Journey Middle School

217 Celtic Drive, Madison, Alabama 35758

Magic of Electrons, 7th & 8th grade

Ms. Kelly Brunson

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Classroom Digital Platforms	**Webpage Link:** https://www.madisoncity.k12.al.us/Page/8265 **Schoology Link:** https://madisoncity.schoology.com/home
Textbook Information	Online PLTW curriculum (no textbook) www.pltw.org (login information provided in class)
Course Description	In this class, students examine the behavior and parts of atoms as well as the impact of electricity on the world around them. They learn skills in basic circuitry design and use what they know to propose authentic designs.
Course Objectives	At the conclusion of this class, students will be able to confidently design simple circuits to address authentic challenges.
Prerequisites	None
Course Goals	• Understand Atomic Structure • Differentiate Conductors and Insulators • Compare Static and Current Electricity • Build and Test Electromagnets • Construct and Analyze a DC Motor • Design Basic Circuits • Utilize Electronic Components • Calculate Resistance and Apply Ohm's Law • Understand Capacitors and Compare with Batteries • Learn Binary Number Systems and Logic Gates
Instructional Delivery Plan, Course Outline & Culminating Project (Course Outline)	**Unit 1: What is Electricity?** *This lesson is an introduction to basic electricity. No prior knowledge of the concepts within the lesson is assumed. The power provided through electricity is a part of our everyday lives. Few people could imagine life without it, but few consider where it comes from or how it is produced and transmitted. This lesson will show the difference between a conductor and an insulator. This knowledge will be applied by measuring current, voltage, and resistance. The concept of converting energy into electricity will be explored through the designing and building of electromagnet models, a DC motor, and a generator.* **Unit 2: Electronics** *This lesson is an overview and introduction to basic electronics and circuits with a focus on some of the most basic devices and their functions. Students will be introduced to electrical circuit diagrams and asked to create them. In this lesson students will observe how the electron flow merges with technology through electronic circuits. Almost any device that uses electricity can be broken down into basic electronic circuits and the electronic devices in those circuits.* *This lesson will bridge the gap between Lesson 1 What Is Electricity? where students*

	learned about how electrons flow as well as obtain the knowledge needed to go from electric flow through simple circuits and Lesson 3 Digital Electronics where students will see how electronic devices, especially the transistor, are used to create integrated circuit chips that function based on logic. **Unit 3: Digital Electronics** *This lesson introduces students to the digital world of cell phones, computers, MP3 devices, and many other modern conveniences that rely on binary numbers, the 0s and 1s of the digital realm, to function. This is an exciting field for students to consider because it is ever-changing. An understanding of the components and their functions opens the door for limitless creative ideas to design improved devices that can entertain or save lives.* **Culminating Project: 3.4 Logic Problems** *Students design, build, and test circuits to simulate devices that will solve one of nine everyday problems, such as a smoke alarm, burglar alarm, or an automatic emergency shut-off switch.*
Credentialing	**None**
CTSO Integration ***(JMS Career Technical Student Organization is TSA)***	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.
Embedded Numeracy Anchor Assignment	**Assignment:** Unit 2 Lesson 3 (Resistance - Resistor Practice Table) **Standard:** MA19.6.6 Add, subtract, multiply, and divide decimals using a standard algorithm.
Embedded Literacy Anchor Assignment	**Assignment:** Unit 3 Lesson 6 (Logic Problems Data Sheet) **Standard:** ELA21.7.7b - Write informative or explanatory texts with an organized structure and a formal style to examine ideas or processes effectively while developing the topic and utilizing appropriate transitions, precise vocabulary, and credible information or data when relevant.
Embedded Science Anchor Assignment	**Assignment:** Unit 1 Lesson 1 (Atomic Structure and Electricity) **Standard:** SC15.8.1 Analyze patterns within the periodic table to construct models (e.g., molecular-level models, including drawings; computer representations) that illustrate the structure, composition, and characteristics of atoms and molecules.
CTE Lab Safety Guidelines	Each student in a CTE/PLTW course will be required to complete a lab safety exam and score 100% correct before being allowed to use any tools on projects. We expect students to responsibly and safely use the CTE equipment. Examples of equipment used in CTE courses may include and are not limited to the following: scissors, hot glue guns, box cutters, power tools, hand tools, measuring tools, electronic equipment, computers, medical supplies, adhesives, robotics equipment, food items (consumable and non-consumable).
Classroom Expectations	Classroom Expectations: 1. Come prepared to learn everyday and follow all directions quickly. 2. Try to limit your time outside of the classroom as much as you can. 3. Try your very best every single day. 4. Be kind and respectful to everyone. 5. Keep your area clean 6. Keep all personal electronics out of sight during class
Progressive Discipline ***(JMS Policy)***	**All progressive discipline will correspond with the Madison City Schools Code of Conduct regarding Class I and II offenses. Some Class II and all Class III offenses are a direct office**

