



Artificial Intelligence in the Classroom: Resources for CS EdWeek 2023

This resource is created as a collection of free curricular resources to support educators in teaching about artificial intelligence to students in K-12th grades. Many of these resources offer *several* opportunities and levels of educational materials, activities, and resources. We've taken the time to highlight some of the shorter 1-hour activities that one might explore using during [CS EdWeek](#) and/or [Hour of Code](#), but note that many of these resources are far more robust and could be used across several days or weeks depending on time and curricular needs.

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STEELS Technology and Engineering & CSTA Standards Crosswalk

This STEELS workbook which highlights the connections between the Technology and Engineering and CSTA Standards may be helpful if you are addressing the CS standards in your instruction and want to identify some opportunities to integrate relevant STEELS concepts. In this workbook, explore how each of the concepts and subconcepts identified in the 2017 CSTA K-12 CS standards is supported by STEELS T&E standards.

Standards Crosswalk for STEELS Technology & Engineering

[Grades 3-5](#)

[Grades 6-8](#)

[Grades 9-12](#)

Standards Crosswalk for alignment to CSTA standards

[Grades 3-5](#)

[Grades 6-8](#)

[Grades 9-10](#)

[Grades 11-12](#)



1. [AI4All](#)

Grade Levels	Suggested Activities (1 hour or less)
<p data-bbox="203 373 462 531">9-12 Lessons can be modified for younger learners.</p>	<p data-bbox="487 363 771 394">AI & Deepfakes (1 hour)</p> <ul data-bbox="535 401 1380 573" style="list-style-type: none">● Students learn about what deepfakes are, the impact of deepfakes, and ways of verifying/identifying information that they see.● Teacher-led, group discussion.● Requires no background● Focus Skill: Critical Thinking <p data-bbox="487 615 747 646">AI & Drawing (1 hour)</p> <ul data-bbox="535 653 1388 825" style="list-style-type: none">● Students learn about how AI models are developed and how human biases are embedded in datasets using Google Quick Draw.● Teacher-led● Cross-curricular (Social Studies, ELA, CS, Art)● Focus Skills: Understanding AI, Privacy/Bias Concerns <p data-bbox="487 867 860 898">AI & Facial Recognition (1 hour)</p> <ul data-bbox="535 905 1404 1108" style="list-style-type: none">● Students learn about how facial recognition technology works as well as the biases it has; students will also be introduced to the idea of surveillance and how it's used.● Group/Individual● The activity requires students to have a webcam.● Focus Skill: Ethics <p data-bbox="487 1150 1177 1182">Additional AI Activities and Lessons (More than an hour):</p> <p data-bbox="487 1188 885 1220">AI & The Environment (1-2 hours)</p> <p data-bbox="487 1226 755 1257">AI & Dance (1-4 hours)</p> <p data-bbox="487 1264 738 1295">AI & Ethics (10 hours)</p> <p data-bbox="487 1302 950 1333">How Neural Networks Work (2-4 hours)</p>
<p data-bbox="203 1354 998 1386">Login: None needed; all materials organized in Google Drive folders</p> <p data-bbox="203 1392 1161 1423">Instruction: Includes Slide Deck, Facilitation Guide, Glossary, and Collection Form</p> <p data-bbox="203 1430 1331 1461">Device: Chromebooks or Laptops. Some activities use GitHub. Some activities require webcam.</p> <p data-bbox="203 1467 414 1499">Integrations: N/A</p>	



2. [aiEDU](#)

Grade Levels	Suggested Activities (1 hour or less)
7-12	<p>AI Snapshots: 180 warmups for core content classrooms (each content area has 45 warmups); intended for grades 9-12.</p> <ul style="list-style-type: none">• English• Science• Math• Social Studies <p>Intro to AI: 10 week unit consisting of 35-45 minute lessons including lesson plans, student workbook, editable slides, teacher guide, and supplementary materials; intended for grades 9-12.</p> <p>Other recommended activities:</p> <p>AI in 5 Minutes: Basic facts about AI to get teachers or students started on their learning journey.</p> <p>AI Project Dashboard Various projects ranging from 1.5 to 5 hours; intended for grades 9-12.</p>

Login: No login required; teachers do have to fill out a form to get the materials sent to their email.

Instruction: The products are all available through Google Drive.

Device: Web-based

Other Links & Resources for Educator Support & Professional Development:

[Professional Development](#): aiEDU provides several engaging topics to support teachers to further their depth of knowledge regarding AI; all events are offered virtually through Zoom.

[AI Toolkits](#): designed to support teachers, parents and other community champions to share the importance of AI education and support its adoption in your learning spaces. In particular, it will highlight the critical need for AI in schools and its relation to our economic future.

[Educator Newsletter](#): Sign up for the monthly newsletter so that you don't miss a thing and check out the featured educators in the Educator Spotlights.

