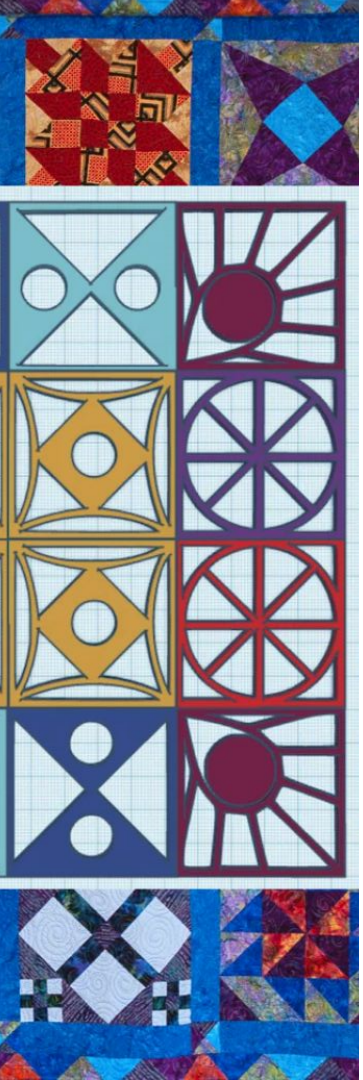


Culturally Relevant Making . . . During a Pandemic

Lesley STEAM Learning Lab
Lesley University
March 10, 2021

SXSW EDU 2021

LSTEAM

Dr. Nettrice Gaskins, Director, Lesley STEAM Learning Lab, Lesley University
ngaskins@lesley.edu • @nettieb

Kreg Hanning, Director of Technology & Innovation, Lesley STEAM Learning Lab, Lesley University
khanning@lesley.edu • @khanning88

Sue Cusack, Assistant Professor, Program Director, Technology in Education; Director, Lesley STEAM Learning Lab, Lesley University
scusack@lesley.edu • @suecusack

Lesley STEAM Learning Lab, Lesley University
makerspace@lesley.edu • @LesleySTEAM

What Do We Do?

- Design “maker” experiences for undergraduate & graduate preservice teachers
- Partner with schools to support their adoption and integration of “making” in education
- Community outreach STEAM events

Synthesizing Gay and Ladson-Billings

Culturally responsive teaching	Culturally relevant pedagogy	Culturally relevant education
Social and academic empowerment	Academic achievement	Academic skills and concepts (AS&C)
Multidimensionality		
Cultural validation	Cultural competence	Critical reflection (CR)
Social, emotional, and political comprehensiveness		Cultural competence (CC)
School and societal transformation	Sociopolitical consciousness	Critique discourses of power (CDP)
Emancipation or liberation from oppressive educational practices and ideologies		

Aronson, Brittany & Laughter, Judson. (2018). The theory and practice of culturally relevant education: expanding the conversation to include gender and sexuality equity. *Gender and Education*. 32. 1-18

Characteristics of Culturally Responsive Teaching

- Acknowledging the legitimacy of cultural heritages of different ethnic groups
- Building bridges of meaningfulness between home and school experiences
- Using a wide variety of instructional strategies
- Incorporating multicultural information, resources and materials in all subjects.

How to Tap in to **Background Knowledge**:
Ask students to bring what they know

Guided Inquiry

Include deliverables and scope of the project, including problems to solve, design constraints, materials, and tasks to accomplish.

Models and Demonstrations

Set the scene, especially through cultural modeling—scaffolding cultural knowledge to support discipline-specific learning—and showing students what could be done.

Allow for Meaning Making:
Give students

- Voice
- Collaborate
- Communicate

Technological Doodling & Thinkering

With materials, technologies, and tools to *build to think*, which enables students to break down project tasks into steps based on their level of knowledge.

Instructables

- A flexible structure that support student engagement and meaning making
- Conducive to synchronous and asynchronous learning
- Provides opportunities for multiple means for representation and expression

