

AI Bytes

Making Sense of Artificial Intelligence in Get SET (Skills, Education and Training)

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Apprentissage en ligne



Welcome to *AI Bytes*, your curated guide for adult literacy educators navigating the fast-evolving world of artificial intelligence. Beyond the flood of “how-to” tutorials, true AI literacy asks deeper questions such as, why these tools exist, how they shape daily life, and what they cost.

As we close out this fiscal year, our goal continues to help adults make sense of a world where instructions are automated, everyday objects are connected, and digital choices shape work, safety, and opportunity.

This edition highlights three practical areas that support both learners and educators as we navigate this new digital landscape together:

Everyday IoT (Internet of Things). IoT shows that AI isn't just “in the cloud”: it's built into the devices people use every day. When a device sends an alert, it signals a new everyday function with which learners need to familiarize themselves. By unpacking IoT, we help learners

build the technical literacy they need to stay safe, employable, and in control.

The environmental cost of a prompt.

Every AI query carries a footprint as it runs on electricity, energy intensive data centres, and water. Teaching clear, purposeful prompting is both a digital skill and a form of environmental stewardship, helping learners use AI responsibly and sustainably.

The automation gap in AI captions and translations.

AI can miss context, culture, and lived experience. Errors in translation, captioning, or content generation have real impact for learners who rely on these tools. Human judgment remains the final safeguard for equity and accuracy

Our commitment is simple: we work to demystify AI by asking critical questions, explaining how systems work, and equipping educators and learners with clear examples and the confidence to navigate a new digital age.

Meet the *AI Bytes* team



Carolina Cohoon is an EdTech Consultant at Literacy Link South Central. Her professional background encompasses education and rehabilitation, with a passion for inclusion and accessibility. Carolina is dedicated to designing learning experiences that celebrate and embrace diversity. Her interest in AI is fueled by her enthusiasm for innovation, knowledge sharing, enhancing accessibility, and improving the learning experience through personalized learning adaptations that AI can offer within the framework of Universal Design for Learning (UDL). Carolina is certified in ChatGPT through the Blockchain Council and has recently completed Ivey School of Business training in Accelerating Leadership through AI, demonstrating her dedication to advancing inclusive, technology-enhanced education that drives meaningful transformation in learning.

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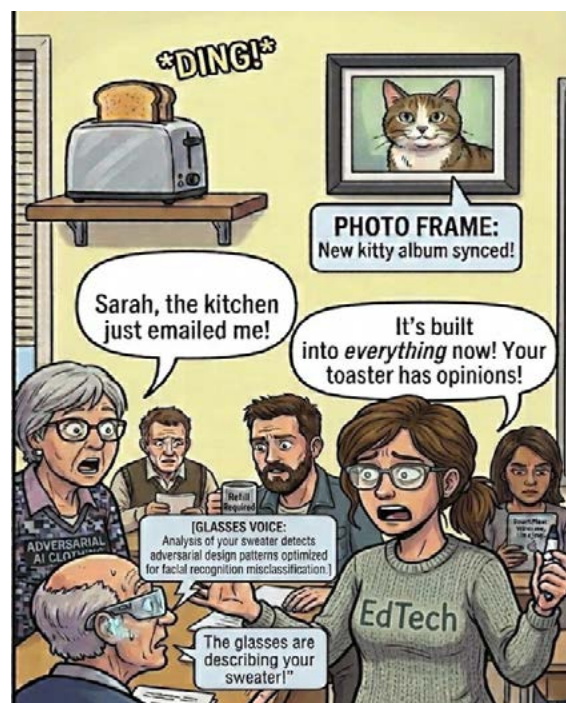
* This bulletin is edited by Contact North | Contact Nord. Generative AI tools supported aspects of ideation, formatting and image creation in this work. Original ideas, translation, knowledge, research and connections were developed by the authors. This disclosure reflects our commitment to transparency, intellectual integrity and responsible use of emerging technologies.

Everyday Internet of Things (IoT)

Before we define IoT, think of the last time your smartwatch mapped your heart rate, steps, and sleep, then seamlessly synced that data to your phone to build a personalized picture of your health. Or your thermostat quietly turned itself down because you left the house. Or a delivery notification updated itself.

That's the **Internet of Things**, and you've been using it for years.


In simple terms, IoT is what happens when everyday objects are given the ability to sense the world around them, connect to a network, and do something useful with what they learn. IoT is sensors, software, and a data connection working together.



