

Definitions for Planning Quality STEM Programs

Vermont Afterschool is committed to helping all afterschool and summer learning programs implement quality STEM programs. Common criteria is needed to define what makes a STEM Program a “quality experience”.

What **DEFINES** a “quality STEM program” in afterschool or summer?

Youth and staff are...

1. Engaging in 3D Learning – the basic elements of the Next Generation Science Standards:
 - Core Disciplinary Ideas – science phenomenon or engineering design
 - Science Practices – activities scientists and engineers actually do like asking questions and communicating ideas; inquiry learning that is “hands on and minds on”
 - Cross Cutting Concepts – connecting the big ideas that link different science content
2. Learning to use real science tools.
3. Practicing 21st Century (transferrable) skills (problem-solving, perseverance, collaboration, critical thinking, etc.)
4. Building understanding through purposeful questions, discussions, youth voice and choice, documenting ideas and reflection.
5. Exploring STEM Identity and STEM careers.
6. Attending to issues of equity and access to the learner’s cultural experience.
7. Accessing resources for going deeper and applying learning in relevant ways.

STEM Programs are not...

- Reconstituted lesson plans from the school day – repeating something kids have already done.
- A recreational hike, building Legos, or watching a science video with no intentional STEM learning goal.
- Science demonstrations for “wow factor” with no context or purposeful STEM learning goals.

What are the Vermont Afterschool STEM Professional Development **LEVELS**?

EXPLORATORY LEVEL – *This level suggests that those in leadership positions and/or their staff have little or no experience facilitating STEM programs, or training, and inconsistent quality STEM opportunities for youth.*

FOUNDATIONAL LEVEL – *This level suggests that those in leadership positions and/or their staff have had some experience facilitating STEM programs, moderate training for staff, and 1 – 2 regularly offered quality STEM opportunities for youth.*

IMPROVEMENT LEVEL – *This level suggests that those in leadership positions and/or their staff have had significant experience facilitating STEM programs, regular training for staff and at least 3 regularly offered quality STEM opportunities for youth.*

Use these levels in selecting appropriate professional development off the Vermont Afterschool website!

www.vermontafterschool.org/training/professional-development/STEM-workshops