



Discovery Middle

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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: <i>Power Schools will be used for parent contact. Please make sure all contact information is up to date in powerschool.</i>
Textbook Information	<i>Online PLTW curriculum (no textbook)</i> 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	<ul style="list-style-type: none"> ● 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: <ul style="list-style-type: none"> ● 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	<p>Unit 1: Flight (<i>Aircraft Construction & Forces that Govern Flight</i>) <i>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.</i></p> <p>Unit 2: Space (<i>Scale of the Solar System & Rocket Apogee</i>) <i>Students explore industry tools to accurately analyze model projects. They will use a variety of materials to create their own innovative space structures.</i></p>
Credentialing	None
CTSO Integration (LMS 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. <i>TSA Based Activities relevant to Flight & Space include but are not limited to: Lab Safety Posters, Essays on Technology, Challenging Tech Issues & Glider Challenge</i>

<p>Embedded Numeracy Anchor Assignment</p>	<p><i>Identify and manipulate single variable in controlled experiment to optimize flight:</i></p> <ol style="list-style-type: none"> 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.
<p>Embedded Literacy Anchor Assignment</p>	<ul style="list-style-type: none"> ● 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.
<p>Embedded Science</p>	<ul style="list-style-type: none"> ● NGSS.MS-PS2- 1. Apply Newton’s Third Law to design a solution to a problem involving the motion of two colliding objects ● NGSS.MS-PS2-2. Plan an investigation to provide evidence that the change in an object’s motion depends on the sum of the forces on the object and the mass of the object
<p>CTE Lab Safety Guidelines</p>	<p>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).</p>
<p>Classroom Expectations</p>	<p>Classroom Rules and Procedures:</p> <ol style="list-style-type: none"> 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
<p><u>Progressive Discipline</u></p>	<p>Step 1: Verbal warning #youfixit Step 2: Intervention/conference/documentation #wefixit Step 3: Consequence #rethinkit Step 4: Consequence / parent contact #reinforcements Step 5: Office referral</p>
<p>Grading Policy & Scale (MCS Policy)</p>	<p>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</p>
<p>Make-up Work</p>	<p>ZNAP - NO zeros allowed policy - 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>

Late Work Policy	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.
Turn it in Notice:	<p>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.</p> <p>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.</p>
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 <i>*Subject to Change</i>	
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