Think Make Create Labs in Idaho

Challenges to STEM Education

The following reasons were the same if STEM was offered in afterschool programs or not:

- ✓Do not have **funding** for STEM curriculum
- ✓Do not have qualified **staff**
- ✓Do not have **time** for a STEM program
- ✓Do not know of an appropriate STEM **curriculum**

Idaho Out-of-School Network Survey, June 2018

Jocelyn Cullers, Boise State University Institute for STEM & Diversity Initiatives

Idaho Out-of-School Network

connecting youth & communities

Why TMC?

Our goal is to assure equitable access to STEM education to communities across Idaho.

- Increase access to hands-on STEM education for rural and underserved youth.
- Provide professional development for inexperienced formal and informal educators.
- Engage and gain support from rural and underserved communities for STEM learning and workforce development.

Idaho's TMC Leadership Team

Idaho Out-of-School Network
connecting youth & communities

Anna Almerico
Program Director

Wendy Wilson
STEM & Communications Coordinator

Amy Post
TMC Labs Coordinator

University of Idaho Extension

Claire Sponseller
Area Extension Educator, 4-H STEM

IDAHO DEPARTMENT OF EDUCATION

Andrea Baerwald
Science & ISAS Coordinator

IDAHO BUSINESS FOR EDUCATION • SCIENCE • TECHNOLOGY • ENGINEERING • MATH
IDAHO ECOSYSTEM

Erica Compton
Director

The Coeur d'Alene Maker's Space
GIZMO cda

Francesca Bessey
Program Director

IDAHO STEM ACTION CENTER

Caty Solace
Executive Director

PROJECT FUNDERS

TMC in Idaho

- TMC Leadership Team launched the first 16 labs in May 2021.
- Added 9 more in 2022
- 28 TMC Labs are on the road in 2024
- Adding “unhitched sites” and near-peer-mentor program in 2024
- More than 45,000 youth have used the labs so far.

