



2025 CTE Summer Swap Academy

*hosted by Maize Career Academy
facilitated by Kansas Center for CTE*



Scratch the Surface: Visual Programming for Starters

Developed for 9-12 STEM and Computer Science Teachers

Imagine a classroom where students light up with excitement as they solve puzzles, design games, and create their own digital art. Computer programming and computer science aren't just for experts—they're powerful tools that even beginners can master with the right guidance. By incorporating engaging, hands-on activities, educators can transform the classroom into a hub of creativity and critical thinking. With dynamic lesson plans and digital resources, students not only learn how to code but also gain skills they can apply to real-world challenges, from automating simple tasks to designing innovative solutions. The possibilities are endless, and every student has the potential to shine. Let's explore how we can make programming approachable, practical, and exciting for every learner.

Specific topics that will be addressed:

- Hardware and Software Basics
- Binary and Data Representation
- Problem-Solving and Algorithms
- Introduction to Coding
- Artificial Intelligence
- Internet of Things (IoT)
- Career Pathway in Tech

The participants will leave with a comprehensive toolkit of digital resources, including ready-to-use lesson plans, engaging digital activities, and hands-on physical projects designed to enhance classroom learning.

Participants will need to bring:

Lesson Swap: Time will be built in to share and trade your favorite lesson plan/activity **relating to** (*enter something specific here; what content would you like this discussion to center around?*). Please bring 15 copies of ONE lesson plan/activity!

Laptop & charger: To participate in different online activities and to view digital resources

PPE: Comfortable clothing

Supplies: No additional materials will be needed. Physical activities items will be provided to use in the activities.



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About the Presenter

Heather Clevenger began her teaching career 13 years ago in North Carolina, bringing a passion for education and innovation to the classroom. Her experience includes working with Duke TIP, where she taught computer programming and introduced students to Raspberry Pis and Arduinos, sparking their interest in technology. Currently, she teaches Computer Programming and AP Computer Science at Maize South High School and also contributes to the Maize Career Academy, where she focuses on engineering education. Outside of her professional life, Heather is a proud mom to her son, who serves in the Navy and is currently enjoying island life.