

@CSTANJ

@CS4NJ

#CSPDWeek2026

#CompSciNJ

@csteachersorg



New Jersey CSPDWeek

This material is based upon work supported by the National Science Foundation under Award No. 2607763.



Meet the Presenters



CO-PRESENTER

Alicia Somers

Classroom Teacher, Prek-2
Spotswood School, Dedicated to
empowering early learners
opportunities and exposure to CS
and access to inclusive CS tools.



CO-PRESENTER

Jahaira Ortiz

Classroom Teacher, K
Union City Public School.
Enthusiastic, and passionate
STEM & Coding Facilitator
dedicated to young learners.



Meet the Presenters



CO-PRESENTER Kim Bachmann

Classroom Teacher, 1st Spotswood, NJ. Former Technology Teacher K-5. Certified Seesaw Educator and Apple Distinguished Coach. Passionate about reaching technology as a tool, not a toy.



CO-PRESENTER Ashley DiMatteo

Classroom Teacher, Kindergarten Teacher, P-3 Certified, Spotswood Public Schools. Dedicated and enthusiastic about utilizing STEM & CS opportunities within the classroom!

Computer Science & AI In Prek-2nd

Plugged and Unplugged Activities



By: Kim Bachmann, Jahair Ortiz, Alicia Somers, & Ashley DiMatteo

Prepare our future students



Educators will...

- **Understand** key early CS concepts (sequencing, patterns, logic, problem-solving)
- **Experience** unplugged activities as learners
- **Practice** facilitating activities for young children
- **Connect** activities to early learning standards (play-based, social-emotional, literacy)

What happens in Computer Science?

- Students are encouraged to participate in
- Unplugged and Plugged activities
- Exposure and Hands On Activities



Why Computer Science?

Early Engagement

Encourage PreK-2 students to learn computer science and get them excited about coding.

Community Celebration

Celebrate the contributions of students, teachers, and partners to the field.

Equity & Access

Promote equity in computer science education across all student demographics.

Academic Excellence

Meet State Standards while preparing students for a tech-driven future.



Computer Science Concepts in Preschool

to complete a task.



instructions.



into smaller parts.



world around us.



details and ignoring unnecessary parts.



Debugging

Finding and fixing mistakes.



Automation

Making tasks easier by using tools.



Data & Sorting

Collecting information and finding ways to organize it.



Logic

Using reasoning to solve problems.



Programming & Coding

Giving commands to make something happen.



Tip: These early experiences build foundational thinking skills that support future learning in computer science and beyond!

Empowering Young Minds Through CS-Start in Prek

- Interactive "Plugged" activities for early exposure
- Hands-on "Unplugged" logic puzzles
- New tools for your teacher toolbox
- Integrating computational thinking into daily routines



What do you see in Kindergarten for CS?



COMPUTER SCIENCE in Kindergarten

Building the Future, One Little Learner at a Time!



WHY IS COMPUTER SCIENCE IMPORTANT?



BUILDS PROBLEM SOLVING SKILLS

Children learn to think critically and find creative solutions.



ENCOURAGES LOGICAL THINKING

Students learn to think in sequence, sort, and make connections.



PREPARES FOR THE FUTURE

Technology is part of every career path and everyday life.



PROMOTES COLLABORATION

Students work together, share ideas, and build together.



SPARKS CREATIVITY & CONFIDENCE

Kids get to create, explore, and feel proud of what they do!

5 WAYS TO INCORPORATE COMPUTER SCIENCE IN THE CLASSROOM

1 SEQUENCING & ALGORITHMS

UNPLUGGED

Students put steps in order to complete a task or solve a problem.



EXAMPLE: Handwashing Steps

2 CODING & DIRECTIONS

UNPLUGGED / PLUGGED

Students give and follow directions to move objects or characters.

