Think Make Create WORKS

# STEM Supervisor Orientation

## As we do introductions, please:

Fill out the registration form

Create a Learning Academy account

Create an Idaho STEM Ecosystem Community Platform account

Think Make Create LABS

IDAHO WORKFORCE DEVELOPMENT COUNCIL

Idaho Out-of-School Network
connecting youth & communities

University of Idaho Extension

Idaho Out-of-School Network

## Mission:

The Idaho Out-of-School Network's (ION) mission is to build, advocate for, and lead a strong out-of-school community. ION provides tools and resources to increase access to quality youth programs.

## Vision:

Every Idaho child has an opportunity to learn and thrive through participation in a high quality out-of-school program.

Think Make Create

LABS



Idaho Out-of-School Network

University of Idaho Extension

# Why is STEM important?

# The State of America's Workforce

## UNITED STATES

**40%**

of U.S. companies report difficulty in filling positions because of a lack of STEM skills.[1]

## INTERNATIONAL

**$2.5 Trillion**

The U.S. would gain an extra $2.5 trillion in Gross Domestic Product between now and 2050 if its students scored at the international average on math and science tests.[2]

**27%**

of the new high-skills jobs related to agriculture that will be created in the next five years will require a STEM education.[3]

**86%**

of engineers and 74 percent of computer professionals are men.[4]

**21%**

STEM employees earn 21% more than individuals in non-STEM fields.[5]

**14%**

of the engineering workforce is made up of women.[4]

**10%**

Underrepresented minorities hold only 10% of science and engineering jobs despite making up over a quarter of the U.S. population age 21 and older.[6]

Sources:


1. Brookings Institution, Still Searching: Job Vacancies and STEM Skills, 2014
2. Washington Center for Equitable Growth, January 2015
3. https://www.purdue.edu/usda/employment/wp-content/uploads/2015/04/2-Page-USDA-Employ.pdf
4. CTEq analysis of U.S. Census Bureau report on STEM college graduates, 2014
5. Brookings Institution, Still Searching: Job Vacancies and STEM Skills, 2014
6. National Science Foundation, Science & Engineering Indicators, 2013

Think Make Create LABS

# 80%

For students in elementary through high school, **more than 80% of their time is spent learning outside of school** at afterschool and summer programs, in libraries, museums, science centers, or at home or in the community.

# 15%

**Female scientists and engineers are concentrated in different occupations** than are men, with relatively high shares of women in the social sciences (62%) and biological, agricultural, and environmental life sciences (48%) **and relatively low shares in engineering (15%)** and computer and mathematical sciences (25%).

# 3%

Women make up half of the total U.S. college-educated workforce, but less than one third of the science and engineering workforce. **Latinx and African-American women make up less than 3%.**

STEM Next Opportunity Fund

# STEM teaches “soft” skills

- A.k.a. durable or 21st century skills
- Employers have trouble filling jobs due to the “soft skills” gap
- Major in-demand skills of tomorrow are the Four C’s:
  - Communication
  - Collaboration
  - Creativity
  - Critical thinking
- Youth learn widely-applicable problem-solving through inquiry.

Karimia, Haleh S., Piña, Anthony A. “Strategically Addressing the Soft Skills Gap Among STEM Undergraduates.” *Journal of Research in STEM Education*, Vol 7, No 1, July 2021, 21-46. https://doi.org/10.51355/jstem.2021.99

# 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

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connecting youth & communities

