2022-2023
Discovery Middle
1304 Hughes Road, Madison, Alabama 35758
Melissa Marowski
PLTW Flight & Space

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Course Digital Platforms	**Webpage** **Link: https://www.madisoncity.k12.al.us/Domain/2106** **Schoology: https://madisoncity.schoology.com/home** **Simulators : https://www.whiteboxlearning.com/** **Curriculum: www.pltw.org** **Parent Communication:** ***Power Schools will be used for parent contact. Please make sure all contact information is up to date in powerschool.***
Textbook Information	*Online PLTW curriculum (no textbook) www.pltw.org (loin usernames provided in class)*
Course Description	The exciting world of aerospace comes alive through Flight and Space. Students explore the science behind aeronautics and use their knowledge to design, build, and test gliders, hot air balloons, model rockets and Mars Rovers. Custom built simulation software allows students to experience the move beyond a classroom's four walls.
Course Prerequisites	None
Course Objectives	• Apply EDP to refine designed solutions • Use industry tools to measure and analyze forces • Demonstrate growth using Whitebox Learning while constructing aircrafts • Research and develop understanding for future space travel
Course Goals	Students will be able to: • Create solutions to real-world challenges while exploring the engineering design process • Describe how forces act on an object • Design and support innovations for future space exploration • Use math applications to analyze models and make comparisons
Instructional Delivery Plan, Course Outline & Culminating Project	**Unit 1: Flight** ***(Aircraft Construction & Forces that Govern Flight)*** *Students explore the capabilities of multiple physical and digital aircrafts . They learn to use the Engineering Design Process to develop solutions to real world challenges. They learn processes and gain skills to test and redesign aircrafts while observing forces of flight.* **Unit 2: Space** ***(Scale of the Solar System & Rocket Apogee)*** *Students explore industry tools to accurately analyze model projects. They will use a variety of materials to create their own innovative space structures.*
Credentialing	None

CTSO Integration ***(LMS Career Technical Student Organization is TSA)*** ***https://www.madisoncity.k12.al.us/Domain/2036***	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 Flight & Space include but are not limited to: Lab Safety Posters, Essays on Technology, Challenging Tech Issues & Glider Challenge*
Embedded Numeracy Anchor Assignment *https://docs.google.com/document/d/1WRN-4AUPHDJDPuEa1g04HZp2hn2cRwCYnwjZNshAHoQ/edit?usp=sharing*	***Identify and manipulate single variable in controlled experiment to optimize flight:*** **1. Calculate unit rates of length, area, and other quantities measured in like or different units that include ratios or fractions.** **2. Represent a relationship between two quantities and determine whether the two quantities are related proportionally. a. Use equivalent ratios displayed in a table or in a graph of the relationship in the coordinate plane to determine whether a relationship between two quantities is proportional.** **4. Determine whether a relationship between two variables is proportional or non proportional.**
Embedded Literacy Anchor Assignment *https://docs.google.com/document/d/1WRN-4AUPHDJDPuEa1g04HZp2hn2cRwCYnwjZNshAHoQ/edit?usp=sharing*	• CCSS.ELA-LITERACY.RST.6-8 Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions • CCSS.ELA-LITERACY.RST.6-8.3 Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. • CCSS.ELA-LITERACY.RST.6-8 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics. • CCSS.ELA-LITERACY.RST.6-8. By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently. • CCSS.ELA-LITERACY.WHST.6-8 Use precise language and domain-specific vocabulary to inform about or explain the topic • CCSS.ELA-LITERACY.WHST.6-8 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
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 Rules and Procedures: 1. Be on time, on task and prepared to learn. #nofreedays 2. Respect the teacher, the classroom, other students, and yourself. #benice 3. Be responsible for your own learning. #nocheating #workhard 4. Clean up after yourself and your classmates. #notyourhousekeeper 5. Keep all personal electronics PUT AWAY. #onlywithpermission #notexting #nopictures #nosocialmedia
Progressive Discipline	**Step 1:** Verbal warning **Step 2:** Intervention/conference/documentation **Step 3:** Consequence / Behavior entered in BLOOM **Step 4:** Consequence / parent contact **Step 5:** Office referral
Grading Policy & Scale ***(MCS Policy)***	**60%** = Assessments (Tests, Mini-Assessment, Projects, Portfolio) **40%** = Daily Grades (Quizzes, Homework, Classwork, and Participation) **Grade Scale:** 90-100 = A; 80-89 = B; 70-79 = C; 65-69 = D; <64 = F

Make-up Work	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 absences must be made up within a timeframe determined by the teacher. **It is the responsibility of the student to ensure he or she makes up work following excused absences. Students will not receive credit for and will not be allowed to make up any assignments, tests, work, activities, etc., missed during unexcused absences.** (DMS 2021-2022 Student Handbook)
Late Work Policy	For work turned in late, the following policy will apply: • The assignment will drop one LETTER grade for each school day that passes. For example, if an assignment is turned in one school day late, the highest a student can receive is 89%; two days late, 79%, etc. 1 day late = maximum credit 89% 2 days late = maximum credit 79% 3 days late = maximum credit 69% 4 days late = maximum credit 59% 5-10 days late = maximum credit 50% • Half credit is always better than no credit! Until work has been made up, "Missing" (which counts as a zero) will be put in the grade book. This will be updated once work is completed and turned in.
Turnitin Notice:	The majority of writing assignments in this course will be submitted to Turnitin via the Schoology learning platform. The primary focus of this software is to help students become better writers and scholars. Turnitin generates a report on the originality of student writing by comparing it with a database of periodicals, books, online content, student papers, and other published work. This program will help students discern when they are using sources fairly, citing properly, and paraphrasing effectively - skills essential to all academic work. Students will have the opportunity to review their Turnitin originality report and will have the opportunity to make revisions before submitting their work for grading. Once their work is submitted, teachers have the opportunity to view the student's originality report and grade accordingly.
Technology Policy	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.
Accommodations	Requests for accommodations for this course or any school event are welcomed from students and parents.
Materials & Supplies	Paper & Pencil, charged computer

9 Week Plan ****Subject to Change*	
Week	**Unit**
1	**Classroom Procedures: STEM Challenge**
2	**Intro to the Engineering Design process**
3	**Forces of Flight: Newton's Laws**
4	**Parts of an Aircraft: Bernoulli's Principle**

5	**Whitebox Gliders**
6	**Welcome to the Universe**
7	**Exploring to the Moon**
8	**Mission to Mars**
9	**Mars Rovers**