# **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?

 $\boxtimes$  Peer Evaluation / Reflection

□ Performance--