



Semi-Annual Report

ALABAMA STATE DEPARTMENT OF EDUCATION

2023/2024 ERIC G. MACKEY, Ed. D. STATE SUPERINTENDENT



Alabama Math, Science, and Technology Initiative (AMSTI)

Prepared for:

Chairs of Senate F&TE and House WM&E

Permanent Joint Legislative Committee on Finances & Budgets

Deputy Director of Legislative Services Agency-Fiscal Division

**Statistics in this report are from August 1, 2023 - December 31, 2023
unless otherwise noted.*

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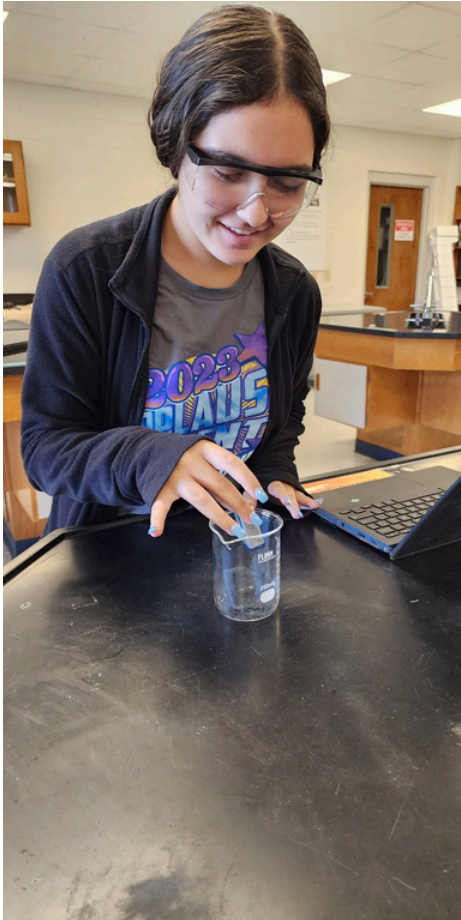
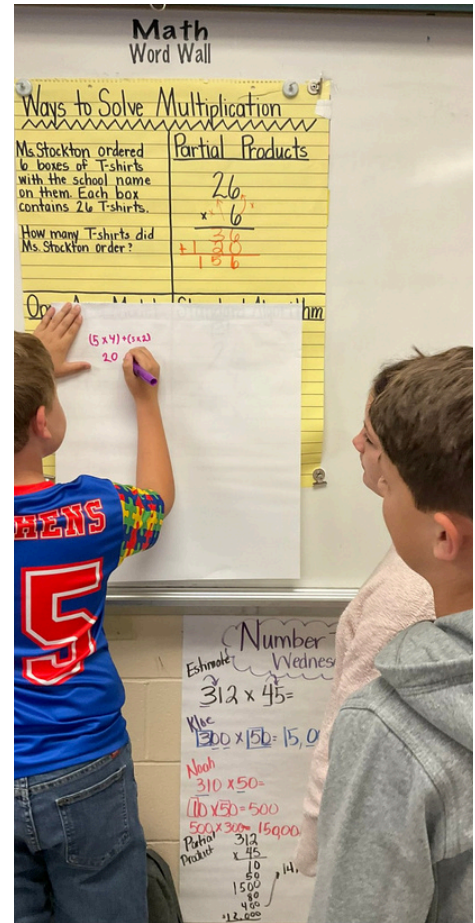


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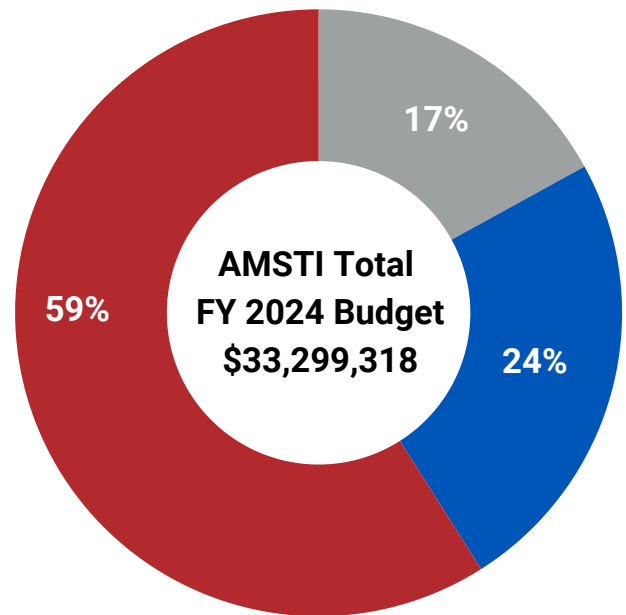
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Budget and Funding

Legislative funding of AMSTI as a line item began in FY 2006.

AMSTI's funding provides approximately \$33 million statewide - approximately \$16.5 million for K-12 Math and \$16.5 million for K-12 Science.

