PLTW Design and Modeling and Green Architecture/2026-27/6-8 Instructional Plan

Created 8/6/2026

Contact Information

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COURSE DESCRIPTION

In this CTE course, students will learn how to use the engineering and design process to solve real world problems. The first semester, students will learn the fundamentals of engineering, and the second semester they will focus on architecture. Skills utilized will include sketching, collaborating with a team, building models, utilizing CAD, and creating presentations for clients.

COURSE ACTIVITIES

Below, you will find descriptions of the most common activities that students will participate in during the course of each semester.

Throughout the year, students will:

- Follow the steps of the engineering and design process to create a product
- Use computer programs to make virtual models
- Use a variety of tools to measure and build
- Present their products to the class as they would to a client

GRADES - Click here for → YWLA Grading Policy

Major (Tests, projects, models, presentations)	60%
Minor (Notes, Daily Work, group participation)	40%

Classroom Resources

- **Project Lead the Way online textbook**
- **Google Classroom**
- **STEM Labs for Middle Grades**
- **SketchUp for Schools**
- **Ludichart**
- **Draw io**
- **TinkerCAD**

Exam Date

Fall-December 15&16
Spring–May 24&25

YOUNG WOMEN'S Leadership Academy

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COURSE OBJECTIVES AND TOPICS

Fall PLTW Design and Modeling

- **Unit 1–engineering process, creating a design portfolio, Zipline Challenge, Foot Orthosis Challenge, orthographic and isometric sketching, measurement, Skimmer Challenge, dial calipers, and Mechanical Dissection Challenge**
- **Unit 2- using TinkerCAD to create 3d models–guided lessons in TinkerCAD, Puzzle Cube Challenge**
- **Unit 3– Therapeutic Toy Design Challenge**

Spring Green Architecture

- **Unit 1–design careers, design process review, architectural measurement, Autodesk Revit, designing interiors, fundamentals of construction, blueprints and building plans, Dream Bedroom Challenge**
- **Unit 2–Sustainable Architecture, building green, house styles**
- **Unit 3– Architectural Challenge–building a shed model to scale and code**

Please note:

This class is project based. If students are absent, they are expected to come to tutorials to make-up what was missed. On rare occasions, they may receive an alternate assignment if it is not possible to recreate the experience in tutorials.

Project Lead the Way is very proprietorial. If you want to view materials, you will have to schedule an appointment with me or go into the text with your student. You will not be able to preview materials otherwise.

Please feel free to reach out with any questions or concerns. We are excited to work together to make this a successful year of learning!
