From STEAM to SEEDS

Designing Creative Maker Environments and Experiences in Science, Engineering, Esthetics, Design, Storytelling for Students

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What’s Your Story?
THINKING AND EXPRESSING WITH OBJECTS
How can you share your stories with objects?
START MAKING NOW!
Cube Template
A light toy
A pair of scissors
A black marker
A set of sticky labels
Share your stories with the person sitting next to you
CONSTRUCTIONISM

“Children learn the best when they are actively engaged in constructing something that has personal meaning to them—be it a poem, a robot, a sandcastle or a computer program”

-Seymour Papert on Constructionism
What is making?
I Am a Maker

I learn by making things.
I explore, customize, and combine things.
I take risks and learn from failed attempts.
I understand that things can get messy when you're tinkering.
I keep trying even when I get stuck.
I take my work seriously without taking myself seriously.
I make connections from one topic to another.
I think, I feel, and I make with my hands.

I share my creations and processes with other people.
I am comfortable not knowing.
I observe and draw inspiration from things around me.
I find and build communities where everyone is welcome.
I pause to document and reflect on my process.
I keep imagining, wondering, and asking questions.
I create not just consume.

— by Alisha Panjwani
Start Making!...a program model developed by The Clubhouse Network to engage MORE young people ALL over the world in Maker-inspired activities, through reflection, curiosity, & confidence
Program Flow

Light it Up    Make it Sing    Paint with Light    Give it Form    Change the Move    Sew the Circuits

Final Open Make

Show and Share
Session 1: Light it Up
Session 2: Make it Sing
Session 3: Paint with Light
Session 4: Give it Form
Session 5: Change the Move
Session 6: Sew the Circuits
Program Flow

Building the First Project → Taking it Further → Open Make

Demoing → Sharing and Reflecting

Opening → Documenting and Displaying

Getting Ready → Getting Ready

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Being a Facilitator

I document and share my creative process.

I encourage collaboration and help people learn from each other.

I adapt to new situations and am open to changing plans when needed.

I create a respectful and inviting environment.

I am curious about others’ interests.

I welcome everyone’s ideas.

I reflect and refine how I facilitate.

I make a safe space for taking risks and learning from failures.

I ask questions to help others articulate their ideas.

I am friendly and approachable.

I take time to listen.

I am patient and encourage persistence.

I try making projects myself.
Start Making! Creative competencies

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1. Identify as a creator or maker

2. Confidence in creative expression

3. Technical tool literacy

4. Awareness of STEAM concepts

5. Collaboration and networking

— by Alisha Panjwani
ASSESSING RELEVANCE AND PERSONAL MEANING
STORY MAKING
Telling Stories

AND THE BIRDS CAME WHOOSHING DOWN.
Making Things
"If you ‘understand’ something in only one way, then you scarcely understand it at all.”

-Marvin Minsky, 2006
Storytelling and Making
TANGIBLE COMPUTATIONAL MEDIA

LilyPad Arduino (Buechley, 2008)

TinyProgrammer (Mellis, 2012)

Circuit Stickers (Qi, Huang, 2014)
Representing experiences in new ways with Tangible Computational Media

Jie Qi

Miwa Matreyek

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seeds studio lab
How do we create opportunities for children to create personally meaningful stories with Tangible Computational Media?
STORY-MAKING
MEANINGFUL REPRESENTATIONS
Creative Learning Experiences in Science, Engineering, Esthetics, Design & Storytelling
Beauty of Scale
Beauty of Shapes forms and folds
Design Practices
1. Create a Sacred Space
2. **Encourage Sharing of Personal Experiences**
3. Spark Ideas by Sharing Your Own Creative Process

I used the light in the house to show how happy I was at my grandmother’s every summer.
4. Be Curious about Others
Curiosity
5. Introduce Tools as a Medium for Self-Expression (Not Just Technique)
6. PROVIDE CREATIVE CONSTRAINTS BUT LEAVE ROOM FOR OPEN EXPLORATION
7. Raise the Ceiling

Use the lights to show important things in your drawing.

Want to try making the lights blink?
8. See Outward; Focus Inward

I wish I could’ve done that.

It just takes its home wherever it goes!
9. Reflect In Action
(not just On Action)
10. Look Back; Look Ahead
COOL VS MEANINGFUL
TRENDY VS TIMELESS

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