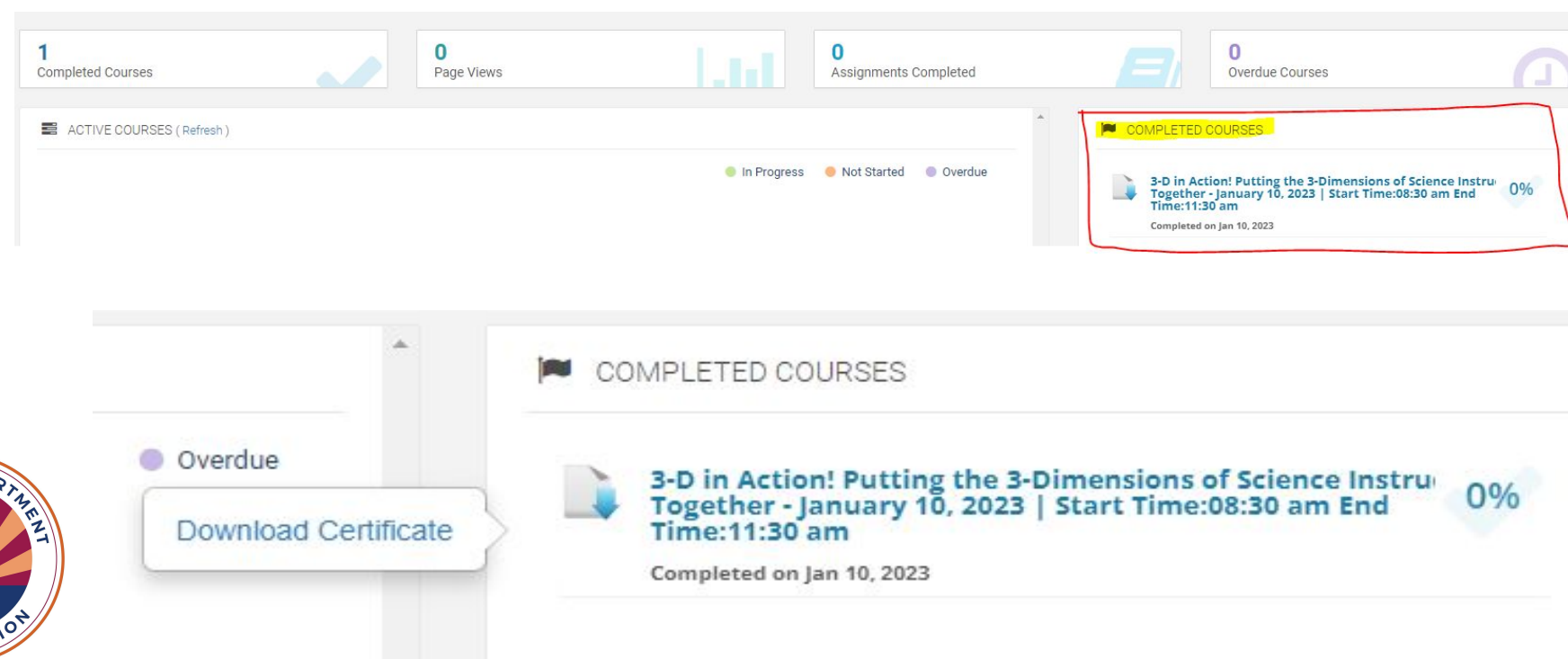


# WELCOME!

*Please review this information while we wait for all to join!*

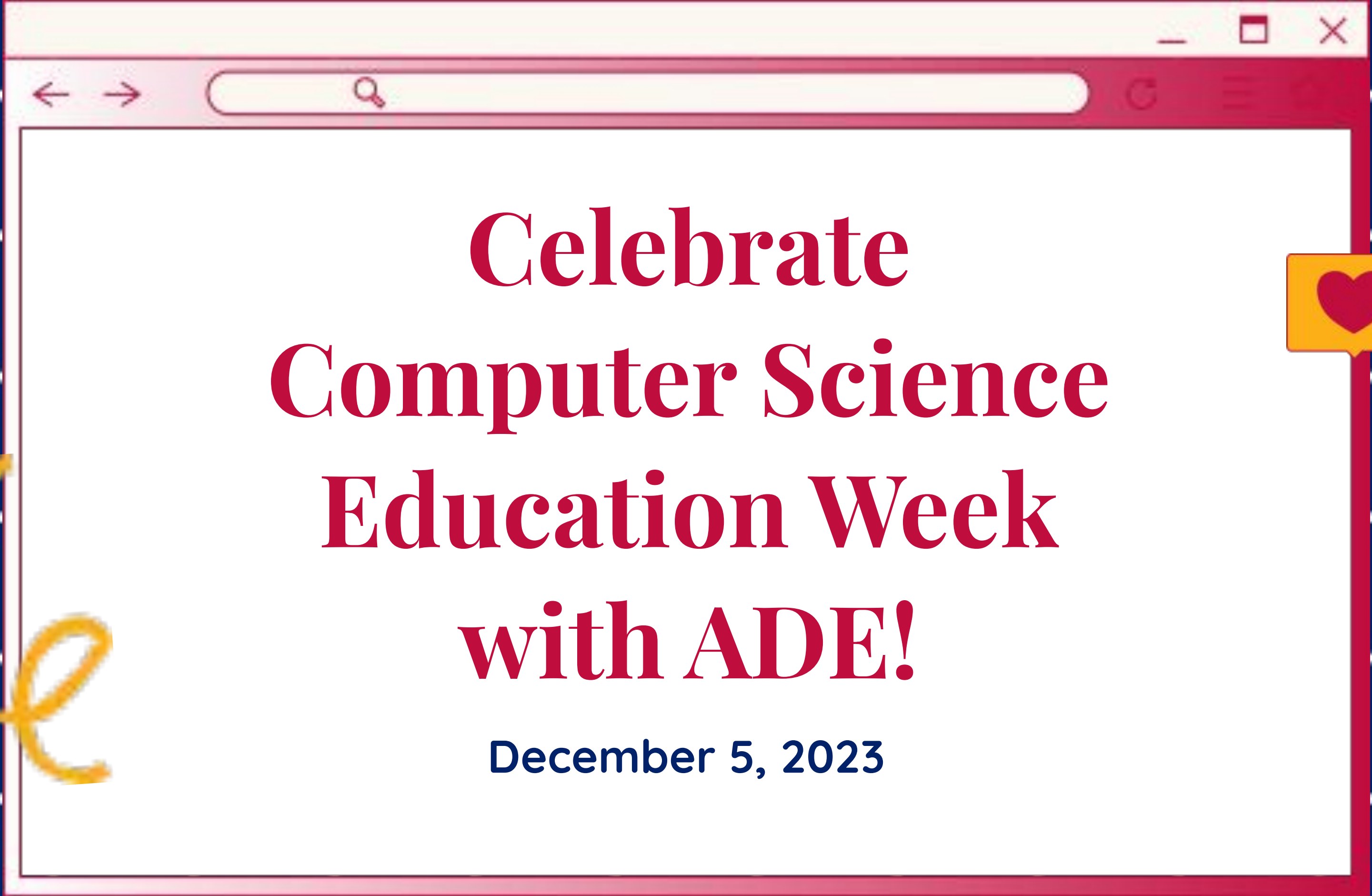
## Attendance, Resources & PD Clock Hours

