



Journey Middle School

217 Celtic Drive, Madison, Alabama 35758

Science, Technology, Engineering, and Math (STEM)

Kaleb Hood

Teacher Contact Information	Email: kdhood@madisoncity.k12.al.us Classroom Phone: 256-774-4695
Classroom Digital Platforms	Webpage Link: Webpage link Schoology Link: Webpage link
Textbook Information	There is no textbook for this course. We use a variety of resources, activities and lessons to meet STEM I Standards. You will be able to see them in Schoology.
Course Description	<i>In this course, students will gain a foundational understanding of what engineers do. In this hands-on, project-based learning course, students will work in groups utilizing the engineering design process to propose student-created solutions to challenges. Examples of past projects include: STEM Animations, paper roller coasters/towers, design builds, computer-aided designs (CAD), assembly line construction, inventions/innovations, and MORE!</i>
Course Objectives	Upon completion of the course, students will be able to: <ol style="list-style-type: none"> 1. Work more effectively and efficiently in groups. 2. Manage timelines/due dates in a more consistent manner. 3. Explain the benefits of technological advancement to our lives. 4. Understand the role that engineers play in the invention and innovation of new technologies. 5. Improve the use of soft skills to better collaborate and communicate with peers.
Course Outline	Unit 1: What is STEM & course introduction Unit 2: Science Unit 3: Technology Unit 4: Engineering Unit 5: Math Unit 6: Final Project <i>*This is subject to change.</i>
Instructional Delivery Plan, Course Outline & Culminating Project	Career & Technology Foundations Safety, Workplace & Employability Skills, STEM Career Exploration, Digital Literacy, TSA Students explore safety concerns, procedures, and implement safe practices in our workspace. Students discuss and demonstrate communication, collaboration, and soft skills in the workplace through various hands-on projects; use the Occupational Outlook Handbook and other resources to explore STEM careers; use digital skills to research and participate in TSA projects/events. Scope of Technology Development of Technology to Meet Human Needs, Innovation, Technological Systems. Explain the close link between technology and creativity and how it results in innovation by exploring various inventions including the Internet. Technology & Society Positive & Negative Ways Technology Affects Humans, Management of Waste, Using Tech. to Repair from Natural Disasters, Employer-Driven Iterative Design, & Inventions & Innovations. Students research the 2011 Fukushima Daiichi tsunami and nuclear disaster and technology's effects on human life in the aftermath. Design Process Identifying Criteria & Constraints, Using

	<p>the Engineering Design Process, Developing Solutions to Problems, Process Documentation and Communication, Modeling Designs, No Perfect Design, Brainstorming, 2D and 3D Modeling. Students practice the design process as they design various things including a machine model and video game. Digital Literacy Digital Footprint and Permanence, Online Safety, Internet Research Strategies, Using Digital Resources to Collect Artifacts and Information on Real-World Issues, Addressing the Issues. Students utilize code.org and other resources to explore digital literacy. Culminating Project: TSA Inventions & Innovations Project</p>
Classroom Expectations	<ul style="list-style-type: none"> ● Be in the classroom, in your assigned seat, when the bell rings ● Be prepared to start class, when the bell rings (have pencil, notebooks, etc. ready) ● Follow directions the first time they are given ● Be respectful of your teacher, classmates, and the building itself
Progressive Discipline <i>(JMS Policy)</i>	<p>All progressive discipline will correspond with the Madison City Schools Code of Conduct regarding Class I and II offenses. Class III offenses are a direct office referral.</p> <p>Step 1: Verbal warning Step 2: Student/teacher conference Step 3: Parent contact/conference Step 4: Detention and a parent contact Step 5: Office referral</p>
Cell Phone Policy	<p>Cell phones and earbuds/headphones will not be allowed to be used during classroom instruction time. Phones and earbuds/headphones will be put away in a location designated by the teacher and placed in silent mode. In secondary schools, students will have access to their phones and earbuds/headphones outside of classroom instruction time, such as between classes and during lunch, but devices should be put away when students are in the lunch serving line. Failure to follow these procedures will result in a disciplinary referral to the office.</p>
Grading Policy <i>(MCS Policy)</i>	<p>60% = Assessments (Tests, Essays, Projects) 40% = Daily Grades (Quizzes, Homework, Classwork, and Participation)</p>
Late Work Policy	<p>Late assignments will be reviewed and considered on an individual basis. As CTE/STEM courses simulate real-world work environments and emphasizes project-based learning, timely completion of tasks is essential. However, if circumstances arise, students are responsible for communicating with the teacher emulating positive employability traits; each situation will be assessed fairly and thoughtfully.</p>
Make-up Work/Test Policy	<p>Students with excused absences will be allowed to make-up all work within three days of returning to school. It is the student's responsibility to ask for make-up work. Students can get with a classmate or ask the teacher for help. Work that is not made up will become a zero (including quizzes/tests). Many times, missed quizzes and tests can be made up during school.</p>
Technology	<p>Student laptops should not be hard-wired to the network or have print capabilities. Discs, flash drives, jump drives, or other USB devices are not allowed on Madison City computers. Neither the teacher nor the school is responsible for broken, stolen, or lost laptops. Laptops and other electronic devices will be used at the teacher's individual discretion.</p>

