



Extending the lifespan of equipment policy



At an institutional level, extending the lifespan of provide the best way to reduce the environmental footprint associated with the manufacturing of new devices and the impacts linked to their end-of-life.

Examples :

- Set up a plan to buy upgradable equipment as much as is reasonably possible.
- Engage companies or internal personnel to repair equipment.

3



3



Equipment donation and pooling policy



Donating or lending equipment to people in need or those unable to acquire it not only extends the lifespan of existing equipment but also provides significant social benefits.

Examples :

- Set up a lending system towards students.
- Donate equipment to non-profit organisations or schools.

3



3



Recycling policy



An efficient way to deal with the end-life of equipment is to establish a system for collecting and recycling electronic equipment.

Examples :

- Implement a plan for recycling IT equipment at the institutional level.
- Set a plan Communicate about the waste recycling policy (what? when? where?)
- Ensure transparency of the chain of custody for equipment with the refurbishers.

2



2



Barter and second-hand equipment policy



Over the full lifecycle of IT equipment, manufacturing accounts for the majority of environmental impacts. Purchasing refurbished equipment instead of new hardware is an especially effective way to reduce environmental impacts.

Examples :

- Set up a Barter and second-hand equipment policy at an institutional level.
- Set up a second-hand market where teacher, student and staff could exchange or acquire refurbished devices.

3



3



Environmental clauses policy



The systematic inclusion of environmental requirements in tenders is a straightforward and highly effective measure to encourage manufacturers to offer eco-designed equipment and properly manage their end-of-life.

Examples :

- Require in tenders that the service provider or equipment holds recognized eco-labels or standards.

3



3



Implement and optimize the sorting of consumables



The objective of this best practice is to minimize the impact of the company's waste (paper, toner, batteries, etc.) by promoting recycling and the reuse of the raw materials they contain.

Examples :

- Place appropriate waste receptacles in strategic locations.
- Ensure regular collection by a suitable organization.

2



2



Network infrastructure location



The physical location of infrastructure (servers, networks) is particularly important to ensure efficient energy consumption, extend equipment lifespan, and enhance the resilience of the IT system at the institutional level.

Example :

- Arrange network infrastructure in a suitable location (secure, refrigerated, ventilated, etc.).

2



2



Smart power supply policy



There are increasingly more smart devices that can significantly and almost automatically reduce energy consumption at the institutional level.

Example :

- Implement intelligent equipment at the institution (smart plugs, presence sensors, smart thermostats, etc.).

2



2





Collective action



Collective action



Collective action



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Energy-efficient equipment policy



There are increasingly more efficient devices that can significantly and almost automatically reduce energy consumption at the institutional level.

Example :

- *Install energy-efficient devices in the institution (low-power screens, LED bulbs, ARM computers, etc.).*



Enable eco mode on equipment and infrastructure



Most equipment can be configured to enter sleep mode automatically or remotely, which can result in energy savings both for end users and for the infrastructure itself.

Example :

- *Enable by default the energy-saving features of modern processors and network equipment (switch,...).*



Renewable energy



Power the institution's equipment with renewable energy instead of fossil energy reduce significantly the carbon footprint.

Examples :

- *Investments in internal infrastructure.*
- *Purchases from green energy suppliers).*



Social clauses policy



The choice to use digital services goes beyond their mere functionality and may involve legal, economic, or even philosophical considerations.

Examples :

- *Use services that are respectful and transparent regarding data use.*
- *Use open-source software.*



Social and mental impacts of digital tools



Digital sobriety is one of the most effective ways to reduce the environmental impact of digital technology while also mitigating the psychological and mental strain that can disrupt learning.

Example :

- *Organize a training session on the social and psychological effects of digital tools.*



Training on the impact of digital tools on teaching and learning



Many beliefs associate digital technology with academic performance. However, digital tools only have indirect effects on learning, which can be either positive or negative depending on the specific context

Example :

- *Organize a training session on the real contributions of digital tools to teaching and learning.*



Collective moments for digital disconnection



It is challenging to overcome digital addictions on an individual level. Enforcing collective breaks helps create distance and introduces new habits.