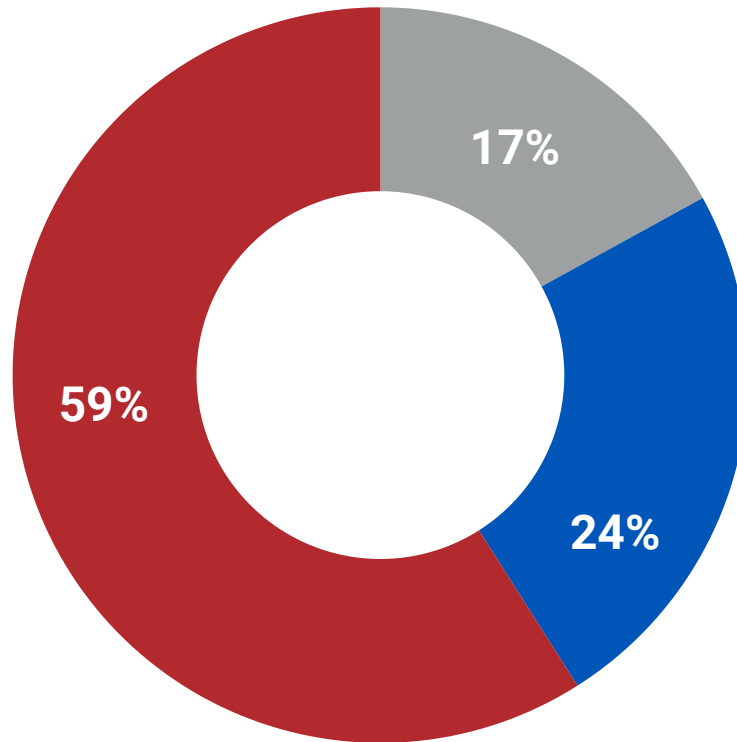
There are 18 SDE staff members and approximately 200 regional staff throughout the 11 sites.



AMSTI Funding and Statistics FY 2006-2024		
Statewide Coverage Began FY 2008		
Year	Appropriation	Schools
FY 2007 - FY 2009	\$22M - \$40.8M	349-626
AMSTI Budget decrease due to FY09 & FY10 Proration		
FY 2010 - FY 2017	\$26M - \$29M	638-905
#AMSTI4All Began in FY 2018		
FY 2018 - FY 2024	\$29M - \$33.3M	1194-1408*
*Number of schools with teachers utilizing AMSTI services under #AMSTI4All delivery structure		

Budget and Funding

AMSTI Total
FY 2024 Budget
\$33,299,318



On Site Support
\$19,644,090
59%

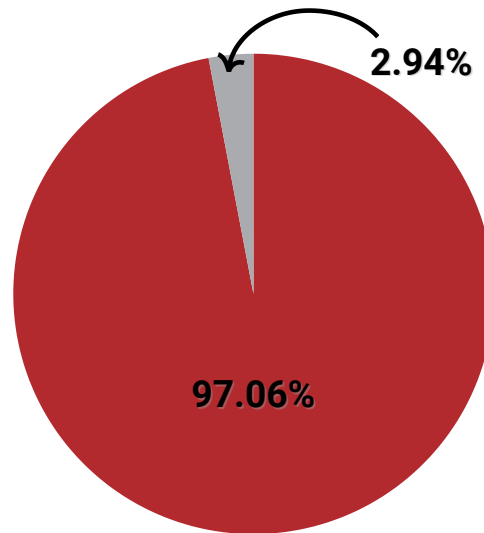
Equipment & Materials
\$5,684,801
17%

Professional Learning
\$7,970,428
24%



Budget and Funding

Alabama Science in Motion (ASIM) Total FY 2024 Budget \$2,583,796*



On Site Support (salaries only)	Remainder of ASIM line item after salaries
\$2,507,839	\$75,957
97.06%	2.94%

*Current funding levels for ASIM solely provides for specialist salaries. Their benefits, support staff salaries and benefits, additional operating costs, equipment and materials, and professional learning for educators, must be paid from the supplemental \$2,500,000 from the AMSTI line item.



On-Site Support

- Takes place in school settings
- Includes job-embedded learning and coaching
- Support for administrators and teachers
- Key to changing instructional practice according to research
- Research-based best practices
- Provided by Regional Specialists, Teachers-in-Residence (TIRs), and Building Based Math Coaches (BBMCs)

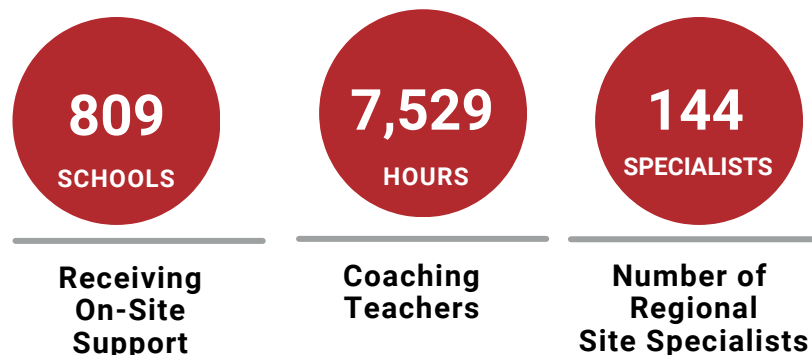
On Site Support
\$19,644,090
59%

Site Specialists

Each of the 11 regional sites houses site specialists who operate in the areas of K-5, 6-8, and 9-12 Math; K-2, 3-5, and 6-8 Science, and Digital Literacy and Computer Science (DLCS); and ASIM (9-12 Science). These specialists provide support to 31,909 active AMSTI teachers in 1,408 schools.