- You must stay on the whole time- .5 hours- to receive credit
- Please follow the directions below to obtain your PD certificate
  - In the new [ADE Professional Learning and Development \(APLD\) system](#) when you login to your ADEConnect account you will see a list of active courses and completed courses, as demonstrated in this screenshot:



The screenshot displays the ADEConnect interface. At the top, there are four summary cards: '1 Completed Courses', '0 Page Views', '0 Assignments Completed', and '0 Overdue Courses'. Below this is a section for 'ACTIVE COURSES (Refresh)' with a legend for 'In Progress', 'Not Started', and 'Overdue'. A red box highlights a 'COMPLETED COURSES' section containing a course titled '3-D in Action! Putting the 3-Dimensions of Science Instru Together - January 10, 2023 | Start Time:08:30 am End Time:11:30 am' with a '0%' progress indicator. Below this, a larger view of the same course is shown with a 'Download Certificate' button highlighted by a white callout box. The Arizona Department of Education logo is visible in the bottom left corner.

Click on the completed course for which you want to obtain your certificate. When you click on the course link, a small pop-up will appear that says “Download Certificate.” Click that link and it will download your certificate as a PDF, see screenshot to the left.



# Celebrate Computer Science Education Week with ADE!

December 5, 2023





# *Welcome!*



**SARAH SLEASMAN**  
**K-12 ACADEMIC STANDARDS**  
**DIRECTOR OF SCIENCE & STEM**



**ALECIA HENDERSON**  
**K-12 ACADEMIC STANDARDS**  
**COMPUTER SCIENCE & EDTECH**  
**SPECIALIST**



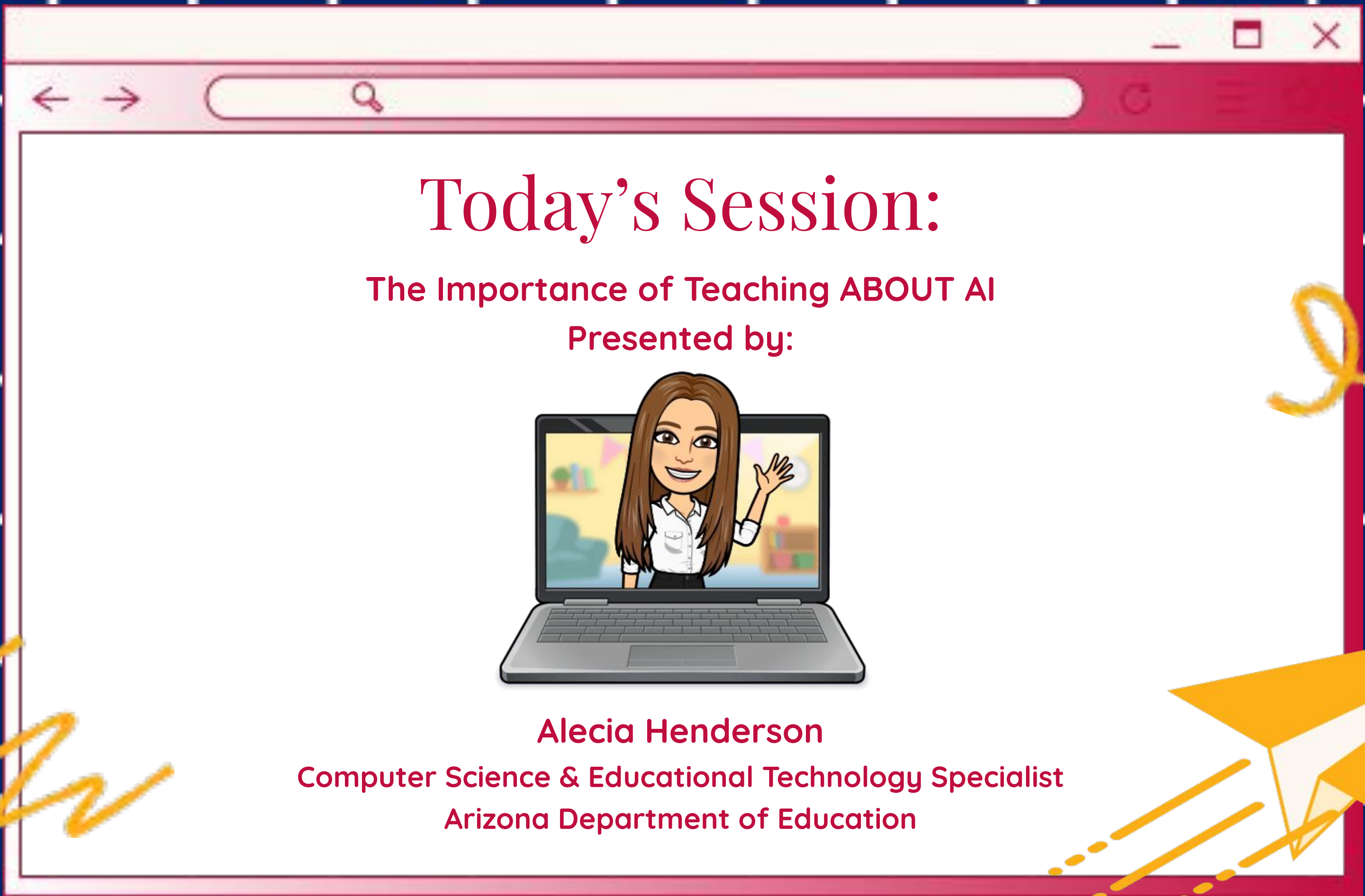
**CHRISTEL BRUNO**  
**K-12 ACADEMIC STANDARDS**  
**STEM SPECIALIST**