IoT is the network of physical objects embedded with sensors and software that allow them to collect, send, and exchange data, turning everyday devices into tools that report, respond, and improve over time.

Why does this matter for your learners? Because IoT is no longer limited to tech companies or research labs. It's in warehouses, clinics, restaurants, farms, retail stores, and more.

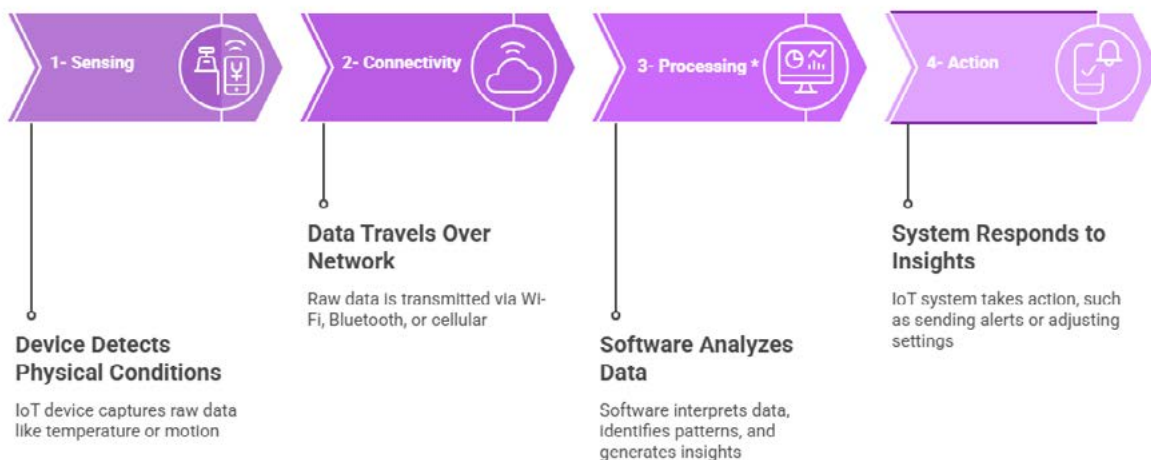
Everyday IoT

Item 	Sensing	Connectivity	Processing	Action & Insight
Smartwatch	Heart rate, movement	Bluetooth to your phone	App compares to your history	Health alerts, fitness coaching
Smart Thermostat	Room temperature, occupancy	Wi-Fi to cloud	Learns your schedule	Auto-adjusts for comfort and savings
Smart Fridge	Door opens, temperature	Home network	Tracks contents over time	Alerts when food may spoil
Smart Car	Engine health, surroundings	Cellular/5G	Real-time analysis on board	Driver warnings, service reminders

How IoT works

Every IoT system, whether it's a fitness tracker or a hospital monitoring system, follows the same basic pattern. Understanding this cycle is the key to grasping almost any connected device you'll encounter at work.

How IoT works



Processing (Stage 3) sometimes happens before **Connectivity** (Stage 2). This is called **Edge Computing**. See graphic on [When IoT gets ‘smarter’ with AI](#)

Here’s the same cycle applied to a smartwatch:

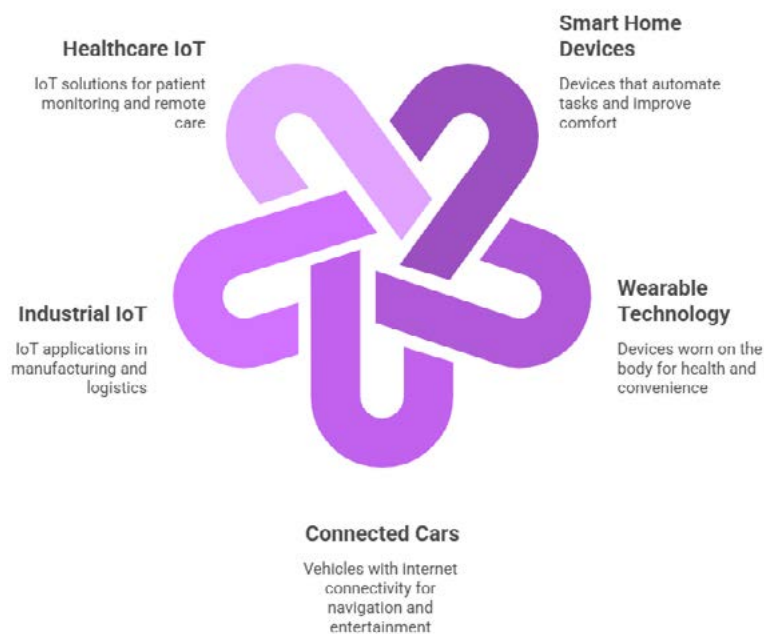
1. **Sensing:** The watch detects your heart rate through your skin.
2. **Connectivity:** It sends that data via Bluetooth to your phone.
3. **Processing:** An app compares your current heart rate to your usual range and recent history.
4. **Action:** You get a notification suggesting you slow down. Or, if something looks unusual, a prompt to check in with your doctor.

