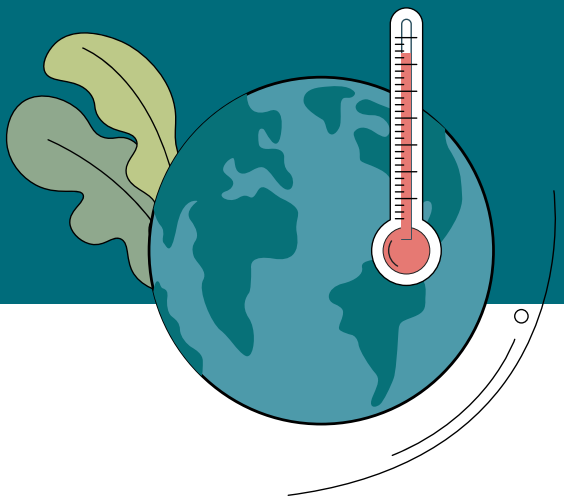
eGreen

THE ENVIRONMENTAL IMPACT OF DIGITAL TECHNOLOGY

Participant notebook



INTRODUCTION

A.1: HOW TO MEASURE CLIMATE CHANGE?

1. What is the most widely used measure for assessing climate change?

.....

.....

.....

.....

.....

2. What formula is used to obtain it?

.....

.....

.....

.....

.....

A.2: WHAT IS THE CARBON FOOTPRINT OF THE DIGITAL SECTOR?

1. What is the percentage of the digital carbon footprint in global CO2 emissions?

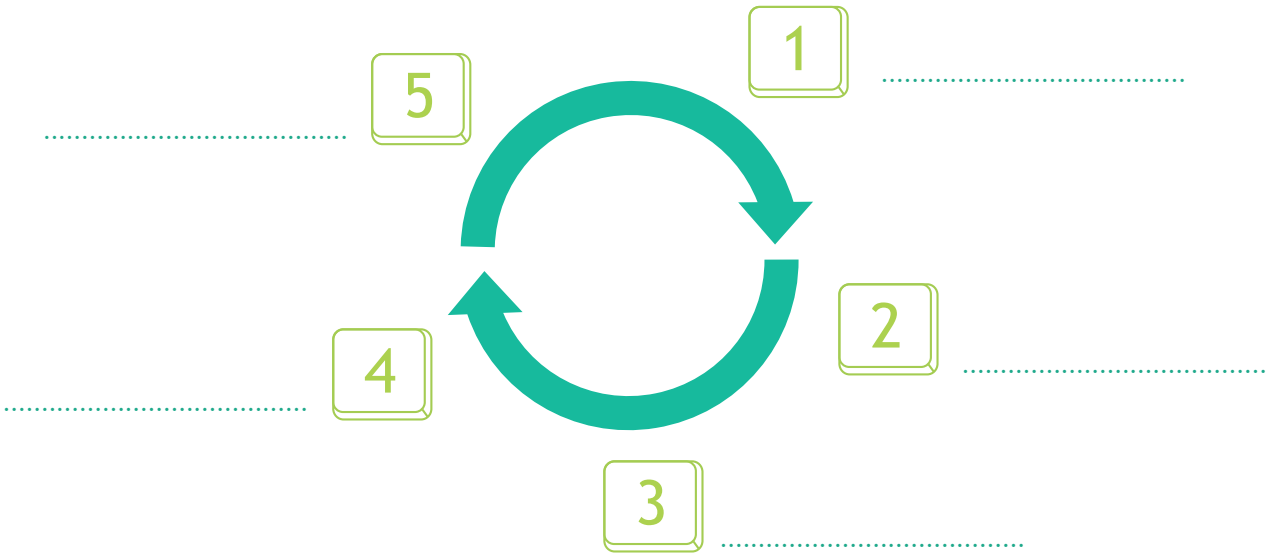
A. 0.05% - 0.1% B. 0.5%-1% C. 1%-2% D. 2%-3%

2. When comparing the CO2 emissions from digital activities and aviation on a global level, which statement best describes their relative contributions?