Example :

- *Organize events focused on disconnection (email-free days, digital detox week, etc.).*



Responsible digital charter



Most academic uses of digital technology are implicit for students. With increasingly intelligent digital tools (AI), it is essential to make expectations clear by explicitly communicating the institution's stance on digital usage and academic integrity, thereby fostering a sense of responsibility.

Example :

- *Communicate and display the school's ambitions regarding "Responsible Digital" practices.*





Collective action



Collective action



Collective action



Collective action



Collective action



Collective action



Collective action



Collective action





Life cycle analysis



Life cycle analysis is the most common and effective method for gaining detailed insight into the environmental impacts associated with an institution and regulate the uses of digital.

Example :

- Conduct a life cycle analysis at an institutional level or in an academic project.

3



3



Protect your equipment



Mobile equipment is constantly transported and handled, increasing the risk of premature damage. One simple way to maintain your devices is to put measures in place to protect them in their daily use.

Example :

- Buy protective cases to safeguard your devices (laptops, tablets, and smartphones).

1



Clean your equipment



Maintain your equipment by regularly cleaning it can extend its lifespan.

Example :

- Use appropriate products to clean the keyboard, screen, and fan of your laptop.

1



Eco-friendly printing



Adopting eco-friendly printing practices can reduce the number of consumables (paper, toner) and the energy consumption.

Examples :

- To use scrap paper for drafting/rough work.
- Print on both side of the paper.
- Use the print preview.
- Print in black and white rather than in colours.

2



Maintain the hardware



Maintaining the hardware of your devices help to extend the lifespan of equipment and to reduce the environmental footprint associated with the manufacturing of new devices and the impacts linked to their end-of-life.

Examples :

- Add or replace component if needed (RAM, HDD,...).
- Purchase extended warranties.
- Extend the accounting depreciation period (beyond 5 years).

2



Limit the number of screen



Compared to all other IT equipment, screens have the highest impact in terms of manufacturing and energy consumption.

Examples :

- Buy a screen with eco-label or an efficient energy consumption.
- Buy a larger screen if needed rather than two screens.

2



Maintain the software



A computer with poorly maintained software can require up to 25% more power and reduce its lifespan.

Examples :

- Avoid systematically upgrading to new software versions.
- Reboot the machines.
- Clear temporary files (browser, system, etc.).
- Clean the registry.
- Defragment the hard drive and the registry.

1



Turn off or set your device to sleep mode



Over a 24-hour day, a workstation is typically used for no more than 8 hours. In sleep mode or turn off, you can save nearly two-thirds of the electricity consumption during working days compared to a workstation left on 24/7.

Example :

- Configure devices to enter sleep mode when you are away from the office.

2





Individual action



Individual action



Individual action



Collective action



Individual action



Individual action



Individual action



Individual action





Disable unused features



Some features of your devices are permanently activated by default, causing unnecessary energy consumption and premature battery wear over time.

Example :

- *Disable wifi, bluetooth, etc when non needed.*

1



Clean up personal digital spaces



Although data storage is not the primary environmental impact of digital technology, the accumulation of unnecessary data requires an increasing number of hard drives, especially since data is often duplicated multiple times for backup purposes.

Example :

- *Regularly delete unnecessary data from the cloud, emails, etc.*

1



Manage battery cycles



The battery of a device is a component that directly affects both the device's lifespan and its power consumption. Proper maintenance practices help optimize both aspects.

Example :

- *Preserve the battery by keeping the charge level between 80% and 20%, this can extend your device.*

1



Limit use of email



Contrary to popular belief, it is not the storage but rather the writing, reading, and transmission of emails that contribute the most to increasing the environmental footprint of the information system.

Examples :

- *Limit the number of emails sent each day*
- *Reduce the number of recipients.*
- *Avoid using emails as a substitute for phone or in-person communication.*
- *If needed, prefer instant messaging systems for quick and casual exchanges.*

2



Centralize data sharing



An effective way to avoid the proliferation of unnecessary data is to centralize it in spaces accessible to those who need it.

