

Creative Computing Curriculum

Coding & STEAM 2019

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Week 3: Coding and the Creative Arts Part 1

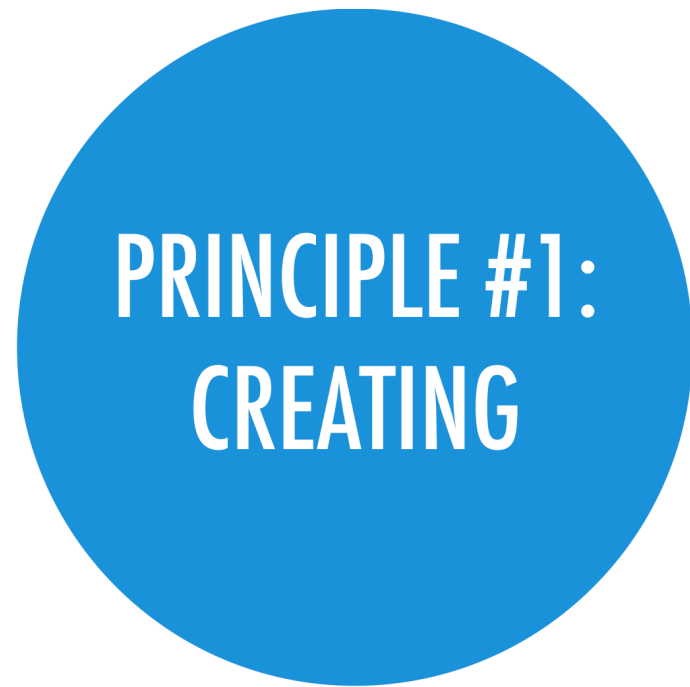
15th August 2019

Creative Computing Curriculum Guide

- A guide for teaching Coding with Scratch (inside and outside of K-12)
- Includes activities, project templates and Debug It! projects
- Encourages learners to be creators and designers with digital technologies, rather than "consumers"
- Emphasises creativity and the creation of personally meaningful projects

Creative Computing Curriculum Guide

- Developed by a team of researchers from the Harvard Graduate School of Education
- Influenced by work done by Karen Brennan, whose thesis explored balancing structure and agency of learners in Scratch
- Free and available for download (PDF and PowerPoint)
 - Under Links heading: ScratchEd's Creative Computing Curriculum Guide



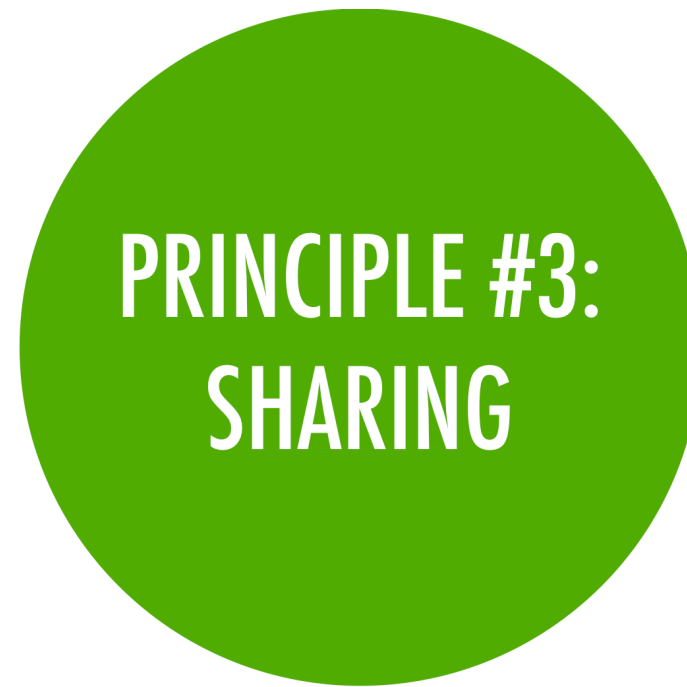
**PRINCIPLE #1:
CREATING**

Offer opportunities for learners to engage in designing and making, not just listening, observing, and using.