Idaho Out-of-School Network Survey, June 2018

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

# Idaho's TMC Leadership Team

Idaho Out-of-School Network
connecting youth & communities

Anna Almerico
*Program Director*

Amy Post
*TMC Labs Coordinator*

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

IDAHO STEM ACTION CENTER

University of Idaho Extension

Claire Sponseller
*Area Extension Educator, 4-H STEM*

The Library

IDAHO Career & Technical Education

IDAHO DEPARTMENT OF EDUCATION

Andrea Baerwald
*Science & ISAS Coordinator*

IDAHO'S National Laboratory
Operated by Battelle Energy Alliance

Micron

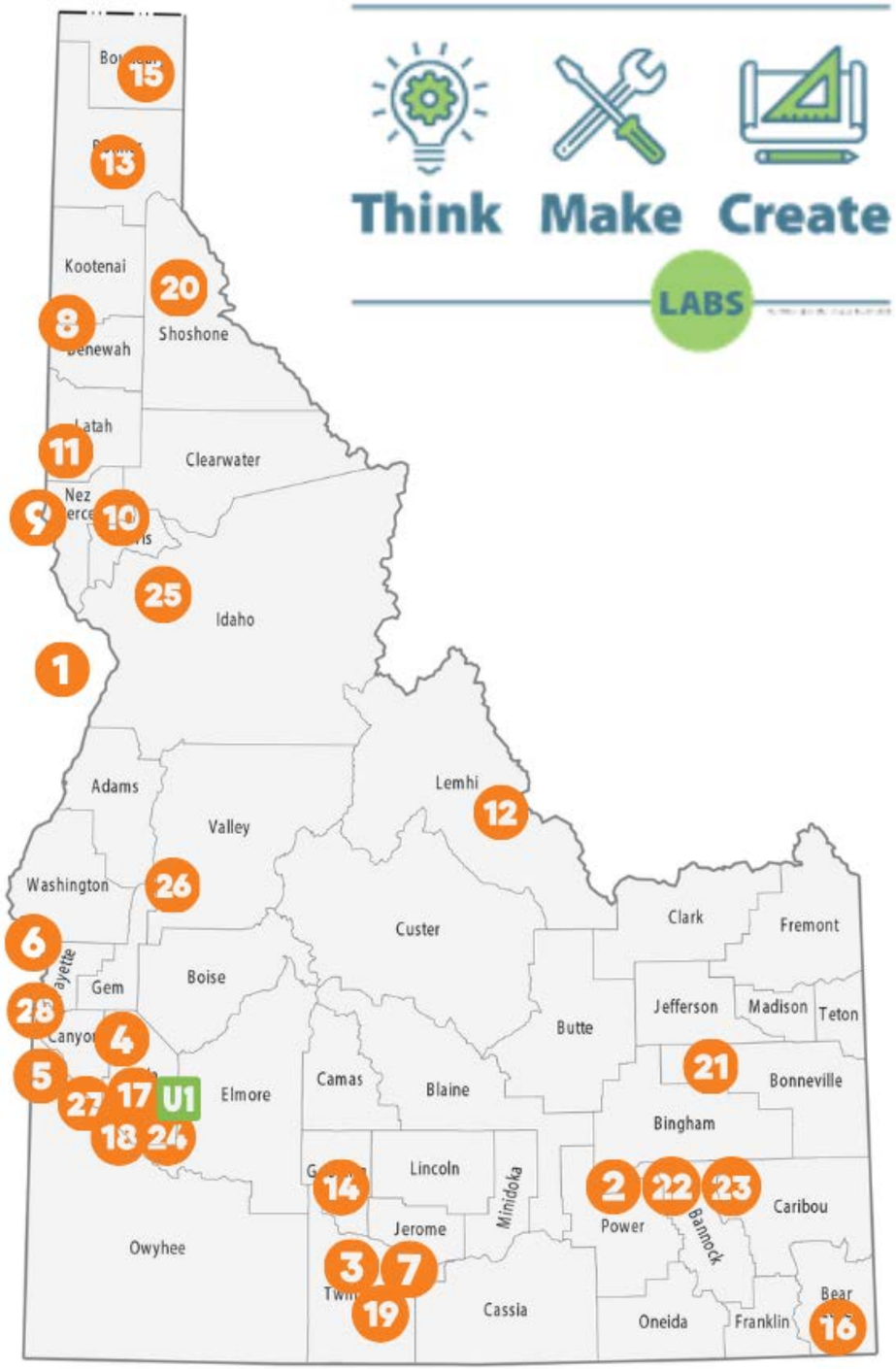
# TMC LABS

- TMC Leadership Team successfully launched the first 16 labs in May 2021.
- 28 TMC Labs on the road in 2024, 2 TMC Unhitched Lab.
- More than 70,000 youth have used the labs so far.
- Each month, approximately 1,000 K-8 youth use TMC Labs.

