



Electronic Sustainability – Best practices



Thank you to **Santoshi Pisupati**, International Community School, Lake Washington School District, for researching and preparing the recommendations and best practices in this guide.

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Call to Action from a high school student

Ensuring we can meet our own technology and electronic needs without compromising the ability of future generations to meet their own needs is more important than ever.

My interest in this area was not piqued until my sophomore year, when I took AP Environmental Science and learned about the devastating effects of e-waste on our planet. I want to change that for the next generation of students. They should know about e-waste the day they start using computers in class.

In a place like Western Washington, home to Microsoft, Amazon, Boeing and other tech giants, technology will only continue to dominate our lives.

King County Green Schools Program has the potential to advance electronic and digital sustainability for more than 300,000 students. Our collective impact is significant and meaningful.

Santoshi Pisupati, student
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Note: Guidance in this guide was not prepared by or associated with Lake Washington School District.



Glossary

E-waste: Electronics that are nearing the end of their useful life which are discarded, donated, or given to a recycler.

Sustainability: Meeting the needs of the current generation without compromising the ability of future generations to meet their needs.

Digital Carbon Footprint: The amount of greenhouse gases, especially carbon dioxide, emitted when using digital devices.

Audit: A comprehensive examination or evaluation.

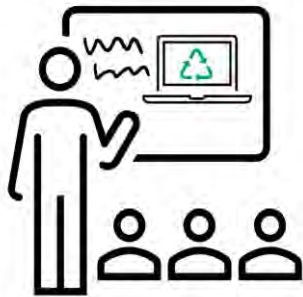
Throwaway Culture: A society characterized by consumerism with frequent use of products and materials one time only rather than reusing or repurposing them.

Introduction



In 2020, King County recycled more than 68,000 pounds of electronics through certified recyclers. However, many electronics are disposed rather than recycled, and there are many sustainable digital practices which schools, school districts, students, and their families can follow to reduce the impact of E-waste.

The problem of e-waste stems from our **throwaway culture**. With 94% of King County households having at least one computer, and with the increasing availability of technology to more people in our area, the amount of e-waste generated annually is **bound to increase**.



Certain device configurations can increase the life span of electronic devices and reduce e-waste. Since many King County school districts use **technology in the classroom**, schools can emphasize the importance of hardware maintenance and security measures to increase device life-span.

The Internet itself consumes **large amounts of electricity**, more than the entire United Kingdom does, at 416.2TWh per year. Many students don't realize how much impact every search, download, stream, or share has. All our digital actions consume electricity, which produces **carbon emissions** that trap excess heat, disrupting weather patterns and accelerating climate change.



Electronics include **hazardous materials such as lead and mercury**, and cannot be placed in our regional landfill when they are no longer usable or repairable.



Today's generation of students must **use the Internet and technology sustainably**. King County school districts already have practices in place to encourage good digital citizenship, but what about sustainable digital citizenship?

We can take simple actions to reduce our digital carbon footprint. These actions can be taught and encouraged at school.

Sustainable technology and digital practices

Assess current metrics and place benchmarks

- **Device longevity audits** to assess how long school-provided netbooks or tablets last, and therefore, how frequently they will need to be replaced.
- **Battery usage audits** to: (1) measure how long educational technology lasts under typical student consumption and how many recharges per week are necessary; and (2) see if used batteries are recycled in school facilities.
- **Internet search audits** that measure how many searches are conducted daily by the typical student, and how much carbon those searches emit over the course of the school year.

Create sustainable e-waste management systems in schools, districts

- Computers, monitors, and televisions are **not** accepted in the King County Cedar Hills Regional Landfill - and they must be re-used or recycled. Schools in Washington State are **required by state law** to collect electronics to be recycled. Separate collection is required: Do **not** place these items in regular or commingled recycling bins.
- Promote **E-Cycle Washington electronics recycling services** to students and their families, school staff, and district staff. E-Cycle Washington provides free electronics recycling for public and private schools for computers, monitors, laptops, tablets, e-readers, portable DVD players, and televisions. See [E-Cycle Washington](#) (or call 1-866-779-6632) and the [Take it Back Network - King County](#).
- Partner with local governments and non-profits to host **community e-waste recycling programs** where residents can bring their batteries and old electronics to be handled by certified e-waste recyclers.

- Electronics include hazardous materials such as lead and mercury, and thus it is best to **use a company approved by E-Cycle Washington or the Take-it-Back Network handle repairs**, especially if the repairs involve opening the electronic equipment.
- Educate students about **device configurations** and tips to make their devices last as long as possible, through videos, presentations or workshops.
- Teach students basic **electronic security** features, such as strong passwords and multi-factor authentication, to ensure their devices are not compromised and decrease the need to discard devices due to such problems.
- Promote **refurbished devices** in educational settings and elsewhere.
- Limit the **amount of time** students can spend on their computer devices to promote technological and physical health for themselves and their devices.

Preserve IT infrastructure for the next generation

- Incorporate **green website design** practices into curricula for online projects.
- Recommend students **clean out their email inboxes** regularly to reduce clutter and energy needed to store unwanted mail.
- Educate students on the ecological **impact of their searches, downloads, streams and shares**, and advise them to think before they search. This can include information about the unregulated energy consumption of online activities such as video gaming and bitcoin farming.
- On their school devices, allow students to use **carbon-neutral or carbon-negative search engines** such as Ecosia or OceanHero – and make those the default search engines on school-provided electronics.
- Require **ad-blockers** on school devices to eliminate the energy required to show and follow through on an advertisement.
- Encourage districts to partner with their IT vendors to advance sustainability in supply chains and device lifecycles, including **green-website hosting providers** for school or district websites.
- Encourage students to become **cyber-activists** by digitally exploring ways to protest against environmental injustices and advocate for sustainability.

Additional sustainable policies and procedures

- **Lease and buy back** school computers.
- **Hold “bring your own device” days** to reduce charging times.
- Encourage student teams and staff to **calculate digital carbon footprints** throughout the year.
- **In curriculum, offer alternatives to digital activities** to lessen computer use. Alternatives: **Making more videos available to download** rather than stream; and providing **URL links** rather than directions to get to a web page.

- Make more content available to view on **smartphones and smaller devices**.
- Consider allowing students to **telecommute to school** while sick or away.
- Provide digital, **downloadable student ID cards** rather than physical ones made of plastic.

Resources to learn more

[The Environmental Impact of Technology Usage](#)

[Green technology: how schools can cut ICT spending](#)

[How to Reduce Your Digital Carbon Footprint | Green New Deal](#)

[17 ways to make your website more energy efficient - Whole Digital 13.12.19](#)

[Website Carbon Calculator | How is your website impacting the planet?](#)

[\(PDF\) Sustainable Development Goals and Digital Citizenship](#)

[Previous Post Eight ways to reduce your digital carbon footprint](#)

[How to Reduce Your Digital Carbon Footprint?](#)

[A quick guide to your digital carbon footprint](#)

[Ecosia - the search engine that plants trees](#)

[TreeCard - The wooden debit card that plants trees.](#)

[Cleaning Up Electronic Waste \(E-Waste\) | US EPA](#)