
Activity 2.2 – Oblique Sketches Answer Key

Introduction

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 six 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

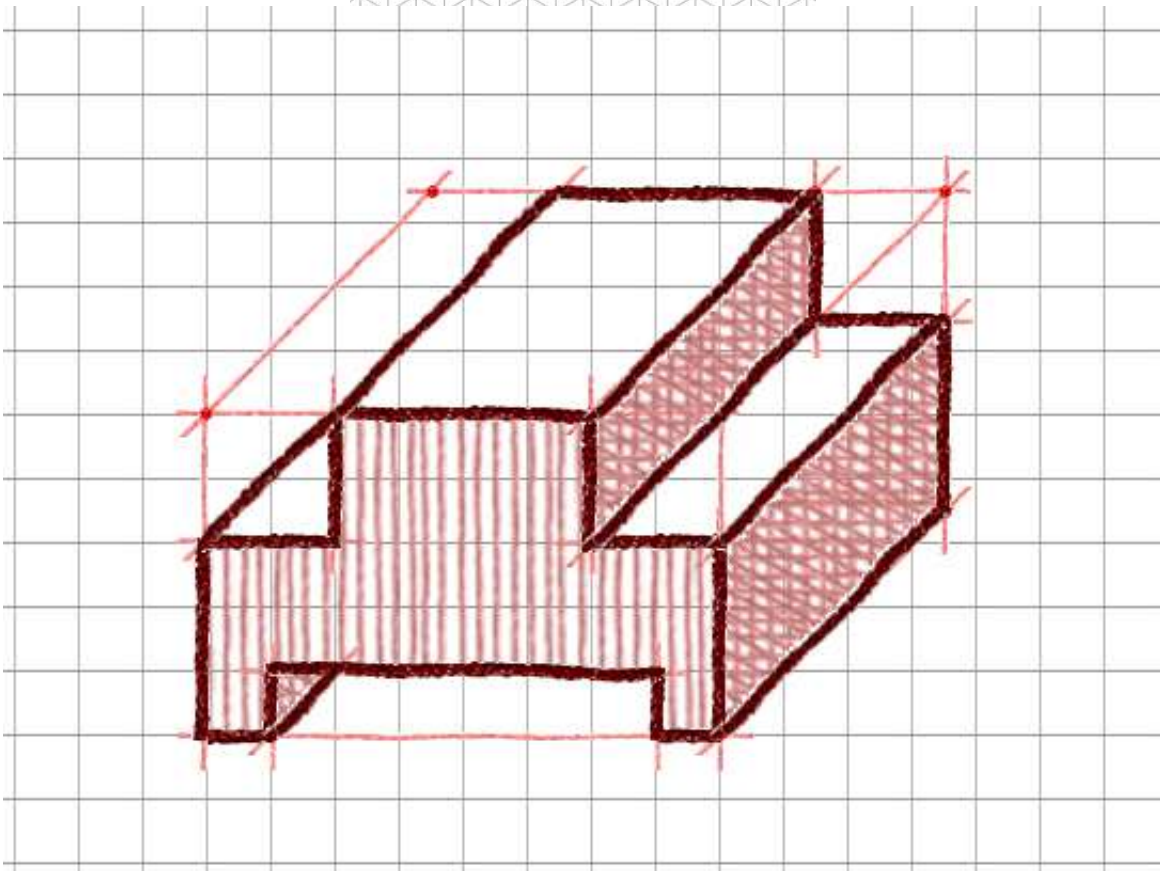
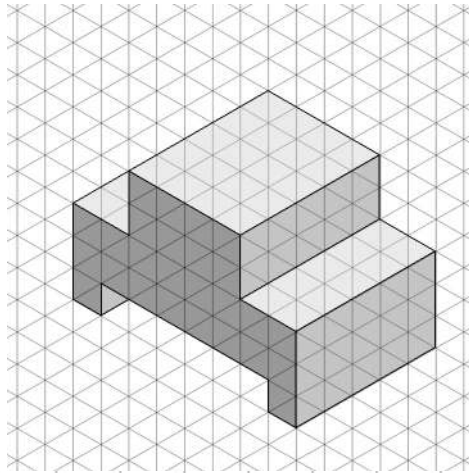
In this activity, you will practice your sketching and technical communication skills by creating *general oblique sketches* of objects on graph paper. A general oblique sketch has lines that can be drawn at any scale and any angle. The most common angles are 30, 45 and 60 degrees, but any angle can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