# What is Computer Science Education Week?

CSEd week is an annual call to action to inspire K-12 students to learn computer science, advocate for equity and celebrate the contributions of students, teachers, and partners to the field.

**#CSEverywhere @azedschools**





# Today's Session:

The Importance of Teaching ABOUT AI

Presented by:



**Alecia Henderson**

Computer Science & Educational Technology Specialist  
Arizona Department of Education



# AI in Education

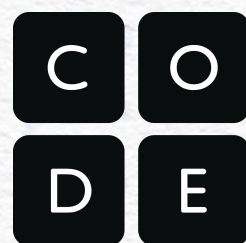
A Presentation Template from



Empowering educators to teach with AI and about AI

## ◆ About TeachAI

TeachAI guides education leaders and policymakers in rethinking education in an increasingly AI-driven world by connecting the discussion of teaching *with* AI to teaching *about* AI including computer science.



In coordination with the World Economic Forum

Learn more about TeachAI at  
<https://TeachAI.org/about>

# What is Artificial Intelligence?

---



# AI is:

- Online and in-store shopping
- Robotic tractors, precision agriculture
- Warehouse Fulfillment
- Credit Card Fraud Protection
- Insurance Rates
- NASA images from space
- Text to Speech
- Foreign Language Translation
- Mapping and Navigation

**It is in all of our lives and industries.**

# AI is NOT:

- Alive
- Smarter than us
- Killer robots
- Only for geniuses
- Only for people in tech cities
- Always physical. It is inside our computer software and phone apps.

**And it is not going away.**

# Education with AI is:

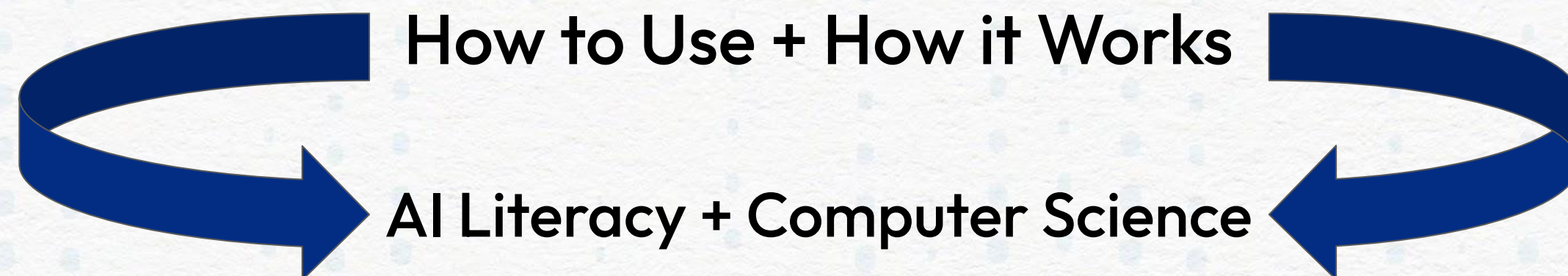
- Personalized learning: More practice problems for struggling students, more advanced concepts for students who are ahead
- Differentiation in seconds
- Increased student persistence
- Handwriting conversion to digital
- Text to speech, speech to text
- Language Translation

# Education with AI is NOT:

- Replacing teachers
- Going to solve every problem
- One more thing that needs to take a lot of time for busy educators
- Another subject that must be separate from Computer Science

## AI Literacy

The knowledge, skills, and attitudes associated with how artificial intelligence works, including its principles, concepts, and applications, as well as how to use artificial intelligence, such as its limitations, implications, and ethical considerations.



