

Activity 1.2.1 – Isometric Sketches

Introduction

How do reading the face of a clock and sketching isometric pictorials relate to each other? Picture a cube in your mind. All of the surfaces of the cube form right angles with their adjacent faces. If you were to draw an isometric pictorial of the cube, you would see that the edges point toward 2 and 8 o'clock, 4 and 10 o'clock, and 6 and 12 o'clock. This idea helps when sketching isometric pictorials on writing surfaces that do not have isometric grids.

Isometrics are very common in Computer-Aided Design (CAD) programs and are only slightly more difficult to sketch than oblique pictorials.

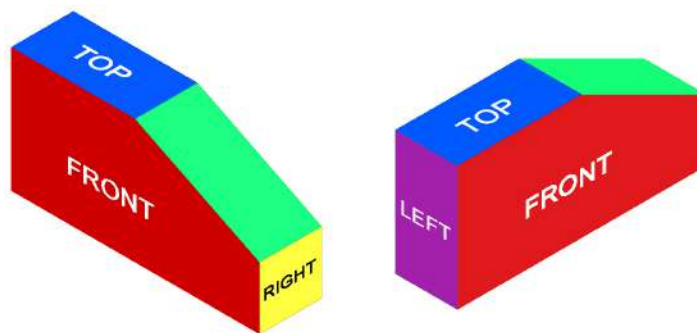
Equipment

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

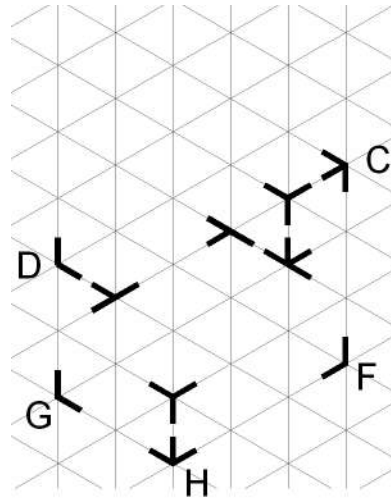
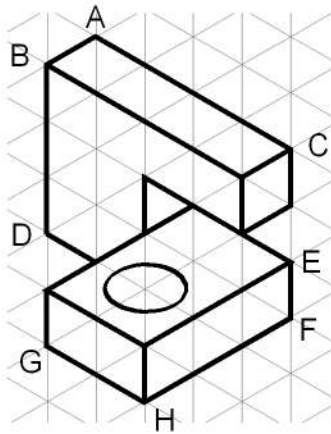
Procedure

In this activity, you will develop your isometric sketching skills by drawing views of objects that are already given in an isometric orientation. You will then apply your sketching skills throughout the remainder of the course.

Before you begin, you must understand how an isometric view is called out. The image on the left represents a top, front, right side view isometric. The order is first face, second face, then third face. The same object is pictured again on the right, but shown in a top, left side, front view orientation.

