



## PLTW Engineering

### Engineering Design and Development I Course Resume

Course resumes showcase the technical skills students gain in PLTW courses. Each resume outlines the computational skills, analytical skills, and knowledge students acquire in the specific course. Course resumes also detail student experience with tools, software, lab work, and engineering design. The detailed skills listed within course resumes illustrate the immediate, applicable contributions that students can make within a workplace.

This course resume highlights the PLTW Engineering Design and Development course. The following list provides knowledge and skills that each student will experience in the course. The engineering design process experience and course knowledge gained will vary depending on the engineering problem that each student (or team of students) chooses to address.

#### Engineering Design Process Experience

- Exhibit professional skills needed to successfully contribute to work in a team
- Determine how to proceed through possible alternate routes of a design process
- Solve a problem using an engineering design process
- Document in detail the engineering design process used to solve a problem or design a product
- Create a detailed and comprehensive design brief

#### Professional Skills

- Team collaboration
- Project management
- Problem solving
- Communication skills
- Presentation skills
- Technical writing

#### Tools and Software

- Microsoft® Office (Excel®, Word, PowerPoint®)
- 3-D solid modeling software
- Variety of measuring devices

#### Course Knowledge

- Careers
  - Engineering disciplines
  - STEM careers related to engineering
  - Professional ethics
- Design Process
  - Define the problem
  - Generate concepts
  - Develop a solution
  - Construct and test a prototype
  - Evaluate a solution
  - Present a solution
  - Product life cycle
  - Design teams
- Application of STEM Principles and Practices
  - Technical sketching and drawing
  - Modeling in engineering
  - Computational and analytical skills
  - Measurement