# 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. Children's 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. Moscow School District
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

U1. BSU OnRamp



# What is TMC Labs?



STEM Labs in trailers

# What is TMC Labs?

STEM activities

# What is TMC Labs?

## Educator Training

# TMC LABS

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## GOAL 1

Expand access to STEM learning and skills to ALL youth.

## GOAL 2

Train educators to provide hands-on STEM learning to youth.

## GOAL 3

Increase communities' support of STEM learning and support Idaho's workforce development.

# WORKFORCE DEVELOPMENT TRAINING FUND:

## Funding Source: Idaho WDC

Innovation Grants fund local workforce development projects, providing skills training and career connections to address employer-identified skill gaps and promote economic mobility, job creation, and innovation.

IDAHO WORKFORCE DEVELOPMENT COUNCIL

# TMC WORKS!


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## GOAL 1

Support STEM programing at out-of-school time employers.

## GOAL 2

Increase STEM job skills of 250 teenage and adult workers.

## GOAL 3

Increase STEM-readiness of the overall Idaho workforce.

# ROLES: STEM SUPERVISOR

- Recruit ambassadors
- Train ambassadors
- Supervise &coordinate ambassadors
- Schedule and supervise STEM sessions
- Mentor &coach ambassadors
- Complete 20 hours training
- Document training
- Complete user reports (or have ambassadors do them)
- Order supplies and turn in receipts
- Outreach for worksite visits
- Must submit TINs/SSNs to receive $750 stipend (can only do once)

In charge of running the program!

# STEM Supervisor - *To Do List*

Earn $750

## PROGRAM START

1. Provide Tax ID# to Site Administrator
2. Register for ION's Learning Academy
3. Enroll in "STEM Supervisor Training (TMC Works)" on the Learning Academy
4. Fill out TMC Works Participant Registration Form (Step 1 of "STEM Supervisor Training")
5. Complete the first 8 steps of online training
6. Attend 4-hour in-person training with ION
7. Lead 3-hour live training with STEM Ambassadors within the first few weeks

All resources linked at idahooutofschool.org/tmc-works

## COHORT DURATION

1. Coordinate, mentor and coach STEM Ambassadors
2. Supervise and assist with STEM activity sessions
3. Submit TMC User Reports for all STEM activities (from you and your STEM Ambassadors)
4. Buy STEM materials for Ambassadors and submit receipts to Site Administrator
5. Complete and document 20 total training hours, including in-person and non-Learning Academy trainings. Ensure Ambassadors do the same.
6. Complete 80 placement hours.

## END OF COHORT

1. Finish submitting user reports
2. Document all training
3. Complete end-of-program survey
4. Receive stipend

| COHORT | | | |
|---|---|---|---|
| Summer 2024: 6/15 | June - August | 8/31/24 |
| Fall 2024: 9/1 | September - December | 12/25/24 |
| Spring 2025: 1/1 | January - May | 5/31/25 |
| Summer 2025: 5/15 | May - August | 8/25/25 |
| Fall 2025: 9/1 | September - December | 12/25/25 |

# ROLES: STEM AMBASSADOR

- Learn STEM by teaching STEM to younger children
- Contribute to STEM program at your facility
- Develop workplace skills
- Explore future career options
- Complete 20 hours training, 80 hours placement
- Optional: visit a STEM workplace, participate in Youth Council
- Can be employees, volunteers or program participants
- Must submit TINs/SSNs to receive $750 stipend

Teens and adults teaching STEM!