Recognizing IoT in everyday life

One of the best ways to build confidence with new concepts is to notice it in places that already feel familiar.

When a learner understands how their thermostat “thinks,” the logic behind an industrial sensor on a factory floor doesn’t feel quite so foreign.

Which of these ‘invisible’ connections do you rely on most?



IoT at work

Across industries, IoT creates a simple cycle: a device notices something, a system interprets it, and a person, or sometimes the system itself, *acts*. Your learners’ role is most often in that last step.

Manufacturing: Vibration sensors monitor machines around the clock. When readings shift, even slightly, the system flags it before a breakdown happens. A worker used to find out a machine was failing when it stopped working. Now, they might get a dashboard alert the day before, giving them time to schedule maintenance without halting the manufacturing line.

Healthcare: Bedside sensors and wearables track patient vitals continuously. Clinical staff use dashboards to see who needs urgent attention, instead of walking from room to room to check on each patient manually.

Retail and Logistics: Smart shelves use weight or optical sensors to track inventory in real time. When stock runs low, staff get a notification and no manual counting is required. Meanwhile, GPS trackers on delivery vehicles mean teams can reroute on the fly when delays occur.

In each of these settings, someone on the ground needs to read the alert, understand what it means, and decide what to do next. That person doesn't need a computer science degree; they need digital confidence.

Skill development opportunities

As workplaces become more connected, several essential skills are emerging across industries.

These include reading dashboards and alerts, following digital workflows, performing basic troubleshooting, and communicating what a system is showing or doing. These skills show up consistently across IoT operations, Industry 4.0 training, and digital-skills frameworks.

Together, they form a shared foundation for working confidently within connected systems.



When IoT gets 'smarter' with AI

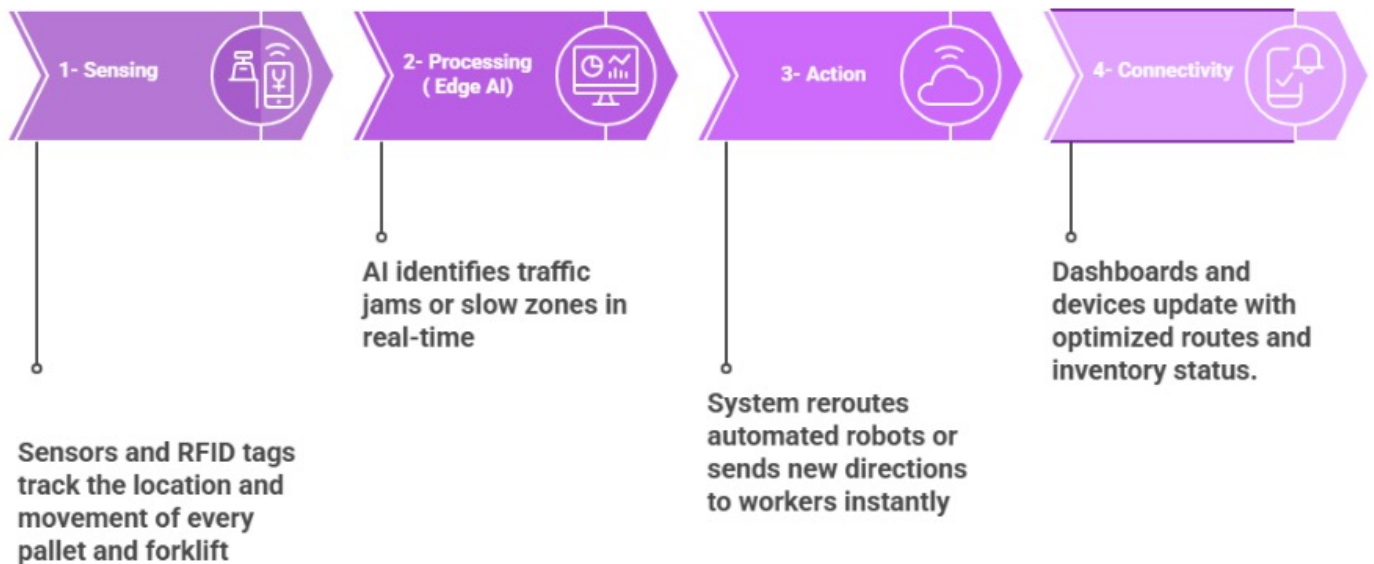
IoT devices gather real-world measurements and send them to systems that store and process the data. AI examines those measurements to identify patterns, prioritize what matters, and either trigger automated actions or recommend what action should be taken. A lone sensor can report that a machine is vibrating at an unusual frequency: AI is what recognizes that this specific vibration pattern has historically preceded a breakdown and then flags the issue, schedules a maintenance check, or notifies the right technician so the problem is addressed before it causes downtime.