The numbers below represent K-12 Math and Science/DLCS site specialists' work (does not include the coaching hours listed on the following page).

K-12 Site Specialists By the Numbers



On-Site Support

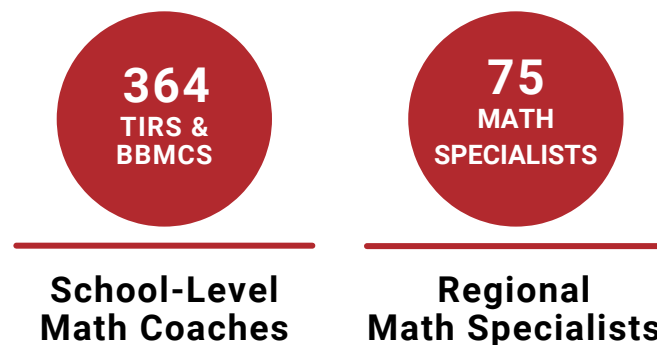
K-5 Math Coaching Initiative

In 2023-2024, AMSTI provided professional learning and mentoring support for 364 Building-Based Math Coaches (BBMC) across the state. This number includes approximately 132 system-funded coaches, 204 state funded coaches, and 28 AMSTI ESSER funded Teachers in Residence (TIRs).

The AMSTI Math Coaching Initiative provides ongoing coaching and instructional support, professional learning through Coaching Academies and Communities, Teacher Leader Academy, and collaboration with school administrators. AMSTI's coaching initiative aligns with the Alabama Coaching Framework and features AMSTI professional learning and support for four groups of math educators:

1. AMSTI Regional Math Specialists
2. School-Level Administrators
3. School-Level Math Coaches (TIRs and BBMCs)
4. Classroom Math Teachers

AMSTI Regional Math Specialists provide side by side mentoring support for all Building-Based Math Coaches (BBMCs) to implement evidence based coaching practices to continually improve teacher practice and student learning.



51,979 Hours

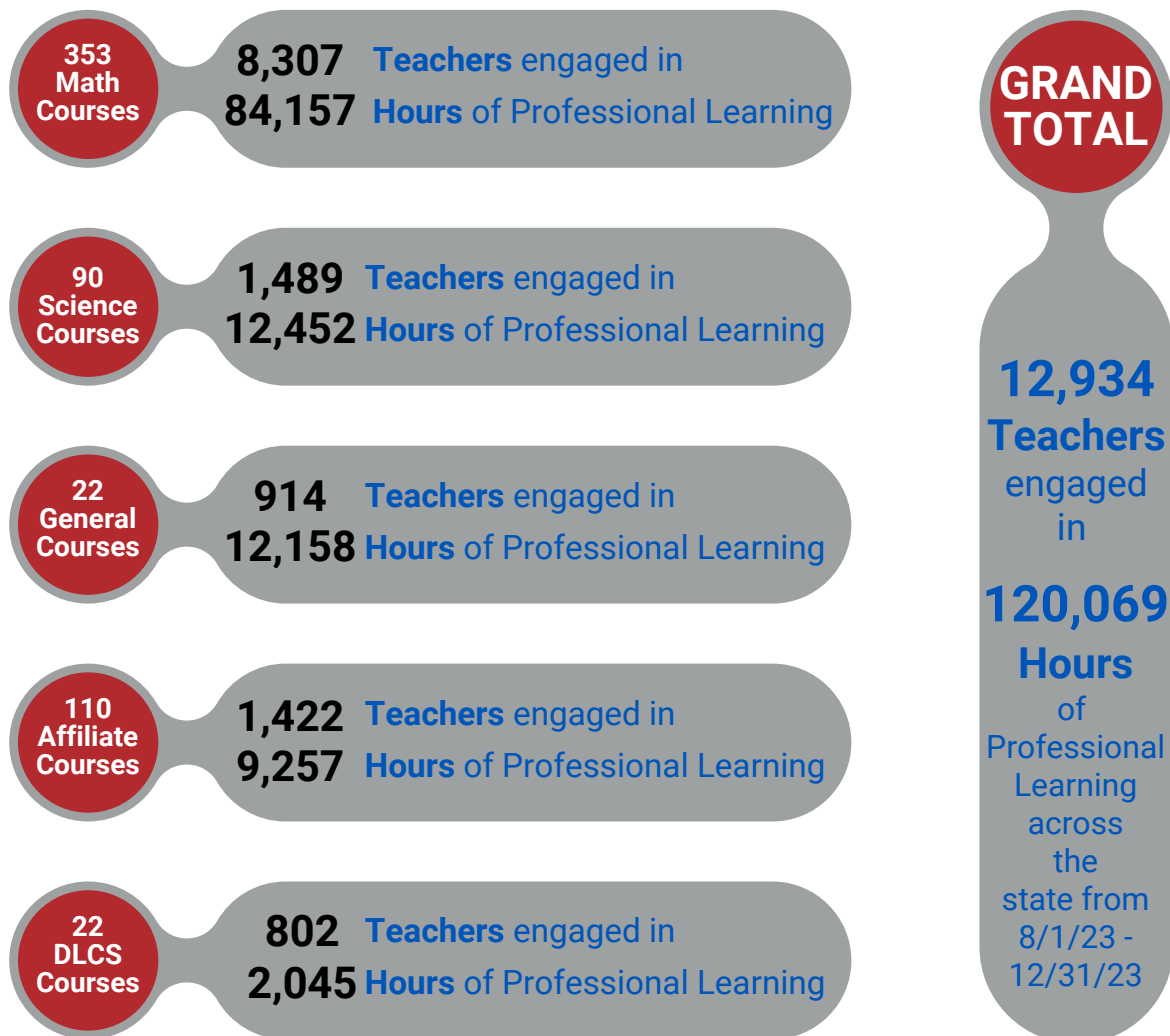
spent coaching in and out of a cycle by
specialists and school-level coaches
during the 1st Semester