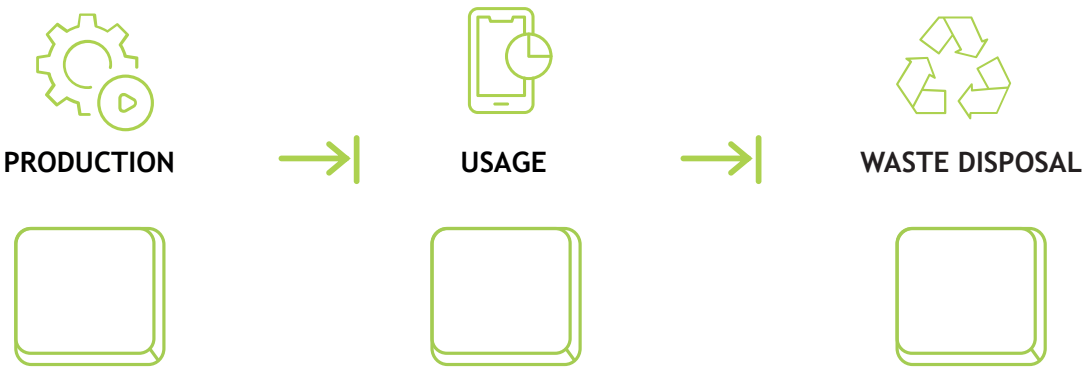
A.  B.  C. 

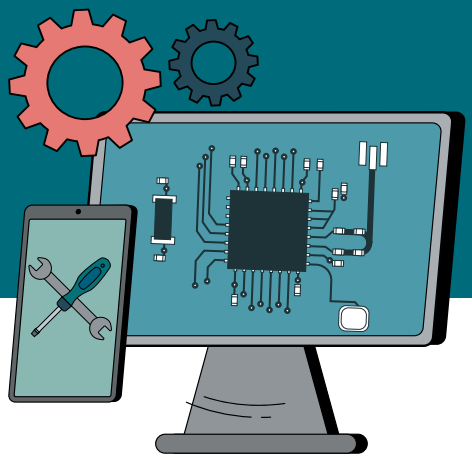
A.3: LIFECYCLE OF DIGITAL DEVICES

What are the 5 stages in the life cycle of a digital device?



How much of total CO2 is going to production, use and recycling (in %)?





MODULE 1

Production of digital devices

A.4: HOW MANY DIGITAL DEVICES DO YOU OWN TODAY?

Digital devices	Number
Smartphone	
Tablet	
Laptop	
Desktop	
Gaming consoles and virtual reality headset	
TVs and streaming devices	
Wearable and smart home devices (speaker, smartwatch…)	
Other (to add)	
TOTAL	

Carbon footprint of the production of my digital devices

Digital devices	Carbon footprint of their production	Number of devices	Calculate your footprint
Smartphone	39.07 kg CO2e		
Tablet	63.19 kg CO2e		
Laptop	156.24 kg CO2e		
Desktop	417 kg CO2e		
Gaming consoles and virtual reality headset	73.75 kg CO2e		
TVs and streaming devices	371.69 kg CO2e		
Wearable and smart home devices (speaker, smartwatch…)	10 kg CO2e		
Other (to add)			
TOTAL CO2			

Suggestions to reduce your impact

The 5 factors to consider before buying a device!

1 NEED

2 IMMEDIATE

3 SIMILAR

4 ORIGIN

5 USEFUL

MODULE 2

Impact of daily usage

A.5: WHAT DO DIGITAL DEVICES ENABLE US TO DO?