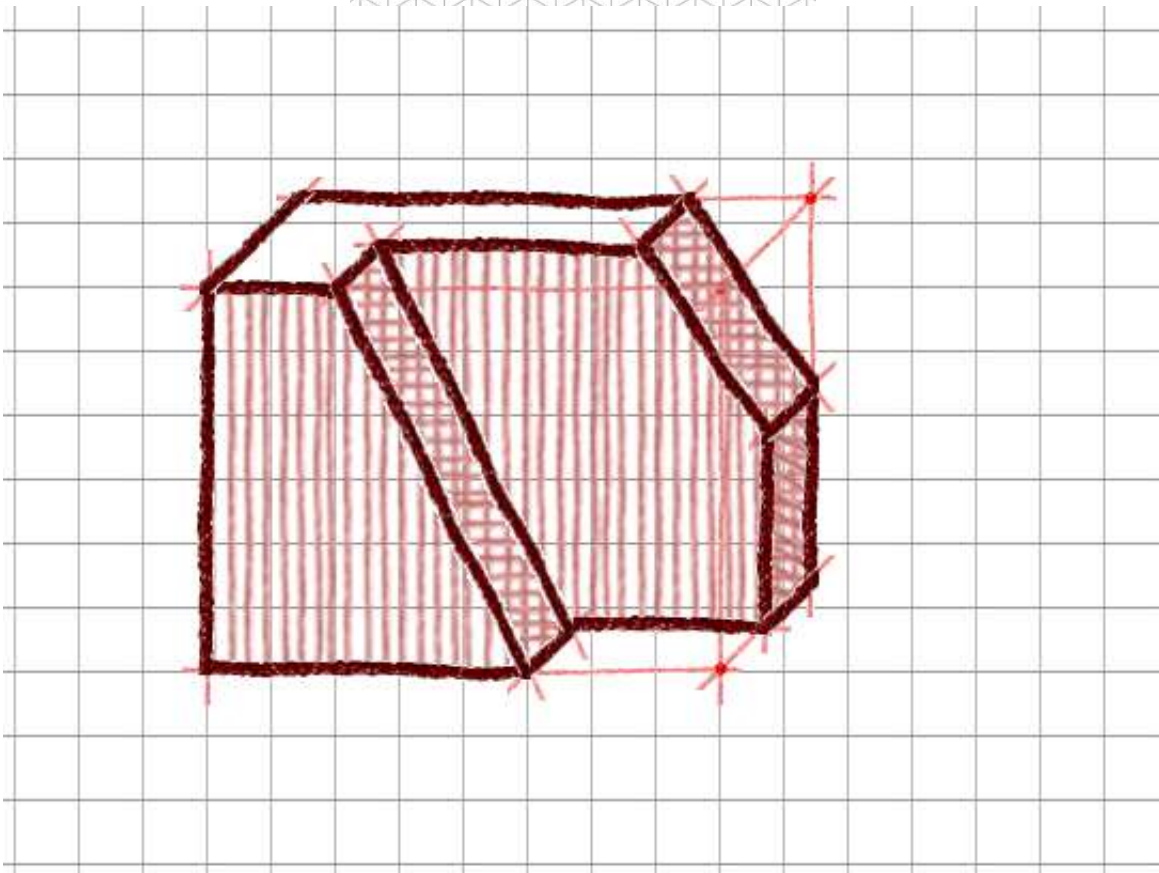
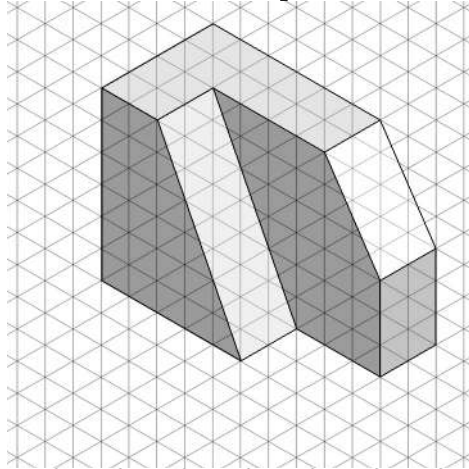
- Delineate the visible edges of the sketch with object lines.
- DO NOT ERASE YOUR POINTS AND CONSTRUCTION LINES.
- Add tonal shading to the sketch when finished.

Teacher Note: Students' answers may vary depending on the angle and scale that students used. The solutions to these objects below are a guide to help you understand what the end result will look like.

