



HS Robotics- Electronics/Robotics

Mr. Sandifer

Susitna Valley Jr/Sr High School

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Robotics Google Classroom Code: **2yfhxg4r**

Advanced Robotics Google Classroom Code: **evhopjgt**

Required Materials: Composition notebooks are required for this class (it is preferred that it not be a spiral notebook, but instead an actual composition notebook. I do have plenty of extras to give if students don't bring one)

Course Requirements and Expectations:

Course Description: The electronics course is designed to provide an opportunity to develop a basic background or career related skill in electricity or electronics and 3D Printing. The students will explore the use of test instruments to verify and analyze electronic circuits. Students will learn how electronic circuits are designed and used in home, work, and leisure activities. Students will also apply concepts through projects and activities in conjunction with designing and testing various electronic circuits with numerous different electric components.

Some of the topics we will cover include but are not limited to:

Circuit Basics, Voltage, Resistance, Current, Series vs. Parallel, Using Multimeters, Ohms Law, Soldering, Schematics, Using Breadboards, DC Motors, LED's, Electrical Components, Coding with Microsoft MakeCode, and 3D printing with Onshape Software.

Class Structure: The above materials will be taught through the use of direct instruction, internet resources, exploration, and hands-on labs. The goal of this class is not only to teach students the facts, but also to foster their development in the following skills of scientific inquiry:

<i>Develop questions</i>	<i>Conduct Investigations</i>
<i>Record and analyze data</i>	<i>Perform research</i>
<i>Communicate their findings</i>	<i>Design tests</i>

Expectations:

1. Students should be on time to class and prepared to start work.
2. Students are expected to follow the classroom social contract and school handbook
3. Students are required to follow all lab safety procedures
4. Students are expected to give 100% every day.

Grading: This class is mostly project based, so participation in all activities is crucial for students to have a good grade. The breakdown of how students will be graded in this class is:

70% Formative Assessments- Projects and Tests

30% Summative Assessments: Quizzes, Participation, Homework.

Hall Passes:

Students are provided two hall passes per day. These can be used to visit the restroom, gather forgotten materials, etc. Once students utilize all daily passes, they may serve a lunch detention in exchange for an additional daily hall pass. Students must show me their computer screen and wait for me to give them approval to leave. Once they leave, they must leave their computer facing me for the entirety of their pass. If a student makes a hall pass and is gone for more than the allotted time (8 minutes), the student will receive a warning on the first offense and then a lunch detention for each subsequent offense. If any student stops someone's pass while they are out of the classroom, they will receive a lunch detention.

Food & Drink:

I share classrooms with other teachers so I will be implementing a no food or drink in the classroom policy other than water. If a student needs to eat, they should do so outside of the classroom. If someone has a medical reason they need to eat, they should talk to me to arrange for them to eat accordingly.

Dress Code:

See the Handbook for more information on the dress code: [Student Handbook](#)

Phones:

Su Valley and the Mat School School District is a cell phone-free learning environment.

Personal electronic devices, including cell phones, bluetooth earbuds or headphones, etc., are not permitted for student use during the school day and must remain powered off or on airplane mode and in a backpack or locker from 8:00 am to 2:55 pm. Alternatively, a Yondr pouch will be provided to any student who wishes to use one, either at the student's or parent's request.

Consequences for Violations: (Violations do not reset at quarter or semester)

1. First Offense:

- The device will be confiscated by a staff member and sent to the office.
- A phone call will be made to the student's home to notify parent or guardian.
- The phone will be returned to the student at the end of the day.

2. Second Offense:

- The device will be confiscated by a staff member and sent to the office.
- A phone call will be made to the student's home to notify parent or guardian.
- The phone will only be returned to the parent or guardian.

3. Third Offense:

- The device will be confiscated by a staff member and sent to the office.
- A phone call will be made to the student's home to notify parent or guardian.
- The phone will only be returned to the parent or guardian.
- The student will be required to use a Yondr pouch (a secure pouch that locks the phone away) for the remainder of the year.

Tardies:

A tardy is defined as reporting to class any time after the bell rings. Students will provide a tardy slip from the office (kiosk or secretary) for an excused tardy. An unexcused tardy (arriving to class more than 5 minutes late without an excused pass) will be a truancy from class.

If a student accumulates 3 or more unexcused tardies per week, they will be assigned lunch detention.

- 3 tardies = 1 detention, 4 tardies = 2 detentions, and so forth up to 5.
- 6th tardies and above will result in ISS

- Students will have 1 minute from the time printed on the bottom of the tardy slip to return to class or it will be counted as an unexcused absence.
- Students will have 7 minutes to get from class to the detention room
- Tardy reports will be run on Fridays and detentions served the following week.
- Tardy counts will reset every Monday so that students have a “fresh start”.
- Excessive or habitual offenders will be referred to administration for additional support or progressive disciplinary actions.

Course Safety

Maintaining safety in the classroom and on the job is imperative. Learning and developing excellent safety habits begins in the classroom and continues in to the employment arena. The best suggestion for practicing safe habits is to **THINK** before acting.