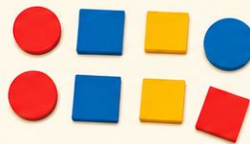


EXAMPLE: Bee-Bot Maze

3 PATTERNS & DECOMPOSITION

UNPLUGGED

Students recognize patterns and break big problems into smaller parts.

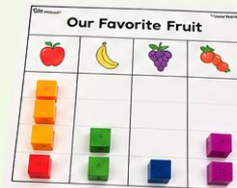


EXAMPLE: Pattern Block Designs

4 DATA & SORTING

UNPLUGGED / PLUGGED

Students collect information, sort it, and look for patterns in data.



EXAMPLE: Graph Our Favorite Fruit

5 CREATING & EXPLORING

PLUGGED

Students create their own projects using tools that encourage creativity and design.



EXAMPLE: Drawing in KidPix or Tynker

TODAY'S LITTLE CODERS, TOMORROW'S BIG PROBLEM SOLVERS!

What do you see in 1st grade CS?



Computer Science Concepts for 1st Grade



Computer science is about learning how to think like a problem solver!

1 Sequencing

Putting steps in the correct order.



Example: First brush your teeth, then put on pajamas, then read a book.

2 Algorithms

A set of instructions to complete a task.



- 1 Get bread
- 2 Spread peanut butter
- 3 Add jelly
- 4 Put it together

Example: Directions for making a peanut butter sandwich.

3 Patterns

Finding things that repeat or follow rules.



Example: Red, blue, red, blue... What comes next?

4 Decomposition

Breaking a big problem into smaller parts.



Example: Cleaning a room by first picking up toys, then books, then clothes.

5 Debugging

Finding and fixing mistakes.



Example: If a set of directions doesn't work, figure out which step needs to change.

6 Loops

Doing the same action multiple times.

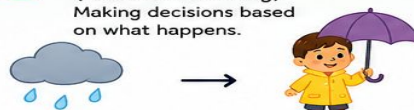


Clap your hands 5 times!

Example: Repeat a dance move or clap five times.

7 Conditionals

("If...then" thinking)
Making decisions based on what happens.



Example: If it's raining, bring an umbrella.

8 Persistence

Trying different solutions when something doesn't work the first time.



Example: Keep trying and don't give up!

FUN ACTIVITIES



Build simple patterns with blocks or beads.



Give a friend "robot instructions" to walk across the room.



Play coding games like Code.org Course A or ScratchJr.



Solve age-appropriate puzzles and mazes.



Create stories where characters follow step-by-step instructions.

These skills build a strong foundation for coding and problem solving in the future!

In 1st Grade, we don't learn to code—we learn to **THINK, SOLVE PROBLEMS,** and **HAVE FUN!**



Exploring AI Foundations

Pattern Recognition

Identifying repeats and sequences in everyday shapes and colors.

Problem Decomposition

Breaking down complex tasks into small, manageable steps for kids.

Algorithmic Thinking

Creating simple rules for a robot to follow a path or solve a puzzle.



AI in the Classroom- Overview

Engaging with AI

- Explore AI perception and senses
- Learn how machines find patterns in data
- Discuss societal impacts on daily life
- Hands-on unplugged AI activities for PreK-2



AI in the Classroom-Lesson 1



1. “I Am a Robot” Game

Goal: Understand how AI follows instructions

- One child is the “robot,” others give simple directions (walk, clap, turn).
- Teacher emphasizes: “Robots/AI follow instructions step-by-step!”
- Make it silly—wrong directions = funny results.

This material is based upon work supported by the National Science Foundation under Award No. 2607763.



AI in the Classroom- Lesson 2

2. Smart Sorting (Like AI!)

Goal: Introduce how AI sorts and categorizes

- Give kids mixed objects like colors, shapes, or animals.
- Ask them to sort them by color, size, or type.
- Explain: "AI learns by sorting and grouping things!"



This material is based upon work supported by the National Science Foundation under Award No. 2607763.