Before IoT and AI worked together, most workplaces were *reactive*. IoT sensors and AI algorithms now work together to monitor equipment in real-time, allowing workplaces to predict and prevent breakdowns *before* they occur.

Example: In a warehouse, IoT tracks where every item is.

Add AI, and the system learns which routes are slowest at which times of day, automatically adjusting how orders are routed. This cuts delays without anyone changing a setting.

IoT and AI



What could go wrong?

Understanding the limitations of IoT is just as important as understanding its benefits, especially for workers who'll be interacting with these systems daily.

1. Security and Privacy

Connected devices collect a lot of data, sometimes about the people using them. Weak security can expose that data or even allow outsiders to interfere with physical systems. Governments and industries are increasingly requiring manufacturers to meet security standards before their products can be sold. This is an evolving area, and it's worth helping learners understand

why strong passwords and cautious device use matters.

2. Systems may not communicate the same way

Just because two devices are "smart" doesn't mean they speak the same language. Integrating a sensor from brand A with software



from brand B is often like trying to fit a square peg in a round hole. For learners, the important takeaway isn't to fix these mismatches, but to recognize that they happen. Knowing that systems sometimes struggle to “talk” to one another can make it easier to understand why certain tools feel clunky or inconsistent.

3. Alert fatigue

When a system sends too many notifications, people stop paying attention to all of them. If your learners are working in an environment with dashboards and alerts, they must understand the difference between noise and a signal that genuinely requires action. Understanding this distinction is part of becoming confident with technology. This kind of thoughtful judgment grows with practice and helps learners navigate complex systems with more ease and confidence.

Try this

Here are a few simple exercises to try with your learners:

- Ask them to identify one connected device they used today and walk through the four steps: What did it sense? How did it connect? What did it process? What action did it take?
- If you have access to a workplace with a digital dashboard or alert system, walk through it together. What does each indicator mean? What would they do if something turned red?
- Have them interview someone they know who works in manufacturing, healthcare, or retail. Then have them ask: “Which of your systems give you alerts and which ones offer you data?” The answers are often surprising.
- Ask learners: “Can you think of a job task that used to require a person, but is now handled automatically?” Then ask them what that person’s role look like now. This is a great entry point into an honest conversation about AI and work.

Will video replace other IoT Sensors?

Recommended articles:

1. Global Technology Industry Association states “In 2026, we expect a surge in “vision-as-a-service” where a single smart camera running multi-modal AI models replaces dozens of discrete sensors.” Learn more at [11 IoT Predictions for 2026](#).
2. Learn more about technologies powering video IoT sensors at [Video as IoT Sensors for Real-Time Intelligence](#).

The environmental cost of a prompt

Most people experience AI as something weightless: a typed question, a few seconds of processing, and an answer that seems to appear out of nowhere. But every digital action has a *physical* footprint, and AI, especially generative AI, has a much larger one than most of us realize.

Think back to the last three AI prompts you sent and, with a bit of curiosity, consider what invisible work, electricity, cooling, computation, was set in motion to make those responses appear.

Each prompt leaves a small energy footprint

Asking a chatbot a question uses roughly **10 times** more electricity than a Google search. And that gap gets much wider when AI is generating images, writing long documents, or producing video. The more complex the task, the heavier the load.