Example :

- *Favor common and centralized digital spaces (LMS, collaborative applications, etc.) over individual emails.*

2



Use reduced versions of applications



Although it is difficult to forgo digital services, there are often less energy-intensive alternatives that can be identified and adapted to one's needs.

Examples :

- *Limit data flow by adjusting streaming rates.*
- *Use smaller AI models.*
- *Use instant messaging instead of mail.*

2



Anticipate the use of training materials



Design materials while anticipating student usage so that you can reduce the environment footprint of your course material.

Examples :

- *Limit the printing of training material.*
- *Share your training material on the LMS rather by mail.*

2



Prescribe technology usage in courses



Students usually bring their digital devices to class by default. One effective way to avoid distractions and help students stay focused during class is to set specific times when they are allowed to use their digital devices.

Examples :

- *Explain to students at which times they are allowed to use their laptops, tablets, or phones.*
- *Indicate the purpose of each designated period, such as note-taking, research, or interactive activities.*

2

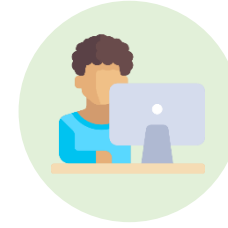




Individual action



Individual action



Individual action



Individual action



Individual action



Individual action



Individual action



Individual action





Favor low-tech teaching activities



Using digital learning applications doesn't automatically translate to learning benefits. Prefer non-digital alternatives when the digital dimension does not add value.

Example :

- Using an online polling app when you have a large number of students allows everyone to participate, which is less necessary with a smaller class size.



Open access resources



Make resources openly accessible by applying a Creative Commons license.

Example :

- Display the legal notice for your resources.



Learn and work in airplane mode



Allow time for offline work using physical materials instead of digital ones.

Example :

- Avoid going online if the task does not require online resources, in order to prevent distractions.



Question digital benefits in learning and teaching



Using digital learning applications doesn't automatically translate to learning benefits. Use digital tools or resources only when their pedagogical value can be clearly explained.

Example :

- For example, video allows students to quickly grasp key concepts or complex dynamic phenomena (such as mechanical processes or 3D representations).



Use existing resources



Prefer non-digital alternatives when the digital dimension does not add value.

Example :

- Using an online polling app when you have a large number of students allows everyone to participate, which is less necessary with a smaller class size.



Use open-source software



When you need to use professional software, authoring tools are often expensive, but there are sometimes free, open-source alternatives.

Example :

- Moodle, Gimp, Audacity, Shotcut,..





Individual action



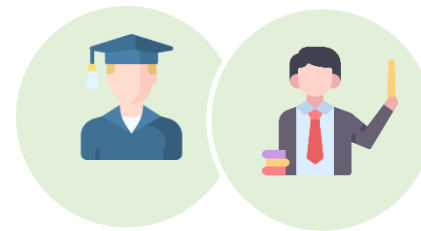
Individual action



Individual action



Individual action



Individual action



Individual action





Unethical digital practices

Why bother about data privacy? As long as it saves us money and gets the job done, that's all that matters.

Selection criteria for digital tools shouldn't depend solely on practicality or cost-effectiveness. It's also important to base these choices on ethical criteria—for example, by recognizing knowledge as a common good.

4



Non-sustainable course design

I photocopied 400 copies of my 500-page handout, and to make sure everyone has it, I emailed it to everyone.

Teachers can reduce the environmental footprint of their courses right from the design phase by using existing resources, considering how their materials will be used, and taking into account the resources required for educational activities.

4



Planned obsolescence

Seriously? 20 minutes to boot up those dinosaurs in the computer lab? And they still have floppy drives? Is that for real?

Extending the lifespan of existing equipment through software or hardware maintenance not only avoids the environmental impacts associated with aging infrastructures but also reduces those resulting from overly frequent equipment renewal.

7



Poor management of e-waste

Where should I throw away my old laptop? In the yellow bin or the green bin?

Equipment at the end of their life must be subject to planned actions to help limit the environmental impacts associated with electronic waste. For example, existing waste can be recycled or devices can be given a second life.

6



Overconsumption

The new iPhone is so cool, I have to buy the new one, the new colour is amazing and it even matches my eyes!