With AI Literacy, I CAN:

- Personalize my learning
- Assess safety and privacy with apps and data sharing
- Properly cite AI usage when writing or creating
- Prepare for the future of work
- Act as an informed citizen

With AI/CS integration, I CAN:

- Collect data responsibly
- Break down complex problems
- Analyze data critically
- Identify patterns and trends
- Evaluate the effectiveness of solutions
- Ethically evaluate AI systems to minimize bias

# Generative AI



**Generative AI:** Tools that create text, images, code, and sound based on vast datasets.

Generative AI tools such as Bard, Bing, and ChatGPT, are trained on massive amounts of data to recognize patterns and relationships between words, images, sounds and code. They use that understanding to generate brand-new, original, often creative outputs customized to the prompts users provide.

“Generative AI professional example for a slide deck presentation” prompt. Bing Chat, Microsoft, 3 Oct. 2023



*We envision a technology-enhanced future more like an electric bike and less like robot vacuums. On an electric bike, the human is fully aware and fully in control, but their burden is less, and their effort is multiplied by a complementary technological enhancement.*



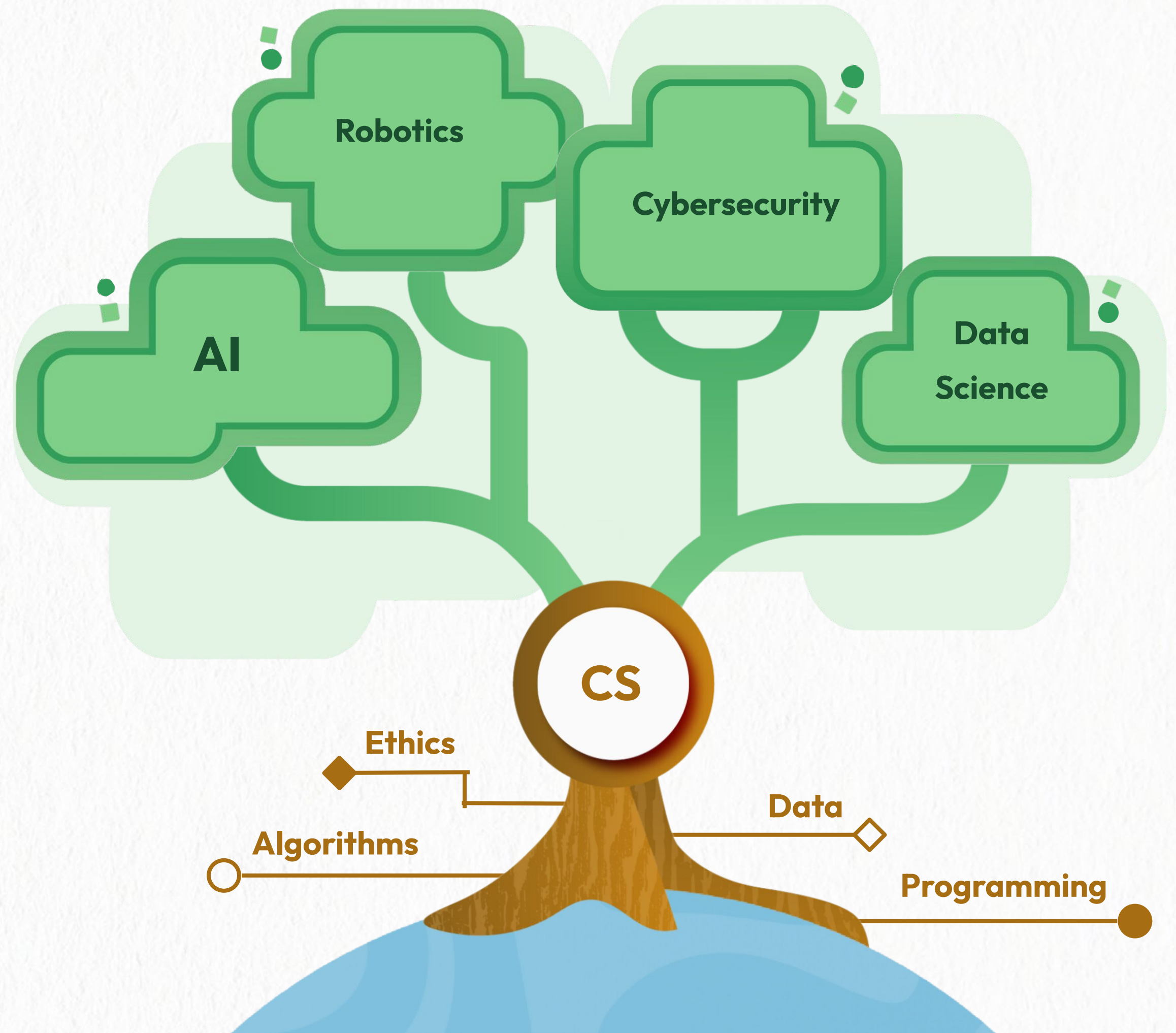
Source: US Department of Education Office of Educational Technology

<https://tech.ed.gov/files/2023/05/ai-report-core-messaging-handout.pdf>

# Teaching With and About AI



In an age of AI,  
CS isn't just  
mandatory, it is  
**foundational**



# Free Resources from Code.org



# AI 101 for Teachers

This foundational video series for teachers developed by Code.org explores artificial intelligence (AI) and its potential to transform education.

[Click Here](#)

# How AI Works - Lessons & Videos

Code.org's series of short videos and accompanying in-classroom lessons are a great way to begin introducing your students to the foundational knowledge of how artificial intelligence works and why it matters.

[Click Here](#)

# Teacher Resources

**For Teachers!**

## Lesson Overview

This lesson centers around the [How AI Works: Chatbots and Large Language Models](#) video from the [How AI Works video series](#). Watch this video first before exploring the lesson plan.

Large Language Models (LLMs) generate new text. The text LLMs generate looks like a human might have written it because large language models are built based on large bodies of text, such as Wikipedia.

