Greener online study

Many of us spend much of our time online. All our actions online have a digital carbon footprint. Your carbon footprint is the amount of greenhouse gasses your actions create.

The good news is you can reduce your digital carbon footprint and so use technology in a way that will not cause the planet long term damage.

Learning outcomes

By the end of this activity you will have:

- Read our top tips for digital sustainability.
- Thought about which can be incorporated into your regular routines.
- Chosen one or more to make your time online more sustainable.

Read on for practical actions.

Top Tips

Keep the planet in mind when you're working online. Here are some simple tips to help you reduce the carbon footprint of common online tasks.

Read through and think which might work for you.

Emails

Reduce the number and size of emails you send/ receive. This is easier than you may think.

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- Only use 'reply all' where there is a clear reason for doing so.

- Do you receive emails from mailing lists, but rarely read them? Then it's time to unsubscribe. Your inbox and the planet will thank you.

- Ask yourself do you really need to send a 'did you see this...' email? If you do really need to send a message consider sending an emoji or Teams message rather than a thank you email.

- Do you often send documents via email? If so, where possible, send a link to the document, rather than sending it as an attachment. This will reduce the size of the email and therefore its carbon footprint.

How will this help?

Each email generates on average 1g CO_2. This seems a small amount, however if every adult in the UK sent one less thank you email a day we would save 16.433 tonnes of carbon a year (OVO energy, 2019, Additional workings 5).

Any email containing an attachment can generate around 50g of CO_2 (Forth Tech, 2023, para. 5).

An emoji reaction in Outlook uses less energy in storage and transmission when compared to a new email, and therefore produces less CO_2 (Constantinou, 2024). A response in Teams generates 0.055g per message (Derudder, 2020a, para 5).

Searching

Reduce your web searches without reducing the amount of information you find.

- Be as specific as possible with keywords to cut down on the number of searches you need to perform, this gets easier over time.
- Use bookmarks for sites you visit regularly
- For web addresses you know type them rather than searching for it.
- Consider changing you default search engine to Ecosia.

How will this help?

Exactly how much carbon is generated from one search is in dispute, numbers for a Google search differ between 7g and 0.2g per search (Gombiner, 2011, pp. 121–122).

Typing a URL consumes less energy than searching for one, on average this reduces the carbon impact by 35% (Derudder, 2020b, para. 5).

Ecosia use 100% of their profits for climate action, 80% of this goes to planting and protecting trees (Joshi, 2021, para. 6), which take in carbon from the atmosphere. The cumulative positive effect can be phenomenal. When a large company switches to Ecosia. For a company that employs 5,000 people, this would generate approximately 200,000 searches a month, which would finance planting 4000 trees a month (or 48,000 per year). This equates to 600 tonnes of CO_2 captured by the trees per year (Ecosia impact calculator, 2025).

Video and filming

Watch and create videos mindfully. This is not to say stop, but you may want to consider how you can reduce the carbon footprint of what you watch and create.

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- Does it benefit to you to watch a video in the highest quality? Would you lose anything if you watched a video in lower resolution?

- Adjust your browser/ device so that it does not play videos automatically.

- Are you planning on watching a video multiple times? Then consider downloading it rather than streaming each time.

Do you use Teams (or similar meeting software)? Does everyone have their camera on by default? This can be necessary for some meetings but may not be needed for all. Consider if either of these would work for your team instead:

- Having a 'touch base' camera on for the first 5 mins of a meeting.

- Only turning camera on when speaking.

How will this help?

Video was forecast to make up 82% of all web traffic by 2022 (Cisco, 2016, p. 2), it is thought to rise to 85.2% by 2025 (Cisco, no date, cited in DeLeon, 2024).

Assuming you have 15 hours worth of online meetings a week, that gives a carbon footprint of 9.4 kg per month. Turning video off reduces that to 377g. A reduction of 95% (Obringer et al., 2021).

Declutter your data

Remove files you no longer need.

