

Maker 9 Course Outline

Objectives



The main objective of this course is to have students design and make things in conjunction with their Math/Science with Ms. Watt to reinforce concepts they are learning. Students will use woodworking machines, VexIQ, different pieces of 2D/3D software, solder stations, 3D printers, vinyl cutter and a laser engraver. This is a project-based course that will follow closely to their Math/Science class.

Student Responsibility

- Always work safely in the shop. **SAFETY FIRST!**
- If an accident occurs report it to the teacher immediately.
- If a laptop, tool or piece of equipment is broken, report it to the teacher immediately.
- NO GAMES, SOCIAL MEDIA, TEXTING, etc. This class is for learning, NOT zoning out or social media.
- Listening to personal music is accepted as long as NO teacher instruction is taking place.
- NO FOOD or DRINKS are allowed near the laptops or any electronics.
- Arrive to class and on time, lates are PBP or SCD.
- If you are absent, it is your responsibility to make-up missed work.
- ALL notes, labs, assignments, etc will be posted on the Website.
- A drawer for your labs and project materials will be supplied.
- A NOTEBOOK AND A PENCIL/PENCIL ARE NEEDED FOR THIS CLASS.

Labs

- These will be completed throughout the course. They will be given at specific points in the course to help students become familiar with components, computer programming, reinforce principles taught in Math/Science and usage of equipment in the lab.
- All lab work will be marked.
- Labs will be assessed individually

Theory

- This will be given throughout the course. The lessons will be both formal and informal. All lessons will be directly related to the Math/Science being taught by Ms. Watt and will have a hands on approach that this course is based on. **A NOTEBOOK WILL BE REQUIRED.**
- Quizzes will be given on the theory.

Areas of Concentration

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- **2D and 3D Modelling**
 - Students will complete a unit on 2D & 3D modelling. The skills learned during this unit will be utilized on different projects in the course. You will learn to use a 3d printer, laser engraver and Vinyl Cutter.
 - This is individual work.

Electronics & Coding

- Students will take the knowledge gained from Science (Ohm's law, Watt's Law, Series/Parallel, etc) and apply it during a series of building circuits (breadboarding labs). These labs will involve an Arduino microprocessor and the programming of it.
- This will be individual work.

Mechanical & Coding (VexIQ Robotics)

- Students will use the VexIQ robotics system to reinforce concepts that are taught in the Math/Science and build several robots that will compete in classroom challenges or complete labs.
- Students will be in groups of 2 during this portion of the course
- Computer programming will be used to control the robot

Term 2 Culminating Project

Students will create a larger project that applies the use of the Math/Science and Technology that they learned to date.

Marking

Assignments/Labs & Project work	80%
Quizzes & Theory	20%

**A term is usually 10 weeks long. If a unit/project takes around 3 weeks to complete, it means the unit/project is approx. 30% of your term mark in my world ☺*

Cleanup

Cleanup is called about 5 minutes prior to the end of the class. It is important that all students put away their own equipment and clean up their work area. No student is permitted to leave until all the tools are accounted for. When the teacher is satisfied with the cleanup, you will be dismissed.