Professional Learning

- Professional Learning offers continuous and as-needed teacher training in specific subjects and administrator training.
- Teachers have access to kits, materials, and resources for immediate use in their classrooms upon finishing the ongoing courses.
- #AMSTI4ALL is an improved delivery approach that broadens AMSTI's presence in additional Alabama schools.

Professional Learning
\$7,970,428
24%

Professional Learning by the Numbers 1st Semester FY24

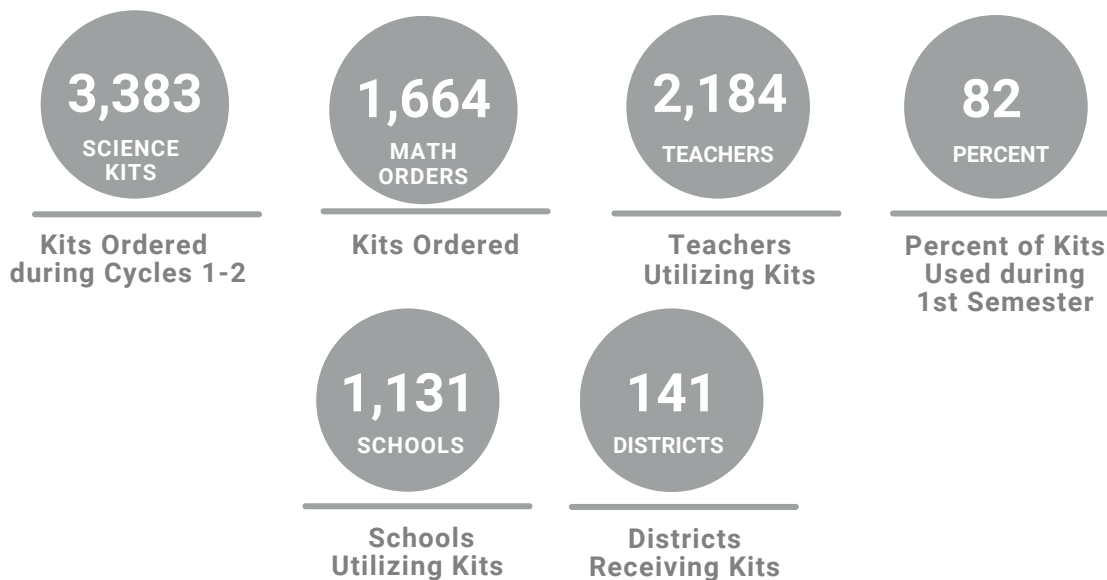


Equipment and Materials

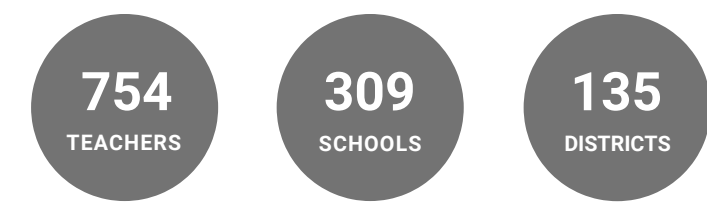
- AMSTI continues to incorporate business and warehousing best practices, aiming to enhance the efficient delivery of kits to schools upon teachers' requests. This initiative not only ensures timely supply but also establishes a solid groundwork for anticipated growth in mathematics, stemming from the collaboration with the Office of Mathematics Improvement (OMI).
- AMSTI is now working on enhancing the order fulfillment process which improved the efficiency by implementing automated systems (Monday.com) that reduce processing time, minimize errors, and ensure accurate and timely shipment of kits to schools.
- AMSTI has successfully transformed its operational efficiency, resulting in substantial cost savings (enter cost here). By eliminating waste, optimizing processes, and enhancing overall workflow, AMSTI has streamlined its supply chain and warehouse management.