TMC Lab Locations

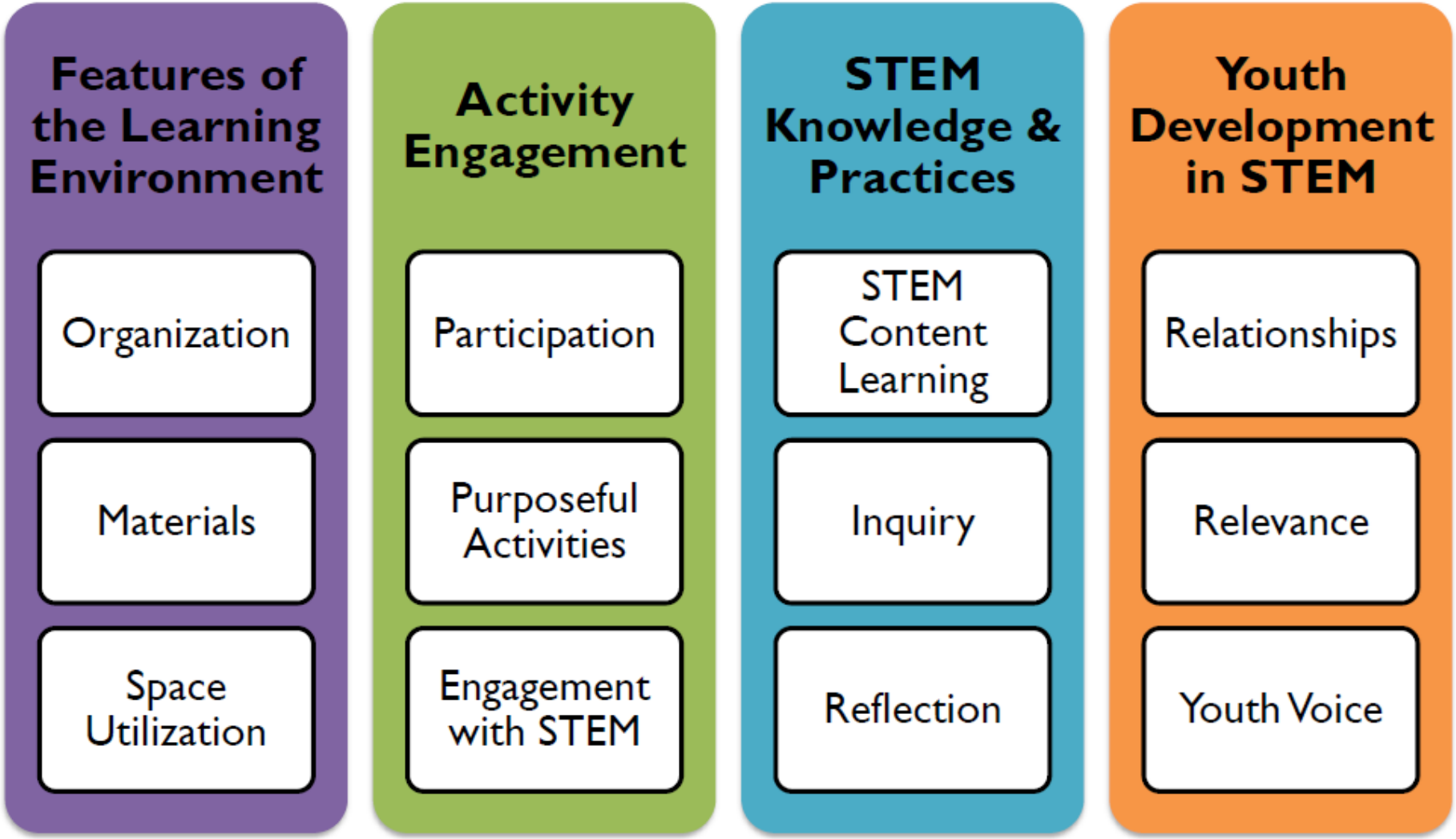
1. UI Extension 4-H Youth Development
2. UI Extension in Bingham County
3. Boys & Girls Clubs of Magic Valley
4. Treasure Valley Family YMCA
5. Nampa School District
6. Boys & Girls Club of Western Treasure Valley
7. Childrens Museum of the Magic Valley
8. UI Extension in Schitsu'umsh Reservation
9. Boys & Girls Clubs of Lewis-Clark Valley
10. UI Extension in Nez Perce Reservation
11. Gizmo
12. UI Extension in Lemhi County
13. East Bonner County Library District
14. Gooding Public Library
15. UI Extension in Boundary County
16. UI Extension in Bear Lake County
17. Boys & Girls Club of Ada County
18. Boys & Girls Club Ada County
19. Boys & Girls Clubs of Magic Valley
20. Pinehurst After School Solutions
21. United Way of Idaho Falls and Bonneville County
22. Boys & Girls Club of the Shoshone-Bannock Tribes
23. United Way of Southeastern Idaho
24. One Stone
25. Mountain View School District
26. Treasure Valley Family YMCA
27. Boys and Girls Club of Canyon County
28. Parma Learning Center


Think
Make
Create
LABS
MOBILE MAKERSPACE
TMC LAB #001
Think Make Create
MOBILE MAKERSPACE