[AI Challenges](#): Influence how AI works, experiment with AI in your life, and share your findings with your community.



3. [CodeHS AI](#)

Grade Levels	Suggested Activities (1 hour or less)
9-12	<p>Student-paced AI courses</p> <p>Introduction to AI</p> <ul style="list-style-type: none">● Students learn important programming concepts that enable the use of AI in computer science and society at large● Grades 9-12● 75 hours for the full unit● Student-paced● Lesson 1.1 What is AI? - can be used as a ~1-hour module● <i>Focus skill: Understanding AI, coding concepts</i> <p>One Month of Artificial Intelligence</p> <ul style="list-style-type: none">● Brief overview of AI and an introduction to programming concepts that enable use of AI (requires background in Python)● Grades 9-12● 20 hours● Student-paced● Focus skill: Understanding AI

Login: The teacher needs to create a login to use.

Instruction: Once on the site, use the course catalog to search for the AI course and add the course to “My courses”. Then you can add a section for your students. Once students enroll in a course, the course is self-paced by students.

Device: Web-based

Integrations: Google Classroom Integration



4. [Code.org AI](#)

Grade Levels	Suggested Activities (1 hour or less)
K-12	<p>Students can experience lessons by subtopic (45 mins)</p> <p>AI for Oceans</p> <ul style="list-style-type: none">● Using AI to Address World Problems● Grades 3-12● 1 hour● Student-paced● Focus Skills: Machine learning, Problem solving <p>Our AI Code of Ethics</p> <ul style="list-style-type: none">● Analyze How AI Can be Used in Society● Grades 7-12● 45 minutes● Teacher-led● Focus Skills: Ethics, Impacts of computing <p>Societal Impact of Generative AI</p> <ul style="list-style-type: none">● Formulate Guidelines for AI Implementation for Different Voices and Perspectives● Grades 7-12● 1 hour● Teacher-led● Focus Skills: Impacts of computing, Critical thinking <p>Hour of Code - AI</p> <ul style="list-style-type: none">● Introduce to Computer Science & AI Through Varying Skill Level Activities During CS Ed Week (Dec. 4-8)● Grades K-12● 1 hour● Student-paced or teacher-led● Focus Skills: Understanding AI, Coding

Login: Optional, but helpful to see where students are making progress

Instruction: Some are teacher-led, others can be student-paced

Device: Tablets are only compatible with the K-5 courses and Hour of Code Activities; also, Laptop and Chromebook compatible

Integrations: Google Classroom, Schoology, other LMS

Other Links & Resources for Educator Support & Professional Development:

Cross-references to other AI resources: [AI4All](#), [Khanmigo](#) (from Khan Academy)

[AI 101 for Teachers](#) - Free, foundational learning series

[AI Toolkit](#) - To get started with AI learning in schools

[Preparing to Teach AI and Machine Learning](#) - Self-paced professional learning



Created in collaboration of [intermediate units across the Commonwealth of Pennsylvania](#) as a part of the STEM Points of Contact Computer Science Workgroup in November and December of 2023.

5. [Common Sense Education](#)

Grade Levels	Suggested Activities (1 hour or less)
<p>K-12 Students, Families, and Community</p>	<p>Lessons and Tools for Teaching About Artificial Intelligence (AI)* *Lesson duration varies.</p> <p>Feature Lesson: AI Literacy for Grades 6-12</p> <ul style="list-style-type: none">● 8 Lessons● 15-20 minutes in duration● Self-paced or teacher-led● Combination of videos and text/articles <p>Lesson 1: What Is AI</p> <ul style="list-style-type: none">● What is artificial intelligence and what are its potential benefits and drawbacks?● Grades 6-12● 15 minutes in duration● Teacher-led● Video, slides, handouts <p>Lesson 2: How Is AI Trained</p> <ul style="list-style-type: none">● How does data determine what artificial intelligence can do?● Grades 6-12● 20 minutes in duration● Teacher-led● Slides <p>Lesson 3: AI Chatbots: Who’s Behind the Screen</p> <ul style="list-style-type: none">● Why are AI chatbots designed to sound so human-like, and how can that impact our everyday lives?● Grades 6-12● 15 minutes in duration● Teacher-led● Video, slides, handouts <p>Lesson 4: AI Chatbots & Friendship</p> <ul style="list-style-type: none">● How can AI chatbots impact our idea of friendship?● Grades 6-12● 15 minutes in duration● Teacher-led● Slides and Handouts provided <p>Lesson 5: Understanding AI Bias</p> <ul style="list-style-type: none">● How does AI bias happen?● Grades 6-12



- 20 minutes in duration
- Teacher-led
- Slides provided

Lesson 6: [How AI Bias Impacts Our Lives](#)

- What are the impacts of AI bias?
- Grades 6-12
- 20 minutes in duration
- Teacher-led
- Video, Slides and handouts provided