Equipment & Materials
\$5,684,801
17%

Equipment and Materials by the Numbers FY 2024 1st Semester AMSTI



Equipment and Materials by the Numbers FY2024 1st Semester Alabama Science in Motion 9-12



Strategic Plan Highlights: Math

Implementation of Standards

Family Connections

The monthly Mathematics @Home calendars continue to be a popular item. These English and Spanish calendars provide tips and resources for families focusing on early numeracy for children up to age seven.



bitly.amsti.org/calendars



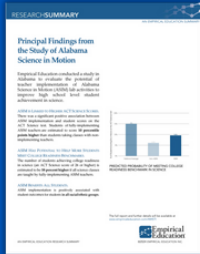
LEA Assistance

- AMSTI partnered with the Office of Mathematics Improvement (OMI) to support K-5 Math Coaching across the state.
- 6-12 Coaching is provided through AMSTI regional specialists
- AMSTI K-12 math continues to support teachers through professional learning and side-by-side support both in the summer and throughout the school year.
- AMSTI continues to develop new professional learning opportunities to meet both the pedagogical and content knowledge needs of our K-12 teachers.
- Throughout our menu of services, K-12 Math is nearing complete course of study coverage.
- Additionally, our ACAP and ACT Experience trainings are helping teachers and students prepare for these assessments through side-by-side experiences and understandings of the standards and the testing experience.

Strategic Plan Highlights: Science

Student Learning

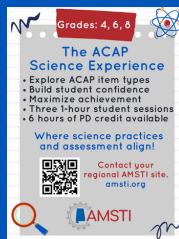
- ASIM (9-12) ACT Science study with Empirical Education completed



- Phases 2-3 of the AMSTI ACT Science Experience rolled out statewide

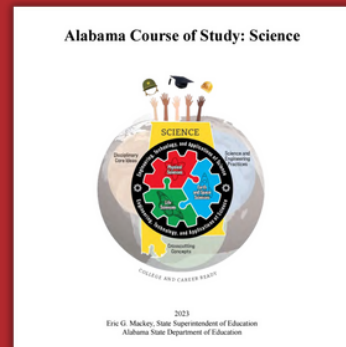


- The AMSTI ACAP Science Experience updated to include 2024 data



Educator Effectiveness

- AMSTI Science Teacher Leader Academy (STLA) piloted in 3 regions
- AMSTI-ALSDE Science Specialists provided content and process support to the 2023 Alabama Course of Study Science Committee and began developing new professional learning opportunities for its rollout



- Site Specialists trained on Science Foundational Training 2024 for Spring rollout

Organizational Effectiveness

- ASIM (9-12) implemented their Teacher Information Form and continued utilizing their Lesson Request Form in Monday.com to improve data collection
- Development of ACES (AMSTI Center for Educator Support) began ahead of the 2023 Alabama Course of Study Science rollout to simplify science materials request process

Strategic Plan Highlights: Digital Literacy and Computer Science

Specialist Training

- A small subset of specialists continued their Adobe Creative Educator (ACE) training through virtual monthly meetings to provide LEA assistance where needed.



- The Technology Team had Canva lead 8 hours of virtual professional learning beginning in November. These sessions were recorded and will be available for reference.



FY24 Robotics Grants

- \$1,000,000 in grants available
- Schools eligible for up to \$3,500.00
- Implemented application process through DocuSign
- Over 750 applications received
- Awards announced 2nd Semester



Coordinated Statewide CS and STEM Events

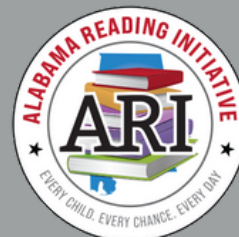
Collaboration with ALEX

- 16th Annual Girls in Math And Science (GEMS) Expo Collaborative Planning began for
 - Birmingham
 - Gulf Shores
 - West Alabama
- Attendance goals for over 400 girls were set for the Birmingham venue



Collaboration with Tynker

- CodeLab LIVE AL My Favorite Word
- Partnered with ARI
- Special Guests
 - Owl -Livia & Short the Squirrel



Coordinated Regional CS and STEM Events

North Alabama STEM

- Community of Practice (CoP) Cohort 1 returns for Pilot Year 2
- STEM CoP Cohort 2 begins with 18 teachers

South Region

- 2nd year of STEM Robotics Competition begins

Science Olympiad

- AMSTI South event added - Troy Region
- AMSTI North - Athens region returns
- Planning, scouting venues, recruiting of teams and volunteers begins for North & South Regional events