Think
OPTUM
Idaho Out-of-School Network

TMC User Engagement

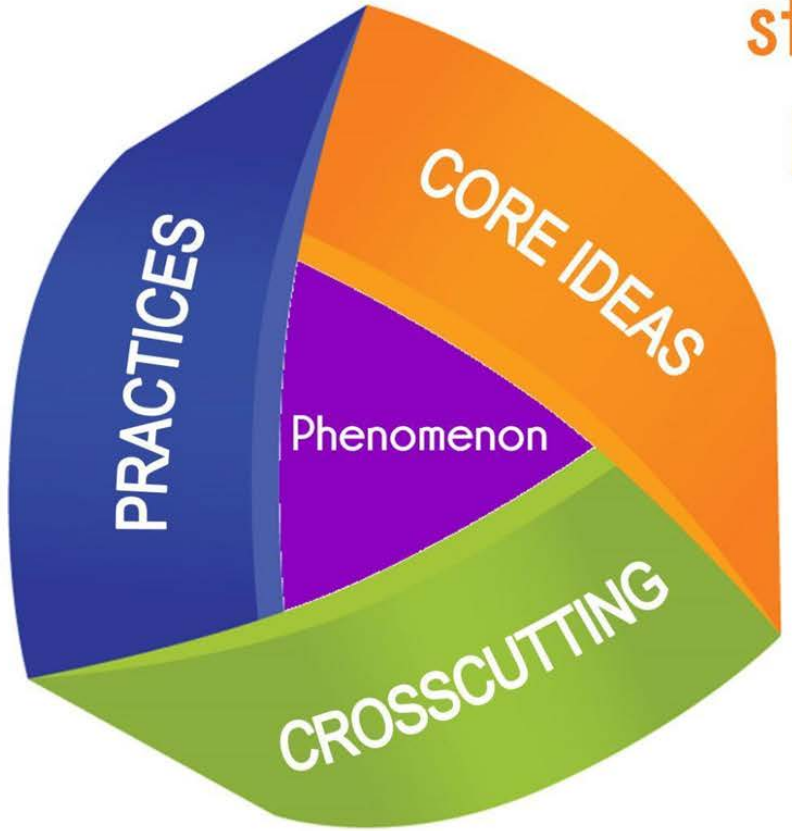
Dimensions of Success



Idaho Content Standards in Science

"What students do."

"What students know."



"How students think."

IDAHO SCIENCE COACHES


EPSON
makedo
A0126x4
DISCOVER

Using a TMC Lab

1) Choose and plan your activities
2) Coordinate with lab host:
   - ✓Schedule (include prep time)
   - ✓Materials and restocking
   - ✓Borrow materials or the Lab
   - ✓Return equipment
3) Do your user report

2024 TMC Lab Usage Report

Single use or monthly reporting form

This form is also available online

Idaho Out-of-School Network

Required questions are marked with an asterisk*

Today's date:*

1. **Lab #/Hosting Organization***
2. **Name of your organization**
3. **Your name***
4. **Email address***
5. **Date of use** (For multiple sessions, indicate first date TMC was used during this reporting period.)
6. **Number of sessions** (How many times was TMC used during this reporting period?)
7. **Total # of hours*** (How many TMC "program hours" were delivered during this reporting period?)
8. **Total number of youth participants***
9. **Ages of youth participants*** (years old)
10. **Community served** (Name of town/community)
11. **Program name and/or location** (Name of youth program, class, library, community center, park, etc.)
12. **School name*** (if applicable)
13. **School District/Number** (if applicable)
14. **Number of program leaders (staff, volunteers, teachers, etc.) who used the TMC Lab** (during this reporting period)
15. **Where and when did you use TMC Labs?**
    a) At a school, during school hours
    b) At a school, out of school hours
    c) Not at a school, during school hours
    d) Not at a school, non-school hours
16. **How did you use TMC Labs?**
    a) *Used the trailer as a mobile makerspace/classroom*
    b) Went "shopping" in the trailer and brought materials to youth
    c) Used the activity guide (aka LiveBinder) and my own materials
    d) Used TMC materials not stored in a trailer (TMC unhitched)
17. **How well did the activities work?** (Do you think the TMC sessions were both "hands-on" and "minds-on?")
    a) *Activities felt both "hands-on and minds-on"*
    b) Activities were "hands-on" but not always "minds-on"
    c) Activities were neither
    d) Not sure
18. **Activities and Highlights***
    (What did you do? How did it go? We love stories!)
19. **Community engagement** (How did parents/guardians or community members interact with TMC?)
20. **Comments or suggestions for improvement**
    (What can we learn from your experience using TMC?)

Demographics

Complete this information using your organization's registration data. Your organization likely collects demographic information when participants register for programs. Ask administrators at your organization if they can provide this information.

Demographic data for each Idaho public school can be found at:
https://idahoschools.org/state/ID/school-list

Gender:

_____*% Male*

_____*% Female*

_____*% Nonbinary or other*

_____*% Gender Unknown*

Race/Ethnicity:

_____*% American Indian or Alaska Native*

_____*% Asian*

_____*% Black or African American*

_____*% Hispanic or Latino*

_____*% Native Hawaiian or Other Pacific Islander*

_____*% White*

_____*% Mixed race/ethnicity*

_____*% Race/ethnicity unknown*

smartsheet

2024 TMC Lab User Report

Complete this report at least once/month.

Some questions are not required. Required questions are marked with a red asterisk.*

1. Lab Number/Hosting Organization *

Select

2. Name of your organization

3. Your name* *

4. Email address *

5. Date of use

For multiple sessions, indicate first date TMC was used during this reporting period.

6. Number of Sessions

How many times was TMC used during this reporting period?

7. Total number of hours *

How many TMC "program hours" were delivered during this reporting period?