<p>Cheating/Plagiarism</p>	<p>A student who cheats will not receive credit for the work in question. If any other student has cooperated in cheating, that student is also considered to have cheated and will not receive credit. Cheating students will also be subject to the consequences in the disciplinary consequences in Section XXII of this CSC. Cheating is defined to include, but is not limited to:</p> <ul style="list-style-type: none"> (a) copying someone else's work in or out of class and identifying and submitting it as your own (b) failing to quote and/or list appropriate citations for material derived from published sources (including the Internet) and identifying and submitting it as your own (c) the use of unauthorized notes, other materials, or assistance during the accomplishment of graded work in or out of class (d) any other situation in which the student attempts to or accepts credit for work not his or her own.
<p>CTSO Integration (LMS Career & Technical Student Organization is TSA.)</p>	<p>Technology Student Association, TSA, is a career technical student organization and a fundamental part of this course. It is a national career and technical student organization of students engaged in science, technology, engineering, and mathematics (STEM). TSA is integrated into the program which includes competitions and leadership opportunities. TSA provides students with activities during their class time and after school with our local TSA Chapter. TSA Based Activities relevant to STEM include but are not limited to: Lab Safety Posters, Career Prep, Essays on Technology, Challenging Tech Issues, CAD Foundations, Inventions & Innovations, Problem-Solving, Technical Design, and Video Design. TSA INVENTIONS & INNOVATIONS is our CTSO project for this course.</p>
<p>Embedded Numeracy Anchor Assignment (Tetrahedral Kite)</p>	<p>Students will measure the lengths and calculate the amount of string needed to construct a tetrahedral kite; be able to construct and describe a tetrahedron, compare and contrast a tetrahedron and a pyramid, and describe the relationships between the four tetrahedrons that form the tetrahedral kite. Students will be able to apply and extend previous understandings of addition and subtraction to add and subtract rational numbers.</p>
<p>Embedded Literacy Anchor Assignment (2011 Fukushima Daiichi Natural and Nuclear Disaster)</p>	<p>Students will read and comprehend complex informational texts used to describe how technologies can be used to repair damage caused by natural disasters and to break down waste from various products and systems. Students will identify and describe positive and negative ways the use of technology affects humans, investigate the management of waste produced by technological systems as a societal issue and describe their findings.</p>
<p>Embedded Science Anchor Assignment (2011 Fukushima Daiichi Natural and Nuclear Disaster)</p>	<p>During this assignment, students will practice the following NextGen Science Standards: MS-ESS3-2 Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects and MS-PS3-1 Interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.</p>

Materials & Supplies	Required materials: <ul style="list-style-type: none">● Notebook or Composition Book● Pencils Suggested materials: <ul style="list-style-type: none">● Scissors● Colored pencils, crayons, or makers● Wired earbuds or headphones Fee: \$10
Homework	It is extremely rare that there is homework in STEM class other than thinking about projects and designs. However, if a student does not use their time wisely in STEM class, work does come home.
Parent & Student Acknowledgment Form	<i>Student form:</i> https://forms.gle/Q5ZQsbLDmqia6Dyp6 <i>Parent form:</i> https://forms.gle/qv53quB7zmaebCoD6