Reducing environmental impact at both the institutional and individual levels involves questioning, at the time of purchasing devices, not only the equipment's material characteristics (energy consumption, reparability, manufacturing conditions) but also whether it is truly necessary to acquire them, given the impacts related to manufacturing.

7



Energy-intensive infrastructure

Are you sure that placing the server room in the boiler room to save space is a good idea?

At the institutional level, reducing the energy impact can be achieved by acquiring energy efficient or smart digital equipment or by considering strategically the layout of the infrastructure.

7



Energy consumption: equipment

I leave my computer at the office on 24/7, you never know if I might receive an important message.

At the individual level, reducing the energy impact of equipment can be achieved easily through good consumption habits and appropriate eco-friendly practices.

7



Energy consumption: digital services

To ensure all the students in the class have the latest recorded lecture from the amphitheater, I'll send it to everyone as an email attachment.

Internet usage has tangible consequences on students learning abilities: lack of concentration, reduced attention span, frustration with study situations. A good way to prevent it is to plan individually or collectively disconnection times.

6





Problem



Problem



Problem



Problem



Problem



Problem



Problem



Problem





Digital misconception

Let's create the school of the future: everyone on e-learning and AI instead of the teachers!

Many people associate digital technology with improved academic performance and innovation. However, its impact can be either beneficial or detrimental depending on the specific course context. Therefore, whether you're an institution or a teacher, it's crucial to question the true value of digital tools and communicate this clearly to students.

6



Digital addiction

My attention span is shot. 15 minutes of a lecture is my limit. TikTok is just as educational these days...

Internet usage has tangible consequences on students learning abilities: lack of concentration, reduced attention span, frustration with study situations. A good way to prevent it is to plan individually or collectively disconnection times.

6



CHALLENGE

How long have you owned your smartphone?

The team with the oldest smartphone wins **2 resources points**.

2





Event



Problem



Problem





How can video conferencing be made more environmentally friendly?

- a) Using lower video resolution
- b) Turning off cameras when not speaking
- c) Recording meetings instead of live streaming
- d) Use an open-source software

Feedback :

These practices can reduce the data transfer and processing power required for video conferencing, lowering its carbon footprint.

2



What is "e-waste"?

- a) Waste from paper production
- b) Waste from plastic packaging
- c) Waste from discarded electronic devices
- d) Waste from chemical manufacturing

Feedback :

E-waste includes discarded computers, phones, and other electronics, which often contain hazardous materials that can pollute the environment.

1



What is a "circular economy" in the context of digital technology?

- a) Recycling electronic waste
- b) Designing devices for durability and repairability
- c) Refurbishing and reusing old devices
- d) Sell new devices to eco-friendly people

Feedback :

A circular economy aims to keep resources in use for as long as possible, minimizing waste and environmental impact.

2



Which of these environmental impacts of manufacturing digital equipment is the one with the most significant impact ?

- a) Water consumption
- b) The use of rare earth elements and critical resources
- c) The production of electronic waste

Feedback :

While water consumption and electronic waste are also important factors, the use of rare earth elements and other critical resources stands out as the most significant impact due to its far-reaching consequences on resource depletion, environmental degradation, and the sustainability of the digital industry as a whole.

2



What is the phenomenon of rapid renewal of digital devices called?

- a) Planned obsolescence
- b) Digital life cycle
- c) Technological obsolescence
- d) Digital evolution

Feedback :

Manufacturing digital devices has a multifaceted environmental impact, including high water consumption, the use of scarce resources, and the generation of significant electronic waste.

1



Which of these actions is the most effective in reducing the environmental impact of digital technology?

- a) Turning off your computer at night
- b) Decreasing the brightness of your screen
- c) Using Wi-Fi instead of 4G
- d) Extending the life of your devices

Feedback :

Keeping devices for longer significantly reduces the demand for new production, which has the biggest environmental impact.

1



What is "cloud computing"?

- a) A dematerialized data storage system
- b) A wireless display technology
- c) Video conferencing software
- d) An online learning method

Feedback :

Cloud computing involves storing and accessing data and programs over the internet instead of on a personal computer or local server.