8. Total number of youth participants *

9. Ages of youth participants (years old) *

D14 | B

Labs 1-25 TMC Stocking List (2021-2022)

Supplies	Count per lab	Unit	Stocking Location
Clothespins, wooden, 3 in.	200	pieces	
Paper Clips	1500	pieces	
Pins, T-pins	100	pieces	
Pom Poms	2	pounds	
String, 10 ply, cotton, white	1500	feet	
Thread	10	rolls	A
Thumb Tacks (Push pins)	200	pieces	
Twine, natural jute, 3 ply	984	feet	
Wire, craft, 20 g, assorted colors	656	feet	
Wire, craft, 20 g, silver	770	feet	
Yarn, 30 skeins, assorted colors	1300	yards	
Beads, 6x6 mm letter beads	1440	pieces	
Beads, 9mm pony beads	4600	pieces	
Brass Brads	1200	pieces	
Buttons	1500	pieces	
Dice	10	pieces	
Feathers, 3-5 in, assorted colors	2400	pieces	
Feathers, natural	540	pieces	B
Gems	1800	pieces	
Googly Eyes	1680	pieces	
Marbles	100	pieces	
Sequins	2	container	
Stencils	21	pieces	
Stickers	1650	pieces	
Balloon Pump	2	pieces	

Cut Copy Format Painter | Paste | Clipboard | Arial 11 | Font | Wrap Text | Merge & Center | Alignment | General | Number | Conditional Formatting | Format as Table | Normal | Bad | Good | Neutral | Calculation | Check Cell | Styles | Insert | Delete | Format | Cells | AutoSum | Fill | Clear | Sort & Filter | Find & Select | Editing | Analyze Data | Analysis | Sensitivity | Add-ins

G16

TMC Stocking List (2023)

Increased quanitity of items are highlighted yellow

Supplies	Count per lab	Unit	Amazon Link	Stocking Location (Labs 1-25)	Stocking Location (Labs 26-28)	Notes
AA Battery Holder	192	pieces	https://a.co/d/8nlwqdj	R	M	Need 250 to complete all activities. These can be reused.
Aluminum Foil, 100+ sq. ft.	2	rolls	https://a.co/d/9jtY0bL	R	M	
Aprons	2	pieces		F (Operations Bag)	V (Operations Bag)	
Bags, brown paper, 4 lb.	125	pieces	https://a.co/d/4zRK7VH	Q (Manipulative Shelf)	Manipulative Shelf (Q)	Previously stocked 250, reduced quantity to save space.
Bags, trash, drawstring, 30 gallon	50	pieces	https://a.co/d/bRX3O6y	T (Milk Crate)	R (Trailer Box)	Moved from Box R or S to Box R
Bags, trash, small, 4 gal, various colors	150	pieces	https://a.co/d/artLnC3	E	E	
Bags, Ziplock, 1 gal	300	pieces	https://a.co/d/6tPaEBw	F (Operations Bag)	V (Operations Bag)	For storing smaller pieces in boxes. New item for 2023.
Bags, Ziplock, 2 gal	45	pieces	https://a.co/d/dvbECXw	F (Operations Bag)	V (Operations Bag)	For storing smaller pieces in boxes. New item for 2023.
Balloon Pump	2	pieces	https://a.co/d/9tsajGe	C	C	
Balloons, 12 inch, assorted color	450	pieces	https://a.co/d/cEyXUAK	C	C	Previously stocked 150, wasn't enough for all activities. Recommend latex baloons from Zurchers for helium-filled balloons.
Balls, ping pong	100	pieces	https://a.co/d/5fNxwPw	J	F	New item for 2023
Balls, Tennis	3	pieces	https://a.co/d/7OmEbtb	J	F	New item for 2023
Battery Connector for 9V battery	60	pieces	https://a.co/d/8OFFwQ6	G (Gear Box)	N (Gear Box)	
Battery, 3V Coin Cell	300	pieces	https://a.co/d/73RtiGX	R	M	
Battery, 9V	48	pieces	https://a.co/d/4HOLDmw	R	M	
Battery, AA	750	pieces	https://a.co/d/979paar	R	M	
Battery, LR44 Button/Coin Cell	300	pieces	https://a.co/d/2AED1dy	R	M	
Beads, 6x6 mm letter beads	1440	pieces	https://a.co/d/adYwt3m	B	B	
Beads, 9mm pony beads	4600	pieces	https://a.co/d/jhlDeT3	B	B	
Binder clips, large	432	pieces	https://a.co/d/02eQ5bV	I (Milk Crate)	P (milk crate)	Previously stocked 48, wasn't enough for all activities.
Binder clips, small	300	pieces	https://a.co/d/cBLdNVA	I (Milk Crate)	P (milk crate)	Previously stocked 200, wasn't enough for all activities.
Bolts, machine screws, #6-32x1"	550	pieces	https://www.boltdepot.com/	R	M	Phillips pan head, stainless steel 18-8. New item for 2023
Book bag	1	pieces	https://a.co/d/9kHl4Mt	Varies	Varies	
Book, Ada Twist, Scientist	1	pieces	https://a.co/d/ghM6BjR		Book Bag	New item for 2023
Book, Goldilocks and the Three Engineers	1	pieces	https://a.co/d/hHeuhpm		Book Bag	New item for 2023