A.6: MATCH EACH DIGITAL ACTION WITH THE AVERAGE CORRESPONDING CO2 EMISSIONS EQUIVALENT TO THE DISTANCE TRAVEL

Compare the environmental impact of the digital use to the one of a car

Associate each activity with the distance travelled by a car

- Send and receive 100 emails (without attachments)
- Conduct internet research for 1 hour daily for a week
- Store a series of 10 one-hour episodes in the cloud
- Print 10 double-sided pages
- Spend 1 hour on social media daily for a week
- Watch a 1 hour episode of a serie daily for a week

A.7: GOOD DIGITAL HABITS

Associate each digital habit to its category

1. Video streaming

2. Social media

3. Emails

4. Internet research

- I limit the number of open tabs or windows, I close the tab when no longer needed
- I use sustainable search engines, such as Ecosia
- I reduce my time on social media
- I avoid sharing my email if not necessary
- I prioritise streaming in lower- quality resolution
- I clear my inbox regularly
- If I need to go to a page or website address, I enter that address in the address bar and not in the engine bar
- I don't reply to unnecessary emails
- If I am searching for a keyword, I use the address bar or the engine bar
- I have scheduled my social media time
- I have disabled social media notifications on my devices
- I limit the use of video during online calls
- I save the pages I visit often in my favourites to find them directly
- I prioritise Wi-Fi, if available, instead of Mobile Data
- I use offline mode for my music and videos, if possible
- I don't use cc in emails, if not necessary
- I have used apps that help limit use of social media on my devices
- I have sent emails with links to files instead of large attachments
- I don't send unnecessary emails
- I have hidden social media apps from the first screen on my devices

Suggestions to reduce your impact

VIDEO STREAMING

SOCIAL MEDIA

EMAILS

INTERNET RESEARCH

MODULE 3

End-of-life of digital devices

A.8: E-WASTE MANAGEMENT

1. What are the different options available for disposing of these e-waste items in your community? (e.g., throwing them away, recycling, donating)

2. What challenges might you face in responsibly disposing of your e-waste?

.....

.....

.....

.....

.....

.....

A9: EFFECTS THAT ACCENTUATE THE DISPOSAL OF DIGITAL DEVICES

Link the definition with the correct explanation

Functional obsolescence	Strategy through which the standard lifespan of a device is deliberately reduced from the design stage for economic reasons.
Psychological (or evolutional) obsolescence	Devices that are designed in ways that make them difficult or impossible to be repaired.
Planned obsolescence	When a product no longer meets the needs of users who wish to acquire a new model due to a change in functionality or design.
Irreparability	Product that no longer meets new expectations for technical (e.g. incompatibility with new equipment), regulatory and/or economic reasons.

A.10: HOW TO TAKE CARE OF YOUR DIGITAL DEVICE TO EXTEND ITS LIFETIME?

Smartphone

Laptop/computer

Tablet

Smartwatch

Game console

TV

A.11: QUIZZ - CIRCLE THE RIGHT ANSWER

1. In 2019, approximately how many smartphones were sold worldwide?

A. 500 million B. 750 million C. 1 billion D. 1.5 billion

2. During the production phase of a digital device, which step requires the excavation of 200 kg of minerals?

A. Conception

B. Extraction and transformation

C. Manufacture of components

D. Construction

3. From production to distribution, how much does a smartphone travel before being sold to the customer?

A. Equivalent to a round-trip by plane from Brussels to Rome

B. Equivalent to a round-trip by plane from Paris to Moscow

C. Equivalent to doing a full world tour by plane

D. Equivalent to doing 4 world tours by plane

4. What percentage does the production phase represent for the overall carbon emission of a digital device?

A. 44% B. 56% C. 68% D. 78%

5. Which digital activity stands out as the most energy-intensive and environmentally impactful, constituting 80% of web data?