# BLOOM'S TAXONOMY

# ROLES: STEM AMBASSADOR

- Learn STEM by teaching STEM to younger children
- Contribute to STEM program at your facility
- Develop workplace skills
- Explore future career options
- Complete 20 hours training, 80 hours placement
- Optional: visit a STEM workplace, participate in Youth Council
- Can be employees, volunteers or program participants
- Must submit TINs/SSNs to receive $750 stipend

Teens and adults teaching STEM!

# STEM Ambassador - *To Do List*

**Earn $750**

## PROGRAM START

1. Submit Tax ID# to Site Administrator
2. Sign up for ION's Learning Academy
3. Enroll in "STEM Ambassador Training (TMC Works)" on the Learning Academy
4. Fill out TMC Works Participant Registration Form (Step 1 of "STEM Ambassador Training (TMC Works)")
5. Complete first 7 steps of "STEM Ambassador Training (TMC Works)"
6. Attend 3-hour live training with STEM Supervisor within first few weeks

All resources linked at idahooutofschool.org/tmc-works

## COHORT DURATION

1. Complete 80 placement hours: plan, prepare, lead STEM activities with children
2. Complete TMC User Reports after STEM activities
3. Complete Steps 8 through 11 in online training
4. Complete and document 20 total training hours, including in-person and non-Learning Academy trainings
5. Optional:
   - STEM Activity Facilitation Reflection
   - Visit a STEM workplace or higher-education program to explore future careers

## END OF COHORT

1. Finish submitting user reports
2. Document all training
3. Complete end-of-program survey
4. Receive stipend

| COHORT | | |
|---|---|---|
| Summer 2024: 6/15 | June - August | 8/31/24 |
| Fall 2024: 9/1 | September - December | 12/25/24 |
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# Site Administrator - *To Do List*

1. Review and sign your TMC Works contract
2. Attend Site Administrator Orientation
3. Recruit STEM Supervisors at your site
4. Collect STEM Supervisors' Tax ID#s
5. Submit Tax ID#s to ID Dept. of Labor portal
6. Email ION the names of Tax ID#s submitted
7. Coordinate in-person training with ION
8. Assign "STEM Supervisor Training" in ION's Learning Academy to STEM Supervisors
9. Ensure Supervisors immediately complete Step 1 (TMC Works Participant Registration Form) of "STEM Supervisor Training"

1. Track hours for STEM Supervisors and Ambassadors
2. Buy STEM materials & track receipts with Receipt Ledger form
3. Ensure Supervisors submit training records (online and in-person) and user reports
4. Check-in meeting with ION
5. Submit remaining Ambassadors and Supervisors' Tax ID#s
6. Assign post-program surveys to STEM Ambassadors & Supervisors near the end of their 100 hours

1. Ensure all participants have 20 hours of training documented in Learning Academy accounts
2. Ensure Supervisors have submitted TMC user reports for all STEM activities
3. Email ION with names of participants. Indicate if they have completed, dropped out or remain active in the program
4. Complete Site Administrator post-program survey
5. Pay out stipends and save documentation
6. Submit Invoice, stipend documentation and receipt ledger to ION for reimbursement

All resources linked at idahooutofschool.org/tmc-works

| PROGRAM START | COHORT DURATION | END OF COHORT |
|---|---|---|
| COHORT | | |
| Summer 2024: 6/15 | June - August | 8/31/24 |
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| Summer 2025: 5/15 | May - August | 8/25/25 |
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# STEM Worksite/School Visit

Ambassadors will...

- Explore an area of interest
- See what a worksite looks like
- Learn steps for entering that workplace
- Meet people at the worksite

Do this by:

- Setting up a tour at a STEM employers
- Visit a STEM program at a higher-education institution
- Interview a STEM professional and learn about their career

# TMC Works

## TMC Works

### TMC WORKS REGISTRATION

This web page contains resources for current participants in the TMC Works program. Prospective sites should email Amy Post at apost@jannus.org for more information on joining the program.

