

Fitting it all in!

Integration through STEAM and PBL



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Hello
你好
Bonjour
Hallo
Ciao
こんにちは
Hola

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Students Learning through Play & Tinkering

The role of the educator is to create the conditions for invention rather than provide ready-made knowledge.

Seymour Papert (1928 - 2016)



Students & Identity Affirmation

Through play, tinkering,
creating, debugging, and
remixing, we build
community and
opportunities for
“cognitive engagement
and identity investment”
(Cummins, 2007, p 105)



Students and Digital Use

A **digital use divide** continues to exist between learners who are using technology in active, creative ways to support their learning and those who predominantly use technology for passive content consumption.

(NETP, 2016, p 5)



**Some stories from boston
teachers.**

Morgan

Gender Equity

“The best thing I've witnessed is that both the boys and girls are using these materials together.”



Alicia

Culturally
Responsive

*“Making sure the
environment reflects
back to who the
children are”*

<https://youngsteaminventors.com/>



Jeff

Supporting Language Learners

*“I have students who
don’t speak English
as a first language
but their ideas just
come to life.”*





Lesley STEAM 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

Activity Station 01



Poetry in Action

WHAT: Stop motion animation is where you take many photos of objects or characters and string them together into a movie. Each time you take a picture, you'll move the character or object just a tiny amount. The onion skin feature helps you line up your shots to create a smooth animation. The voice recording feature even lets you narrate the story once you're done filming.

YOUR CHALLENGE: Bring a poem of your choice to life through stop motion.

CAN YOU:

- Take advantage of the text structure?
- Bring new meaning to the author's use of language and word choice?
- Take at least 50 - 100 photos to help make the animation flow organically?
- Add a voice narration and sound effects with attention to rate and expression of your reading?



Leaky STEAM Learning Lab - steam.leaky.edu - 2017

Activity Station 02



eBooks & eComics

WHAT: Book Creator is an iPad and Android app that lets you design and publish your own customized eBook.

YOUR CHALLENGE: Using data collected from your lab work, create an interactive eBook or comic strip to tell the story of a scientific phenomenon or burning question.

CAN YOU:

- Use a storyboard to help organize your thoughts and map the action?
- Create an engaging dialogue of characters?
- Embed appropriate scientific language and vocabulary?
- Craft a compelling conclusion?
- Add sound effects or music?



How antihistamine works.
(BIOLOGY 101)

Activity Station 03: Storytelling with ScratchJr



Scratch Jr. Tips

WHAT: Scratch Jr. uses color-coded "blocks" that can be dragged down into the programming area to instruct a character to do something (move, talk, jump, etc). These command blocks can be snapped together to create more complex instructions.

Note: you need to begin with one of the **yellow blocks** (like the green flag). Click on the green flag at the top of the screen to make your program go!

Click on this green flag to make all the characters do what you coded them to do:



To draw your own character, choose the blank box and then the paintbrush.



To delete a character, hold one finger down on it and then press the red "X".



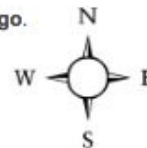
Activity Station 04



Bee-Bot City

WHAT: The Bee Bot robot is programmed by pressing the desired buttons and then pressing go.

Note: Be sure to press clear between each program! You can press more than one button (multiple instructions) before pressing go.



YOUR CHALLENGE: Help us build our Robot City!

1. Using recyclables: create a streetscape/neighborhood.
2. Use post-its or cardstock to label the environmental print, street signs, storefronts, neighborhood helpers, cardinal directions.
3. Can you program the Bee-Bot to move around the city?

CAN YOUR BOT:

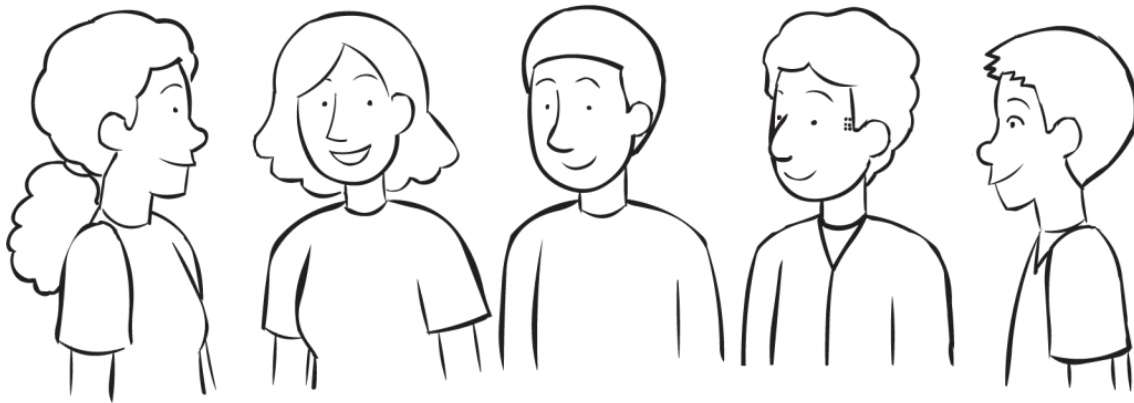
- Turn at street corners?
- Repeat a move?
- Go up a low ramp?
- Turn at a 45 degree angle?



Lesley STEAM Learning Lab - steamlab.org - 2017

Debrief & Thank you!

my best bit was....





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Quick overview of creativity apps we used



ScratchJr. (coding & storytelling)



Book Creator (ebook authoring tool)



DoInk (green screen)



Stop Motion Studio Pro



BeeBots