On its own, that might not sound alarming. But picture this: hundreds of millions of people doing this *all day, every day*. Suddenly the math changes:

AI's electricity footprint

10x

more electricity than a Google search,
per AI text query

1–1.5%

of global electricity already used by
data centres worldwide

13%

of Ontario's new electricity demand
projected from data centres by 2035

Explore how Ontario is prioritizing energy connections for data centres to support Canadian AI infrastructure growth at [Quid Pro Quo: Data Centres, the Government of Canada, and the Provinces](#).

The physical cost of the digital cloud

Most people think about electricity when powering AI. But there are other resources that AI quietly consumes in enormous quantities:

Water

[A 2023 University of California, Riverside \(UCR\) study](#) points to the substantial water footprint behind everyday AI use. It estimates that a typical session of 20–50 questions can indirectly draw about 500 milliliters of water once both data center cooling and electricity related water use are considered. When scaled across growing global adoption, this contributes to projections of hundreds of billions of liters of AI related water consumption by 2025.

*“Wherever they choose to put a data centre, it is like a **giant soda straw** sucking water out of that basin. And when you take water from a place, you have to reduce demand or put water back in that same place, there's no other solution.”— [Peter Colohan, Lincoln Institute of Land Policy](#)*

The numbers behind the ‘straw’

- Large U.S. data centres can use millions of gallons of water per day for cooling alone.
- About half the electricity powering U.S. data centres still comes from fossil-fuel plants, which also burn through enormous amounts of water to generate steam.
- By 2030, global data centre water use is projected to hit 1.2 trillion litres per year.
- Canada has had almost no public debate about what this means for our freshwater, despite being a country with 20% of the world's freshwater flows.

Chip production also requires significant water consumption. Manufacturing these chips demands ultrapure water to rinse off microscopic residue without damaging the circuitry. A single chip factory uses roughly the same amount of water each day as 33,000 households.

Land and infrastructure

Another resource that might spark meaningful conversation with your learners is a discussion of the land itself. Today's data centres cover vast stretches of earth with pavement and steel, displacing the farms and natural wetlands. The largest facilities being built today span areas the size of several city blocks and bring their own roads, transmission corridors, and substations.

The economic story isn't always what communities expect. Most of the jobs created are temporary construction roles, and once the building phase ends, a facility the size of a stadium may employ fewer people*. A researcher at the Lincoln Institute of Land Policy compared this pattern to coal mining: communities drawn in by the promise of economic growth without fully considering what remains afterward.

The environmental footprint of AI begins in mines, in rivers, and in chip factories on the other side of the world. AI hardware depends on lithium, gallium, palladium, and other rare metals

extracted from places like the Atacama Desert in South America, where mining involves pumping ancient groundwater to the surface and evaporating it.

By the time anyone sends a prompt, the environmental cost is already in motion.

* Exact job numbers vary by facility and automation level. Water use varies widely by chip fabrication and region. Some data centres are improving efficiency or using renewable energy, though this does not eliminate land or water impacts.

Impacts of AI in the environment

As with any powerful tool, the value of AI is shaped by how it's applied, who guides its development, and the goals it's designed to serve. Exploring both its environmental risks and its potential benefits can help learners understand the choices behind different uses of the technology.

THE AI-ENVIRONMENTAL BALANCE: IMPACTS & SOLUTIONS

WHERE AI CONTRIBUTES TO ENVIRONMENTAL PRESSURES ↓

1.1 FOSSIL FUEL EXTRACTION.

OIL & GAS DEPOSIT DISCOVERY: 44% of Upstream Companies use AI. **EXTENDS FOSSIL FUEL LIFESPAN & DELAYS DECLINE OF EMISSIONS.**

A critical challenge when global emissions need to decline.

1.2 AI-GENERATED MEDIA.

HIGH-POWERED AI-GENERATED MEDIA: Images, Video, Music. **USES SIGNIFICANTLY MORE ENERGY THAN TEXT GENERATION.**

Produced at **INDUSTRIAL SCALE** for entertainment.

WHERE AI SUPPORTS ENVIRONMENTAL SOLUTIONS ↑

2.1 FLOOD FORECASTING.

GOOGLE'S AI FLOOD FORECASTING: Disasters Predicted **HOURS EARLIER.** **IMPROVED COMMUNITY SAFETY.**

Old System: 1 Hour Warn
Oil-Enabled: 4 Hour Warn
AI-Enabled: 4 Hours Warn

Faster predictions than traditional models.