PRIORITY



AMSTI

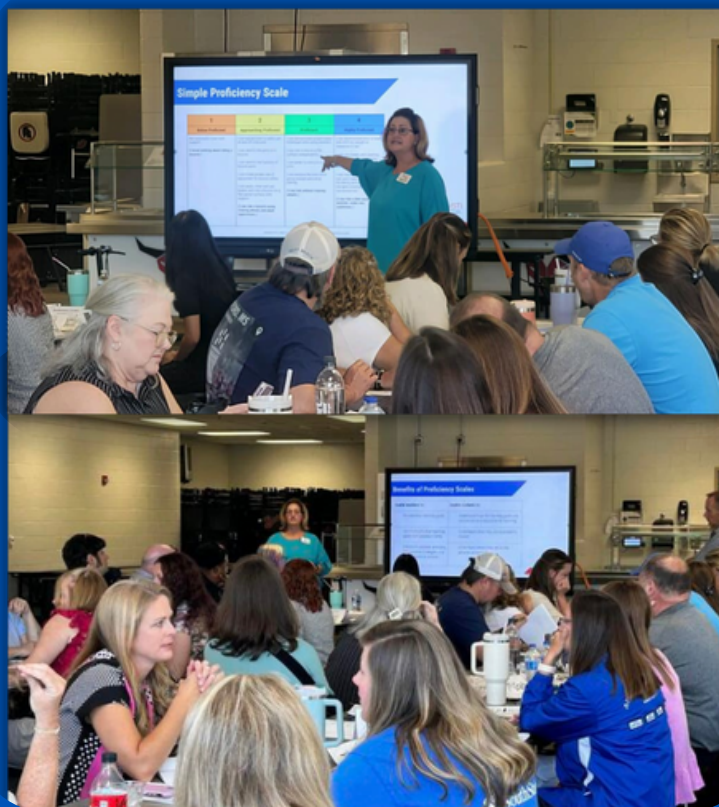
Proficiency
Scales

AMSTI has published proficiency scales covering essential math and science standards from kindergarten to 12th grade, including K-8 DLCS, accessible on our website and other platforms for teachers' convenience. These scales are valuable tools for both teaching and evaluating student progress.

Our professional development sessions aim to familiarize participants with proficiency scales, highlight their advantages, and explain the implementation process for practical instruction and assessment. Furthermore, we offer guidance on creating student-friendly versions of proficiency scales for immediate classroom application. During the 2024-2025 school year, new proficiency scales for the 2023 ACOS: Science will be developed. Newly revised Critical Standards, Focus Maps, and Proficiency Scales will be released in Spring 2024 for K-12 Mathematics.



bitly.amsti.org/Scales

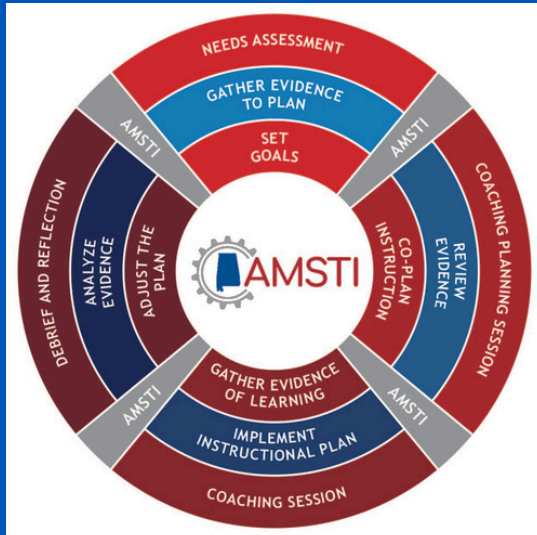


PRIORITY



AMSTI

Coaching



AMSTI has formulated a **Continuum of Coaching Support** designed to equip **Building-Based Math Coaches (BBMCs)** with the necessary skills to efficiently support their respective schools. This support system encompasses diverse channels, including **Coaching Academies**, **Coaching Communities**, and **personalized mentoring** by regional staff within a framework of ongoing enhancement initiatives.

Furthermore, **AMSTI Science Specialists** extend coaching services to educators and teacher leaders. These coaching cycles emphasize a **student-centered approach** to analyzing student data, engaging in collaborative lesson planning, co-teaching, and reflecting on student advancement to inform instructional next steps.



PRIORITY



**Menus of
Service**

AMSTI offers a wide range of services in STEM fields. Both AMSTI and AMSTI-ASIM sites collaborate with LEAs and/or schools to offer professional learning opportunities (PLOs) to all Alabama teachers (whether AMSTI-affiliated or not) according to the service menus. These PLOs aim to provide teachers with evidence-based professional development that aligns with the current vision of AMSTI and AMSTI-ASIM.

AMSTI K-5 Mathematics Professional Learning Menu of Services

#AMSTI4All Math

- 2019 ALCOS: Mathematics Overview... 1 day
- Choral Counting and Counting Collections in the Early Grades (K-2)... 1 day
- Number Talks (K-5)... 1 day
- ACAP Aligned Daily Instruction (2-5)... 1 day
- Number Sense Routines in the K-5 Classroom... 1 day
- Proficiency Scales

NUMBERS

- Number Sense... 2 days
- Fractions and Decimals... 2 days
- Geometry and Measurement... 2 days

OGAP

- OGAP Additive... 4 days
- OGAP Multiplicative... 4 days
- OGAP Fractions... 4 days

Prerequisite for Content Training

- Math Foundational Training (MFT)... 1 day

Content Training Elementary Math

"See Course Descriptions for AMSTI follow-up support"