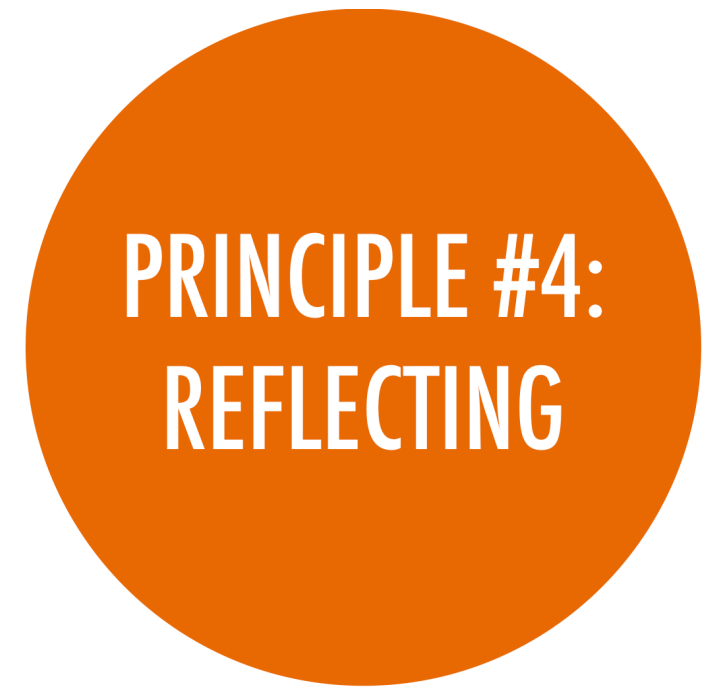
**PRINCIPLE #2:
PERSONALIZING**

Offer opportunities for learners to engage in activities that are personally meaningful and relevant.



**PRINCIPLE #3:
SHARING**

Offer opportunities for learners to engage in interactions with others as audience, coaches, and co-creators.



**PRINCIPLE #4:
REFLECTING**

Offer opportunities for learners to review and rethink their creative practices.

The 7 Units

- Each Unit has a theme (e.g. Unit 2 is focused on Animations)
- Each Unit usually has a **Big Idea**, 6 activities within it and a **Debug-It Studio**
- The focus of the Guide is on a "process-oriented" approach to assessment - through Projects, journals and discussion
- Each **Unit** will be linked to outcomes from a **KLA**

Unit 0 - Getting Started



UNIT 0 - GETTING STARTED

Prepare for the culture of creative computing by exploring possibilities and setting up technical infrastructure (e.g., creating Scratch accounts, starting design journals) and social infrastructure (e.g., establishing critique groups). Dive into an initial creative experience by making something “surprising” happen to a Scratch character.

Unit 1 - Exploring Scratch

UNIT 1 - EXPLORING

Get comfortable with the key computational concept of sequence through a series of activities that provide varying levels of structure – from a step-by-step tutorial, to a creative challenge using a limited number of blocks, to open-ended explorations through making a project about yourself.

Unit 2 - Animations: links to the Creative Arts

UNIT 2 - ANIMATIONS

Play with visuals and audio in these activities focused on animation, art, and music. Explore Scratch's focus on media - and the key computational concepts of loops, events, and parallelism - by building your own band, designing animated creatures, and creating a music video for a favorite song.

Unit 3 - Stories: links to English

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UNIT 3 - STORIES

Create new interactive worlds through collaborative storytelling. Begin by developing characters, learning to code conversations, and then situating those characters and conversations in shifting scenes. Combine characters, conversations, and scenes in a larger story project that is passed along to other creators to further develop – and possibly reimagine entirely!

Unit 4 - Games: links to Mathematics

UNIT 4 - GAMES

Connect fundamental game mechanics such as score and levels to key computational concepts, such as variables, operators, and conditionals. Analyze your favorite games, imagine new ones, and practice game design by implementing (and extending) classic games, like Pong.

Unit 5 - Diving Deeper: links to Science & Technology

UNIT 5 - DIVING DEEPER

Before the culminating unit, take a moment to revisit work from prior units, further exploring advanced concepts or helping others by designing new activities or debugging challenges.

Unit 6 - Hackathon: links to Science & Technology

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UNIT 6 - HACKATHON

Put all of the computational concepts and practices into action by designing and developing a project of your own through iterative cycles of planning, making, and sharing.

Coding & STEAM and the Guide

- We will start working from Unit 2 in this program
- The original Guide was written before [Teacher Accounts](#) were created
- Unit 0 also introduces [Design Journals](#) and [Critique Groups](#)
- Unit 1 is called [Exploring](#) and the [Big Idea](#) behind that Unit is important

Unit 1's Big Idea

"...educators sometimes worry that they don't "know" enough about Scratch to be able to help others. We encourage you to take a broad view of what it means to 'know' Scratch. You don't need to know everything about the Scratch interface or how to solve every problem that a learner encounters. But, ...educators can serve as cognitive guides, asking questions and helping break down problems into manageable pieces."