3D Quilt Codes & the Tinkercad Cypher

Embodying Chemistry: Paint an Interactive Dance Pad

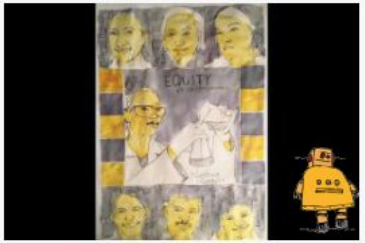
Pixel Art Sonification

Quilt Making in Three Dimensions

Make "Joy" Using Google Drawings & Tinkercad

Wearable Sound Shields

Build a Makey Makey Drum Machine



Science Story Quilts

3D Tic-Tac-Toe Remixed

Biogen

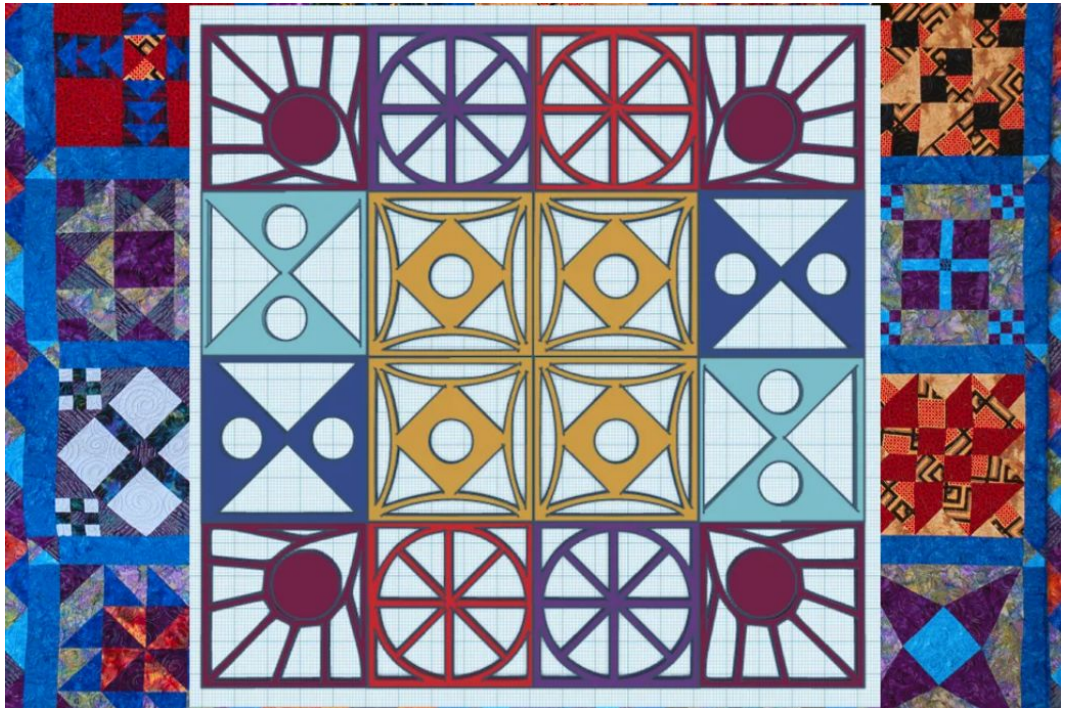
These projects have been made possible through the Biogen Foundation STAR Initiative

TinkerCAD

- Go to: Tinkercad https://www.tinkercad.com/
- Creating an account (Youtube 0:40 - 0:55 minutes)
- Overview of basic functions (Youtube 1:15 - 7:40 minutes)
- Importing and manipulating SVG files (Youtube 1:40 - 1:45 minutes)

3D Quilt Codes & the Tinkercad Cypher

bit.ly/3dquilt



the cypher

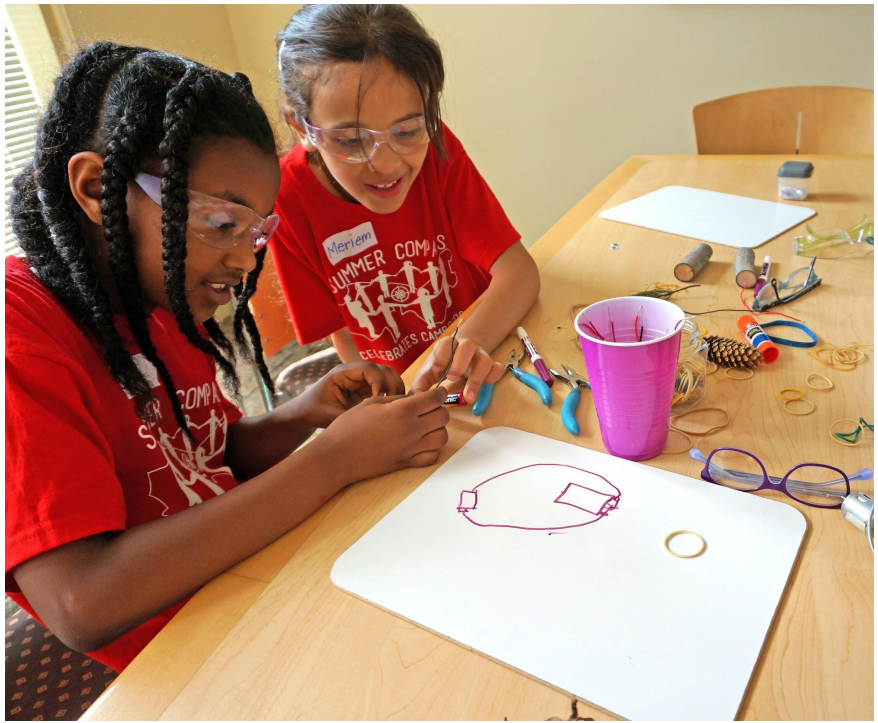
The cypher is an important cultural practice, providing a structure for sharing knowledge and information only readily understood by those actively engaged in it.