In this lesson, students learn what an LLM is and how it works, then use an LLM to co-create a text with AI. Finally, the class wraps up with a discussion about whether or not LLMs are intelligent or creative.

More guidance and resources for this lesson are available in the **Lesson Plan:**

- <https://studio.code.org/s/how-ai-works-2023/lessons/4>



# **How AI Works - Lesson 4**

## **Chatbots and Large Language Models**

# Warm Up

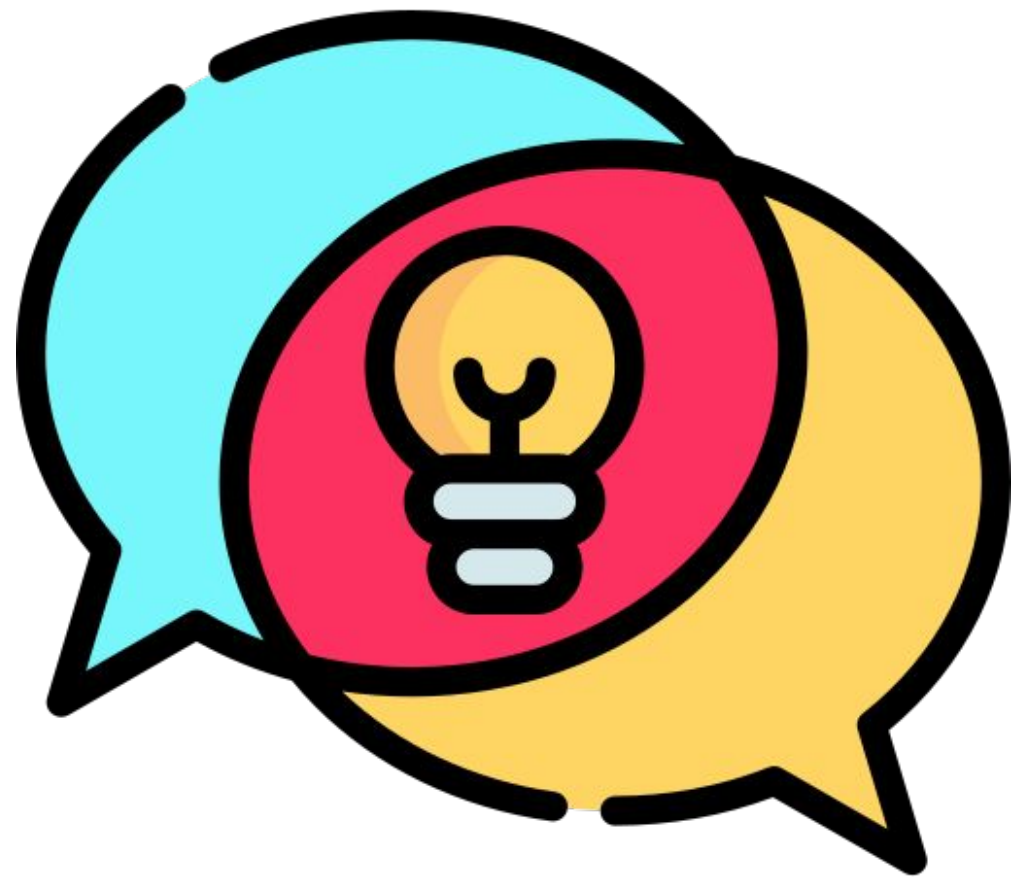


# Prompt

Complete the following sentences with one word only:

- Thank \_\_\_\_.
- Please buy me a \_\_\_\_.
- Video games are \_\_\_\_.
- I enjoy playing outside in the Spring because it is \_\_\_\_.

# Consider...



Compare your answers with your neighbors. Where did you pick the same words? Where did you pick different ones?

Why did you pick these words?

# Activity







# Written Voice Simulator

This app lets you create a brand new piece of writing based on a “voice” that has been written before. The term “voice” here does not refer to the sound of a spoken voice, but text that reads like an author's voice.

Starting with a random word, the app gives you 5 options for the next word based on the structure and probabilities of whatever short story, poem, song, or writing piece it's currently modeling.

