

# A Guide to AI in Education

## Google's history, and future, in AI

While AI is revolutionary technology, it's not new to us. In fact, it's already in many Google products - like Search, Gmail, Photos, and YouTube - helping make things better and safer behind the scenes. And with more recent advances in generative AI, tools like [Gemini](#) and [NotebookLM](#) offer even more exciting new possibilities.

We believe AI is going to help learners, educators, and school communities unlock potential in ways we can't even imagine yet. From unleashing creativity to offering personal support to supercharging productivity, AI can advance the quest for understanding in all kinds of powerful and interesting ways.

## Breaking down AI, ML, LLMs, and gen AI

How to make sense of all these terms:

- **AI** is computer programming that learns and adapts, with systems taught to mimic intelligent human behaviors
- **Machine learning (ML)** is the technique that allows machines to learn autonomously from data
- **Large language models (LLMs)** are machine learning models that can understand, predict, and generate human language
- **Generative AI (gen AI)** refers to the use of AI to create new content, like text, images, music, audio, code, and videos

## A balance of bold and responsible

Google's approach to AI has always been about balancing bold with responsible, and when it comes to tools designed for education, we are especially thoughtful and deliberate.

This means applying our technological expertise and deep knowledge of the educational space, while always keeping educators in the loop: working directly with the education community to create products that are truly helpful in improving the teaching and learning experience. When schools use our AI-powered educational tools, they can feel confident that their experience is safe and secure, and that it's been responsibly designed with educators and students in mind.

## Applying Google's AI Principles to our work in education

In 2018, we were one of the first companies to establish [AI Principles](#) as part of our commitment to developing technology responsibly. These are the questions we ask when applying these principles to our education tools:

1. Is it appropriate for education (responsible, safe, and secure)?
2. Is it clear to educators and students what the benefits of using it are, and where and how to start?
3. Is it helping all levels and backgrounds to succeed?
4. Is the educator looped into the student experience to help shape and guide (if needed)?
5. Is it enabling educators and students to utilize our workflows seamlessly?
6. Does it enable leaders to adequately and appropriately support staff and students?
7. Does it provide sufficient tooling and control for leaders?
8. Does it adhere to requirements leaders are beholden to for their institutions?
9. Does it provide leaders with the visibility and insights needed to complete their work?

**AI can never replace the expertise, knowledge, or creativity of an educator - but it can be a helpful tool to enhance and enrich teaching and learning experiences.**

## Putting AI to work in our solutions built for education

In education, AI can be used to do helpful things like make learning experiences more personal, provide immediate feedback, improve accessibility, enhance digital security, give educators precious time back and so much more. When using Google Workspace for Education and Chromebooks, organizations have control over their data and assurance that it will never be used to train models outside of their domain without permission.

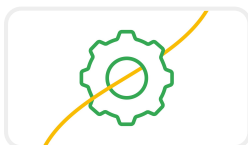
### ● Elevating the educator

AI can help give educators time back to invest in themselves and their students, while supercharging their creativity and productivity.



#### More interactivity

**Interactive questions for YouTube videos in Classroom** will help deliver engaging video lessons with automatically suggested questions that guide deeper learning.



#### More productivity

**Gemini** is a powerful AI assistant that can also provide creative inspiration – from helping with presentations to writing emails to generating slide images.

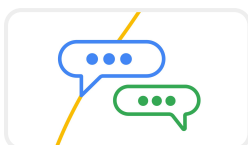


#### More security

With AI-powered detection and remediation, **Google Workspace for Education** blocks over 99.9% of spam, phishing attempts, and malware. With features like Verified Boot to block threats, there have been zero reported successful ransomware attacks on **Chromebooks**.

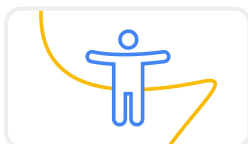
### ● Making learning more personal for students

AI can help meet students where they are, with adaptive tools that help them expand their knowledge and deepen their understanding of the world.



#### More supportive

**Practice sets in Google Classroom** enable educators to automatically provide their students with real-time feedback and helpful in-the-moment hints if they get stuck.



#### More accessible

AI built into **Chromebooks** provides advanced text-to-speech, dictation, and live and closed captions. **Google Meet** uses AI for automatic transcription, noise cancellation, and captions.



#### More adaptive

The **Read Along integration with Classroom** uses advanced text-to-speech and the power of your voice to help build reading skills at a personal pace.

Check out how educators can  
[advance education with AI](#)

*\* Note that product and feature availability will evolve over time, and may not be available in all markets.*

### Accounts and access

#### What's the difference between AI tools available with a school-issued Google Account versus a personal consumer account?

##### School-issued Google Account

[Google for Education](#) is a suite of tools- including Google Workspace for Education and Chromebooks- that are designed for teaching and learning in school settings. These secure, private accounts are managed by education administrators.

While at school, education administrators are able to use robust tools with high restriction of privacy to control what students see and do online. With parental consent, school administrators can enable and disable individual services that are not a part of Google Workspace for Education [Core Services](#). There is no advertising in Google Workspace for Education Core Services, and user data from K-12 accounts is never used for ads personalization.

