



Welcome to 7th grade Engineering and Design. This semester is going to be very exciting! You are participating in an entirely new curriculum designed to integrate your core subjects of science and mathematics into an engineering and technology curriculum. We will use problem based learning to complete real world challenges that are designed by you!

Course Description

Gateway is a PLTW® program (visit www.pltw.org) that addresses the interests of middle school students while incorporating national standards in science, technology, and mathematics. This activity-oriented program shows students how technology is used in engineering to solve everyday problems. During the Gateway experience students will gain the skills they need to develop, produce, and use products and services.

Units:

- **Design and Modeling (DM):** In this unit, students begin to recognize the value of an engineering notebook to document and capture their ideas. They are introduced to and use the design process to solve problems and understand the influence that creative and innovative design has on our lives. Students use industry standard 3D modeling software to create a virtual image of their designs and produce a portfolio to showcase their creative solutions. (9 weeks)
- **Automation and Robotics (AR):** Students trace the history, development, and influence of automation and robotics. They learn about mechanical systems, energy transfer, machine automation and computer control systems. Students use a robust robotics platform to design, build and program a solution to solve an existing problem. (9 weeks)

Materials Needed

- Two pocket folder or three ring binder
- Pencils
- Box of tissues
- Log Book (assignment log)

Course Expectations/Procedures

Classroom Rules

1. Have **all** appropriate materials and supplies at your table and be seated when the bell rings.
2. Respect the people, equipment, and furnishings of Room 121.
3. **Follow** directions the **first** time they are given.
4. Say or do nothing that will interfere with class activities.
5. **Follow all** rules found in GMS handbook.

**** Always ask yourself, Is what I am about to do appropriate? ****

If You Choose to Break a Rule:

First Time: Student will be given a verbal warning and be reminded of the classroom rule that is being broken.

Second Time: Student will receive a second verbal warning. The teacher and student will have a private conference, where the student will state the classroom rule broken and will be reminded of the consequences of a third discipline offense.

Third Time: Student will receive a lunch detention. During their lunch period the student will fill out "My Action Plan" sheet and conference with teacher during lunch period. The student will take home the "My Action Plan" sheet and have their parents/guardians sign and return to school.

Fourth Time: An office referral will be written and the student will be sent to the office. Parent/Guardian will be contacted.

***Severe disruptions:** Student sent immediately to the office.

Due to the nature of problem based learning and the PLTW curriculum it is imperative that students give their best effort to behave appropriately and positively contribute to the learning environment. Participation will account for 25% of the overall grade and will be monitored daily.

Grading Policy

Grades are generated from a variety of assessments, projects, quizzes, labs, homework, and in-class assignments. All assignments are important, but not all are graded.

Grades will be weighted as follows:

- Classwork, Homework, Quizzes-25%
- Participation-25%
- Assessments (tests & projects)-50%

Late assignments will NOT be accepted. PLTW curriculum is designed to provide a working environment where each student is responsible for contributing to a culminating project. If a student is not prepared the team's progress will be hindered.

There will be an option for students who had difficulty passing a test (a score of a D or below) to demonstrate they have mastered the concept by retaking the test. Correct answers will count for half credit on the retake. Retakes will be scheduled the week following the original test date.

Work Habits

Students are expected to be prepared and ready for class each day. When a student forgets something or has no supplies, class time must be taken to find the things the student does not have.

Each student will be given ten passes per quarter that may be used in any subject to go to the restroom, locker, etc. Passes will only be granted if the student has the pass ready to sign and it is an appropriate time for the student to leave the room. Students will designate a page in the back or front of the planner for the passes.

Make-Up Policy

When a student is absent, he/she needs to find out what assignments were missed and the due dates. He/she should do the following:

1. Copy missing assignments from the classroom plan book.
2. Obtain handouts from classroom binder.
3. Conference with team members to catch up on the current project.
4. Write the word "ABSENT" at the top of the assignment and turn it in to the teacher.
5. Students are responsible for scheduling any test or quiz makeup with the teacher.

Students will have the same number of days to complete the assignment as they missed.

Homework Policy

Homework will be assigned based on specific lessons. Therefore, do not expect homework for PLTW every day. In a project based learning environment, homework assignments are deeply tied to the student teams' progress and learning outcomes. *It is essential that homework assigned by the teacher or the team is completed as assigned and on time.*

There is a list of all homework assignments for each week posted on the homework log in our room. Students are encouraged to review that list regularly. If you or your child would like to know the homework for the day, please check Schoology.

Schoology & Instagram

- ★ Schoology can be found through the Westerville City School website (<http://www.westerville.k12.oh.us>). Once there you will find the Schoology tab located at the very top of the Westerville City School website.
- ★ To access my Instagram account please follow the username 'engineeringanddesign'

If you have any questions, I will be happy to assist you in locating Schoology and/or my Instagram account.

Communication

Please do not hesitate to contact me if a need or concern should arise. The most efficient way to reach me is at the following e-mail, Swartzel@wcsoh.org.

Lab Procedures and Safety

This class is designed using a problem based learning approach in which students will have the freedom to use many tools and some machinery in order to complete challenges. In order to make this experience successful and safe for everyone, appropriate participation is required. Please complete the attached lab safety contract verifying that you have read and understand what will be required of the student during our Engineering and Design course.

Please sign below acknowledging that:

- I have read this syllabus and understand the course requirements
- I know that I need to have all of my supplies in class every day
- I understand the requirements about making up missed work
- *If I am finding it difficult to purchase the necessary supplies, I will let Mrs. Swartzel know so arrangements can be made.

Student Signature: _____

Date: _____

Parent Signature: _____

Date: _____

****Keep this syllabus in your binder to be able to use in class as requested****

Student Name: _____ Period: _____

Safety Rules

1. I will behave in the laboratory and not play with laboratory equipment or materials.
2. I will protect my eyes, face, and hands while engaging in lab activities by wearing safety goggles, and, when needed gloves or other protective gear.
3. I will only use FabLab machines and PLTW equipment under teacher supervision and/or instruction.
4. I will follow all written and oral instructions. I will wait until I receive my teacher's permission to begin a lab activity.
5. I will be very careful in the laboratory and not eat, taste, or drink anything (most importantly chemicals).
6. I will wash my hands thoroughly after using chemicals and equipment. When using chemicals, I will not touch my mouth, lips, or eyes until after I have washed my hands.
7. I will report any injury or accident to my teacher immediately.
8. I will clean up my supplies and the surrounding area before being dismissed.

I understand that failure to comply with these safety guidelines may result in my being removed from class and that I will lose credit for the work that is done during my absence.

Student Signature: _____ Date: _____

I have read this Safety Contract and understand what is expected of my child during engineering and design laboratory activities.

Parent Signature: _____ Date: _____

I will be using Schoology and an Instagram account to post important class announcements, homework assignments and updates on all the students' accomplishments. I want to be able to visually communicate all the wonderful products your child is designing and creating, so I would like to include on Schoology and Instagram images of students throughout the design process.

If you would prefer that your child's image not appear on Schoology or Instagram, please check the appropriate box and sign below.

- I DO NOT give permission for my son's or daughter's picture to be posted online.**
- I give permission for my son's or daughter's picture to be posted online.**

Parent/Guardian Signature: _____ Date _____

Engineering & Design Communication Form

Parent(s)/Guardian(s): Communication is very important in middle school. Please fill out the information below. This information will be stored in my classroom and will not be shared with anyone.

Do you have Internet Access at home? (please circle) **YES / NO**

Other helpful information that I should know about your child or about communications with parent(s)/guardians? Please use the space below.