Digital Transformation and You!
- Empowering Schools and Students-

(1) Operating Systems
Operating systems know your device and everything on it.

General Tips:
- Use operating systems with lean data usage which respects privacy!
- Configure them such that:
  - no microphone or camera is active (switch on if necessary for a application, but do not forget to switch off) e.g. https://www.rosc.gov.za/collected/novice-device-security/cookies/
  - specific applications need security: Google Chrome 0-100, Mozilla Firefox 0-100, Internet Explorer 7-100, Microsoft Edge 7-100
  - no telemetry data is collected and sent
  - no cloud services are used
  - use data-lean anti-virus programs
- Back your data up only on hardware connected to the system temporarily for the back-up task, back-up best on DVD (for protection against ransomware)

(2a) Internet Browsers
Browsers know a lot about you and are the “door to the internet”.

Tips for Basic Security:
- When choosing a browser, consider minimal data configuration, expandability, and updatability
- Check your browser for new updates
- Check the version of your web browser... E.g. Mozilla Firefox: 88.0.0 (5417)
- Firefox: a great deal of control over privacy
- Firefox shows connections
- Amazonisation services can help disguise your presence: https://addons.mozilla.org/en-US/firefox/
- Firefox: a great deal of control over privacy

Watch out! Configure settings as required and be wary of updates, check correctness of settings after an update

Unset the environment variable SSLKEYLOGFILE
https://developer.mozilla.org/

(2b) Internet Browsers
Browser URLs are postcards (http) or letters (https) – the sender, the recipient and the shape of the envelope can always be identified.

- Configure, update and use browser add-ons for:

Tips for special add-ons:
- Block access to location data (LAN, IP, GPS)
  - Do you know about open app downloads like through F-Droid?
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Watch out! Avoid apps with a permanently activated microphone and camera in class, they record you and your surroundings, are disturbed by acoustic noise, or reveal personal messages!

(3) Apps
Apps know all the data they have access rights to.

Tips:
- Check app accesses and connections before use e.g. https://www.privacywidget.org
- Configure apps to be data-lean
- Prefer native apps (do not know)
- Block access through app settings on phones (e.g. to the microphone, camera, memory)
- Use e.g. Blokada to block trackers
- Block access to location data (LAN, IP, GPS)
- Do you know about open app downloads like through F-Droid?

(4) Search Engines
Most search engines also search for you.

Tips:
- Do you know these search engines?
  - lite.qwant.de
  - MetaGer.de
  - YaCy.net
- View query and active search suggestions you reveal information about yourself (profiling)
- Do you know the children’s search engine?
  - blinde.kuh.de – Free of analytics for special protection of children (April 2016)
- Important! Searching directly is recommended, through third-parties there are often personalised results.

Pay attention to updates!

Digital Self-Defence is the ability to constructively overcome the challenges faced in the complex media landscape.

The measures listed are intended to enable pupils, teachers and students to use digital media responsibly and appropriately. In this way, the opportunities offered by digital transformation are harnessed, while at the same time risks are minimised in order to preserve personal freedom.

One-hundred percent security unfortunately doesn’t exist, but with a clear understanding, anyone can open up new opportunities! Note the reference under (6)!

This compass was created using Linux/DarwinOS and LibreOffice. The research was done through the Firefox browser with the add-ons “NoScript”, “HTTPS Everywhere” and “Privacy Badger”. The content creation was coordinated using gog-encrypted email.

Special Tips:
- Do you know Linux or Qubes? - PC
  - (e.g. DebianEDU) https://www.privacybasics.org/ operating systems:
  - https://people.apache.org/lucene/
  - https://www.privacybasics.org/ or http://www.freebasics.webarchive.org (April 16)
  - Mobile (e.g. LineageOS, Ubuntu Touch) https://lineageos.org/ (April 16)
- If you need to use Windows 10 – configuration required! See for example:
  - https://www.pcmag.com/security/windows-10-6-tips-for-privacy-configuration
  - https://blogs.windows.com/blogs/security/2015/05/15/how-to-view-your-windows-10-personal-information-and-change-privacy-settings-
  - https://www.pcmag.com/security/windows-10-tips-for-privacy-configuration
- Custom installation
  - Available data protection options (e.g. advertising ID, typical behaviour, user/app logging)
  - Local accounts (no Microsoft account)
  - Third party apps (e.g. browser, email)
  - Default set of telemetry (basic, but cannot be completely disabled)
- Consider deactivation guides for:
  - Cortana
  - Speech recognition, connection and error reporting, cloud services for data storage
  - Check configuration after updates!

