

HOUR OF CODE

& CS WEEK TOOLKIT

Grades 2–8 | Ready-to-Run Activities | Posters | Certificates | Banner

5 Activity Packs	Print + digital options for every grade band
5 CS Awareness Posters	School-wide display ready
2 Certificate Options	Full Color & Ink-Saving student awards
Vocabulary Glossary	15 essential CS terms & definitions
Assessment Rubric	Teacher grading checklist for all activities
Parent Tech-Letter	Home communication template
CS Careers Worksheet	Explore 12 tech careers
Display Banner & Pledge	Whole-school header & Digital Citizenship pledge

UM Printables

Table of Contents

1. Introduction & How to Use This Resource
2. Activity Pack 1 — Binary Bracelets (Gr 2–4)
3. Activity Pack 2 — Pixel Art Coding (Gr 2–5)
4. Activity Pack 3 — Algorithm Storytelling (Gr 3–6)
5. Activity Pack 4 — Conditionals Card Game (Gr 4–7)
6. Activity Pack 5 — Loops & Patterns (Gr 5–8)
7. CS Awareness Poster Set (5 Posters)
8. Student Certificates (Full Color & Ink-Saving)
9. Computer Science Vocabulary Glossary
10. Digital Citizenship & Coding Pledge
11. CS Week Assessment Rubric
12. Parent Communication Letter
13. CS Careers Research Worksheet
14. Whole-School Display Banner
15. Review Request

How to Use This Resource

This toolkit is your one-stop shop for running a successful Computer Science Education Week or Hour of Code event at your school. Whether you are a STEM specialist, classroom teacher, or first-time CS coordinator, these ready-to-run activities will help you organize and deliver engaging, hands-on coding experiences for every student in your building. Each activity has been designed with minimal prep in mind and includes both print and digital options to suit any learning environment.

Quick-Start Guide

	Action
1. Plan	Choose 1 activity per class; print or go digital
2. Schedule	Display the poster set in your hallway or classroom
3. Setup	Print certificates for participating students
4. Run	Facilitate the activity using the provided guides
5. Extend	Send the parent letter home and assign the careers worksheet
6. Celebrate	Award certificates and display the whole-school banner

Activity Pack 1: Binary Bracelets

Grade Band	2–4 (Digital & Print)
CS Concept	Binary & Data Representation
Duration	45 minutes
Materials	Pony beads (2 colors per student), String, Printed Key

Overview

Students learn that computers store information using only two states: ON (1) and OFF (0). In this hands-on activity, they encode the first letter of their name into binary using two colors of beads, creating a wearable bracelet that represents their initial in computer language.

Teacher Instructions

Step 1: Introduce the concept of binary (1s and 0s) as the language of computers.

Step 2: Display the Binary Alphabet Key (provided below). Explain that each letter uses 8 bits (1 byte).

Step 3: Have students find the first letter of their name on the key.

Step 4: Instruct students to choose one bead color for "1" and another for "0".

Step 5: Students string their beads in the exact order of the binary code for their letter.

Step 6: Tie the bracelets. Have students swap and decode each other's bracelets!

Binary Alphabet Key (A–M)

Letter	Decimal	8-Bit Binary Code
A	65	01000001
B	66	01000010
C	67	01000011
D	68	01000100
E	69	01000101
F	70	01000110

G	71	01000111
H	72	01001000
I	73	01001001
J	74	01001010
K	75	01001011
L	76	01001100
M	77	01001101

Binary Alphabet Key (N–Z)

Letter	Decimal	8-Bit Binary Code
N	78	01001110
O	79	01001111
P	80	01010000
Q	81	01010001
R	82	01010010
S	83	01010011
T	84	01010100
U	85	01010101
V	86	01010110
W	87	01010111
X	88	01011000
Y	89	01011001
Z	90	01011010

Student Worksheet: Code Your Bracelet

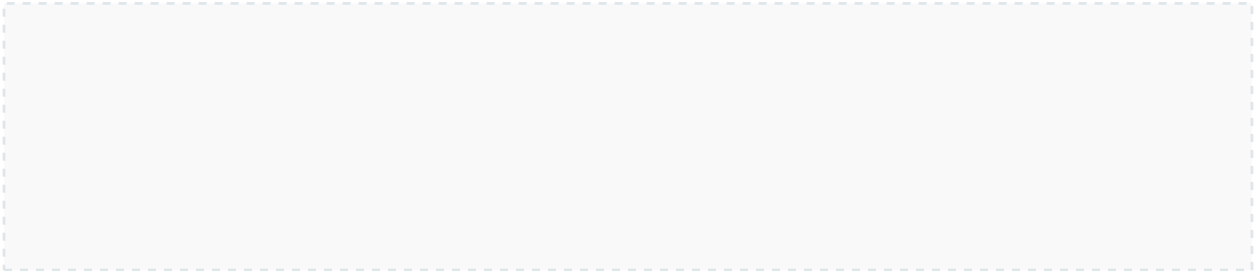
My Letter: _____

Binary Code: _____

Color for 1 (ON): _____

Color for 0 (OFF): _____

Draw your pattern of beads here:



Activity Pack 2: Pixel Art Coding

Grade Band	2–5 (Digital & Print)
CS Concept	Algorithms & Decomposition
Duration	45–60 minutes
Materials	Printed pixel grids, Crayons/Markers, Optional: Spreadsheet software

Overview

Students discover how computers use grids of pixels to display images. By creating a set of coordinate instructions (an algorithm) to color a grid, they learn decomposition—breaking a big picture into small, manageable parts. This activity bridges unplugged coding with digital art.

