

Logic Map: School-Day, After-School Outdoor Classrooms, Weekends and Summer STEM Day Camps

The Cause: To positively affect underserved communities from the kids up, by empowering innovators with STEM/Entrepreneurial habits, through repetitive exploration of a natural, living laboratory. Instill curiosity, perseverance and critical thinking to unlock their individual potential and nurture a strong Youth Voice.

The Reality →

Demographic Inequities in STEAM PS Education

- Limited exposure to real-world application of STEAM concepts
- Active disengagement from school
- Unrealized Potential
- High Drop-Out Rate

Risk Factors for the Marginalized and Underserved

- ACEs / Trauma
- Lack of caring adults who set long-term positive goals
- Developmental Delays
- Systemic Poverty
- Learning Differences

Missed Learning Opportunities

- 5th Grade – Development of Conceptual Thinking
- Awareness that STEAM is Everywhere and can be explored through the Scientific Method & Eng. Design Process
- Summer learning gap

Global Opportunities brought LOCAL

- Expand provincial perspectives and limits into the larger community assets

Inputs/Resources →

- Funding**
- Collaboration with schools, educators, and informal STEM learning organizations
- Trained Naturalist STEM Educators (NGSS/STEM[^]3 and DoS[®] Certified)**
- Mentor/Facilitator Volunteers
- Access to the PEAR[®] Institutes' Student Assessment (CIS)
- Grade-specific Curriculum – OAS and NAE Grand Challenges
- Customized Student Journals
- Age-specific Tools
- Naturally diverse outdoor space
- Aquaponics System**



Program Structure →

- ❖ **5-hour, school-day classes, progressively reinforced (2-3X/year)**
- ❖ Pre-conference w/ school to set STEAM learning goals and align expectations of program
- ❖ **Purposeful Activities linked to school specific Lesson Planning**
- ❖ **3-4 program activities, both individual and group based, per OC @TGC class**
- ❖ Facilitator/Mentor debriefing – Youth Voice & Career Development
- ❖ **Student Assessments: PEAR[®] and HOPE[™]**
- ❖ Journaling & Data Collection
- ❖ **Program activities back-in-school & Summer Day-Camps**
- ❖ Aquaponics – NAE STEM and Agribusiness
- ❖ Community Engagement Events
- ❖ WildSTEM OST Program & Family STEM Saturdays

Outputs →

- Number of students served (Goal = 5,500/year)
- Number of teachers engaged (Goal = 500/year)
- OC Class Days/year (Goal = 72-78)
- Completed Personal Student Journals
- Participation and satisfaction of students and teachers
- Student-paced Activities aligned with OAS, reinforcing in-school STEAM topics, and introduction to the Human-Center Design Process for problem-solving
- Offer 40 Summer Field Class Days
- Work Force Development: Identify Relevant Career Clusters that our activity trails exemplify
- **Exposure to Hope: Goals, Pathways, & Agency**

Short-Term Outcomes →

Knowledge, Skills, & Attitudes:

- ✓ Critical Thinking via Human-Centered Design (Engineering Design Process)
- ✓ Understanding of relevant grade-level science concepts and improved classroom performance
- ✓ Increase in Curiosity, Respect, Self-Control and Youth Voice
- ✓ Understanding of STEAM-relevant real-world problems and career opportunities
- ✓ Teamwork & Collaboration Skills

Connection to STEAM Ecosystem:

- ✓ **Scalable Programming across Tulsa City Parks**
- ✓ Awareness of Summer bridge-learning opportunities
- ✓ Student engagement in community projects

Long-Term Outcomes ↑

- Increased systems-thinking and Human Centered Design Thinking approach to challenges
- Strengthened Continuous Learning & Hope-building habits with increased goal orientation
- **Positive Changes – 21st Century Learning Skills:**
 - **STEM Interest**
 - **Critical Thinking**
 - **Perseverance**
 - **Relationship with Adults**
 - **Relationship with Peers**
 - **Self-Awareness of personal potential**
- Healthy Stewardship of both natural resources and communities
- **Active engagement in school**

EXCELLENT Programming leads to **HOPE**, which is a precursor to **JOY!**

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Disconnect kids from their hollow virtual worlds; let them get messy in nature, while experientially learning complex STEM concepts, building teamwork and discovering their own potential. Let them explore, engage, fail, retry and bloom. Empower youth for real challenges. **FUN IS IN OUR NATURE!**