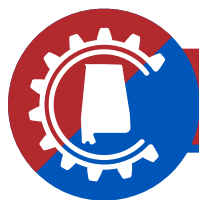
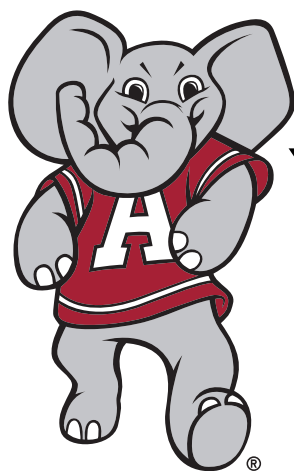


Incorporating
K-12 STEM
learning with the
biggest event in
Alabama...
the IRON BOWL!



LET'S HEAR IT FOR THE TEAM: The True Fan



Strike up the band! Let us hear you, students. For this STEM Challenge, design and create a musical instrument for the half-time show. Your instrument should play at least 3 different notes. You will be the star of the show!! Take a look at this QR code to see a unique way of playing a team's fight song.



MATERIALS & PROCEDURE

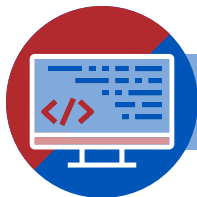
- Collect recyclable materials (water bottles, paper rolls, cereal boxes, etc. – as well as noise producing items like rubber bands, et al).
- Establish criteria and constraints (i.e. time to plan, size, cost of materials).
- Determine how students preview available materials during the Imagine and Plan stage.
- Determine how students will access materials during the Create stage.
- Determine where students will store/keep Fan Gear during the Create, Test, Improve/Redesign stages.
- For additional support, see the Engineering Reference Guide at www.amsti.org/engineering



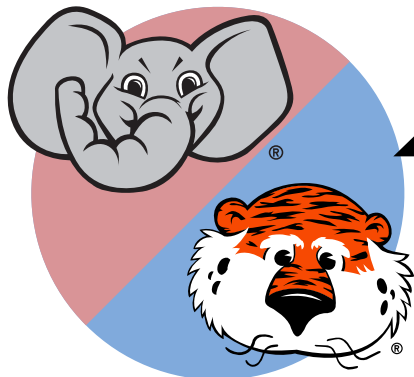
STANDARDS & PRACTICES

See connections to student practice and content standards:

- Content Courses of Study at Alabama Learning Exchange (ALEX)
<https://aub.ie/ALEX>
- Science and Engineering Practices
<https://aub.ie/scienceengineeringpractices>
- Student Math Practice Standards
<https://aub.ie/studentmathpractices>



COMPUTER SCIENCE/ROBOTICS ALTERNATE CHALLENGE



You can also take your ideas and try them out with a computer science connection! Use **Scratch** or another coding platform to program a half-time show to music.

You could also use a robot to play your music around campus on Iron Bowl Game Day!

Show off your best ideas!

- You can find connections to the Digital Literacy and Computer Science Course of Study by clicking the link below.

www.amsti.org/dlcs



STEM OCCUPATIONS

- The skills used in this STEM Iron Bowl Challenge align with many exciting STEM and Computer Science careers. All Alabama schools have access to Learning Blade to expose students to these exciting careers.
- Learning Blade is a system of interactive Online lessons and printable at-home activities for 5th to 9th graders, where students learn about 100 STEM and Computer Science careers and technologies while reviewing academics. Students can use over 400 Online lessons in 12 human-centered "Missions" or stories to explore these exciting careers.
- Any teacher or school staff can register for their school's free account by filling out the form at www.LearningBlade.com/AL



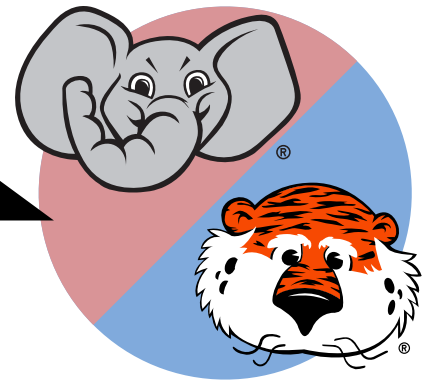
AMSTI PARTNERS

The Alabama Math, Science, and Technology Initiative is proud to work with the following partners to provide these fun and creative STEM education resources:



Wondering how to get your students started?

Follow the Engineering Design Process outlined below!



IMAGINE & PLAN

- Determine the amount of time you will allow for students to individually imagine and collaboratively plan a design.
- Consider requiring a written design plan that includes a drawing, a list of specific materials, etc.

NOTES



CREATE

- Provide time for students to create a prototype that adheres to the criteria and constraints.



TEST

- Provide time for students to test their prototype.

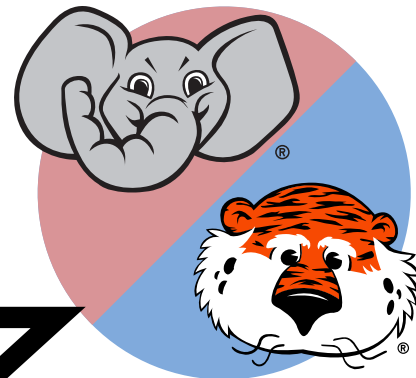


IMPROVE & REDESIGN

- Provide time for students to share how they could improve their design.
- If time permits, allow students to improve their prototype.



COMMUNICATE



Once your students have completed this STEM Iron Bowl Challenge, it's time to show it off to the world! Use the steps below to explain and demonstrate your STEM Iron Bowl solutions.



GIVE A DEMONSTRATION

- Give a live demonstration of your solution to this STEM Iron Bowl Challenge to your family, friends, and classmates.
- Create a video of your creation. You could film your live demonstration, or make a video from a digital slideshow that's all about your creation. Then share the video through your school's website, or social media channels.

CAPTURE YOUR CREATION

- Seeing is believing. Make sure you take some awesome photos or videos of what you've made. If your solution uses software or digital graphics, take screenshots of your work. All of these images and photos will help others see the neat ways you answered the challenge.
- Don't forget to include yourself and your team in the photos. Creating something new isn't easy, so you want to give yourself credit for your hard work.



SHARE IT ON SOCIAL MEDIA

- If you are an Alabama Crimson Tide fan, use the hashtag **#AIB21rolltide**
- If you are an Auburn Tiger fan, use the hashtag **#AIB21wareagle**
- Be sure to tag us @AMSTI4all, @ALSIM4all, @learningblade, @scoreauburn & @cosamau
- Ask friends and family to like and share your cool STEM Iron Bowl creations. You've made something special, and it's time to let the world know about it!