STEM Action Center: FY 2019 at a Glance

Unleashing Curiosity

424,678+
Student Experiences

- Math Personalized Learning
- Organization Grants
- Computing Partnerships
- Magic Show
- Innovation Incubators
- STEM Fest
- STEM Bus Program

Connecting Community

- 85+ Districts & Charters
- 250+ Community Partners
- 10+ Government Agencies
- 9+ Higher Education Partners

Building Capacity

8,537+
STEM Professional Learning Opportunities
For teachers, facilitators, and administrators statewide

Evaluating Innovation

210+
New Ideas Put into Action
Including a STEM Landscape Analysis

stem.utah.gov

Utah Department of Heritage & Arts
Utah STEM Action Center
Small dollar amounts given directly to people with great ideas can have huge impacts.

**Quick Facts**

- **283 Ideas Funded**
- **93,502 + Students**
- **283 Schools Impacted**
- **63 Organizations Supported**

Participating in two STEM competitions made students three times more likely to want a STEM job*.

*International Journal of Science Education

Utah students won an international science competition at the world level.

High school students learned about half life and the perils of hanging out in abandoned uranium mines.

12-14 year old girls from rural Utah got to pilot real airplanes around Cache Valley.

For more information contact:
Sue Redington | sredington@utah.gov | 801-538-8697

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The K-12 Mathematics Personalized Learning Software Grant provides funds to LEAs and schools through a competitive grant process to support the use of mathematics software that is individualized, self-adapting, engaging, and provides frequent feedback while addressing core standards in math. The Utah Education Policy Center at the University of Utah, in partnership with Utah Valley University School of Education, are serving as the external evaluators for the grant program.

Overall, students who used the software were **23% more likely to be proficient in math** in SY18-19 than similar non-users.*

- Non-users (baseline)
- All users (1-60+ min./week) **23%**
- 8-17 min./week **13%**
- 17-31 min./week **38%**
- More than 31 min./week **57%**

Programs assess students’ understanding of math and provide personalized content, adaptively targeting knowledge gaps and providing immediate feedback.

**Teacher and Administrator Commitment and Support**
- **81%** of teachers agreed the software *increased their instructional effectiveness*.
- **96%** of teachers agreed the software *helped students strengthen important skills*.
- **95%** of administrators agreed the software *had a positive impact on students’ math performance*.
- **71%** of teachers agreed the math software *increased their satisfaction with their job*.

“**This is the best program I have seen for teaching students to keep trying things and not give up when it is hard. I have seen an increase in their critical thinking skills**”

For more information contact: Clarence Ames | cames@utah.gov | 801-538-8617

The 586 schools from 33 districts & 39 charters serve 134,807 students.

- **$19/year** per student
- Math scores improved & teachers reported increased job satisfaction
- **21%** of Utah Students have access to software
- **100%** of purchased licenses were used

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*These students are 23% more likely to attain grade-level proficiency than peers.*

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Math Personalized Learning Software Facilitates Innovation

**HOW?**

**Innovation from the Software**

- The software provided **new ways to solve math problems.**
  - 92% of teachers agreed
  - 75% of elementary students agreed
  - 59% of secondary students agreed

- The software **built student confidence in math.**
  - 83% of teachers agreed
  - 68% of elementary students agreed
  - 52% of secondary students agreed

**NEW WAYS TO SOLVE PROBLEMS** + **CONFIDENCE IN MATH**

Over 90% of teachers and administrators were satisfied with the software and would recommend the software to others.

**What Teachers Say They Appreciate**

- Software is adaptive to the students’ levels.
- Students can work at their own pace and track their own progress.
- The software complements in-class teaching.
- Programs support the Utah Core Standards.
- The software is engaging.
- The software facilitates mathematical thinking and problem solving.
- Language learners and low-literacy students benefit from the visual components.
- Data reports increase instructional effectiveness.
- Regular use is associated with academic gains.

- 90% of teachers felt the software was a good complement to classroom instruction
- 93% of teachers felt the program was well aligned to Utah Core Standards

*Variables held constant in the models included 2015-16 SAGE math scores, low income, race/ethnicity, gender, grade level, and school Title I status.*

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Percentage of teachers who reported positive impacts:

- 93% ability to target instruction using data
- 91% ability to engage equitably with students
- 91% STEM content knowledge

STUDENT OUTCOMES

Teachers reported increases in students’ ability to:
- communicate
- collaborate
- think critically
- think creatively
- be self directed learners
- solve real world problems

QUICK FACTS

- 5,732 teacher and administrator participants
- 76 locally designed STEM professional learning plans
- 58 multi-year projects, showing long term commitment and teacher buy-in

> stem.utah.gov
63,000+
Students Impacted
From 410 schools in 34 districts
and 23 charters

30+
Innovative Ideas Funded
including 28 unique proposals from Utah teachers and administrators

340+
New Opportunities for Students
including more than 250 new class sections

47% off the Wasatch Front

2530 Teachers & Facilitators

This has been a great way for us to evaluate computing curriculum using the out-of-school program. It is helping us to decide activities that should be included in our 6th grade course -- and those that are best as enrichment for the after school program.”

- JoAnn Tuttle, Nebo School District
About STEM in Motion

STEM in Motion is a traveling education program that visits schools and communities across Utah to provide hands-on learning and inspire the next generation of STEM leaders.

Curriculum
- Industry Driven
- Utah Core Standards

Student Impact

Percentage of students who reported liking STEM a great deal.

<table>
<thead>
<tr>
<th>Before Visit</th>
<th>After Visit</th>
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<tbody>
<tr>
<td>37%</td>
<td>66%</td>
</tr>
</tbody>
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Quick Facts

- 10,780 students impacted
- 64 schools visited
- 20 school districts
- 449 programs taught
- 44,165 participants in public events

Equity & Access

- 91% of teachers said their visit introduced students to new material
- 60% Title I Schools
- 30% Schools in rural Utah

For more information contact:
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stem.utah.gov
Supporting STEM in Utah
Since its inception in 2016, the Utah STEM Foundation has worked to produce a STEM-competitive workforce by collaborating with community partners to create engagement and industry alignment and deliberately allocating valuable funds.

The Utah STEM Foundation Funding Priorities:

- **Workforce**
  Students will thrive in STEM and contribute to Utah’s workforce

- **Innovation**
  We will use creativity and innovation to solve challenging problems

- **Girls**
  We will work to close the gender gap in STEM fields

**Equity & Accesss**

The Utah STEM Foundation by the Numbers

$1.2 million donated by 40+ industry partners

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
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<tbody>
<tr>
<td>FY16</td>
<td>$503,000</td>
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<tr>
<td>FY17</td>
<td>$660,108</td>
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<tr>
<td>FY18</td>
<td>$811,910</td>
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<tr>
<td>FY19</td>
<td>$1,190,645</td>
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Industry contributions helped students become prepared to enter the STEM workforce and contribute to Utah’s economic prosperity.

Over 67,000 students reached

Each year our relationships and donations increase. We appreciate all of our STEM champions!