1

2

Think Make Create LABS

The Makerspace Playbook

Issue #25: October 2023

TMC ON THE MOVE: PREPPING FOR WINTER

Each of us may have different degrees of winter, but this still is an excellent opportunity to schedule time for a thorough walk-through of your mobile makerspace. Summers are busy and we may not have done a great job of inventorying and cleaning as we should. When prepping for winter, make sure to pull out any items that might not store well. For us, we pull out vinegar as an exploding gallon in a trailer made for some interesting cleanup. I would recheck items that sometimes react to varying temperatures: crayons, playdough, plastics, etc. The integrity of these items may change after they have been stored in hot/cold temperatures, and this would be a good time to replace them. Batteries can winter over but check to make sure they are still stored separately and safely. Remember to consider the outside of the trailer as well. Check wheel bearings, brakes, door hinges, and all the trailer connections as these are used often and should be in top repair.

- Claire Sponseller, Area Extension Educator, University of Idaho Extension 4-H

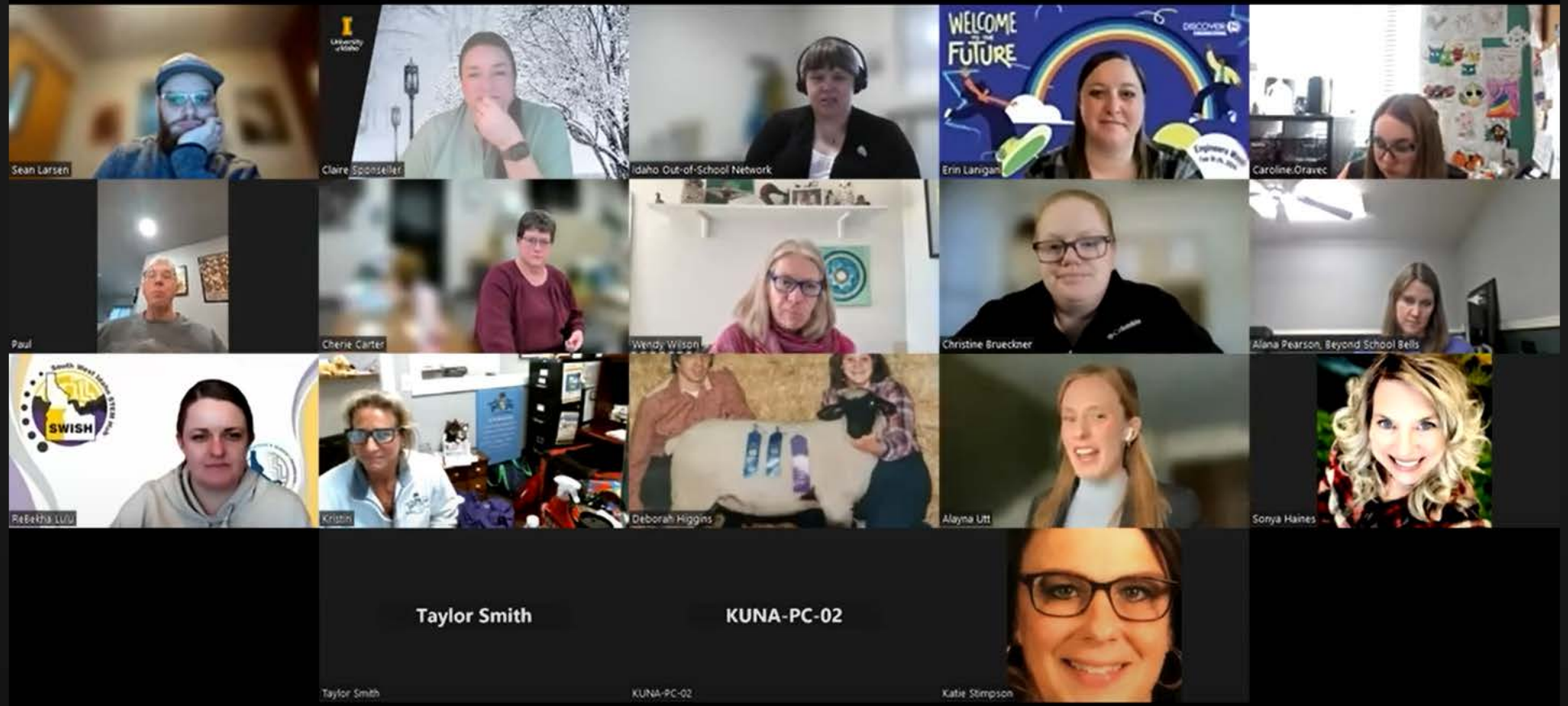
Spotlight on You: City Build 2040

Students at Oakland-Craig Public School had the privilege to take part in City Build 2040 during their summer program. The activity was led by 2 Oakland Craig high school students over the course of 4 days. The first 3 days focused on designing and building. Students were put into groups of 3-4 to build a section of their city. On the fourth day, students rushed to complete their section of the city so they would be ready to present to parents and community members about how they envision Oakland, NE to look like in year 2040. They also rehearsed our speeches and collaborated with their classmates to see how each of their sections interconnected.

Parents and community members arrived around lunchtime and were greeted by students. Participants stood in a large circle around the city so that each group could say something about their section. We concluded the event with a nice lunch and conversation.

One other group leader said "I worked with the 1st and 2nd graders. Every day the students loved walking into the commons to see what had been added to the City Build. They loved seeing what had been

02/2024 TMC Shop Talk



0:10 / 49:55

Idaho Think Make Create Labs Guide

By: Claire Sponseller

Table of Contents
Getting Started
Activities
Idaho Content Standards in Science
Arts
Binary Bracelets
Build a Band
Checkerboard Coding Art
Flowers from Mars
Origami Bookmarks
Nature Weave
Rainstick
Sundial
Yarn Art
Design
Electronics
Engineering
Resources/Forms

Binary Bracelets

/media/get/MjI3Njk2MTY=

Participants use binary code to make bracelets. Binary is representing information with only two options. Ideas include youth spelling their name or favorite word with only two colors, or have them make a bracelet for someone else!