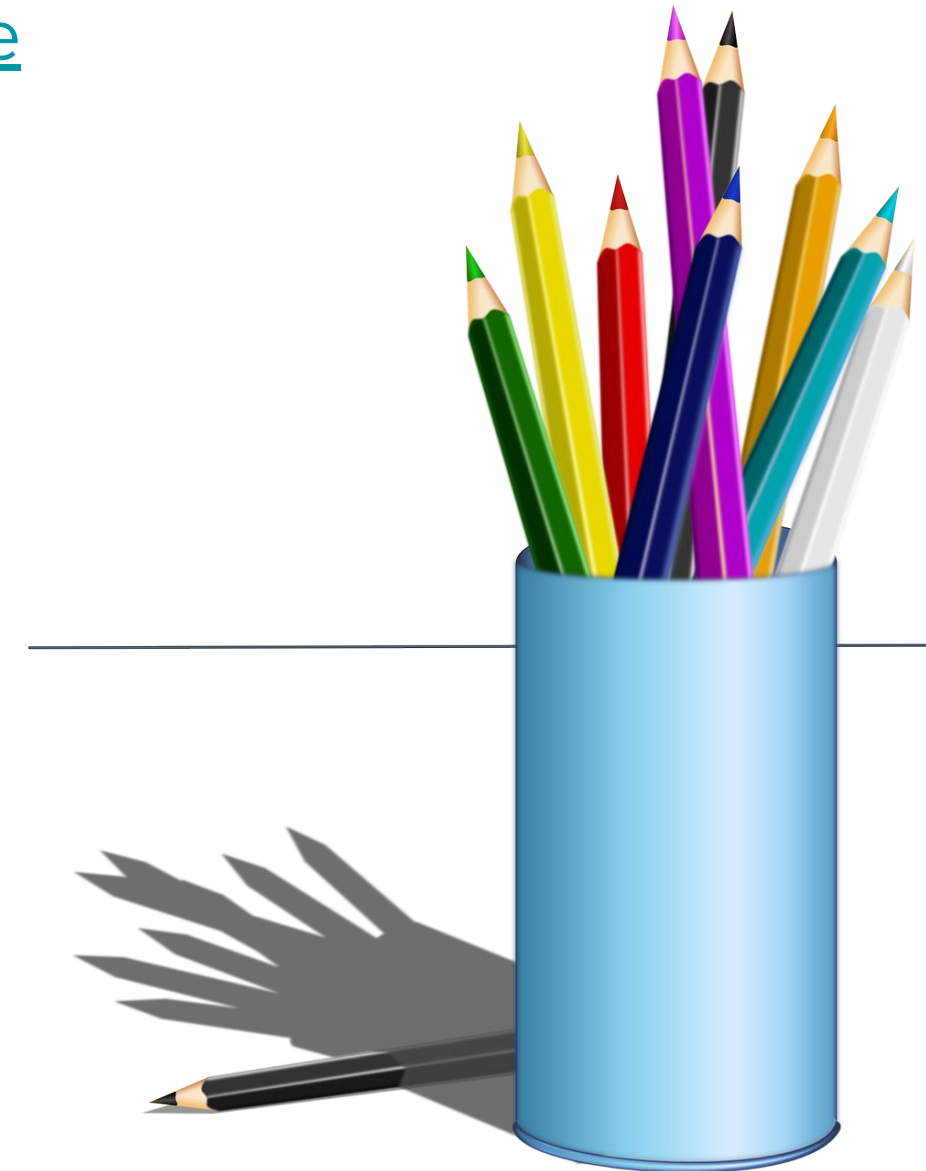
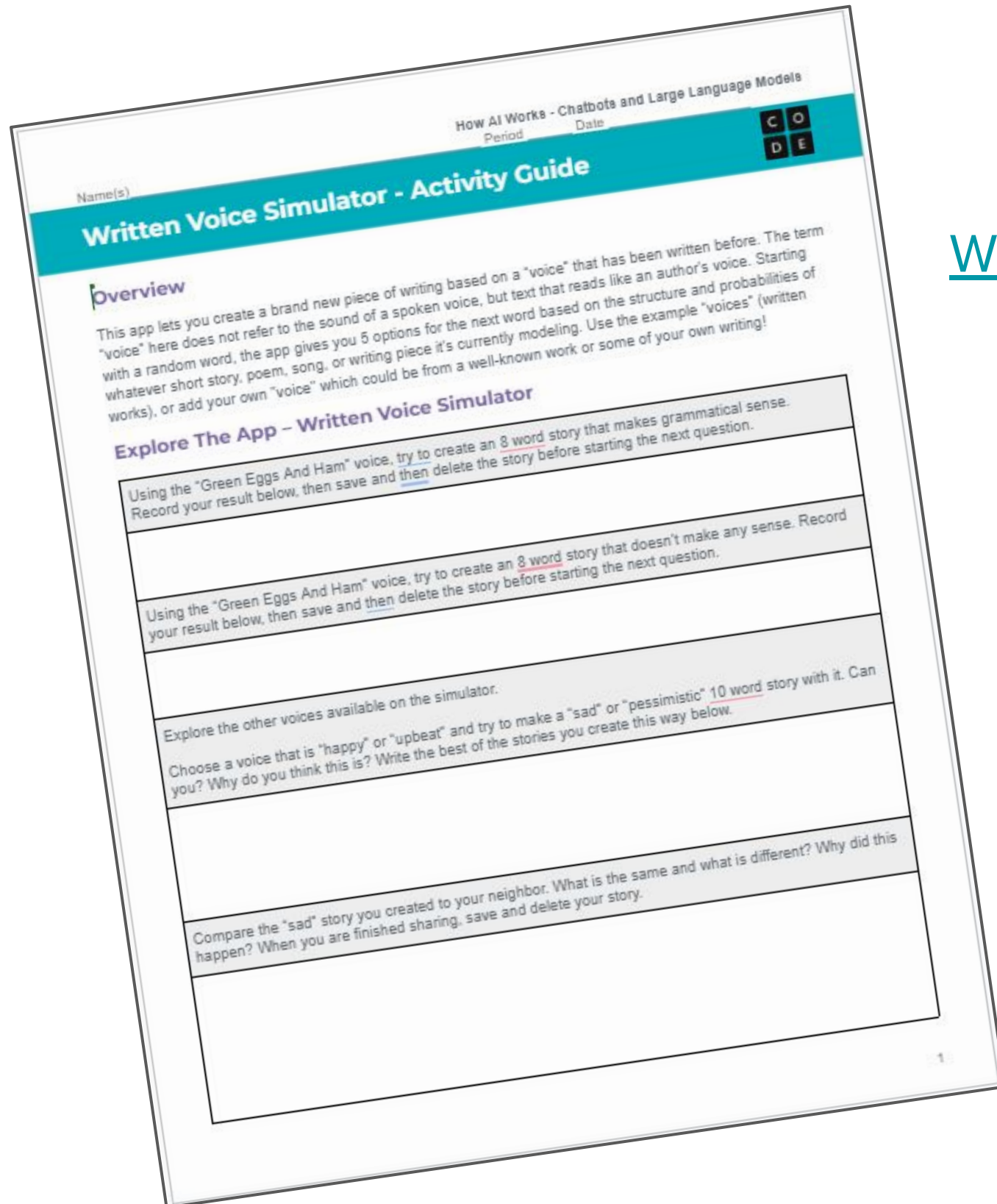


