

How Afterschool & Summer Programs Support STEM

- » **Increased Fluency**
- » **Increased Access**
- » **Increased Opportunity**

Afterschool learning helps children and youth become more fluent in science, technology, engineering and math—the subjects called “STEM.” Children and youth need multiple and varied opportunities to explore and tinker to fully understand and become fluent. By working through **interesting and practical challenges** with STEM methods, tools or ways of thinking, kids develop a better command of these subjects and can do more with them.

Right now, some communities don’t have access to enough strong STEM opportunities. The quality and variety of STEM opportunities can be pretty uneven from place to place. To keep building our shared prosperity, we need to ensure that all children, regardless of where they live, have chances to build the skills and knowledge that the world of tomorrow will demand.

Let’s **use afterschool & summer time to immerse students in STEM.** If we want the next generation to be fluent in STEM, we have to take an immersion approach. **Children of school age spend only 20 percent of their waking hours in school—the other 80 percent is spent outside of school.** To allow for the level of exposure and experiences needed to develop fluency in STEM, we must ensure that all communities offer ways for students to engage with these subjects afterschool. And this time must be spent doing the kinds of things we know make a difference in fluency: exploring, discovering and learning by doing.

Of Oregon programs that offer STEM...

S 55% report that they mostly focus on science

T 41% mostly focus on technology

E 36% mostly focus on engineering

M 21% mostly focus on math

>> 57% report that they “always” or “often” integrate the four aspects of STEM

Where

Each of Oregon’s 36 counties is served by **at least one** of the responding programs that offer STEM. **Ten or more** of the programs offer STEM in each of these counties:

**Clackamas
Deschutes
Lane** **Marion
Multnomah
Washington**

67% of reported STEM programs deliver programming in a school



25% deliver programming at a community center



25% deliver programming in a science center, library, or museum

17% deliver programming in a recreation center

13% deliver programming at a university

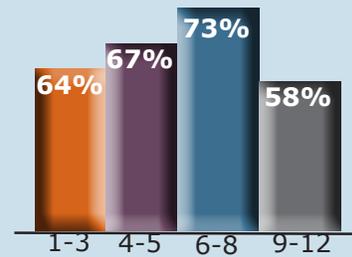


Are we Addressing Equity?

We must include everyone, not just for the social and economic justice issues, but for the necessary diversity of thought to drive innovation. We must recognize the components of equity: diversity, access, and inclusion. To paraphrase Ruthe Farmer, White House Policy Senior Advisor for Tech Inclusion:

- Diversity: counting who is in the room.
- Access: Who knows the room exists? Who has the map to the room? Who has transportation and a key?
- Inclusion: Who feels welcome in the room?

Responding STEM programs provided for many grade levels...



Grade
>> 67% and 50% of programs report females and underrepresented minorities, respectively, as target demographics

Opportunities in Oregon

Computer Science Education

Oregon currently has 6,493 open computing jobs (3.0 times the average demand rate in Oregon).

- The average salary for a computing occupation in OR is \$85,026, which is significantly higher than the average salary in the state (\$48,100).
- Oregon had only 387 computer science graduates in 2014; only 13% were female.
- Only 290 high school students in Oregon took the AP Computer Science exam in 2015; only 18% were female; only 11 students were Hispanic; only 4 students were black; only 1 student was Native American.
- Only 25 schools in OR (10% of OR schools with AP programs) offered the AP Computer Science course in 2014-2015.
- There are fewer AP exams taken in computer science than in any other STEM subject area.

See more at: <https://code.org/promote/or>

Oregon Workforce Investment Boards

Local civic, business and workforce development leaders develop strategies that leverage funding and resources within their local communities to prepare and match the skills of workers with the workforce demands of businesses. Find your local board at http://www.workforceinvestmentworks.com/oregon/workforce_experts.asp

Oregon Connections

Connecting STEM/CTE professionals in volunteer and mentoring opportunities by sharing their expertise and experience with students. Sign up now at <http://stemoregon.org/connections/>