Culturally Relevant Making . . .
During a Pandemic

Lesley STEAM Learning Lab
Lesley University
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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

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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
<table>
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<th>Synthesizing Gay and Ladson-Billings</th>
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<td>Culturally responsive teaching</td>
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<td>Social and academic empowerment</td>
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<td>Multidimensionality</td>
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<td>oppressive educational practices and</td>
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<td>ideologies</td>
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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.

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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

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

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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.
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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

¹Seymour 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

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