1



What is the environmental impact of storing data in the cloud?

- a) Negligible
- b) Low
- c) Moderate
- d) Significant

Feedback :

Data centers require vast amounts of energy to operate and cool their servers, contributing to greenhouse gas emissions.

1





Quiz



Quiz



Quiz



Quiz



Quiz



Quiz



Quiz



Quiz





What is the main source of energy used to power data centers?

- a) Solar energy
- b) Wind energy
- c) Hydroelectric energy
- d) Fossil fuels**

Feedback :

While there is a move towards renewable energy, many data centers still rely heavily on fossil fuels, particularly coal and natural gas.

1



Which of these digital devices consumes the most energy?

- a) A smartphone
- b) A tablet
- c) A laptop
- d) A desktop computer**

Feedback :

Desktop computers generally have more powerful components and larger displays, leading to higher energy consumption compared to other devices.

1



What is a "digital footprint" in terms of the environment?

- a) The mark left by our online activities on the environment**
- b) The amount of personal data stored on the internet
- c) The number of digital devices we own
- d) The area occupied by data centers in the world

Feedback :

This refers to the environmental impact of our digital actions, including energy use, resource consumption, and waste generation.

1



Classify those actions from the most to the less impactful to reduce the environmental impact of mail.

- a) Deleting unnecessary emails (3)
- b) Limiting the number of attachments (1)
- c) Unsubscribing from unwanted newsletters (2)

Feedback :

1. Limiting the number of attachments can reduce CO2 emissions by up to 92%.
2. Unsubscribing from unwanted newsletters reduces the overall number of emails sent and received.
3. Deleting unnecessary emails helps by freeing up server space and reducing energy consumption for storage.

3



Which of these file formats is the lightest?

- a) .doc
- b) .pdf
- c) .txt**
- d) .jpeg

Feedback :

Plain text files (.txt) contain only basic text without formatting, making them smaller than richer formats like .doc or .pdf.

1



What is "Moodle"?

- a) A set of rules for good behaviour on the internet
- b) Anti-virus software
- c) Wireless communication technology
- d) An online learning platform**

Feedback :

Moodle is the leading learning management system used by most of the universities around the world. This is a good example of an open-source software that outdo most of the authoring LMS alternatives.

1



What is the name for waste from electrical and electronic equipment?

- a) Household waste
- b) Industrial waste
- c) Green waste
- d) WEEE**

Feedback :

WEEE (Waste Electrical and Electronic Equipment) is a category of waste that includes discarded electronic devices.

1



What does the acronym "ADEME" stand for?

- a) Ecological Transition Agency
- b) Association for the Development of Renewable Energies
- c) Agency for the Environment and Energy Management
- d) Association for the Defense of the Environment and Digital Technology**

Feedback :

ADEME is a French agency that provides expertise and advice on environmental and energy issues.

1





Quiz



Quiz



Quiz



Quiz



Quiz



Quiz



Quiz



Quiz





Which of these metals is used in the manufacture of smartphones ?

- a) Gold
- b) Silver
- c) Cobalt
- d) All of the above

Feedback :

Smartphones contain a variety of metals, including gold, silver, and cobalt, often sourced from conflict zones or environmentally damaging mines.

2



What is the consequence of extracting the raw materials needed to manufacture digital equipment?

- a) Deforestation
- b) Soil pollution
- c) Depletion of natural resources
- d) All of the above

Feedback :

Raw material extraction for electronics has significant environmental consequences, including deforestation, soil pollution, and resource depletion.

2



What is the name for all the actions aimed at reducing the environmental impact of digital technology?

- a) **Digital sobriety**
- b) Digital transition
- c) Digital ecology
- d) Responsible digital technology

Feedback :

Digital sobriety encourages a more mindful and responsible use of digital technology to minimize its environmental footprint.

1



What is the role of higher education institutions in reducing the environmental impact of digital technology?

- a) Raise awareness among students and staff
- b) Implement digital equipment management policies
- c) Promote responsible digital practices
- d) **All of the above**

Feedback :

Higher education institutions have a crucial role in promoting awareness, implementing sustainable practices, and fostering responsible digital citizenship among their communities.