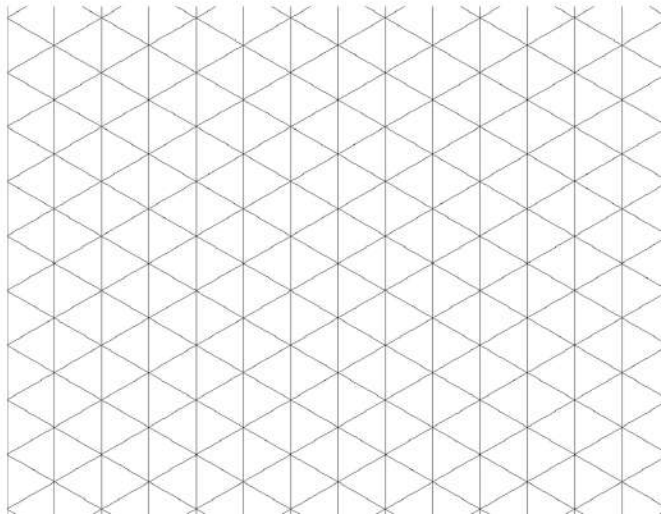
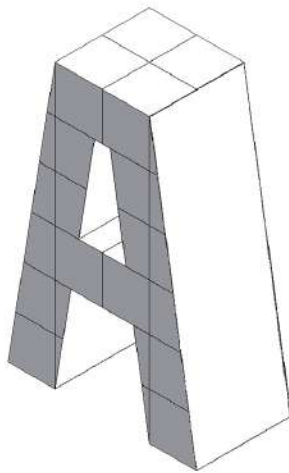
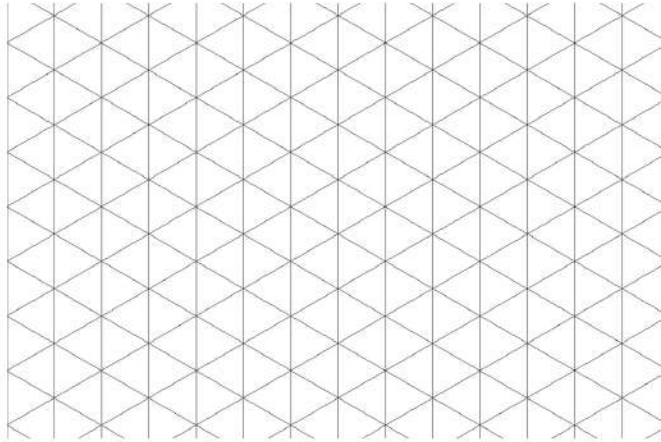
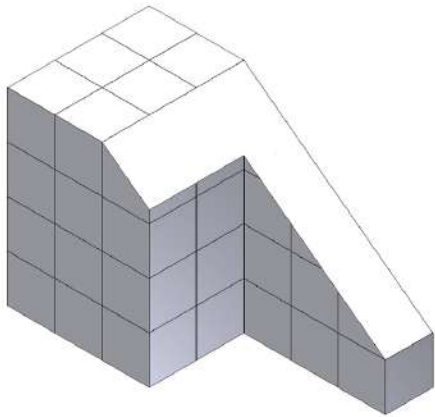
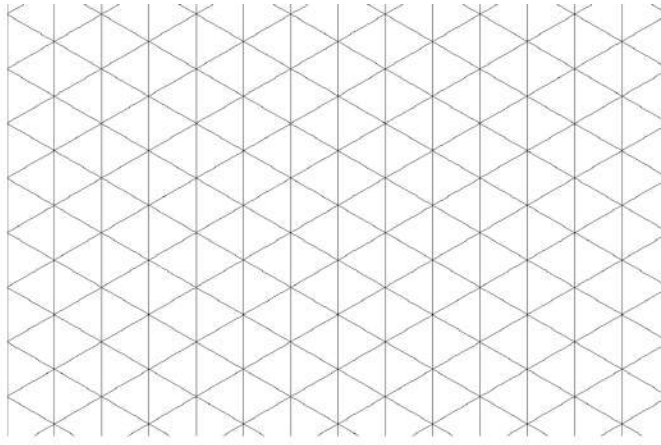
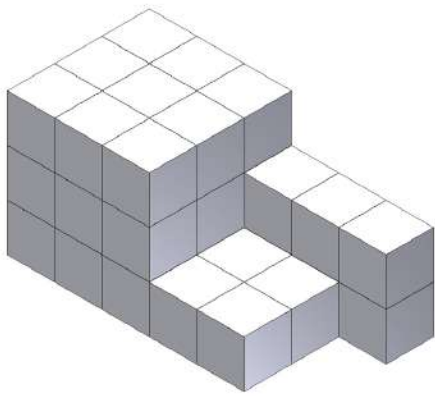


Complete the isometric pictorial of the object pictured below. Use points and construction lines to layout the isometric sketches. DO NOT ERASE YOUR POINTS AND CONSTRUCTION LINES.

