

The AMSTI-USA Monthly Newsletter is published on the first business day of each month. All issues are archived on the AMSTI-USA page [HERE](#). For questions or comments, please email Cassie Haywood at chaywood@southalabama.edu.

From Leadership

Efficacy of AMSTI

Rachel Broadhead | Director

State Level AMSTI leadership recently released a study of AMSTI by Empirical Education. Those of you who have been with the project for many years will be excited to hear that the study confirmed the results from the previous longitudinal study, again citing AMSTI's impact on math and science scores!

This study, commissioned by the Alabama Legislature, was a cluster-randomized trial involving 82 schools and about 700 teachers and once again revealed an overall positive effect, finding that students receiving instruction from AMSTI trained teachers outscore their peers in non-AMSTI classrooms, even in the same school.

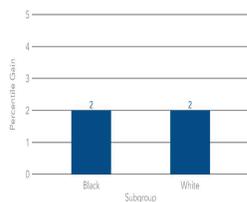


FIGURE 4. IMPACT OF AMSTI FOR BLACK AND WHITE STUDENTS ON THE ACT ASPIRE MATH ASSESSMENT

The impact of AMSTI instruction was also considered across subgroups to reveal an equally positive impact on Black and White students' math scores. The impact of AMSTI on several other subgroups can be seen in these charts from the study.

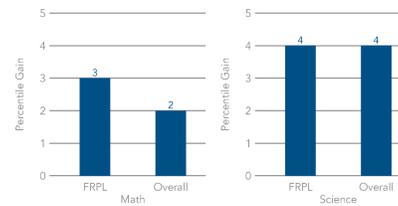


FIGURE 8. IMPACT OF AMSTI FOR STUDENTS ELIGIBLE FOR FREE/REDUCED PRICE LUNCH PROGRAM ON THE ACT ASPIRE MATH AND SCIENCE ASSESSMENT

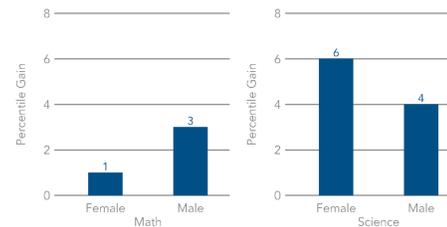


FIGURE 7. IMPACT OF AMSTI FOR FEMALE AND MALE STUDENTS ON THE ACT ASPIRE MATH AND SCIENCE ASSESSMENT

Another design element of this study involved comparing AMSTI trained teachers and non-AMSTI trained teachers in the same school. This allowed Empirical Education to find that AMSTI training has a similar positive impact on all trained teachers regardless of grade level taught, degree level attained, or the school wide percentage of minority students. In other words, all types of teachers in all types of schools can improve their practice with AMSTI training.

Read the full Empirical Education Research Report of AMSTI [here](#).

Materials Corner

Living Organisms

Susan Andress | Business Manager

Occasionally we struggle to provide living organisms to our AMSTI classrooms due to varying limitations. We must work within the confines of what is available from vendors and what is allowable to be shipped to Alabama.

Availability for Kindergarten Plants & Animals

A few years ago due to insufficient supplies, Carolina Biological began substituting Ladybugs for Milkweed bugs in the Plants & Animals kit. They have built up their quantities and have plans for sustaining their supply, so we are switching back to Milkweed bugs from now on. January – March Carolina Biological will ship shelled sunflower seeds for the Milkweed bugs to eat. After March, AMSTI will put shelled sunflower in the seed packet shipped inside the kit.

Restrictions for 7th Grade Development and Reproduction of Organisms

The Alabama Department of Agriculture and Industries has banned the shipment of Cabbage White Butterflies (*Pieris rapae*) to Alabama. This butterfly is used in the 7th Grade kit: Development and Reproduction of Organisms II. We have been in conversations with Carolina Biologica for months regarding possible substitutions. They thought they could substitute the Painted Lady Butterfly (*Vanessa cardui*), but they eat mallow plant. They won't eat the Brassica rapa (Wisconsin Fast Plants) that the kit also uses in several lessons. We also considered requesting that Alabama reconsider their ban. However, they are responsible for annual damage worth hundreds of thousands of dollars in loss of crops. I do not foresee this ban being lifted.

When a suitable substitution is made, we will test to ensure it works with our lessons, create an errata sheet, modify the kit (if needed), and notify all 7th grade teachers with the information.



Special Notes about Living Material Order Form (LMOF) Redemption:

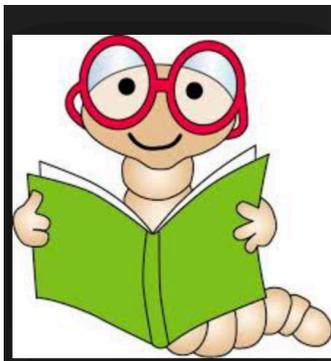
- Always use the control number and not the PO or order number.
- Teachers in rural areas should group their orders as much as possible because there is power in numbers. If the delivery company has only 1 box to deliver to your school, they might not come until the end of the day. If they have 10, then you will likely receive your living organisms earlier in the day.
- Notify your front office to let you know as soon as your living materials arrive so you can begin acclimating.
- Your form must be submitted at least 10 days in advance of the delivery date.
- They ship 2-day ground, so they can only arrive on a Wednesday, Thursday, or Friday because they cannot ship on a Saturday or Sunday.
- You can request them via phone, email, fax, or online portal at carolina.com/livingform

Math Highlights

AMSTI-USA Math Content

By Karma Clark

Are You an Effective Teacher?



