

Grand Design Challenge

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Grade Level: 8th
Room 159

Course Overview

Grand Design Challenge is an 8th grade cycle course that focuses on solving real world problems, identifying criteria and constraints for designs, and determining the needs of a client/group in order to create a successful design. In this course, we will be expanding on your knowledge of the Engineering Design process, and exploring how to apply the process in an ethical manner. Throughout the course you will be working individually or with a partner/group to complete design challenges. In order to complete these designs you will have the opportunity to learn the safe and proper use of tools and machines.

Safety

Your safety is my number one priority in the classroom. Each of you will be asked to read and sign a general safety contract at the beginning of the marking period. You will be provided with two (2) copies of this contract, one for you and you parents/guardians to keep and one that will be signed and returned to me. In addition, for many of the tools that we will use you will need to complete a safety assessment before use.

Do not use any tools or machines without asking my permission first.

Objectives

As a result of this course, you will be able to:

- Understand and evaluate the importance of engineering in meeting the needs of an audience
- Complete a “design under constraint” challenge using the engineering design process, simple machines, and physical models
- Design and create a product that addresses a community challenge using the engineering design process

Required Materials

Each day please bring your charged **chromebook** and a **pen** or **pencil**, and a 2-pocket folder

You will also need scissors, a ruler, glue (a glue stick or liquid glue), and crayons, colored pencils, or markers

Attendance Policy

If you are out for any reason, please follow up with me to complete any work that you may have missed. This may include making up safety quizzes, completing work at home, or working to catch up to your partner/group while designing.

Grading Policy

Your grade will be divided into two categories **Projects/Assignments** and **Class Participation/Preparedness**.

Projects and Assignments

70% of grade

Each project or assignment will be set as a certain number of points. For example, the Circuits Project may be out of 100 points and the Final Project may be out of 200 points. Your grade for each project will be found by dividing the number of points earned by the total number of points available. Your category grade will be determined by dividing the total number of points earned by the total number of points available.

A rubric will be provided for each project explaining the number of points available and what must be done to satisfactorily complete the project.

Participation and Preparedness

30% of grade

This grade will be determined based on your class participation, behavior, and your preparation for class. Each week you will be graded out of 10 points for the week. Being late to class, being unprepared, or not participating fully with your group will cause you to lose points from this grade.

Assignment Overview

Assignments will be posted on google classroom along with information and a rubric. Listed below are some of the assignments that you may see, please note that not all of these assignments will be used every marking period.

- **Grand Design in Engineering Assignment**
- **Circuit Project**
- **Identifying Criteria and Constraints Assignment**
- **Bandsaw Ruler**
- **Scrollsaw Puzzle**
- **Building to Scale Project**
- **Building for an Audience Project**
- **Community/Real world Solutions Project [Final Project]**

I am looking forward to a great marking period with you!

-Mr. Hitchings

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