##### Personal consumer account

Other Google tools, like Google Search and YouTube, may be used for learning-related purposes, but may not necessarily be accessible from a [supervised](#) or school-issued Google Workspace for Education account. Personal Google Accounts are governed by [Google's Consumer Terms of Service](#) and [Privacy Policy](#), where users have the option to disable personalized advertising which is automatically disabled for users under 18. Google provides tools like [Family Link](#) to help parents and guardians manage their children's accounts, devices, and online activity, with features like app approval and screen time limits.

There is no connection between a student's school account and their personal account - meaning that any data from school does not follow learners into their personal account, nor does it follow them after they graduate.

#### Do users under 18 have access to generative AI tools in Google Workspace for Education?

We want to ensure school administrators have transparency and control over if and how students access gen AI when signed in with their school accounts. For now, we are holding off on enabling school administrators to turn on access to gen AI tools (including Gemini) for Google Workspace for Education users under 18. The feedback we've heard is that they want to make sure that these tools are first rigorously tested by staff and faculty in their school environments. Also, as they make their own decisions about gen AI, they want to do so in ways that align with their school policies. We look forward to continuing to work with the education community to explore new ways to bring helpful tools and functionalities to educators and students.

#### Is Gemini available to Google Workspace for Education accounts?

Gemini is separate from the AI-powered innovations we're working on for Google Workspace. It is a consumer experience [governed by Consumer Terms of Service](#) as well as the [Generative AI Additional Terms of Service](#), but Google Workspace administrators have the option to enable access to Gemini for their end users ages 18 and older through the Early Access apps control. [Early Access apps](#) is off by default for all Google Workspace domains, but even when it's turned on, Google Workspace for Education accounts designated as under 18 years of age cannot access Gemini (or other applications covered by the Early Access apps setting). It's important to note that Gemini-generated responses are experimental and may be inaccurate, so educators should always review generated responses before using them in a classroom setting. And no sensitive information, including any student data, should be input into Gemini.

You can learn more about Google for Education's commitment to privacy and security at [Google for Education Privacy and Security page](#), in our Google Workspace for Education [Privacy Notice](#), and in a primer on some differences between Google Workspace for Education [Core Services and Additional Services](#).

### Safety and privacy

#### How does Google keep a student's data safe and secure?

With Google for Education, privacy and security are priorities – and the very foundation of our platform. All of our Google Workspace for Education Core Services – like Gmail, Google Calendar, and Classroom – share a common foundation: They're secure by default, private by design, and free from advertising. While AI capabilities introduce new ways of interacting with our tools, our overarching privacy policies and practices help keep users and organizations in control of their data.

These core tools all meet rigorous local, national, and international compliance standards, including GDPR, FERPA, and COPPA. And schools and users always maintain the ability to control their data. Google Workspace for Education is built on our secure, reliable, industry-leading technology infrastructure and users get the same level of security that Google uses to protect our own services, which are trusted by over a billion users around the world every day. Chromebooks are designed with multiple layers of security to keep them safe from viruses and malware without any additional software required. Each time a Chromebook powers on, security is checked. And because they can be managed centrally, Chromebooks make it easy for school IT administrators to configure policies and settings, like enabling safe browsing or blocking malicious sites.

#### Is Google Workspace for Education data used to train Google's generative AI tools like Gemini and Search?

When using Google Workspace for Education Core Services, your customer data is not used to train or improve the underlying generative AI and LLMs that power Gemini, Search, and other systems outside of Google Workspace without permission. And prompts entered when interacting with tools like Gemini for Workspace are not used without permission beyond the context of that specific user session.

#### How does Google ensure its AI-enabled technology is safe for kids?

Google takes the safety and security of its users very seriously, especially children. With technology as bold as AI, we believe it is imperative to be responsible from the start. That means designing our AI features and products with age-appropriate experiences and protections that are backed by research. And prior to launching any product, we conduct rigorous testing to ensure that our tools minimize potential harms, and work to ensure that a variety of perspectives are included to identify and mitigate unfair bias.

### Partnership and resources

#### Does Google consult with educators and experts when developing AI tools for use in the classroom?

A big component of being thoughtful with new technology is our commitment to partnering with schools and educators, as well as other education experts (like learning scientists) and organizations, along the way. We don't just build for educators, we build with them. Through our Customer Advisory Boards and [Google for Education pilot program](#), we also work directly with school communities around the world to gather feedback on our products and features before making them widely available. By listening to their perspectives, understanding how they're using our tools, and addressing their challenges, we can be thoughtful in our product development and implementation. We also roll out new features gradually, ensuring that schools can stay in control of what works best for them.

#### What resources are being provided by Google to educate teachers on AI?

Teams across Google are actively creating and curating content and tutorials. Here are a few of our favorites, with more on the way:

- 🔗 [Grow with Google: AI and machine learning courses](#)
- 🔗 [Applied Digital Skills: Discover AI in Daily Life](#)
- 🔗 [Google Cloud Skills Boost: Intro to Gen AI Learning Path](#)
- 🔗 [Introduction to Machine Learning](#)
- 🔗 [Google Arts & Culture: overview of AI](#)

Beyond producing our own materials, Google is also part of the Teach AI Advisory, and helping to lead the AI Action Exchange in partnership with ISTE.