Read “**20 Observable Characteristics of Effective Teaching**,”
“by **TeachThought Staff**.”

This article shares observable characteristics
and useful tips for effective teaching in your classroom.

<https://www.teachthought.com/pedagogy/20-observable-characteristics-of-effective-teaching/>

AMSTI math content sessions are designed to assist teachers with developing student proficiency in mathematics. Student growth widely depends on the teacher's ability to determine what strategies students should acquire to promote conceptual understanding throughout their elementary years. This past November our math specialists offered a multiplication and division session for Region 10 educators. During the session, teachers reviewed math standards for their grade levels and made connections to models and strategies that develop student multiplication and division skills. The teachers also left with manipulatives to use to engage students in conceptual activities as they model multiplication and division strategies.



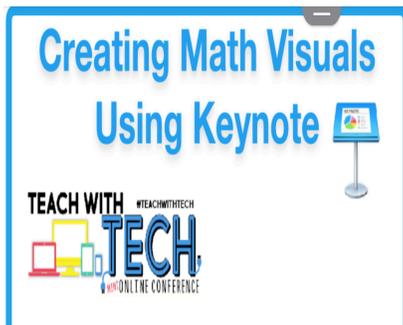
Math Fluency Resources for K-5th

By Angela Williams

Do you want to infuse more technology into your instruction?

Below are some websites and tutorials that can help you increase your technology expertise, design learning experiences that will engage all learning styles, and integrate technology to enhance instruction.

- Berkeley Everett is an Elementary Math Specialist and a consultant who develops digital math tools. The link below offers tutorial videos
- for using Apple's Keynote to create your own visuals like playing cards, board games and posters. It also includes some pre-made visuals
- for concepts like place value, multiplication and fractions that you can print out for use in your classroom.
 - <https://mathvisuals.wordpress.com/about/>
- Google Classroom & Google Apps for Education – Tutorials for getting started that are specifically focused on young children
 - <http://christinepinto.com/gafe-login/>
 - <https://alicekeeler.com/2018/08/13/20-steps-to-get-started-with-the-new-google-classroom/>



...These are a few of my...
FAVORITE THINGS

By Jennifer Fagerstrom

Finding appropriate resources for your classroom can be very challenging and overwhelming, especially with the convenience of technology. I have often found myself looking for lessons and activities, wondering, "What is the math?" and "Does this really meet the needs of my students?" "Will this work support the development of the standard?" I would become frustrated quickly, often giving up or spending way too much time searching sites. So, I thought I would share several sites that I use frequently that have great resources and lessons. I use these sites often and have found that the task and activities are rich and engaging for students. All of the sites below offer free resources for teachers that support the development of a strong sense of number and offer opportunities to engage in the Eight Mathematical Practice Standards.



- Graham Fletcher's website offers 3-Act Task, Progression Videos and other resources. I have used the 3-Act Task and students are always engaged and eager.
<https://www.gfletchy.com>
- Christina Tondevold's offered a free virtual math summit at the end of last summer with many leaders in math education. Some of the participants were Dr. Nicki Newton, Graham Fletcher, Steve Wyborney and Jennifer Bay-Williams. She also offers free resources sources, especially for visual images.
<https://www.buildmathminds.com>
- Robert Kaplinsky's website has great lessons and plenty of information on content as well. He also has some great material on SMPs and DOK levels.
<https://www.robertkaplinsky.com>
- Steve Wyborney's site is loaded with free resources for educators. Some of the resources include SPLAT, Subitizing Slides, Esti-Mysteries, Cube Conversations to name a few.
<http://www.stevewyborney.com>

Science Highlights

Dashing into DLCS Standards

By Chelsea Bailey



Students programming Dash robots in Mrs. Wilson's 3rd grade class
Chatom Elementary School, Washington County

Our new Digital Literacy Computer Science Standards are encouraging amazing things to happen in elementary classrooms. Teachers are embracing the computer science aspect by integrating coding into their instruction. There are many reasons writing code is so important in today's classrooms:

- **It makes students' thinking visible** - as students begin to write simple code, educators can see their student's thought processes. This knowledge gives us an inside glimpse into how students begin to figure out problems and take steps to resolve them.
- **It sustains creativity** – students have the freedom to pursue any design path for a challenge. As they increase in their knowledge of writing code, students become more efficient and precise. This knowledge can be used to build their own video games, create virtual worlds, design competition fields and obstacle courses.

- **It encourages computational thinking** – computational thinking is more than just using math. It involves taking the very complex and finding the main idea, data analysis, critical thinking, abstraction, automation and simulation – and yes MATH!
- **It fosters Future-Ready Skills** – In today's world, everything runs by some type of computer program that was written with code. Digital literacy will be a life skill needed to be successful in the 21st century.
- **It empowers students to take action** – the life changers of the modern world will be the coders. Some have even called them the modern-day wizards. It's hard to believe that programs like Facebook, Twitter, and Windows were created by basically teenagers.

If you are interested in learning how to begin integrating coding into your classroom instruction, let me know. I would love to share ideas as I learn from some amazing teachers who are already blazing a trail with elementary robotics and coding! If you are one of those trail blazers – or just starting- let us know so we can highlight the creative stuff your students are doing.