2.2 POACHER DETECTION.

SERENGETI (TANZANIA) AI: "TrailGuard" detects poachers **WITHIN 30 SECONDS** of entry.

Rapid detection in protected areas.

2.3 CARBON EMISSION REDUCTION.

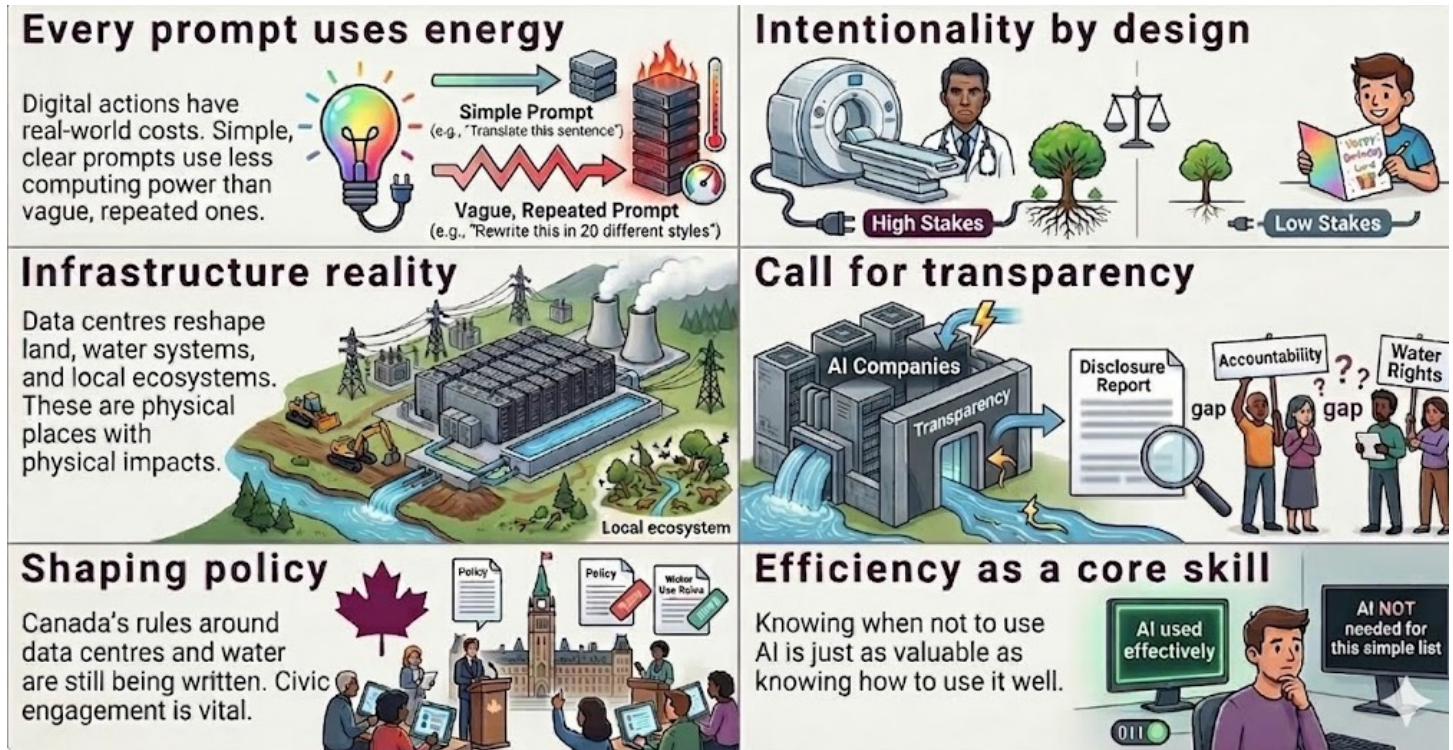
POTENTIAL EMISSION REDUCTION: UP TO 5.4 BILLION TONNES CO₂/YEAR by 2035.

If deployed wisely in **ENERGY, FOOD, TRANSPORTATION.**

The contrast between these examples reflects the decisions made by the people and institutions developing and deploying AI, what they choose to optimize for, whose needs they prioritize, and how they weigh long-term environmental impacts.