2



List as much actions taken individually to reduce the environmental impact of digital as you can.

1  x answer

5 answers maximum

?



List as many actions your institution has taken to reduce the environmental impact of digital as you can.

1  x answer

5 answers maximum

?



List as many actions students in your institution has taken to reduce the environmental impact of digital as you can.

1  x answer

5 answers maximum

?



List as many actions teachers in your institution has taken to reduce the environmental impact of digital as you can.

1  x answer

5 answers maximum

?





Quiz



Quiz



Quiz



Quiz



Quiz



Quiz



Quiz



Quiz





BONUS

By turning off unused devices (computers, phones, tablets), you save energy.

Thanks to these hours of downtime avoided, you can move your **Sustainability token** one space forward on the board.

1 



BONUS

You have chosen to change your browser to reduce your environmental footprint. By favouring a more resource-efficient tool, you are promoting more responsible energy consumption.

As a reward for this effort in digital sobriety, you move your **Sustainability token** two spaces forward on the board.

2 



BONUS

By reducing the number of emails with large attachments you send, you can significantly reduce your data consumption.

Every gigabyte saved allows you to move your **Sustainability token** forward three spaces.

3 



BONUS

You have disabled unnecessary notifications on your devices.

This action helps reduce battery and data consumption and earns you **1 resource point**.



BONUS

You adjust the resolution of your streaming videos, (for example from 1080p to 720p).

Each hour of streaming at a lower quality allows you to earn **2 resources points**.

2 



BONUS

By participating in the "Weekend Without Smartphone" challenge, you successfully reduced your online time.

Congratulations on completing the challenge! You earn **3 resources points** as a reward.

3 



BONUS

The points awarded for the next quiz card will be **doubled**, meaning you will receive twice the usual amount of points for completing that specific action.

2x 



BONUS

Pick an individual action card.



Event



Event



Event



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BONUS

The other team pick a problem card.



BONUS

Pick a collective action card.



MALUS

Storing data on cloud services requires data centers that consume a lot of energy and resources, thus increasing the digital ecological footprint.

You lose 2 resources points.

-2 



MALUS

The manufacturing of digital equipment requires the extraction of numerous minerals, which can lead to significant environmental and social impacts, particularly in the regions where these resources are mined.

You lose 3 resources points.

-3 



MALUS

Excessive screen time can be detrimental to your health (sleep disorders, anxiety, social isolation).

On the board, move your **Impact token** forward one space.

1 



MALUS

Digital equipment (smartphones, computers, data centres) consumes a lot of energy and generates greenhouse gas emissions.

Because of this, move your **Impact token** forward two spaces on the board.

2 



MALUS

The lack of suitable recycling channels for electronic devices complicates waste management and increases pollution.

Move your **Impact token** three spaces forward on the board.

3 



MALUS

Skip your turn: When a team pick this card, they do not add any tokens to the game board.



Event



Event



Event



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MALUS

Intrusive and targeted advertisements increase data and bandwidth consumption, while detracting from the user experience.

On the board, move your **Sustainability token** back one space.

-1



MALUS

The proliferation of connected devices in homes and offices is leading to an increase in energy and data consumption.

You therefore move your **Sustainability token** back two spaces.

-2



MALUS

Some manufacturers design their devices with a limited lifespan, encouraging consumers to replace them more often and generating more electronic waste.

On the board, move your **Sustainability token** back three spaces.

-3



MALUS

The increase in digital usage can also lead to a rise in cyberattacks and data breaches, creating challenges for the security and protection of personal information.

You lose 1 resource point.

-1



CHALLENGE

Compare the average screen time usage of your smartphone over the past week.

The team with the lowest screen time wins **2 resources points**.

2



CHALLENGE

How often do you charge your smartphones each week?

The team with the lowest number of charges wins **2 resources points**.

2



CHALLENGE

Count the total number of electronic devices owned by each member of your team.

The team with the fewest devices wins **2 resources points**.

2



CHALLENGE

How many hours of videos did you watch online last week?

The team with the fewest hours wins **2 resources points**.

2



Event



Event



Event



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