AI in the Classroom- Lesson 3

3. Voice Helper Pretend Play

Goal: Connect to real-life AI (like voice assistants)

- Kids pretend to be “smart helpers” (like Alexa/Siri).
- Others ask questions: “What’s the weather?” “Play music!”
- Encourage polite speaking and listening.



This material is based upon work supported by the National Science Foundation under Award No. 2607763.

AI in the Classroom- Lesson 4



4. Pattern Detective

Goal: Build pattern recognition (core AI skill)

- Use blocks, beads, or drawings to make patterns (ABAB, AABB).
- Kids guess what comes next.
- Explain: "AI looks for patterns just like you!"



AI in the Classroom - Lesson 5



Picture Guessing Game

Goal: Visual recognition

- Show part of a picture (covered or zoomed in).
- Kids guess what it is.
- Explain: "AI looks at pictures and tries to figure them out!"



This material is based upon work supported by the National Science Foundation under Award No. 2607763.

AI in the Classroom - Lesson 6



If/Then Coding Game

Goal: Early logic skills

- Teacher says: "IF I clap, THEN you jump."
- Add more rules (IF red card → sit, IF blue → spin).
- Explain: "This is how computers and AI make decisions!"



This material is based upon work supported by the National Science Foundation under Award No. 2607763.

AI in the Classroom - Lesson 7

Story Builder Bot

Goal: Language + creativity

- Start a story: "Once upon a time, a robot went to school..."
- Each child adds one sentence.
- Talk about how AI helps create stories too.



This material is based upon work supported by the National Science Foundation under Award No. 2607763.

AI in the Classroom - Lesson 8



Learning Machine Game

Goal: Show how AI “learns” from examples

- Show pictures of animals (cat, dog, bird).
- Ask kids to guess categories.
- Add a new one—see if they can classify it.
- Explain: “AI learns from examples just like you!”



AI in the Classroom - Lesson 9



Robot Dance Freeze

Goal: Listening + control

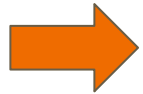
- Play music—kids dance like robots.
- When music stops, they freeze.
- Add commands: “Slow robot,” “Fast robot.”



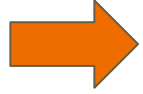
This material is based upon work supported by the National Science Foundation under Award No. 2607763.

Activities for Kindergarten and 1st

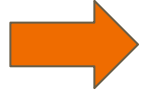
- **CodeAI** Formerly Code.org - curriculum guide



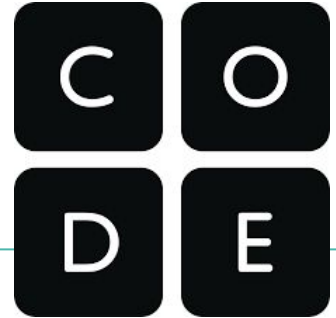
FREE to join



Built for you Curriculum Guides, Plans, and Answers



Unplugged and Courses



Curriculum Catalog

Find the perfect fit for your learning environment: CodeAI courses, tutorials, and more designed for all ages and experience levels.



Filter by:

[Clear filters](#)

Grade ▾

Duration ▾

Topic ▾

Device ▾

Curriculum ▾



CS Fundamentals Unplugged

Grades: K-5

Duration: Quarter



PROGRAMMING

CS Fundamentals: Course A

Grades: K-1

Duration: Month



PROGRAMMING

CS Fundamentals: Course B

Grades: 1-2

Duration: Month

CS Fundamentals Unplugged

Grades: K-5 Duration: Quarter Topic:



Available Resources

Lesson Plans

Slide Decks

Activity Guides

Answer Keys/Exemplars

✖ Computer ✖ Chromebook ✖ Tablet ✖ Mobile ✔ Offline

[See curriculum details](#)

[Assign to class sections](#)



Related Curricula



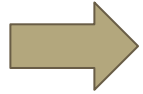
[How AI Makes Decisions](#)



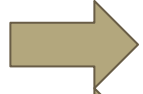
[Mix & Move with AI](#)