PLO	Kindergarten - 2nd Grade	Days	PLO	3rd Grade - 5th Grade	Days
Foundations of Counting...	1	1	Exploring Multiplication and Division Part 1...	2	2
Operations with Numbers: Base Ten...	2	2	Applying Multiplication and Division Part 2...	2	2
Operations and Algebraic Thinking...	1	1	Meaning of Fractions Part 1...	1	1
Measurement and Data...	1	1	Fraction...	1	1
Geometry...	1	1	Geometry...	1	1

Scan Me for Math PL Descriptions

<https://bit.ly/amsti.org/MS>

AMSTI Science Professional Learning Menu of Services

6-8 Content Professional Learning TEAMS Approved

Unit	6th Grade	Days
Earth's Dynamic Systems...	4	4
Earth's Dynamic Systems Crossover...	1	1
Space Systems Exploration...	3	3
Space Systems Exploration Crossover...	0.5	0.5
Weather & Climate Systems...	3	3
Weather & Climate Systems Crossover...	0.5	0.5

Unit	7th Grade	Days
Ecosystems & Their Interactions...	4	4
Genes & Molecular Machines...	4	4
Genes & Molecular Machines Crossover...	1	1
Structure & Function...	3	3
Structure & Function Crossover...	1	1

Unit	8th Grade	Days
Information Transfer...	4	4
Crossover...	1	1
Crossover...	4	4
Crossover...	1	1

Available from June 2024 through July 2025 for teachers who meet the prerequisites.

Prerequisite for 6-8 science teachers not listed in their grade or content area.



MATH



SCIENCE

AMSTI DLCS Professional Learning Menu of Services

Foundational

- Digital Literacy and Computer Science Foundational Training

Integrated Computer Science Kit Training

- EIE Integrated Essentials, Grade 2: Creating Animations
- EIE Integrated Essentials, Grade 3: Building Automated Systems
- EIE Integrated Essentials, Grade 5: Analyzing Digital Images

Integrated Engineering+CS Experiences

- Elementary Engineering and Computer Science Experience: Solar Ovens
- Secondary Engineering and Computer Science Experience: Prosthetic Arms

Integrated Robotics Lessons for Grades K-5

- Bluebot Lessons for Kindergarten
- Bluebot Lessons for 1st Grade
- Dash & Dot Lessons for 2nd Grade
- Sphero Lessons for 4th Grade
- Ozobot Lessons for 5th Grade

Click Here

To schedule any support from this menu, please contact your regional AMSTI site.



DLCS

AMSTI PR & Social Media

AMSTI's strategic plan emphasizes stakeholder relationships. The AMSTI Public Relations (PR) Committee has explored ways to leverage our social media platforms to promote the importance of AMSTI. The following charts illustrate the growth in followers and engagements on Facebook, Twitter, and Instagram in the last two and a half years. AMSTI is dedicated to engaging with all stakeholders, catering to their preferred social media platforms.

Number of Reaches		
Social Media Platform	8/1/2023 - 12/31/2023	Percent increase over previous year for the same period
Facebook	102,000	30%
Twitter	116,300	159%
Instagram	9,540	545%



Number of Followers		
Social Media Platform	8/1/2023 - 12/31/2023	Percent increase over previous year for the same period
Facebook	4,236	22%
Twitter	5,401	3%
Instagram	707	27%

STEM Literacy Plan

Each section of the ALSDE Office of Student Learning (OSL) created Blueprints for Achievement that detail the vision, skills, incentives, resources, and action plans that will support the implementation of the ALSDE's strategic plan, Alabama Achieves.

AMSTI's plan can be accessed via the QR code or link.



The graphic is a vertical poster titled "Alabama's Comprehensive Plan for STEM Literacy". It features a collage of four photos showing students and teachers engaged in STEM activities: a girl with glasses holding a small object, hands building a robot, two girls looking at a microscope, and a group of students working on a project. Below the photos is a bar chart with five bars of increasing height, labeled from left to right: Vision (light blue), Skills (orange), Incentives (green), Resources (blue), and Action Plan (red). Each bar has a corresponding icon above it. At the bottom left is the AMSTI logo and the tagline "Every child. Every chance. Every day." The right side of the graphic includes the Alabama State Department of Education seal, the AMSTI logo, and a QR code.

Alabama's
Comprehensive
Plan
for
STEM Literacy

Vision Skills Incentives Resources Action Plan

AMSTI Every child. Every chance. Every day.

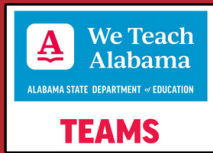
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STATE DEPARTMENT OF EDUCATION
1854

AMSTI

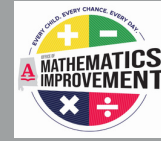
AMSTI

<https://bitly.amsti.org/plan>

Highlights



AMSTI provides thousands of hours of high-quality professional learning to TEAMS teachers in Math, Science, and DLCS sessions across the state to help TEAMS teachers meet their contract requirements. AMSTI continues to create more PLOs to meet this need.



