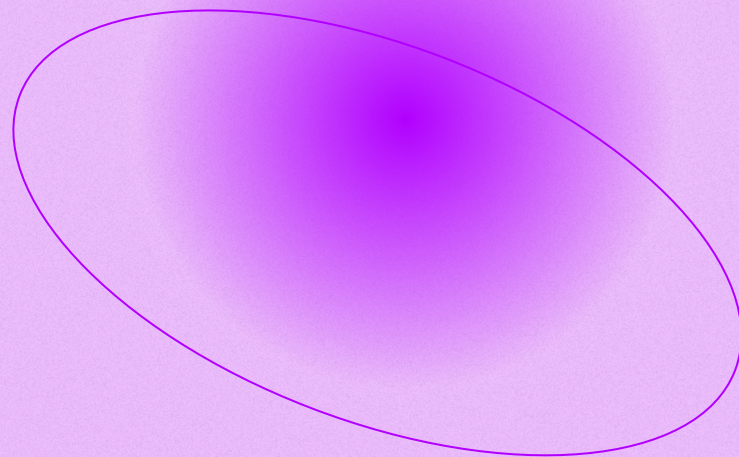
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Part B

NEGATIVE EFFECTS OF COMPUTER USE ON HUMAN HEALTH

I. Exposure to radiation
- Skin burns
- Fertility issues

II. Musculoskeletal disorders
- Headache
- Back Pain

III. Eye strain
- Eye problems
- Vision problems

IV. Reduced activity levels
- Physical inactivity

I. https://www.defendershield.com/the-dangers-of-computer-radiation
II. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6060916/
III. https://**www.aoa.org**/healthy-**eye**s/**eye**-and-vision-conditions/**computer-vision-syndrome**
IV. https://pubmed.ncbi.nlm.nih.gov/11253437/

MEASURES THAT HELP REDUCE THE IMPACT OF COMPUTERS ON HUMAN HEALTH

I. Ergonomic Standards
    - Help reduce physical risks
    - Posture
II. Increase activity levels
    - Reduces health risks
III. Safety Equipment
    - UV resistant glasses
    - Proper computer setup
    - Proper chair

I. https://www.spineuniverse.com/wellness/ergonomics/ergonomic-guidelines-computer-workstations-10
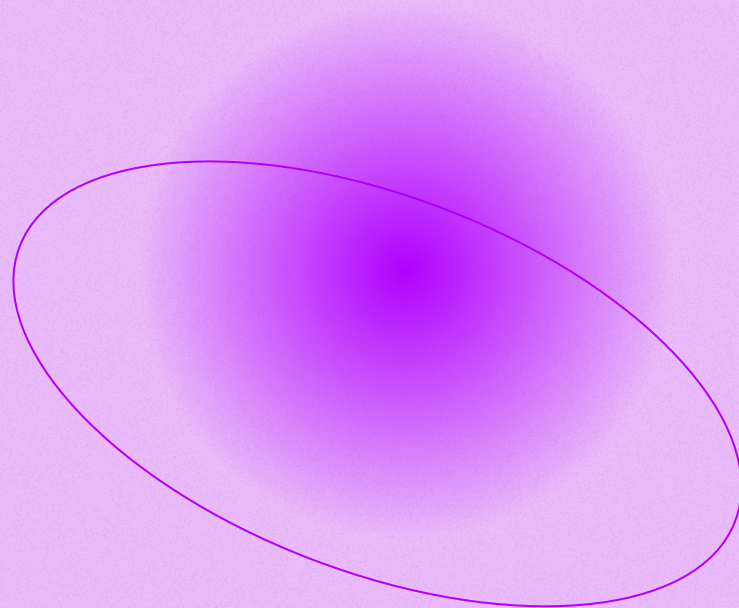II. https://www.cdc.gov/chronicdisease/resources/publications/factsheets/physical-activity.htm

03

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Part C

USING COMPUTERS TO REDUCE RESOURCE USE AND PROTECT THE ENVIRONMENT

I.   Computer modelling to reduce use of physical resources
- Architecture
- Game modeling
- Virtual Lab

II. Interpretation of large amounts of environmental data
- "Aqueduct": a water-risk mapping tool designed by the World Resources Institute
- Monitors and calculates water risk around the world

