

# Afterschool Learning is a Powerful STEM Solution

The number of science, technology, engineering and mathematics (STEM) related jobs is increasing much faster than overall employment. To fill these jobs, we need to engage youth early to get them excited about STEM and help build the skills they will need for the future.

**New research shows that STEM afterschool programs are an effective part of the solution.**

With an innovative research design, a team from the PEAR Institute at Harvard University and McLean Hospital and IMMAP: Institute for Measurement, Methodology, Analysis & Policy at Texas Tech University surveyed nearly 1,600 youth and their program leaders in 160 programs across 11 states. They collected and analyzed data from observations of programs, student self assessment and teacher/facilitator questionnaires to create a fascinating new look into STEM in afterschool.

## STEM Learning in Afterschool Works



78% of students said they had a more positive attitude about STEM because of their afterschool experience.

**INSPIRE**

73% of students said they had a more positive STEM identity because of their afterschool experience.

**EDUCATE**

80% of students said their STEM career knowledge increased because of their afterschool experience.

**EXPLORE**

72% of students said their perseverance and critical thinking skills increased because of their afterschool experience.

**PREPARE**

## Youth Gain STEM Skills

“I like to figure out how things work.”



More than 70% of students across all states reported positive gains in areas of STEM interest, STEM identity, STEM career interest and career knowledge, and 21st-century skills, including perseverance and critical thinking.

## Focus on Quality Yields Positive Youth Outcomes

STEM afterschool programs with the highest quality ratings demonstrated the most positive student outcomes. The gains in STEM interest and skills underscores the return on investment from building capacity in programs and focusing on quality.



“I think of myself as a STEM person.”

# More Details on What Youth Learn in Afterschool STEM



## Building a STEM Identity

**73% of all students reported their STEM identity positively increased following afterschool program participation.**

These youth find STEM easy to understand and that their friends and teachers believe they are a “STEM person” who does well at STEM.

## Increasing Interest in STEM

**78% of students across all states experienced a positive change in their self-reported attitudes towards STEM interest following participation in their afterschool program.**

These youth are excited about STEM and innovation, they like to make things, they are curious about mathematics, engineering and related subjects, and they like to figure out how things in the world work, such as how rain forms or airplanes fly.



## Building 21st-century Skills

**72% of students across all states reported their perseverance and critical thinking skills positively increased following afterschool program participation.**

## Sparking Interest in STEM Careers

**80% of the students across the 11 states reported a positive gain in their STEM career knowledge following program participation.**

Additionally, students reported significant gains in STEM career interest and STEM activity participation, with more than 75% of students reporting positive change in these areas.

These youth know where to find information about STEM jobs and the steps to take to get hired; they know that the connections that what they learn in STEM now is important and useful to them and will help them get a job later. They visit websites about STEM and frequently participate in STEM clubs outside of school.

64% of students across all states reported having higher quality relationships with adults and peers in their lives.

Results showed participation in a STEM-focused afterschool program made a positive impact across all 11 states on students’ 21st-century skills, including perseverance, critical thinking and quality of relationships with adults and peers.

These youth like to think about different ways to solve problems, that they keep working to finish a task even if it takes longer than expected, that they discuss problems with adults they can trust, and that they get along well with peers.

Working across 11 states (FL, IA, IN, KS, MA, MD, MI, NE, OR, PA, and SC) the Afterschool & STEM System-Building Evaluation involved nearly 1,600 youth in 160 programs providing STEM learning opportunities.

[www.STEMReadyAmerica.org](http://www.STEMReadyAmerica.org)

