Activity 1.2.2 – Oblique Sketches

Purpose

Have you ever tried to explain to another person what an object looks like using words and hand gestures? The technique does not work very well, especially if the person does not understand the vocabulary you use. In the engineering world it is often the case that an idea will need to be communicated and explained quickly. Questions, such as "What does the idea look like? How will it work?" need to be answered. In most cases, words and hand gestures alone cannot answer these questions. Sketching ideas is a quick and efficient method that is used in all fields of engineering to get ideas down before they are lost. If the idea turns out to be a possible solution, the sketch will serve as the basis for more advanced drawings and conveying ideas, such as Computer-Aided Design (CAD) solid-modeling.

Oblique, Isometric, Perspective, and Multi-view sketching will be covered in the four activities of this lesson. Pictorial drawings provide realistic views of three-dimensional objects that are easy for non-technical people to understand. Oblique pictorials are perhaps the easiest of the entire three-dimensional sketching techniques you will learn and master.

Equipment

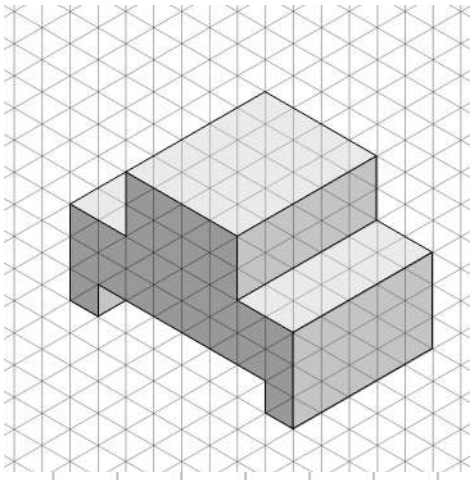
- Engineer's notebook
- Number 2 pencil
- Various objects

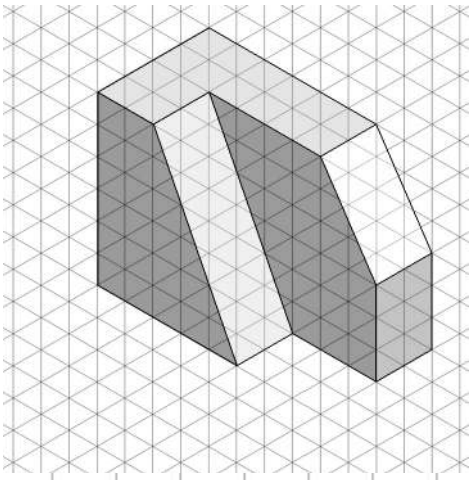
Procedure

In this activity, you will practice your sketching and technical communication skills by creating *general oblique sketches* of objects on graph paper. A general oblique sketch has lines that can be drawn at any scale and any angle. The most common angles are 30, 45 and 60 degrees, but any angle can be used.

1. Study the figures below.
   - Use points and construction lines to layout a general oblique sketch of the object on the large grid.
   - Remember that one unit distance in the figure is equal to one unit distance on the large grid.
   - Show the object in a top, front, right side view orientation in your general oblique sketch.
   - Delineate the visible edges of the sketch with object lines.

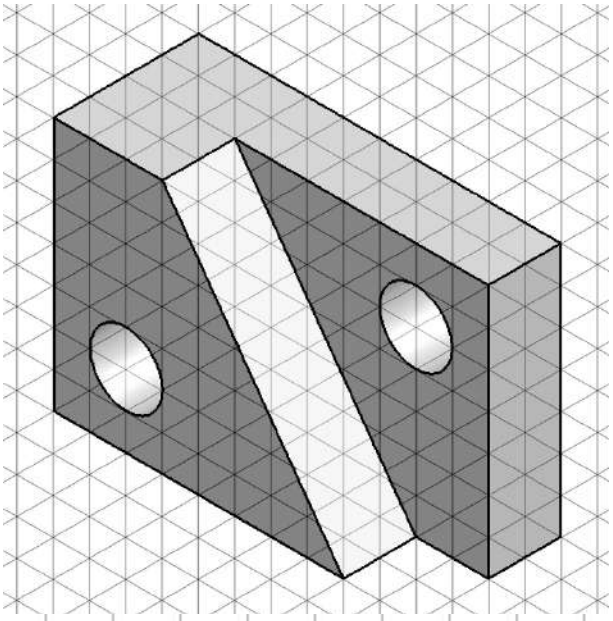
- DO NOT ERASE YOUR POINTS AND CONSTRUCTION LINES.
- Add tonal shading to the sketch when finished.





Extending your Learning

This problem has students not only sketch the isometric, but allows students to experiment with sketching circles.



Conclusion

1. Why practice sketching shapes when a Computer-Aided Design (CAD) program can produce much more accurate Geometry?

2. What pencil techniques are used to create the differences between construction lines and object lines?

3. What are the differences between oblique sketches and isometric sketches?