Kindergarten and 1st

- **Seesaw** - <https://app.seesaw.me/>



Free and Paid Versions



Explore Community Library - Done for you



Hundred of Activities to Choose



1st Grade Computer Science

597 Activities



Lee Horton

I See Colors Photo Book

♥ 16K



Mrs. Hosler

Gingerbread Coding Map

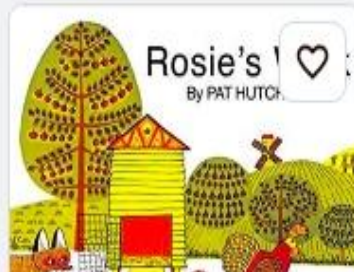
♥ 9.8K



Sara Malchow...

Summer Fun Coding Challenge

♥ 7.4K



Haylee Godfrey

Rosie's Walk - Positional Language

♥ 7.2K



Mrs Priestley

Coding

♥ 6.3K

SEESAW AI

Teach Students About AI Literacy

[View All](#)

Ready-to-teach activities will help students understand how AI works and how to use it responsibly.



What Is AI?

Students will learn what Artificial Intelligence is, how it works, and how people us...

💡 1 Activity



AI Safety Pledge

Students will learn about AI's strengths and limits, sign an AI Safety Pledge, and reflec...

💡 1 Activity



Engaging With AI

Students will learn how to engage with AI, evaluate the accuracy of its responses,...

💡 1 Activity



Creating With AI

Students will learn how to use AI to help solve problems and be creative while making...

💡 1 Activity

AI in the Classroom - Summary Tips



Core Principles

Goal: Making AI accessible

- Use simple language: "AI = smart computer helper"
- Keep it playful and hands-on
- Connect to real life (phones, tablets, games)
- Focus on thinking skills—not technical terms



This material is based upon work supported by the National Science Foundation under Award No. 2607763.

Grants:

- NJEA: Frederick L. Hipp Grant

<https://www.njea.org/hipp-foundation>

- PTA/Community Opportunities
- Local Hubs
- Alpha Delta Kappa Member
- Civil Air Patrol -
- <https://www.gocivilairpatrol.com/>



This material is based upon work supported by the National Science Foundation under Award No. 2607763.



This material is based upon work supported by the National Science Foundation under Award No. 2607763.

CSTA- New 2026 Standards

Explore the New Guidelines

The Computer Science Teachers Association (CSTA) has updated its standards for 2026. Access the official interactive portal to browse, search, and implement these new computer science education benchmarks in your PreK-12 curriculum.



Official CSTA Portal

**[csteachers.org/teacherstandards/
interactive](https://csteachers.org/teacherstandards/interactive)**

CSTA- Standards

Prek- 3rd

Explore the New Guidelines

The Computer Science Teachers Association (CSTA) has updated its standards for 2026. Access the official interactive portal to browse, search, and implement these new computer science education benchmarks in your PreK-12 curriculum.

[PreK/K](#)

[Grade 1](#)

[Grade 2](#)

If you are including Grade 3+ you can find those standards at the bottom of this [webpage](#)



TAKE A
QUICK SURVEY

**Please complete the survey
after each session and complete one at the
end of the day for Stipend~**

There will be one at the end of the week~

- Click feedback on sched now or you will receive an email

Thank you for choosing CS in your classrooms!

Thank You!



Thank you for your time and participation. We appreciate your dedication to advancing Computer Science and AI in the classroom.

For further resources and collaborations, please reach out to us and visit CSTA-NJ to attend chapter meeting that are held every month during the school year. They offer a great deal of resources all year long!

<https://newjersey.csteachers.org/cstanewjersey/cstanj-home>

This material is based upon work supported by the National Science Foundation under Award No. 2607763.

@CSTANJ

@CS4NJ

#CSPDWeek2026

#CompSciNJ

@csteachersorg



New Jersey CSPDWeek

This material is based upon work supported by the National Science Foundation under Award No. 2607763.