**Participant Registration Form**

### IDAHO STEM ECOSYSTEM COMMUNITY PLATFORM

Please consider joining the EcosySTEM Community Platform. This is a secure, password-protected platform, and your place to connect with STEM partners, find volunteer opportunities, learn about regional resources, share skills, and grow with our EcosySTEM.

**EcosySTEM Community Platform**

### RESOURCES FOR TMC WORKS PARTICIPANTS

Site Administrators


TMC Works Webpage

# LEARNING GOALS

## Students will be able to (SWBAT)…

- ✓Youth will be able to…
- ✓Youth will know how to…
- ✓Use verbs (action words)
- ✓Related to STEM
- ✓One learning goal is enough!

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GO TO: **TMC LABS CURRICULUM LIVE BINDER**

**TMC LIVE BINDER Passcode: 16**

USER CODE: 16

TMC "FOR EDUCATORS" PAGE

## USER REPORTS

**ONLINE USER REPORT**

**PRINTABLE USER REPORT**

Please return completed forms to apost@jannus.org or enter in the online report.

Lapwai, ID: A young "maker" enjoys TMC activities

## STOCKING LISTS

**DOWNLOAD 2023 STOCKING LIST**

# QUICK AND EASY TMC

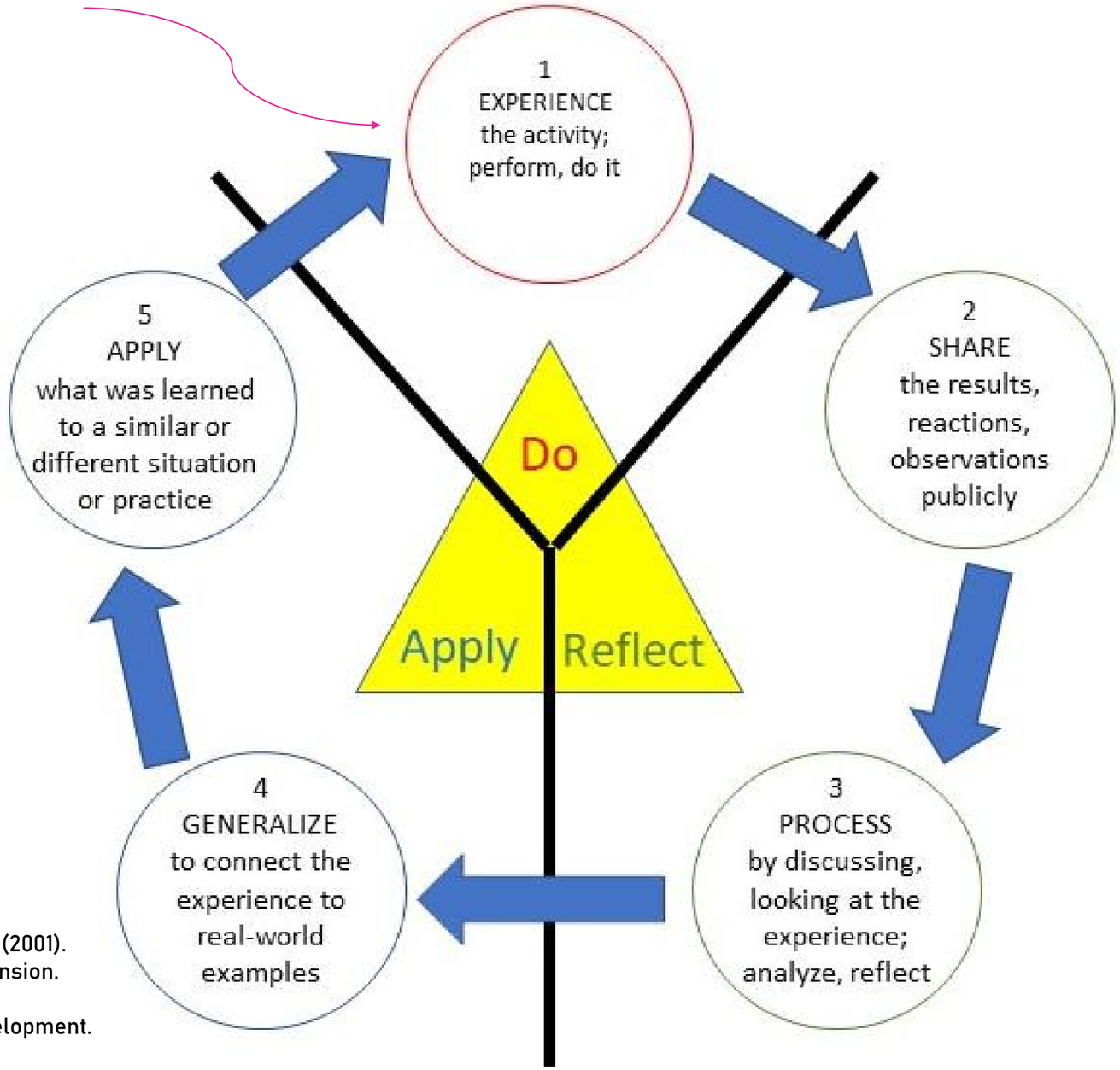
These activities are quick and easy to prep and lead

