

# Orthographic Projection

Content Area: **21st Century Life & Careers**  
Course(s): **Level 1 Engineering Drawing**  
Time Period: **Marking Period 1**  
Length: **4 weeks**  
Status: **Published**

## Unit Introduction

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## Standards

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STEM.9-12.9.4.12.O.(1).1	Apply the concepts, processes, guiding principles, and standards of school mathematics to solve science, technology, engineering, and mathematics problems.
STEM.9-12.9.4.12.O.(1).3	Demonstrate the ability to select, apply, and convert systems of measurement to solve problems.
STEM.9-12.9.4.12.O.2	Demonstrate mathematics knowledge and skills required to pursue the full range of postsecondary education and career opportunities.
STEM.9-12.9.4.12.O.5	Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication.
STEM.9-12.9.4.12.O.17	Employ critical thinking skills (e.g., analyze, synthesize, and evaluate) independently and in teams to solve problems and make decisions.
STEM.9-12.9.4.12.O.35	Describe and use quality control systems and practices to ensure quality products and services.
STEM.9-12.9.4.12.O.58	Maintain a career portfolio to document knowledge, skills, and experience in a career field.

## Essential Questions

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1. What is the purpose of a technical drawing/plan?
2. What are the results of inaccurate work?
3. How do you recognize a good drawing/plan?

## Content/Skills

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Students will use CAD to produce complete Working Drawings.

Students will demonstrate knowledge/skills with Orthographic Projection.

*Textbooks:*

**Basic Technical Drawing** - Spencer, Dygdon, Novak, 8th edition, 2004

**Engineering Drawing & Design** - D.A. Madsen, D.P. Madsen, 6th edition, 2017

*Skills:*

## **Skills (delete)**

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- Converting numbers to metric
- Drawing accurately with CAD
- Mathematical layouts
- Measurement
- Neatness/organization
- Recognizing line types/uses.
- Self assessment
- Using alphabet of lines
- Visualization: 2D from 3D