# Breakout Rooms

Please click the links below:

[Written Voice Simulator Activity Guide](#)

[Written Voice Simulator App](#)

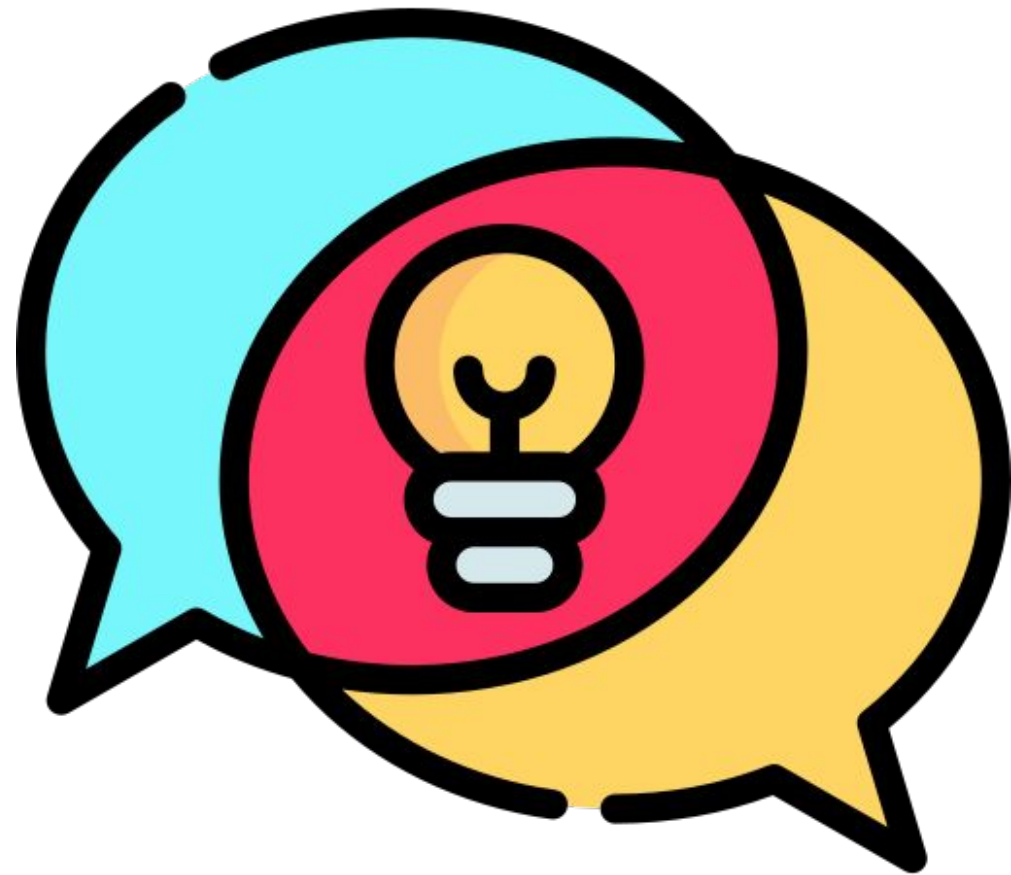


# Discuss



What did you notice as you attempted to create stories using the Written Voice Simulator?

# Discuss



How might a lesson like this support your students in understanding on how generative AI works?

# AI RESOURCES

## AI Resources for Teachers

### What is AI?

AI, or artificial intelligence, is a type of computer technology that can perform tasks that usually require human intelligence.

### Teaching with AI

We recognize that many educators are anxious to learn more about best practices for teaching with AI. We encourage you to begin by checking out the below resources from reputable organizations regarding the use of Artificial Intelligence in the classroom.

1

### Office of Educational Technology

The U.S. Department of Education Office of Educational Technology has drafted a new policy report that addresses the top priorities for AI in education. Their website includes links to the report itself, as well as webinar recordings and resources to support their studies and guidance.

[Click Here to Learn More](#)

### AI Resources from the EdTech Innovation Advisory

CoSN's Artificial Intelligence in K-12 report has been updated to reflect current challenges and opportunities of today's educational ecosystem. Check out their free download to learn more about some of the questions and considerations within AI in Education.

[Click here to Learn More](#)

3

### ISTE: Help Students Think More Deeply with ChatGPT

How can educators use AI tools to help promote critical thinking with students? In this ISTE blog post, Jack Dougall explains his experiences and takeaways with using AI in his geography classroom.

[Click here to Learn More](#)

4

### AI 101 For Teachers

Discover the groundbreaking world of artificial intelligence (AI) and its transformative potential in education with Code.org's foundational online learning series for teachers.

[Click here to Learn More](#)

### How AI Works

This series of short videos will introduce you to how artificial intelligence works and why it matters. Then delve into issues like algorithmic bias and the ethics of AI decision-making.

[Click here to Learn More](#)

6

### Artificial Intelligence Applications to Support K-12 Teachers and Teaching

This paper explores how AI applications can be used to support the work of K-12 teachers by augmenting teacher capacity.

[Click here to Learn More](#)

### AI Exploration for Educators - ISTE

Learn how to develop knowledge and skills about AI, consider risks and explore solutions with ISTE's professional learning program for educators.