- ✓Binary Bracelets
- ✓Flowers from Mars
- ✓Origami Bookmarks
- ✓Sundial
- ✓Crazy Kites
- ✓Whirly-bird Dropcopter
- ✓Making a Paper Circuit (not actually that easy, not always quick)
- ✓Catapults
- ✓Tower Engineering

# EXPERIENTIAL LEARNING MODEL

VIDEO LINK

The activity
Teaching terms and concepts




Keith G. Diem's three step "Do, Reflect, Apply" model for working with youth. Source: Diem, K.G. (2001). Learn by doing the 4-H way. New Jersey 4-H Leader Training Series. Rutgers Cooperative Extension.

Based on: Kolb, David A.. Experiential Learning: Experience as the Source of Learning and Development. United Kingdom, Prentice-Hall, 1984.

# DELIVERING FEEDBACK

- ✓Ask for self-reflection: What went well? What didn't? What they would change?
- ✓Compare scores on Quality Checklist
- ✓Focus feedback on most important aspects of activity's success
  - ✓1-3 strengths
  - ✓1-2 opportunities
- ✓Identify trainings that could help them improve, fill gaps

# SENTENCE FRAMES

## Strengths (+)

- When you..., it was a strong example of...
- It really impressed me when...
- I was interested when...

## Opportunities (Δ)

I wonder…

Have you considered...

One idea to consider for next time is...

Situation-Behavior-Impact (SBI) model is objective (Center for Creative Leadership)

# FEEDBACK TIPS

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## Some tips…

- ✓Smile ☺
- ✓Remind them: you are there for support, they are learning.
- ✓Focus on developing and using strengths.
- ✓Opportunities for growth can be something new or different.
- ✓Resist the urge to jump to straightforward advice.
- ✓Authentic changes is intrinsic.
- ✓Manage expectations of people's performance.
- ✓New to this?  There are lots of trainings on your menu.

