**Unit 3 Study Guide**

**Sketching**

The purpose of a sketch – to quickly and easily get an idea on paper

* Three Styles of Sketching
  + Design sketches
    - Rough sketches
    - Used to quickly capture an idea
    - Tend to have less detail, structure, and restrictions than the other types
  + Freehand technical sketches
    - Can be multi-view or pictorial sketches.
    - More detail and structure than design sketches
    - Typically include dimensions
  + Technical Illustrations
    - Include more detail, structure, and restrictions than other types
    - Objective is to create a sketch that looks as close to the final object as possible.
    - Only pencil and paper (plain or grid) are needed to make a sketch
* Techniques for sketching
  + Straight lines – start at with end point, focus on endpoint and make clear movements
  + Angles – start with a 90 degree angle and subdivide
  + Circles – cross method or circle method
* Sketches must be proportional – Use aids when sketching (pencil as measuring device to divide lines equally) \*remember pencil sight technique\*
* Types of sketches
  + Single-view – for items with very little thickness, think of a CD
  + Multi-view (aka orthographic)
  + Pictorials (All the 3D drawings)
    - Isometric (height, width, depth, 120 degrees between axes)
    - Oblique (front view is the same, depth at 45 degrees)
      * Cavalier – true depth
      * Cabinet – half depth
    - Perspective
      * Vanishing point and horizon line
      * 1 pt/2 pt perspective drawings

**Lettering**

The purpose of neat lettering:

* + The most important reason is to convey information without misunderstanding
  + Adds to the overall appearance of the drawing
* ANSI (American National Standards Institute) recognizes the use of single-stroke letters.
* Typically, all capital letters are used.
* Horizontal guidelines (very light, very thin lines) keep letters the same height.
* Vertical guidelines may be used as an aid to keep letters from slanting.
* Typically, most letters are 1/8” tall.
* A uniform vertical space should be left between lines of letters.
* The background area between letters should appear equal.
* Fraction bar is horizontal and does not touch numbers.
* Fractions are typically twice as tall as numbers.
* The space between words should be equal to the letter “O.”
* An Ames lettering guide or lettering triangle can be used to draw guidelines.
* Letters are formed using a series of strokes.

**Equipment**

* 45° Triangle
* 30° X 60° Triangle
* Adjustable Triangle
* T-Square
* Parallel Edge
* Drawing Table
* Compass
* Dividers
* Brush
* Erasing Shield
* Protractor
* Templates
* Plotter
* Pencils
* Mechanical Pencil
* Wooden Pencils
* Lead Hardness
* Hard (9H,8H,7H,6H,5H,4H) – Used for accuracy. Produces light lines
* Medium (3H, 2H, H, F, HB, B) – General purpose leads.
* Soft (2B, 3B, 4B, 5B, 6B, 7B) – Too soft for mechanical drafting. Good for artwork.