As part of the program of study you will be operating electronic equipment, test equipment, and soldering irons. Therefore, I ask that you read and understand the following class safety rules completely:

- Never goof around while in the shop
- Always wear safety glasses when soldering or cutting.
- Always warn nearby students of a hot solder iron and always keep the solder iron in its holder when not in use.
- Always assume that components are hot use caution when going to pick up materials that may be hot.
- Always clean up your lab area and return all tools and equipment.
- The student will be responsible for any equipment damage caused by neglect, carelessness and/or rowdiness.
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Mr. Sandifer's Syllabus Agreement

I acknowledge that I have received and reviewed the course syllabus. I have read the syllabus and I understand the classroom policies, instructor's expectations, and rules as stated in the syllabus for this course. If I have any questions or concerns, I will contact Mr. Sandifer for further explanation. I understand that I am responsible to complete all homework assignments, quizzes/in-class assignments, and projects. I agree to be prepared for and attend class each day and on each scheduled test day.

Parent Contact Information: Please place a star beside your preferred method of communication

Email Address _____

Cell Phone/Home Phone _____

**I HAVE READ, UNDERSTAND, AND WILL COMPLY WITH
OUR CLASS POLICIES & EXPECTATIONS**

STUDENT: _____ *print name here:* _____

PARENT/GUARDIAN: _____ *print name here:* _____



**MATANUSKA-SUSITNA BOROUGH SCHOOL DISTRICT
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MSBSD Science Safety Contract

PURPOSE

Science is a hands-on laboratory class. However, science activities may have potential hazards. We will use some equipment and animals that may be dangerous if not handled properly. Safety in the science classroom is an important part of the scientific process. To ensure a safe classroom, the Matanuska-Susitna Borough School District has developed a list of rules called the MSBSD Science Safety Contract. These rules must be followed at all times. Additional safety instructions will be given for each activity. No science student will be allowed to participate in science activities until this contract has been signed by both the student and a parent or guardian.

REGARDING EMERGENCIES

- Report any accident (fire, spill, breakage, etc.), injury (cut, burn, etc.), or hazardous condition (broken equipment, etc.) to the teacher immediately.
- Learn where the safety equipment is located and how to use it. Know where the exits, fire extinguishers, fire alarm, eyewash station, and first aid kits are located and what to do in the case of emergency or fire drill.

REGARDING YOUR PERSON

- Conduct yourself in a responsible manner at all times in the science room. Horseplay, practical jokes, and pranks will not be tolerated.
- Never eat, drink, chew gum, or taste anything in the science room.
- Keep hands away from face, eyes, and mouth while using science materials or when working with either chemicals or animals. Wash your hands with soap and water before leaving the science room.
- Wear safety glasses or goggles when instructed. Never remove safety glasses or goggles during an experiment. There will be no exceptions to this rule!
- Consider all chemicals used in the science room to be dangerous. Do not touch or smell any chemicals unless specifically instructed to do so.
- Dress properly—long hair must be tied back, no dangling jewelry, no open-toed shoes, and no loose or baggy clothing. Wear aprons when instructed.

REGARDING YOUR WORK

- Follow all written and verbal instructions carefully. Ask your teacher questions if you do not understand the instructions.
- Do not touch any equipment, supplies, animals, dissecting supplies, or other materials in the science room without permission from the teacher.
- Perform only authorized and approved experiments. Do not conduct any experiments by yourself or when the teacher is out of the room.
- Always carry microscopes, triple beam balance, and other science equipment with both hands.
- Treat all living or preserved specimens with care and respect.
- Never open storage cabinets or enter the prep/storage room without permission from the teacher.
- Do not remove chemicals, equipment, supplies, or animals from the science room without permission from the teacher.
- Handle all glassware with care. Never pick up hot or broken glassware with your bare hands.
- Use extreme caution when using matches, a burner, or hot plate. Only light burners when instructed and do not put anything into a flame unless specifically instructed to do so. Do not leave a lit burner unattended.

REGARDING CLEANUP

- Keep your work area and the science room neat and clean. Bring only your laboratory instructions, worksheets, and writing instruments to the work area.
- Clean all work areas and equipment at the end of the experiment. Return all equipment clean and in working order to the proper storage area.
- Follow your teacher's instructions to dispose of any waste materials generated in an experiment.

CONTRACT

I, _____
(student's name) have read and understand each of the above safety rules set forth in this contract. I agree to follow them to ensure not only my own safety but also the safety of others in the science classroom or laboratory. I also agree to follow the general rules of appropriate behavior for a classroom at all times to avoid accidents and to provide a safe learning environment for everyone. *I understand that if I do not follow all the rules and safety precautions, I will not be allowed to participate in science activities.*

Student Signature

Date

Dear Parent or Guardian:

We feel that you should be informed of the school's effort to create and maintain a safe science classroom/laboratory environment. Please read the list of safety rules. *No student will be permitted to perform science activities unless this contract is signed by both the student and parent/guardian and is on file with the teacher.*

Your signature on this contract indicates that you have read this Science Safety Contract, reviewed it with your child, and are aware of the measures taken to ensure the safety of your son/daughter in the science classroom.

Parent/Guardian Signature

Date

Important questions:

- Does your child wear contact lenses? Y or N
 - Is your child color blind? Y or N
 - Does your child have any allergies? Y or N
- If so, please list: