

Mr. Whitcher's STEM 7/8

2019 Course Syllabus

Welcome to our STEM (Science, Technology, Engineering, Math) classroom! I am excited to get to know you and help you learn as much as you can this year. This is a one semester class in which we will explore processes that we all encounter every single day. We will identify needs, plan and execute a variety of possible solutions, then reflect and learn from each experience. We will work together to prepare for success in all academic areas of the future. ALL areas? Yup, you'll see. I will give my all to make this class interesting, meaningful, memorable and fun. By reading and understanding the information in this document, you will be ready to get the most out of this class. Let's go!

2nd Semester Academic Calendar	
3rd Quarter: Tuesday, 2/5 through Thursday, 4/11 ➤ Friday, 4/5: Last day to turn in work.	4th Quarter: Monday, 4/15 thru Wednesday, 6/12 ➤ Wednesday, 6/5: Last day to turn in work.

Course Objectives

Students will practice and demonstrate knowledge and skills in a number of selected standards sourced from ISTE ([International Society for Technology in Education](#)), NGSS ([Next Generation Science Standards](#)), and AVID ([Advancement Via Individual Determination](#)). Check the links provided above if you'd like to a deeper understanding of these clever acronyms.

The seven (7) standards shown below will be the driving force behind this class. They were derived from the above sources and condensed/combined/prioritized to best represent the objectives for this class. ALL standards will be assessed either directly or indirectly multiple times, resulting in a single, comprehensive mark for each of the three assignment categories, resulting in a final grade.

- NGSS.ETS1-1 Define a problem that addresses a need and identify constraints that may be related to possible solutions.
- NGSS.ETS1-2 Design, construct and test a possible solution using appropriate tools and materials.
- NGSS.ETS.1-3 Evaluate proposed solutions to identify how design constraints are addressed.
- NGSS.MS.ETS1.4 Develop and test a model to improve a tool, design, or process.
- AVID.ORG.1 Maintain organization of binder, planner and notes, and uses time management skills to achieve academic success.
- CTE.CCTC.FN.8.2 Demonstrate honesty, integrity and ethical work habits.
- CCSS.7-8.L.6 Demonstrate appropriate use of domain-specific words and phrases.

Course Text

There is no prescribed textbook or curriculum for this class. Inspiration will be drawn from a variety of sources, including ideas that come about organically as we have this experience together. Plan on individual, partner, and team experiences both small and large. The unifying theme will be finding connections between all of these seemingly unrelated activities within the context and language of the Engineering Design Process.

Grading Policy: 100% Standards Based

Assignment Categories		
40%	40%	20%
		
The Process = Demonstrate knowledge of the Engineering Design Process in a variety of ways.	Technical Writing = Use written communication to articulate plans, observations and reflections of the Engineering Process, using specific and relevant vocabulary.	Work Ethic = Demonstrate your ability to organize yourself and your work, engage and participate in class at every opportunity, and communicate with teacher and peers to understand and complete assignments on time.
Standards that are assessed and feed into each of the assignment categories.		
NGSS.ETS1-1 Define a problem that addresses a need and identify constraints that may be related to possible solutions. NGSS.ETS1-2 Design, construct and test a possible solution using appropriate tools and materials. NGSS.ETS.1-3 Evaluate proposed solutions to identify how design constraints are addressed. NGSS.MS.ETS1.4 Develop and test a model to improve a tool, design, or process.	CCSS.7-8.L.6 Demonstrate appropriate use of domain-specific words and phrases.	AVID.ORG.1 Maintain organization of binder, planner and notes, and uses time management skills to achieve academic success. CTE.CCTC.FN.8.2 Demonstrate honesty, integrity and ethical work habits.

All scored assignments will use the following letter scale. Do not pay any attention to percentages or other numbers you may see when viewing ParentVue or StudentVue. The letters shown below are all I see in my gradebook. I do not use points, percentages or grades until our Synergy Gradebook software forces them on us all at report card time each quarter, inevitably creating some confusion and stress. Trust the process and ask questions to clarify as needed.

- E: Exceeds Standard. Demonstrates deep and thorough understanding of standard. Evidence is the ability to analyze, synthesize, compare and contrast, present, teach, or otherwise go beyond the basic expectations of a standard or skill.
- M: Meets Standard. Demonstrates basic understanding of standard at the level it was presented in the classroom setting.
- N: Nearly Meets Standard. Demonstrates partial understanding of a standard, needs to increase effort, ask more questions, and practice independently to achieve success.
- BG: Beginning. Demonstrates little or no understanding of standard, needs significant help and practice.
- N/A: Not Assessed. When an assignment is missing for any reason, this score applies. Once work is completed and turned in, this score will be replaced with one of the four listed above.

Classroom Rules and Expectations

1. **Be Prepared.** This means students are in their seats, quiet and either working on an entry task or ready to learn BEFORE the bell rings. They are expected to check the whiteboard and the big screen for opening instructions every day. These are the minimum expectations for being “On Time” in our classroom.
 2. **Be Respectful.** . . . of self, teacher, learning, classmates, and property. This means being quiet when the teacher or other students are talking to the class, keeping your hands to yourselves; not touching others or their property. Remember, we are here to learn; everything we do is working toward that goal.
 3. **Be Positive!** You always have control over your own attitude. There will be times when you do not enjoy what we are doing in class, who you are sitting by, or other things you have no control over. If you choose a positive attitude and make the most out of every situation, you will create a better learning environment for everyone. You will also find yourself to be happier, more successful and well-liked by others.
- These rules are posted throughout our classroom to remind students of the minimum expectations.

Absences: I have a one-to-one policy for makeup work. That is, for each day a student misses, a one day extension is given on the assignment. For example, if you are absent for 2 days, you will have 2 additional school days to make up the work or to prepare for any assessment that you missed.

Advanced notice of absence for vacations, etc. Although I appreciate knowing in advance when you will be gone, please do not expect to receive assignments in advance, especially in a largely collaborative, hands-on class such as this. Doing assignments without the context of classroom instruction and discussion can sabotage the learning process and lead to confusion in many cases. We will negotiate these things on case-by-case basis, as some smaller assignments may be possible to complete online, as long as there is internet access wherever you will be.

Late Work: It is the sole responsibility of each student to communicate directly with me when they begin to think an assignment will not make a deadline. I will serve as their mentor in a decision-making process that will hopefully result in the student feeling comfortable talking with me, as well as having the satisfaction of finishing a project and doing their best work without being punished in the grade book. Bottom line, students talk to me directly and we'll figure something out the works for all of us.

Multiple Opportunities: The advantage of rewarding improvement over averaging points. When a student's skill improves over time, they will be rewarded for showing growth. If a student's skill drops, so will the grade. I apply a version of Power Law, not averaging, which gives more weight to the most recent score. Always work hard to improve and strive for learning and understanding that sticks!

Extra Credit is not offered in my class. If an assignment has value for learning, it is offered to all students. Often, extra credit is used as a substitute for late or missing work, and therefore does not contribute to an honest grade that accurately reflects what a student knows and can do. To use a “glass of water” analogy, unless the glass is full, there can be nothing extra, and even in those cases, the glass overflows.

Communication: <http://www.mrwhitcher.com> dwhitcher@ttsd.k12.or.us

YouTube: whitchermath **Instagram:** @mrwhitcher **Phone:** 503-431-5149

Email communication will receive the fastest response. Due to the volume of parent and student communication outside of class, I request this mode whenever possible; most issues can be solved with a quick message or two. Please make sure you have current and correct email addresses in Synergy, as that will be my primary source for contact information. Phone calls will be returned as quickly as possible either before or after school. Due to personal commitments, there are days when I must leave immediately after school and will not return your call until the next day. I appreciate your understanding when this happens. Special circumstances will arise from time to time with your student: vacations, illness and other unforeseen events. Please encourage students to communicate directly with me. I am ready and willing to make accommodations to the rules and deadlines set forth above. Students, please communicate! I am excellent at arriving at solutions that work great for students and do not penalize them for things they cannot control. Thank you!