DRAW FRONT VIEW AND THEN DEPTH



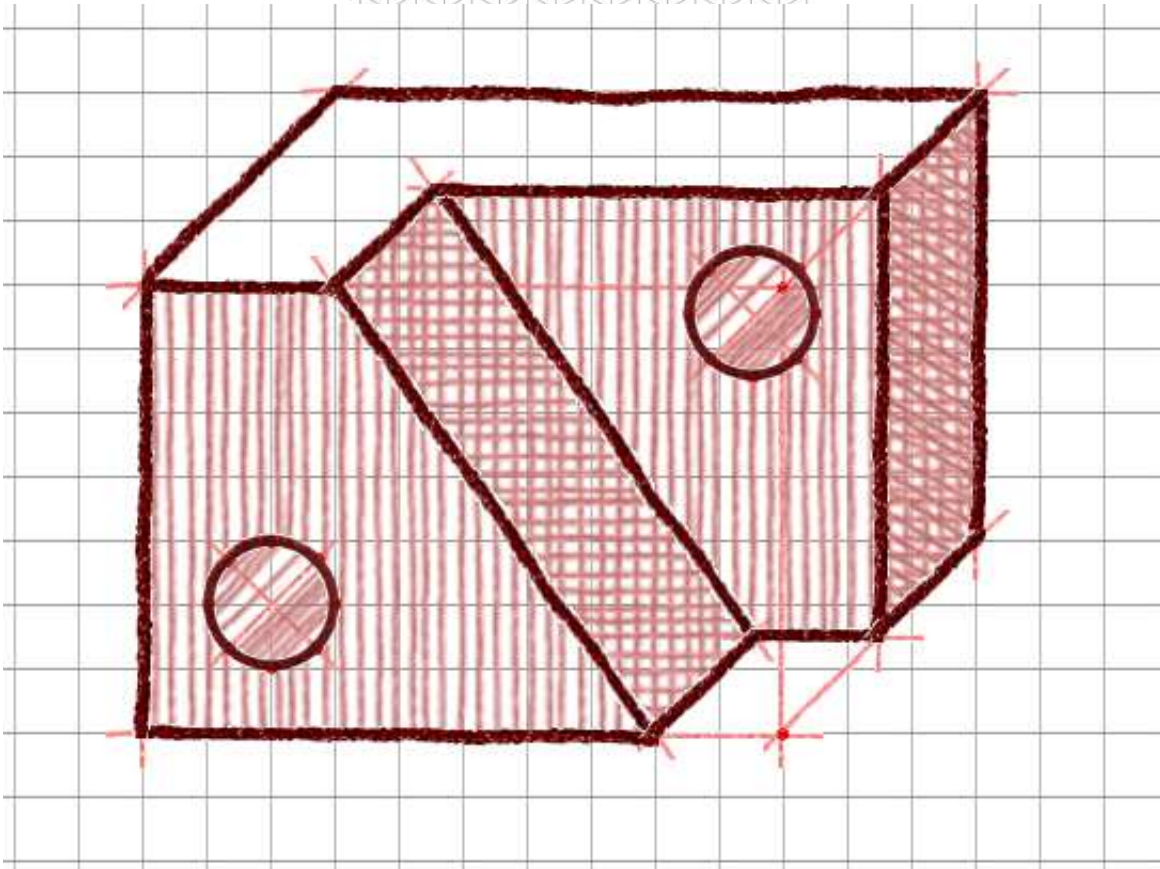
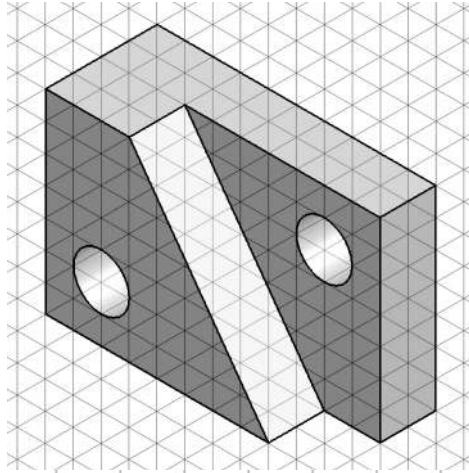
DRAW FRONT Front part then depth of that.
Then draw the other front part and Depth of that.



Extending your Learning

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

DRAW FRONT Front part then depth of that.
Then draw the other front part and Depth of that.



Conclusion

1. Why practice sketching objects, when a computer program can help you produce much more accurate objects?

You might not be around a computer. It could be more difficult and take more time to use a computer than to sketch it by hand. If it is just brainstorming, a sketch would be more efficient than using a computer program. A lot of the techniques used when drawing by hand could be applied when using the computer program, like the additive and subtractive method.

2. What pencil techniques are used to create the construction lines? What techniques are used for object lines?

Construction lines -Very light thin lines. Just use light short strokes.

Object lines – dark, heavy, thick lines.

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

Isometric sketches look more 3D. An edge faces front in an isometric drawing. 30, 60 and 120 degrees angles are mostly used to make the drawings. Width lines are 30 degrees from horizontal. Circles and holes in isometric are drawn as ellipses.

Oblique have a straight on front view. It is used when you want the front face of an object to dominate the picture. The typical angles used to draw oblique's are 90 degrees and 45 degree angles for depth lines. Horizontal lines are used for width lines. Circles and holes in oblique are drawn as circles.

4. What are the differences between oblique cavalier and oblique cabinet sketches? What are the pros for each?

Cavalier uses full depth (the actual depth), cabinet uses half depth. In both oblique cabinet and oblique cavalier you use the correct height and width.

Cavalier uses the correct measurements for depth but it doesn't look realistic

Oblique cabinet looks realistic but the correct measurements of the depth are NOT used (half of the correct depth is used instead)