

# Unit 2 Technical Sketching and Drawing Lesson Plan

**COURSE:**

Introduction to Engineering Design (Honors)

**TEACHER:**

Jason D.

**DURATION:**

## Understandings

Students will understand that:

Technical drawings convey information according to an established set of drawing practices which allow for detailed and universal interpretation of the drawing.

Hand sketching of multiple representations to fully and accurately detail simple objects or parts of objects is a technique used to convey visual and technical information about an object.

Two- and three-dimensional objects share visual relationships which allow interpretation of one perspective from the other.

The style of the engineering graphics and the type of drawing views used to detail an object vary depending upon the intended use of the graphic.

## Knowledge and Skills

**Knowledge:** Students will:

Identify line types (including construction lines, object lines, hidden lines, and center lines) used on a technical drawing per ANSI Line Conventions and Lettering Y14.2M-2008 and explain the purpose of each line.

Identify and define technical drawing representations including isometric, orthographic projection, oblique, and perspective views.

Identify the proper use of each technical drawing representation including isometric, orthographic projection, oblique, and perspective views.

**Skills:** Students will:

Apply tonal shading to enhance the appearance of a pictorial sketch and create a more realistic appearance of a sketched object.

Hand sketch isometric views of a simple object or part at a given scale using the actual object, a detailed verbal description of the object, a pictorial view of the object, or a set of orthographic projections.

Hand sketch 1-point and 2-point perspective pictorial views of a simple object or part given the object, a detailed verbal description of the object, a pictorial view of the object, and/or a set of orthographic projections.

Select flat patterns (nets) that fold into geometric solid forms.

Hand sketch orthographic projections at a given scale and in the correct orientation to fully detail an object or part using the actual object, a detailed verbal description of the object, or a pictorial and isometric view of the object.

Determine the minimum number and types of views necessary to fully detail a part.

Choose and justify the choice for the best orthographic projection of an object to use as a front view on technical drawings.

## ESSENTIAL QUESTIONS:

Students will keep considering:

How is technical drawing similar to and different from artistic drawing?

What can cause a technical drawing to be misinterpreted or to be inadequate when conveying the intent of a design to someone unfamiliar with the original problem or solution?

In what ways can technical drawings help or hinder the communication of problem solution in a global community?

Strong spatial-visualization skills have been linked to success in engineering. Why are spatial-visualization skills so important to engineering success?





Peer Evaluation / Reflection

Performance-