A. Video streaming

B. Social media usage

C. Email communication

D. Internet research

6. What is the average carbon footprint of the emails sent daily worldwide (calculated without attachments)?

A. 1,000 tons of CO2e

B. 20,000 tons of CO2

C. 50,000 tons of CO2e

D. 9,000 tons of CO2

7. What percentage of e-waste produced in 2019 reached formal management or recycling facilities, according to the Global E-waste Statistics Partnership (GESP)?

A. 10% B. 17% C. 25% D. 33%

8. What is psychological obsolescence primarily driven by? (two answers)

A. Changes in functionality or design

B. Physical wear and tear

C. Consumer perception and desire

D. Marketing strategies

9. What are some maintenance tips recommended for prolonging the lifespan of digital devices?

A. Regularly cleaning vents and deleting unnecessary data

B. Leaving devices in direct sunlight for better performance

C. Using any type of cleaning solution on screens

D. Allowing devices to overheat occasionally for optimal functioning

Suggestions to reduce your impact

MODULE 4

The future of digital technology - Initiatives and actions

A.12: FILL IN THE TABLES AND GIVE A NOTE FROM 1 TO 4 TO ASSESS WHETHER THEY IMPLEMENT OR INTEND TO IMPLEMENT SUCH MEASURE

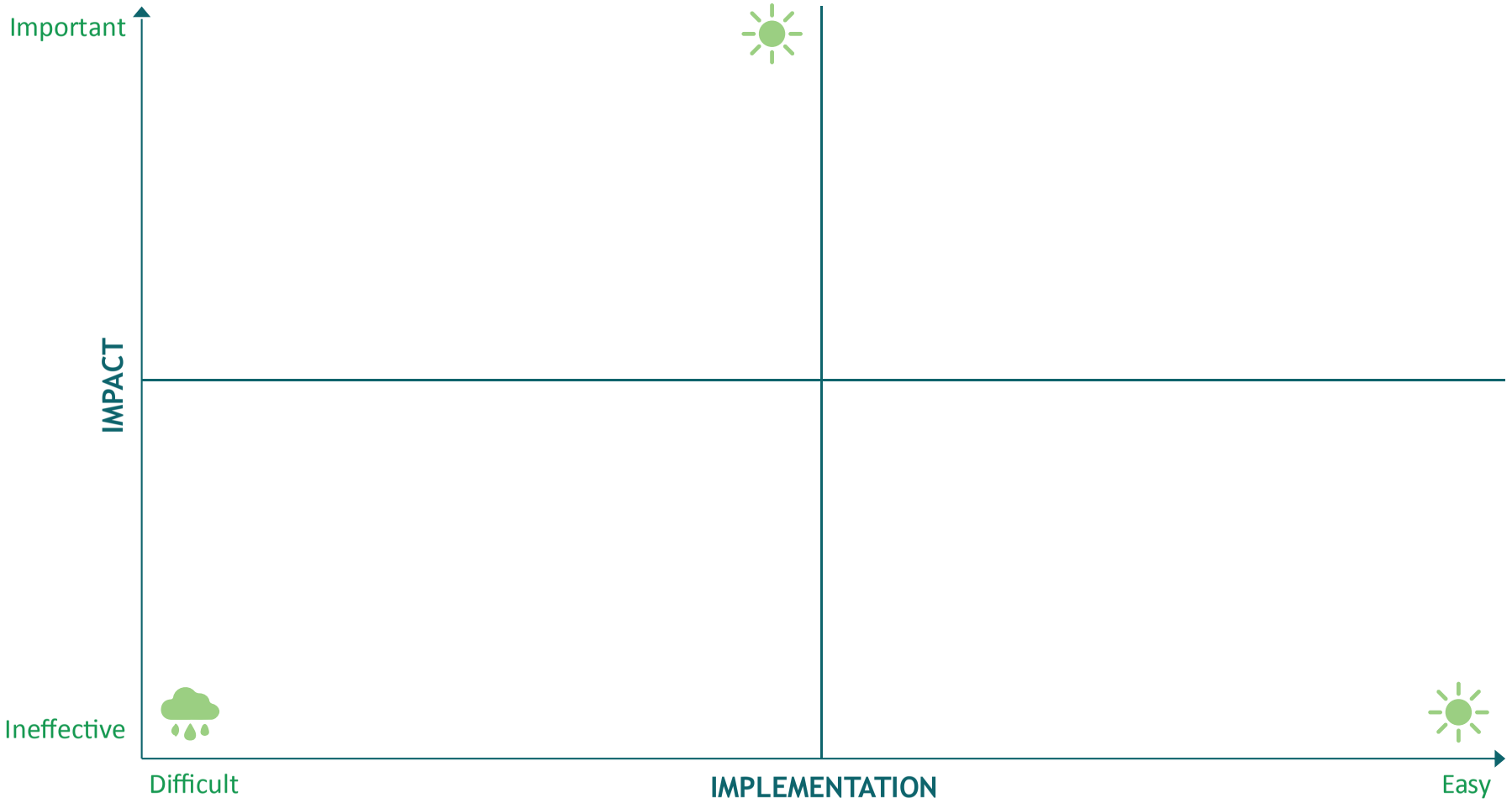
Do you ? (1 = No at all / 4 = Very consistently)	1	2	3	4
Keep your digital devices for as long as possible by taking care of them				
Have your phone or computer repaired rather than buying a new one				
Consider buying reconditioned equipment				
Find a second life for unused equipment (by selling, recycling, upcycling, etc)				
Avoid using unnecessary screens				
Do not leave devices on standby				
Use the least data possible				
Clean up your data regularly				
Use digital technology to reduce commuting from home to work / school				
Take care of the battery life of your digital devices				