AMSTI's partnership with the Office of Mathematics Improvement has continued to flourish. We continue to bring on new coaches across the state and offer ongoing professional learning with side by side mentoring to support continual growth of coaches as leaders in their schools.



AMSTI welcomed new affiliates, bringing the total of AMSTI affiliates to 41. [Click here](#) to learn more about the affiliates.

Elementary Curriculum Supervisor Quote K-5 Math Foundations Training

"They did a wonderful job at building a safe atmosphere and fostering great conversations. When approaching topics that sometimes teachers get stuck on, they were able to swiftly validate and redirect them back to why our work (and changing learning) is so important to mathematical growth for students."

Strategic Plan Tracker

AMSTI continues to revisit and revise the strategic plan as part of its continuous improvement process. The main themes of the strategic plan are Student Learning, Educator Effectiveness, and Organizational Effectiveness.



Once again, all K-8 AMSTI Science online courses were offered through the ALSDE's instance of Schoology. 51 courses were offered, and 150 teachers completed all the requirements during the first semester.

Math Nation EIR Grant



OFFICE OF
Elementary & Secondary Education

In conjunction with Math Nation and WestEd, AMSTI was awarded an 8-million-dollar grant from the USDE to conduct a five-year research study on Algebra I proficiency.



OFFICE OF
Elementary & Secondary Education

AMSTI also received \$4 million dollar grant to use Virtual Reality with CurioXR to enhance students knowledge and skills in Geometry classrooms.

Alabama Math, Science, and Technology Initiative

Vision

Be Alabama's STEM educator talent development system

Mission

To support Alabama educators and students in learning STEM by doing STEM

Beliefs

Expertise - delivering content and pedagogical knowledge with resources and support informed by evidence of effective practice

Efficacy - maintaining high expectations for staff and stakeholders

Empowerment - building sustainability and connecting STEM providers in Alabama communities

Engagement - learning by doing for staff and stakeholders

**Every child. Every chance.
Every day.**



The Alabama Math, Science, and Technology Initiative, known as AMSTI, is the Alabama Department of Education's initiative to improve STEM teaching statewide, including improvements in each individual subject and the integrated STEM subjects.

AMSTI Provides Services Through:

On-Site Support

AMSTI provides on-site support, including coaching, that ensures that instruction and assessment are being carried out according to the overarching teaching and learning framework.

Professional Learning

AMSTI offers a variety of professional learning opportunities for educators, including training in the science of learning, use of the equipment and materials, up-to-date information, and requested topics to help them to implement instruction and assessment that supports student mastery of the Alabama Courses of Study.

Instructional Materials

AMSTI provides the equipment, materials, and lessons necessary for teachers to deliver quality, hands-on lessons in the core areas of math, science, and digital literacy & computer science (DLCS).

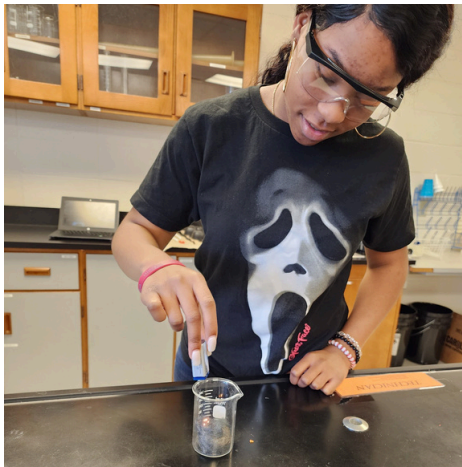
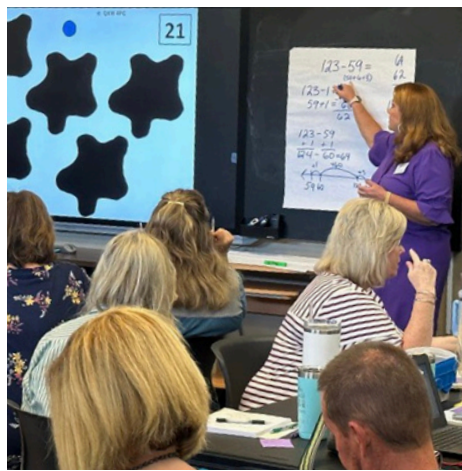


Effectiveness

The concept of "AMSTI for All" delineates the endeavors of an AMSTI or AMSTI-ASIM site in offering a comprehensive range of services to district leaders. This framework aims to facilitate discussions on how the needs of Local Education Agencies (LEAs) can be addressed through professional development, educator assistance, and instructional materials provided by AMSTI and AMSTI-ASIM. In Alabama, every public school educator is granted complimentary access to AMSTI's offerings, encompassing mathematics, science, digital literacy, computer science, and general training, support, and resources.

The initiatives outlined in this report are designed to provide continuous support, yielding both direct and indirect benefits that enhance math and science assessment scores for K-12 students. Furthermore, these programs aim to equip students with the necessary skills to transition seamlessly into higher education or the workforce.







JUNE 2024 ERIC G. MACKEY, Ed. D. STATE SUPERINTENDENT



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