- Little and often is the easiest way to do this. This could be deleting old emails or clearing your downloads folder. Would you like your deleted emails folder to empty on it's own? Some email clients can be set to automatically empty your deleted emails folder on close.

- Are you unsure if you can delete a shared document? If you cannot easily ask who uses a document you can try removing permission to access it, if no one requests access you can consider deleting it.

Reduce the number of files you create

- Do you have a file management system e.g. OneDrive or SharePoint? If so, use it to avoid making multiple copies of the same document.
- Only save a copy of a document to your own device when you need to.

How will this help?

90% of stored data is unused after 3 months – we never go back to it (IEA, no date, cited in Greenergy, 2024, para. 1).

Stored files use up server space, which in turn consumes electricity and burdens the environment (Greenergy, 2024, para. 6).

Quiz

Question 1

Which task produces the least amount of carbon?

- Sending an email with a video file as an attachment
- Sending an email with a link to a video file
- Sending an instant message using Teams (or similar software) with a video file as an attachment
- Sending an instant message using Teams (or similar software) with a link to a video file

Question 2

Shea's tutor has written her a reference to a BBC news article that would help with her assignment.

King, S, and Poynting, M. (2025) *Could the UK actually get colder with global warming?* Available at: https://www.bbc.co.uk/news/articles/cn938ze4yyeo

Shea is keen to search for the article with the least impact on the planet. Which method should she choose?

- Type or copy and paste the url into her web-browser
- Perform a search on ECOSIA for the website title
- Search on Google for UK "global warming"

Correct Answers

- d) Using Teams generates less carbon than email. Sharing a link to a file generates less carbon than adding the file as an attachment.
- a) Typing the URL of a website consumes approximately 35% less energy than searching for it.

What could work for you

Which tip could work for you? If you need to remind yourself of the tips have a look at the summaries below.

Choose a tip to try now.

Emails

Reduce the number of emails you send/ receive

- Use 'reply all' sparingly.

- Unsubscribe from email lists that you don't read.

- Only send an email when you really need to. An emoji or Teams message can work just as well as email, with a much lower carbon emission.

- When you want to share a document that is saved in a file share send the document link rather than an attachment. This will reduce the size of the email and therefore its carbon footprint.

Searching

Consider changing your default search engine to Ecosia

Reduce your web searches

- Be as specific as possible with keywords to cut down on the number of searches you need to perform.

- Type or copy and paste web addresses rather than searching for them.

- Use bookmarks for sites you visit regularly.

Video and filming

Watch and create videos mindfully

- Consider watching a video in a lower resolution.

- Adjust your browser/ device so that it does not play videos automatically.

- If you are planning on watching a video multiple times then consider downloading it rather than streaming each time.

- Do you use Teams (or similar meeting software)? Does everyone have their camera on by default? Depending on the meeting you could try having cameras on the for the first 5 mins of a meeting or only when speaking.

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Declutter your data

Remove files you no longer need

- This could be deleting old emails, or clearing your downloads folder.

- Are you unsure if you can delete a shared document? If you cannot easily ask who uses a document you can try removing permission to access it, if no one requests access you can consider deleting it.

- Do you have a file management system e.g. OneDrive or SharePoint? If so, use it to avoid making multiple copies of the same document.

Reduce files created

- Only save a copy of a document to your own device when you need to.

Your actions

What are you going to do to make your time online more sustainable?

What might you do differently to reduce your online carbon footprint?

Note down 1 or 2 actions.

You may want to share your actions with friends or colleagues to increase the positive impact.

Summary

Spending time online creates a digital carbon footprint. In this activity you have looked at small changes that can help you reduce yours. You have covered:

- Some tips to help reduce your digital carbon footprint.

- How you might incorporate these into your regular routines.

Next Steps

Interested in finding out more? Try the other activities in this pathway.

Do you want to understand the logic behind these tips? We did lots of research to write this activity. Feel free to cross check our reference list below.

References

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