Automation and Robotics

Syllabus

Discovery Middle School
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Course Description:	**Automation and Robotics:** Students trace the history, development, and influence of automation and robotics as they learn about mechanical systems, energy transfer, machine automation, and computer control systems. Students use the VEX Robotics® platform to design, build, and program real-world objects such as traffic lights, toll booths, and robotic arms. http://alignment.pltw.org.
Course Objectives:	Students who successfully complete the Pre-Engineering program will be competent in the following areas: • Understand what STEM education is and what types of jobs are out there in the STEM field • Understand what and how the Engineering Process is used • Use simple machines to accomplish a task • Be able to program and build a robot to accomplish a task • an ability to design and conduct experiments, as well as to analyze and interpret data • an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability • an ability to function on multidisciplinary teams • an ability to identify, formulate, and solve engineering problems • an understanding of professional and ethical responsibility • an ability to communicate effectively
Classroom Expectations:	Classroom Rules and Procedures: 1. Have a positive attitude. 2. Be responsible. 3. Be respectful to others and their opinions. 4. Set high expectations for yourself. 5. Follow all school rules. 6. No cell phones
Textbook/Course Website:	PLTW- https://www.pltw.org/

Grading:	Test grades will account for 60% of the 9-weeks grade, with the remaining 40% being determined by quiz/daily grades. The grading scale is as follows: A (90-100), B (80-89), C (70-79), D (65-69), and F (below 65). Grades will be a reflection of mastery of the standards. Make sure all absences are excused as work can be made up and graded for excused absences only.
Make-up Work:	Under normal circumstances, it is expected that students will submit <u>previously</u> 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:	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.
Accommodations:	Requests for accommodations for this course or any school event are welcomed from students and parents.
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	Concerning laptop utilization: 1. Student laptops should not be hard-wired to the network or have print capabilities. 2. Use of discs, flash drives, jump drives, or other USB devices will not be allowed on Madison City computers. 3. Neither the teacher, nor the school is responsible for broken, stolen, or lost laptops. 4. Laptops and other electronic devices will be used at the individual discretion of the teacher.
Materials and Supplies:	1.Engineering notebook 2. Pencils

18 Week Plan *_Subject to Change_	
Week	**Unit**
1.Lesson A	What is Engineering?
2.Lesson A	What is Engineering?
3. Lesson B	Design Process
4. Lesson B	Design Process
5. Lesson B	Design Process
6. Lesson 1	What is Automation and Robotics?
7. Lesson 1	What is Automation and Robotics?
8. Lesson 2	Mechanical System
9. Lesson 2	Mechanical System
10. Lesson 2	Mechanical System
11. Lesson 2	Mechanical System

12. Lesson 2	Mechanical System
13. Lesson 3	Automated Systems
14. Lesson 3	Automated Systems
15. Lesson 3	Automated Systems
16. Lesson 3	Automated Systems
17. Lesson 3	Automated Systems
18. Lesson 3	Automated Systems