[Click here to Learn More](#)

### Questions?

**Alecia Henderson**  
Computer Science &  
EdTech Specialist  
Alecia.Henderson@azed.gov

**Sarah Sleasman**  
Director of Science &  
STEM  
Sarah.Sleasman@azed.gov



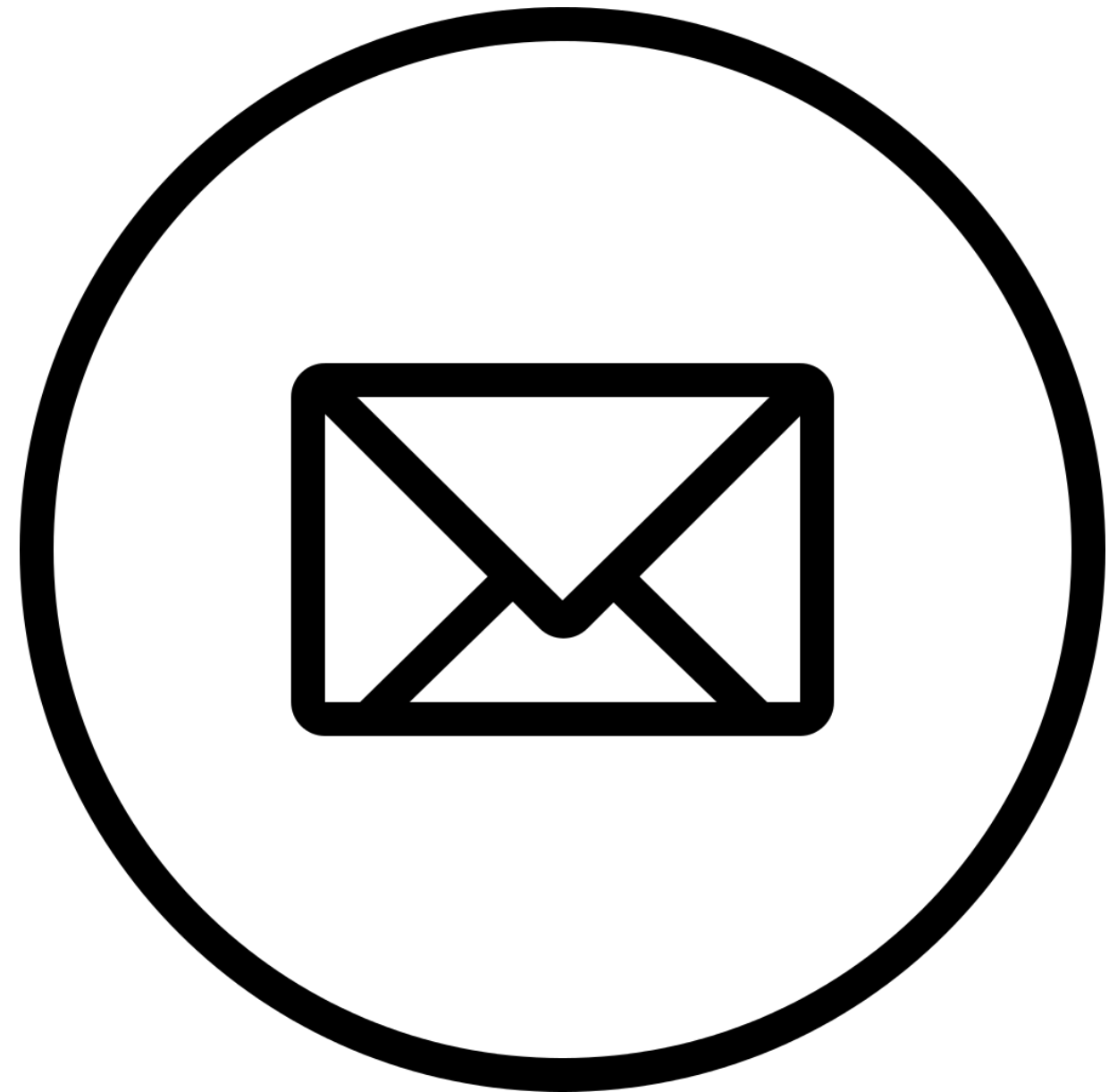
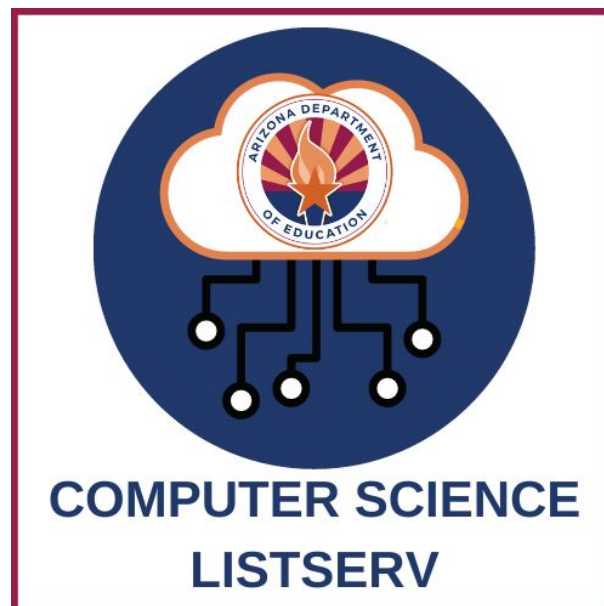


# Sign up for ADE Listserv!

## Educational Technology



## Computer Science





**Many Thanks!**

*Please reach out! We are here to help!*



**THANKS**



**Alecia Henderson**  
Computer Science and Educational  
Technology Specialist  
[Alecia.Henderson@azed.gov](mailto:Alecia.Henderson@azed.gov)

**Sarah Sleasman**  
Director of Science and STEM  
[Sarah.Sleasman@azed.gov](mailto:Sarah.Sleasman@azed.gov)

[Computer Science Standards Webpage](#)