Includes: Decoder Key, Activity Page

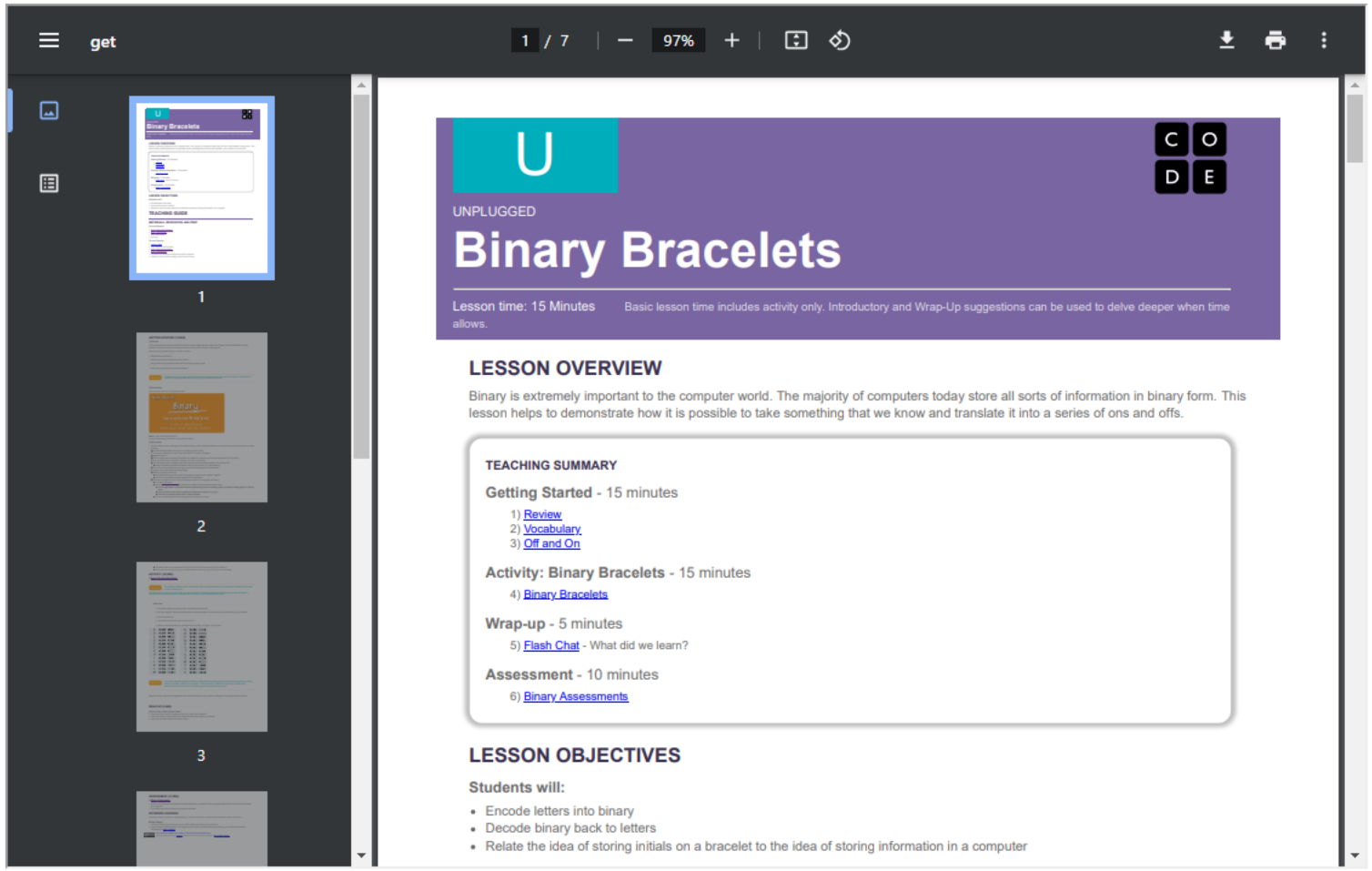
Time: 20-30 min
Age: K-6 grades

Estimated Activity Cost/Youth: $0.53
Cost/30 Youth: $15.90

Materials:
- Lacing - Crate 1
- Beads - Art Box 2
- Scissors - Project Box 7
- Pens - Project Box 2
- Pencils - Project Box 3

This activity is building towards proficiency in the following **Idaho Science Content Standards:**

PS2-4-3. Generate and compare multiple solutions that use patterns to transfer information.




Think Make Create
DESIGN
Air Cannon - English & Spanish
Balloon Rocket
Build a Boat
Cardboard Arcade
Crazy Kits
Emergency Shelter
Game On
Indoor Slingshot - English & Spanish
Kinetic Sculpture
Makedo Car
Makedo Dog
Makedo Playhouse
Parachute Away
Paper Plate Buckyball
Sky Glider
Solar Cooker
Whirlybird - Dropcopter
Wind Anemometer
Wind to Lift a Load


Think Make Create
ART
Binary Bracelets
Build a Band
Checkerboard Coding Art
Flowers from Mars
Origami Bookmarks
Nature Weave
Rainstick
Sundial
Yarn Art


Think Make Create
ENGINEERING
Build a Balloon Powered Car
Build a Bridge
Building Bridges
Catapults & Trebuchets
Can Can Robot
Cardboard Automata
Grabber
Helping Hand
Paddle Power
Paper Engineering
Rubber Band Car
Seismic Shakeup
Seismograph
Soft Landing
Strawkets
Sun Zoon Solar Car - English & Spanish
Tower Engineering


Think Make Create
ELECTRONICS
Bristlebot - English & Spanish
Copper Tape Flashlight
Make a Plane
Make a Mini Electric Car
Junkbot Robots
My New Ride
Make a Paper Circuit
Paper Circuits
Penny Battery
Pipe Cleaner Circuitry
Scribbling Machines
Star Wars Junkbots
Vibrobots

Idaho Out-of-School Network

connecting youth & communities

Amy Post

apost@jannus.org

(208) 789-6325

Think Make Create LABS

Thank You

https://idahooutofschool.org/think-make-create-labs-land/