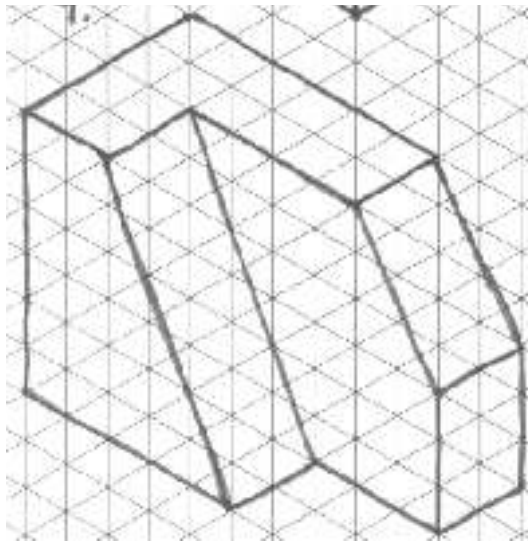
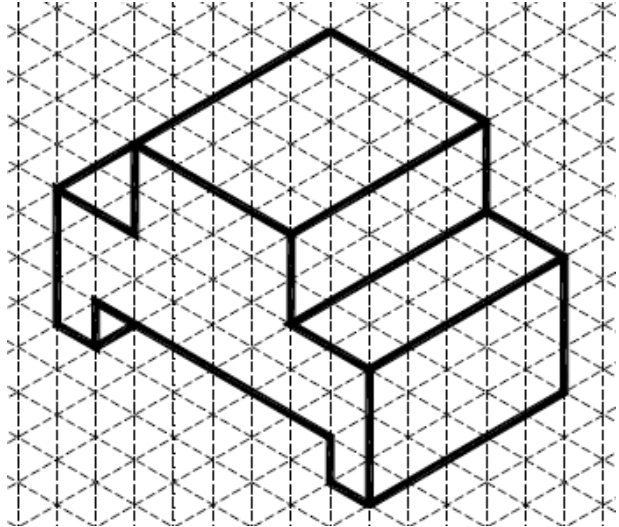
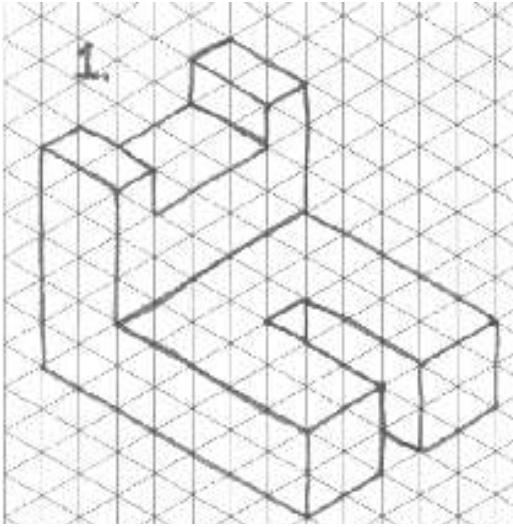


Top, Front, Right Side View

Make isometric sketches of the three objects pictured below. Sketch the objects in the same orientation that they are pictured in. Use points and construction lines to layout the isometric sketches. Then, delineate the visible edges of each sketch with object lines to make them stand out. DO NOT ERASE YOUR POINTS AND CONSTRUCTION LINES. Add tonal shading to the sketches when finished.



Study the isometric objects below. Using the grid paper provided, recreate the three objects for practice. Use the back side of the grid paper to recreate your drawings. This will make the sketches look cleaner while still having the grid lines as a guide.



Conclusion

1. What is the difference between a two-dimensional sketch and an isometric sketch?

2. Why do designers use tonal shading on their sketches?

3. If you were not given isometric graph paper, what technique could you use to approximate the proper isometric angles in order to complete an isometric sketch?