	referral. ● Warning ● Conference with student with parent notification ● Parent Contact ● Detention ● Referral to administration for repeat Class I violations and initial Class II and III offenses---Consequences determined to be reasonable and appropriate by the school administration.
Electronic Communication Device Policy	Wireless Communication Devices A. Definitions 1. Instructional Day – • When school is open and in session: • During class time, lunch, transitions between classes, and any non-instructional periods; • Any time that students are required to store their Wireless Communication Devices under the Student Code of Conduct, or other school rules; or • Any other time, students are instructed to store their devices by school staff. 2. Wireless Communication Devices – Any portable electronic device that has the capability of exchanging voice, messaging, or other data communication with another electronic device, including, without limitation: • cellular telephones • tablet computers • laptop computers • pagers • gaming devices • smart watches • earphones or headphones (Air Pods, ear buds, over the ear headphones, etc., whether wireless or not) B. Possession of Wireless Communication Devices – Students are prohibited from bringing Wireless Communication Devices into school buildings and onto school grounds, except in compliance with this policy. The Board is not responsible for the theft, loss, or damage to any Wireless Communication Device brought onto campus by a student. C. Storage of Devices– At all times during the Instructional Day, students who possess a Wireless Communication Device on any campus or in any school must turn the device off and store the Wireless Communication Device off their person in a locker, car, backpack, purse, gym bag, or other storage location approved by school administrators. This storage requirement is subject to the exceptions set out in subsection D below. D. Prohibition on Use; Exceptions – Students are prohibited from using, operating, or possessing a Wireless Communication Device during the Instructional Day, except under the following limited circumstances: • The use, operation, and/or possession of the device is specifically included in the student's Individualized Education Plan (IEP), 504 Plan, or an Individualized Health Plan; • The use, operation, and/or possession of the device is for educational or learning purposes under the supervision of school personnel; and • The use, operation, and/or possession occur during an emergency threatening the life or safety of the student or another person. The Superintendent or designee is authorized to develop additional guidelines for implementation of these exceptions. E. Searches – School officials may read, examine, or inspect the contents of any wireless communication device upon reasonable suspicion that the device contains evidence of a violation of Board policy, the Code of Conduct, or other school rules, provided that the nature and extent of such reading, examination, and inspection shall be reasonably related and limited to the suspected violation. F. Disciplinary Action – Any violations of this policy may result in disciplinary action under the Student Code of Conduct. G. Additional Procedures Authorized – The Superintendent or designee is authorized to develop any additional rules necessary to carry out this policy.
Grading Policy ***(MCS Policy)***	**60%** = Assessments (Tests, Essays, Projects) **40%** = Daily Grades (Quizzes, Homework, Classwork, and Participation)

Late Work Policy	• Students present in class on the day of instruction are expected to turn in all in-class and out-of-class assignments on time. • 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.
Make-up Work/Test Policy	• Students are permitted to make up work, tests, and other assignments, activities, etc., when absences are excused. Under normal circumstances, it is expected that students will submit previously assigned work upon return to school after an excused absence. All work missed on the day(s) of excused absence(s) must be made up within three school days after returning to school. However, for extended excused absences when homebound services are not necessary, the teacher may grant additional time, but not to extend beyond two weeks past the return to school. It is the joint responsibility of student and parent to ensure a student makes up work following excused absences. Teachers may alter assignments, tests, work, activities, etc., as necessary to ensure an accurate evaluation of the student's performance after an excused absence. • Students will not receive credit for and will not be allowed to make up any assignments, tests, work, activities, etc., missed during unexcused absences.
Technology	Student laptops should not be hard-wired to the network or have print capabilities. Use of discs, flash drives, jump drives, or other USB devices will not be 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 individual discretion of the teacher.
Cheating/Plagiarism	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 disciplinary consequences in Section XXII of this CSC. Cheating is defined to include, but is not limited to: (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.
Artificial Intelligence Acceptable Use Policy ***(MCS Policy)***	Madison City Schools acknowledges that technology is ever-changing and has a tremendous impact on our global society, local community, and classrooms. Artificial intelligence (AI), including generative forms of AI, is becoming more a part of our everyday lives. It is our responsibility to educate and train students to utilize AI in an ethical and educational way. Therefore, Madison City Schools is not banning the student or teacher use of AI, but each student will need to be aware of the limitations and guidelines of its usage: a. Madison City Schools student email accounts and Chromebook access to specific open AI software, such as ChatGPT, are blocked due to data and security concerns. b. Any misuse of AI tools and applications, such as hacking or altering data, is strictly prohibited. c. Teachers may allow the use of AI for curriculum purposes. Access to specific websites will be granted on an as-needed basis, adhering to specific data and privacy guidelines regarding age restrictions and usage. d. College Board and Dual Enrollment college and university classes may have additional restrictions and limitations regarding the use of Artificial Intelligence. e. Students who use AI software with a personal device and/or personal credentials should do so at their own risk, acknowledging that each platform is collecting various forms of data.

	f. Students must acknowledge the use of AI in any capacity related to their schoolwork, including text, images, multimedia, etc. The use of AI could be subject to the Academic Dishonesty Policy. h. Students should acknowledge that AI is not always factually accurate, nor seen as a credible source, and should be able to provide evidence to support its claims.
Accommodations	Requests for accommodations for this course or any school event are welcomed from students and parents.
Materials & Supplies	• Students are expected to have a pencil, charged Chromebook, & paper/notebook • Amazon Wishlist: https://www.amazon.com/hz/wishlist/ls/1MPFPVAY6KZGO?ref_=wl_share *Students will be completing hands-on projects during this class.If additional materials are needed the teacher will notify students and parents prior to the start of the project.
Homework	All assignments and projects will be completed during class time. In the case that a student may not utilize time wisely or are absent from class they may be expected to complete this work at home.
Parent & Student Acknowledgment Form	https://forms.gle/fNAWKrh5de5ka7bb6