Our shared responsibility

Integrating AI into our classrooms presents a unique opportunity to take a leadership role within **environmental literacy**. When we guide learners through these tools, we also equip them to evaluate when the ecological footprint justifies the output. This helps them become better informed citizens and environmental stewards within their communities.



The automation gap in AI captions and translations

AI captions and translation promise a world where language and hearing differences no longer stand between people and participation. In most virtual meetings, that promise appears instantly: a single toggle and accessibility can unfold.

But a promise is not the same as a lived experience. To understand whether these tools truly support inclusion, we need to look with care at whose voices they recognize with ease, and whose they unintentionally distort or overlook.

Speed vs. clarity

AI can now render speech to text or translate dialogue into dozens of languages in under two seconds. For organizations accustomed to the logistics of scheduling human and interpretive

support, this innovation can feel like a revolution.

However, speed is only half the equation.

A caption that appears instantly, but transcribes the wrong word, especially in medical, legal, or technical settings, can be more disruptive than no caption at all. Similarly, automated translation often falls into the "literal trap," swapping words while losing the cultural intent or technical nuance. Human oversight isn't a "stop-gap" until the tech improves; it is a deliberate design choice for environments where clarity and dignity are non-negotiable.

Many AI models are trained on a relatively narrow slice of voices, often those recorded in quiet spaces, spoken in certain regions, or shaped by formal education. You can learn more at [AI systems are built on English – but not the kind most of the world speaks](#).

The reality of our global community is different. It is rich with regional accents, diverse speech patterns, and multilingual professionals. These are the very voices where today's AI tools see the steepest drops in accuracy. When a tool misinterprets a speaker, the person relying on that output must work twice as hard to decode the error.

Designing for belonging through meaningful enquiries

While a vendor's demo provides a glimpse of a tool's potential, it is often just the starting point for our own discovery. Thoughtful inquiry helps us bridge the gap between technical specs and real-world impact:

- *Does the system recognize not only the words themselves, but the meaning they carry in a particular moment or community?*
- *When sensitive or culturally specific dialogue moves through a translation engine, where is that data held, who can access it, and how is it cared for?*
- *How does the vendor describe their training data, whose voices, languages, and communication styles were included, and how do they check accuracy across different groups?*

Sometimes, the most helpful responses are those that invite further curiosity. For instance, if a vendor mentions that servers are located in "various regions," we can view that as an opening to explore the details of [data residency](#) together. When an AI tool helps carry our conversations and identities, privacy and transparency become shared goals in protecting our community's trust.

In our effort to serve a global or diverse community, it's natural to be drawn to tools that offer an expansive reach. While seeing a list of a hundred supported languages is an impressive feat of engineering, the true value of a tool is found in its resonance. We can work with vendors



to understand how a system handles the specific dialects, idioms, and cultural nuances our learners use every day.

Exploring deeper

Want to explore this topic further? Deafblind International developed a guide for deafblind participants called [New Resource – Vendor Evaluation Guide: AI Captioning and Translation for Meetings with Deafblind Participants](#). Its insights serve as a universal point of reference with equity at its heart and is designed to spark meaningful conversations among educators and decision-makers, ensuring that new systems are vetted for safety and accessibility for every student.

Glossary: IoT related terms

TERM	WHAT IT MEANS
Sensor	A component that measures physical conditions like temperature, motion, or heart rate.
Connectivity	The link, Wi-Fi, Bluetooth, or cellular, that moves data from device to wherever it's processed.
Edge Computing	Processing data close to the device so decisions happen quickly, without waiting for a distant server.
Cloud	Remote servers that store and analyze data at large scale.
Actuator	A device that performs a physical action based on a digital command, like opening a valve or dimming a light.
Interoperability	The ability of different devices and systems to work together and share data, even when made by different manufacturers.
Alert Fatigue	What happens when a system sends too many notifications and people start ignoring them, including important ones.
Artificial Intelligence (AI)	Software that finds patterns in data and makes decisions or predictions, often powering the 'processing' step of an IoT system.
Predictive vs. Reactive	Reactive systems respond after something goes wrong. Predictive systems (enabled by AI) anticipate problems before they happen, based on patterns in data.



We are delighted to share that *AI Bytes* has been renewed for the next fiscal year! We're continuing our hands-on exploration of the latest innovations, including an inside look at Google Labs and the power of personalized Gems. And that's just the beginning! Stay tuned for an upcoming survey, as we want your input to help steer the direction of our future bulletins!

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