\begin{align*}
\text{Special Tips:} & \quad \text{Do you know Linux or Qubes? - PC} \\
& \quad \text{(e.g. DebianEDU) https://www.privacybasics.org/ operating systems:} \\
& \quad \text{https://people.apache.org/lucene/} \\
& \quad \text{https://www.privacybasics.org/ or http://www.freebasics.webarchive.org (April 16)} \\
& \quad \text{Mobile (e.g. LineageOS, Ubuntu Touch) https://lineageos.org/ (April 16)} \\
& \quad \text{If you need to use Windows 10 – configuration required! See for example:} \\
& \quad \text{https://www.pcmag.com/security/windows-10-6-tips-for-privacy-configuration} \\
& \quad \text{https://blogs.windows.com/blogs/security/2015/05/15/how-to-view-your-windows-10-personal-information-and-change-privacy-settings-} \\
& \quad \text{https://support.microsoft.com/en-us/help/4021513/windows-10-view-personal-personal-privacy-information} \\
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\end{align*}
With your website you assume responsibility for IT security and data protection for yourself and your users. **Tips:**

- Use native fonts, translation and reading services.
- Specify and adhere to deletion periods for stored data.
- Check for present, unwanted analytical functions of software.
- Use opt-in rather than opt-out.
- Use IP address anonymisation at the meta level.

**Social Networks, Chat, Messenger, Navigation Services (7)**

Social networks know you, your friends and contacts. Navigation services know your location and destinations. They want your data. **Tips:**

- Do you know about decentralised, open source based social networks? e.g. from the Fediverse.

**Internet Gateway/Firewall (8)**

The gateway is the door to the internet and the last line of defence for the user’s systems. **Tips:**

- via DNS you can hide unwanted services, therefore configure and run your own DNS server or one from a provider, no third-party providers, encrypt DNS (DNS over HTTPS).
- Configure security elements (e.g. Windows).
- Configure and use firewalls to filter network traffic.
- Configure and run intrusion prevention systems to help protect against malicious code.
- Check and configure app accesses e.g. at exodus-privacy.eu.org (accesses to smartphone services).

**Password (9)**

Passwords are an important measure to secure the digital identity. **Tips:**

- Use long passwords (at least 10 characters) which include special characters/numbers and avoid common words.
- Use each password for one service/account only.
- Create and memorise a secret sentence and build the password from it using e.g. the first letters and numbers. **Example:** In Spain in 2018, Jane had a blue swimsuit with 17 stripes and 8 spots.

**Privacy-by-Design actively supports sustainability!** Reduce energy costs by blocking and code reduction. If Privacy-by-Design is not implemented, there will be direct and significant consequences. The FBI warns: **[source](https://www.fbi.gov/news/stories/2020/12/privacy-by-design-act)**

**Consequences**

- Dynamic, personalised pricing.
- Profiling.
- Neuromarketing.
- Behaviour-based Marketing.
- Algorithmic decision-making.
- People’s creditworthiness.
- Personalised pricing.

**Office Applications (10)**

Office applications know all the data they process. **Tips:**

- Do you know any locally installed open source applications? **e.g.** see https://www.wikipedia.org/wiki/Net_of_the_earth_and_open_source_software
- LibreOffice.
- GIMP.
- Use local native spelling and translation support.

**Important**

The information and references represent a first introduction to the topic. The contents have been created with the background of computer science and were researched with the greatest care. Nonetheless, no liability can be accepted for the correctness, completeness, and present day validity of the information provided. In particular, the information is of a general nature and does not constitute legal advice in individual cases. When using the tool, no liability can be accepted for damages and such use is exclusively at the user’s own risk.

**Note**

The links given are deliberately printed in small print and should be looked up digitally.

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"When you shop, your data may be the most valuable thing for sale."

"The regulatory authorities may well intervene. The question is how to prove the application of personalised prices. I believe it will be very difficult to uncover the evidence of this. But even if it is proven, the regulatory authorities would have to be able to react swiftly. And now consider the sheer volume of transactions in the market." (…)"”

"My sister always gets ten times the number of points, so why don’t I… If it is a simple coupon that the customer only receives once, I typically don’t get complaints." (…)"

[https://www.adobe.com/hs_PS/news/2019/06/05/privacy/](https://www.adobe.com/hs_PS/news/2019/06/05/privacy/)

"If the customer is not satisfied, the offer can be withdrawn (disguised, for example, as a disconnection)."

[https://www.adobe.com/hs_PS/news/2019/06/05/privacy/](https://www.adobe.com/hs_PS/news/2019/06/05/privacy/)