Lesson 7: [AI Algorithms: How Well Do They Know You?](#)

- How does artificial intelligence influence what we see online?
- Grades 6-12
- 20 minutes in duration
- Teacher-led
- Slides and handouts provided

Lesson 8: [Facing Off with Facial Recognition](#)

- What are the benefits and risks of facial recognition?
- Grades 6-12
- 20 minutes in duration
- Teacher-led
- Slides and handouts provided

Login: Free teacher login needed to access lesson plans, slide deck, and activity sheets

Instruction: Teacher-led

Device: Laptop, Chromebook, Tablet

Integrations: Google Classroom, Schoology, other LMS



6. [Day Of AI](#)

Grade Levels	Suggested Activities (1 hour or less)
<p style="text-align: center;">K-12</p> <p style="text-align: center;">See all Day of AI Curriculum (K-12)</p>	<p>What is AI?</p> <ul style="list-style-type: none"> ● Introductory lesson which helps to define artificial intelligence and addresses the difference between what is and is not AI. ● All Grades, Educator Guides: K-5, 6-8, 9-12 ● Less than an hour - grade band specific ● Teacher-led, class discussion ● Focus Skills: Understanding AI <p>Intro to Voice AI</p> <ul style="list-style-type: none"> ● Students are introduced to the world of AI with hands-on coding projects: students learn the impact AI has in everyday life and uncover the basics of how voice AI works, and students embark on two AI coding missions. ● Grades 9-12 ● 1-2 hours ● Teacher-led, includes tutorials for learners, & asynchronous training for educators on Alexa Skills Inventor ● Focus Skills: Understanding AI, Programming <p>Additional AI Activities and Lessons (More than an hour):</p> <p>“ChatGPT in School” - All Grades, 3+ Hours, Teacher-Led</p> <p>“What Can AI Do?” - Grades K-2, 4 Hours, Teacher-Led</p> <p>“Teachable Machines” - Grades 3-5, 3 Hours, Teacher-Led</p> <p>“AI Blueprint Bill of Rights” - Grades 3-5, 5 Hours, Teacher-Led</p> <p>“Can Machines Be Creative?” - Grades 6-8, 3+ Hours, Teacher-Led</p> <p>“Game AI” - Grades 6-8, 2+ Hours, Teacher-Led</p> <p>“AI in Social Media” - Grades 9-12, 4 Hours, Teacher-Led</p> <p>“Data Science and Me” (no coding version)- Grades 9-12, 7+ hours, Teacher-Led</p> <p>“Data Science and Me” (coding version) - Grades 9-12, 7+ hours, Teacher-Led</p>
<p>Login: Free Registration. A Password will be emailed after registration which can be used to access all content across grade levels. Content is password protected.</p> <p>Instruction: Includes Slide Deck (Google Slides), Educator Guide, Video Tutorials, Additional Student Resources</p> <p>Device: Not Device Specific, Projector, Laptops or iPads depending on lesson.</p> <p>Integrations: N/A</p> <p>Special Date(s): May 13, 2024 is the “Day of AI”</p>	

Other Links & Resources for Educator Support & Professional Development:

[Day of AI FAQ](#)

[Day of AI Curriculum Map](#)



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7. [Minecraft Education](#)

Grade Levels	Suggested Activities (1 hour or less)
1-12	<p data-bbox="488 323 824 352">Hour of Code Generation AI</p> <ul data-bbox="537 363 1414 709" style="list-style-type: none"><li data-bbox="537 363 1414 562">● In Minecraft Hour of Code: Generation AI, students venture through time to create AI-powered inventions. They activate problem-solving skills, creativity, and computational thinking to explore Responsible AI principles. Through MakeCode blocks or Python coding, Hour of Code allows anyone to learn the basics of coding and discover ways to build better AI for all.<li data-bbox="537 573 727 602">● Grades 1-12<li data-bbox="537 613 662 642">● 1 hour<li data-bbox="537 653 756 682">● Tutorial-based<li data-bbox="537 684 1256 714">● Focus: Understanding AI, Programming (Block or Python) <p data-bbox="488 789 1182 819">Additional AI Activities and Lessons (More than an hour):</p> <p data-bbox="488 829 610 858">UNIT 9: AI</p> <ul data-bbox="537 869 1203 961" style="list-style-type: none"><li data-bbox="537 869 716 898">● Grades 6-8<li data-bbox="537 909 1203 938">● 5 Lessons, 45-60 minutes in duration for each lesson<li data-bbox="537 949 878 978">● Self-paced & teacher-led

Getting Started:

1. First, check here to see if your school account is eligible.
2. If you do not have a valid O365 EDU account, you can still download and play for free on Windows, Mac or iPad. (This is for Hour of Code only unit lesson will need educator account)
3. Download Minecraft Education for Windows, Mac or iPad.

Instruction: Teacher led and self paced for students.

Device: Laptop, Chromebook, iPad