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)** *


1


2


3

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# 2024 TMC Lab Usage Report

Single use or monthly reporting form

This form is also available online

Idaho Out-of-School Network

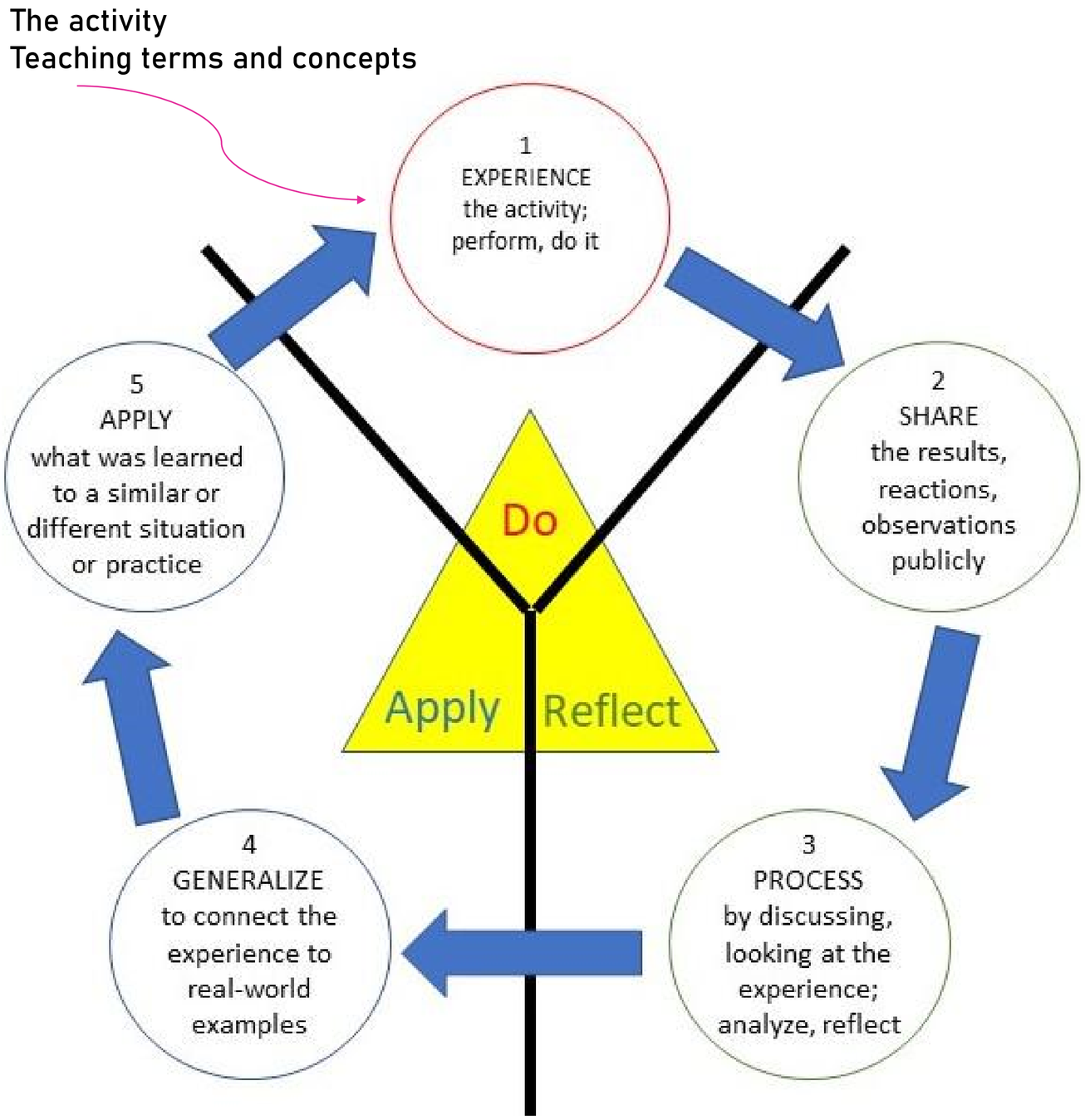
**Required questions are marked with an asterisk***

**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?)
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)*

# LET'S REFLECT AND APPLY!

- What clicked for you today? What's still a mystery?
- What are your main take-aways from today?
- What are you excited to do with your STEM Ambassadors?



# Next Steps:

- Submit your Tax ID number to your site administrator
- Have STEM Ambassadors complete online orientation
- Schedule the 3-hour live training with your STEM Ambassadors
- Start on *your* training
- Start planning and scheduling with your Ambassadors

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Thank You