The cypher is a place for people to demonstrate and practice their skills, as well as a place to enact self-definition and theorize one's own existence in the presence of community.

Cyphers involve call-and-response participation.

Young people get engaged in cyphers of all types.

Breakout Groups - Tinkercad Cypher



LSTEAM Guidelines

Let's Play:
Learning as "Hard Fun"[1]

Let's Think Out Loud:
Learning as Social

Let's Ask the Room:
Learning as a Network of Thinkers

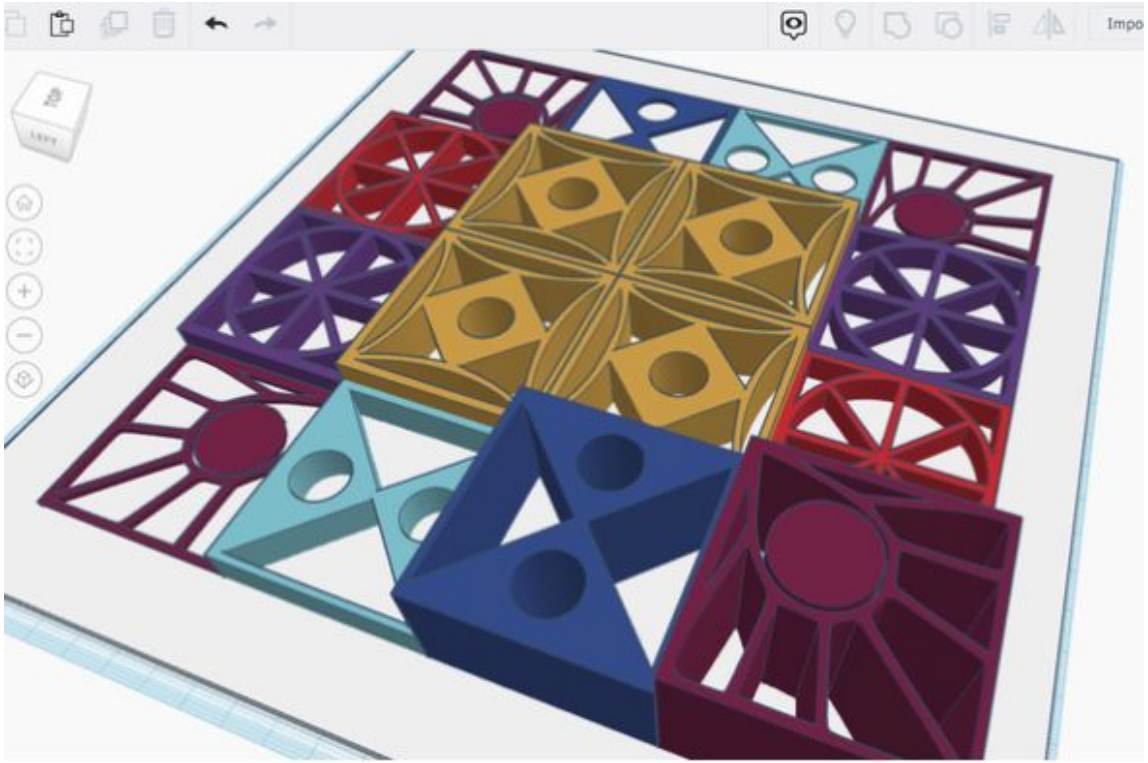
[1] Seymour Papert

Share & Debrief

What did you notice?

New ideas for teaching?

Questions?



Resources

Instructional Resources

- Lesley STEAM Learning Lab
- Lesley STEAM Interdisciplinary Instructables
- 3D Quilt Codes & the Tinkercad Cypher
- Instructables for Teachers
- Questions to Ponder - instructional tool that foster growth in critical thinking, perseverance, and self-directed learning
- Techno-Vernacular Creativity and Innovation by Nettrice Gaskins, in press - August, 2021

Tools

- Create using Instructables
- Tinkercad
- Tinkercad keyboard shortcuts
- Inkscape, Google Draw