Do you intend to ? (1 = No at all / 4 = Very consistently)	1	2	3	4
Keep your digital devices for as long as possible by taking care of them				
Have your phone or computer repaired rather than buying a new one				
Consider buying reconditioned equipment				
Find a second life for unused equipment (by selling, recycling, upcycling, etc)				
Avoid using unnecessary screens				
Do not leave devices on standby				
Use the least data possible				
Clean up your data regularly				
Use digital technology to reduce commuting from home to work / school				
Take care of the battery life of your digital devices				

A.13: PLACE ON THE TABLE EACH PRACTICE ACCORDING TO THE EASE OF IMPLEMENTATION AND THE IMPORTANCE YOU THINK SUCH ACTION HAS TO REDUCE THE ENVIRONMENTAL IMPACT OF DIGITAL TECHNOLOGY.

1 Limit the quantity of owned digital devices	**2** Improve the longevity and repairability of digital devices (from the design to end-of-life)	**3** Regulate production, usage and disposal of digital technology
4 Adopt a digitally moderate way of life	**5** Protect and maintain digital equipment	**6** Raise awareness on environmental impact of digital technology in your social circle
7 Reduce digital usage	**8** Share digital equipment (eg: internet box shared within a building)	**9** End software discontinuance
10 Extend the duration of the warranty of a digital device	**11** Contribute to collective actions (charity, digital clean-up day, initiatives, etc)	**12** Reduce the number of screens and their size
13 Design sustainable digital infrastructures and devices	**14** Develop innovative digital technologies	**15** Systematically recycle or donate unused equipment
16 Repair digital devices		**17** Buy second-hand devices

A.13: GREEN DIGITAL ACTION PLAN



Final suggestions to reduce your impact

For production

For usage

For disposal

NOTES

NOTES

NOTES

ADICE
42, rue Charles Quint
59100 Roubaix
France
adice@adice.asso.fr

REDIAL
8 New Cabra Road,
D07 T1W2, Dublin
Ireland
redialpartnership@gmail.com

CESIE
Via Roma, 94,
90133, Parlermo
Italy
info@cesie.org

JMK
Riia 13-23,
51010, Tartu
Estonia
jmk@jmk.ee