Teacher Instructions

Step 1: Explain that a pixel is the smallest unit of a digital image. Screens are made of thousands of pixels in a grid.

Step 2: Demonstrate how to read grid coordinates (e.g., Column A, Row 3 = A3).

Step 3: Show an example: Write an algorithm on the board like "Fill B4 Red, Fill C4 Red, Fill B5 Red, Fill C5 Red" to make a 2x2 square.

Step 4: Instruct students to design a simple 8x8 pixel character (emoji, alien, heart) lightly in pencil.

Step 5: Students then write the "code" (the list of coordinates and colors) for their character on a separate sheet.

Step 6: Partners swap algorithms and color in a blank grid following ONLY the written instructions to test the code!

Example Algorithm: The Heart

Follow this algorithm to draw a pixel heart. Color the following coordinates **Red**: B3, B4, C2, C3, C4, C5, D2, D3, D4, D5, E3, E4, F3.





Think Like a Coder

Break it down. Step by step. That's how problems get solved!

Computer Science Education Week | UM Printables





Error = Discovery

Bugs aren't failures; they are clues! Debug, iterate, and succeed.

Computer Science Education Week | UM Printables





Full Color Version
Certificate of Achievement

I Coded Today!

This certificate is proudly presented to:

For successfully completing an **Hour of Code**
during Computer Science Education Week.

Date

Teacher

UM Printables





Ink-Saving Version
Certificate of Achievement

I Coded Today!

This certificate is proudly presented to:

For successfully completing an **Hour of Code**
during Computer Science Education Week.

Date

Teacher

UM Printables



Parent Tech-Letter

Send this letter home with students or email it to families to communicate the value of Computer Science Education Week.

Dear Families,

This week, our school is participating in **Computer Science Education Week (CSEdWeek)**, a global movement to inspire students to explore the world of technology. As part of this event, your child will be participating in the **Hour of Code**.

The Hour of Code is a one-hour introduction to computer science designed to demystify "code" and show that anybody can learn the basics. Computer science is not just about staring at screens; it is about **problem-solving, logic, and creativity**.

During our activities, your child will learn concepts like:

- **Algorithms:** Step-by-step instructions to solve a problem.
- **Loops:** How to efficiently repeat actions.
- **Conditionals:** How computers make decisions.
- **Binary:** How computers store information using 1s and 0s.

How You Can Help at Home:

1. **Ask your child:** "What did you code today?" Let them explain their thinking process.
2. **Continue the fun:** Visit code.org/learn or scratch.mit.edu for free, kid-friendly coding games.
3. **Unplugged activities:** Play board games, solve puzzles, or cook together—these all build algorithmic thinking!

We are so excited to see our students become creators, not just consumers, of technology. Thank you for your continued support of your child's educational journey.

Sincerely,

[Teacher Name / School Name]

CS Careers Research Worksheet

Computer Science is everywhere! Use this worksheet to explore a career in technology. Choose one career from the list below that interests you, and research it using books or the internet.

12 Exciting CS Careers

● Software Developer	● UX/UI Designer	● Data Scientist
● Cybersecurity Analyst	● Web Developer	● Game Designer
● Robotics Engineer	● Systems Analyst	● Network Architect
● AI Specialist	● Cloud Engineer	● Tech Educator

My Research

Career I Chose:	
What do they do?	
What tools or coding languages do they use?	
What kind of education or training is needed?	
Why is this career important to the world?	

Whole-School Display Banner

Print this page to create a large, eye-catching header for your school hallways or classroom display board!



UM Printables

Thank You!

Thank you for purchasing this premium **Hour of Code & CS Week Toolkit** from UM Printables! I am dedicated to providing the highest quality educational resources that save you time and engage your students.

Your feedback is incredibly valuable and helps other teachers find this resource. If you found this toolkit helpful, please take a brief moment to leave a rating and a review on Teachers Pay Teachers.

How to Leave a Review:

1. Go to your "My Purchases" page on TPT.
2. Find this resource and click "Provide Feedback".
3. Earn TPT credits for future purchases!

Follow UM Printables on TPT for more premium Computer Science, STEM, and classroom resources!



© UM Printables. All Rights Reserved.