III. Management of natural resources
- More efficient and effective

IV. Programmable temperature control to reduce energy consumption
- Programmed to automatically turn off or reduce heating and cooling during the times when you are asleep or away.
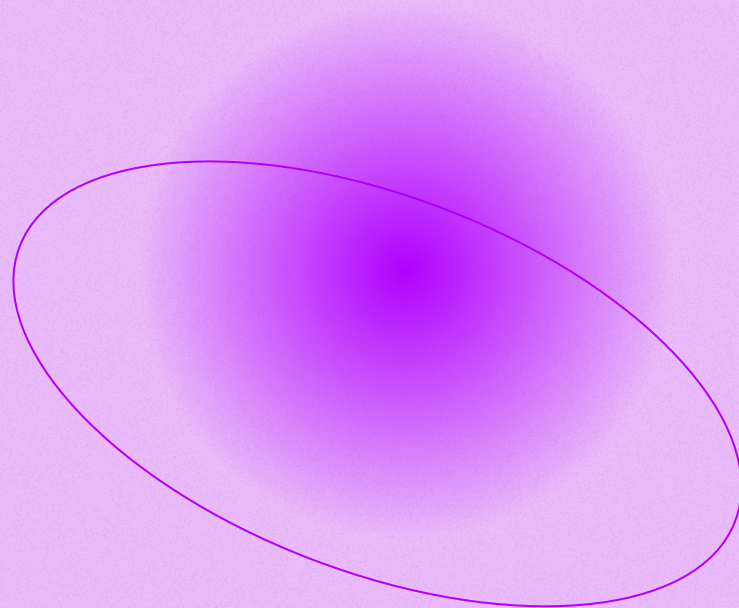
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Part D

PROVIDING ENVIRONMENTAL STEWARDSHIP OPPORTUNTIES

I. Local community recycling centres
   - Plymouth,UK (Weston Mill Recycling Centre)

II. Private companies that refurbish computers
   - Backmarket.com

III. Printer cartridge recycling programs
   I. Inkrecycling.org

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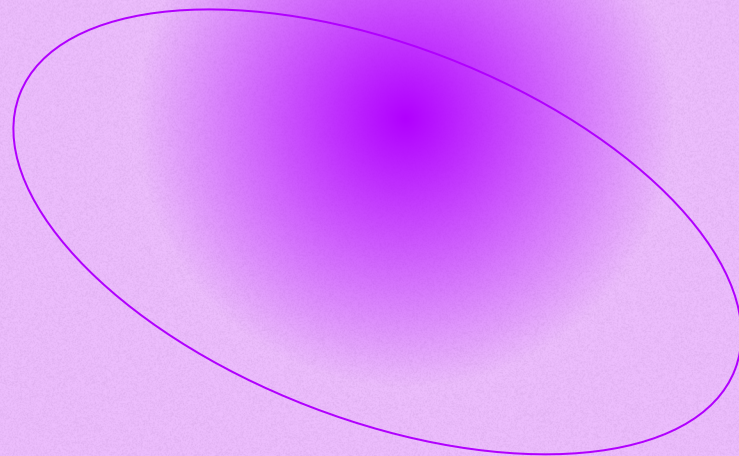
QUESTIONS

QUESTIONS

I. Why does file sharing have a big impact on the economy?
- File-sharing allows the communinty to have a wide range of cultural goods and varying data and is often used to sample content that is bought later. Having access to a library of files increases the welfare of the community as the data is no longer restricted or needed to be bought; for the most part. Overall, file sharing has a positive effect on the economy.

II. Identify one new computer product and the legal and/or ethical issues associated with it.
- Deepfakes
    - Celebrities or big authority figures get inaccurately called out in fake videos

III. Name one issue that cyberbullying creates for
a) a child who is bullied
    - can lead to suicide
b) a child who is bullying
    - believes he/she can get away with the bullying on the internet
c) how children view the internet
    - Bullys may view the internet as a space where they can freely say horrible things to another person.
    - Children may view the internet as something dangerous