

Grade Level: 6 – 7

Curriculum: Explorations, ADST

Title of Lesson: Graphic Communication: Orthographic Projection

Learning Goals/Objectives:

- Complex tasks require the acquisition of additional skills

Materials Needed:

- Pencil
- Eraser
- Ruler
- Grid Paper

Activity Instructions: (Step by Step)

- Perspective drawings can be used for quick sketches, and isometric drawings are great for more detailed and proportional diagrams
 - When it comes time to make an object, especially one with many details, we need to use a particular type of drawing
 - Orthographic Projection is a technique where we draw individual images for each side of the object. This allows us to capture all of the details of an object!
 - Usually, we draw 3 views of an object if it is a simple shape, up to 6 views for a more complex one.
 - The most commonly used views are:
 - Front
 - Top
 - Side
 - When starting an orthographic drawing, we first need to determine which side is the front of the object. Sometimes this is very simple to decide, like if we were to draw a car, or a house. Other times are not quite so clear, like if we were to draw a pen, or a phone charger.
 - Once the front is decided, we can begin.
 - For this activity, the shapes on our practise sheet all have their front sides labelled already
 - Now we need to figure out where to start our drawing. The top view is always drawn directly above the front view, and the side views are drawn to the left or right of the front view.
 - For the practise shapes, draw whichever side is showing. For instance, shape number 1 has it's right side showing, so we need to put our front view to the left side of the page to leave space for the right side view.

- Watch this video to help guide you through the process of working through the drawing:
 - <https://www.youtube.com/watch?v=ytwEDvX-l44>
- We can use the grid lines printed on the practise shapes to determine the length of each side of our shapes.
- Try to complete one shape from each row of the practise shapes

Extensions (Optional):

- Select a simple object from your home to draw using Orthographic Projection! For an extra bit of challenge, select an object where you have to decide on which side the front is!