Drawing Pencils are a basic requirement of any graphics course. You need a number ranging from 2B to 2H. These letters refer to the hardness of the pencil lead. When sketching a soft lead such as 2B is can be used to produce quick drawings and shading. On the other hand, when drawing precisely a 2H or even a harder pencil such as a 4H is ideal. This type of pencil keeps its sharp edge for longer and produces very fine lines.

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<th>SOFTER LEAD</th>
<th>HARDER LEAD</th>
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<tr>
<td>4B</td>
<td>2H</td>
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<tr>
<td>3B</td>
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A refillable pencil is very useful especially if you are constructing a drawing that needs a constant thickness of line. The refills for the pencil are available in a range of thicknesses and they are either hard or soft leads. Disadvantages are that the refillable pencils are relatively expensive and so are the refills. Also the lead tends to break easily.

Ink fountain pens can be used for producing ‘fancy’ styles of writing. Often the pens can be bought with a variety of ‘nibs’ as a set. These can be used to draw/write in a vast range of styles. This type of writing is called ‘Calligraphy’. Ink pens are rarely used now as word processing software can be used to produce accurate styles of writing in a range of fonts.

A protractor is used to measure angles. A typical protractor is a semi-circular piece of plastic with 180 degrees printed around its curve. This piece of equipment is not only used in graphics for constructing accurate drawings but is also used in subjects like Mathematics.

A compass is an absolute essential piece of equipment. It is well worth buying a good set which includes at least two compasses allowing the drawing of small and large circles. The drawing opposite is a ‘bow’ compass, this is used for drawing small circles very accurately. Cheap compasses tend to slip on the paper and break quite easily. A good, quality compass set will last a life time.
When drawing, sketching or attempting basic graphics work the equipment shown below is very useful and sometimes essential.

A **fine pen** (colour - normally black) is used to draw permanent, accurate lines. Fine pens are available with various thicknesses of 'tips'. They are especially useful for printing and placing notes alongside designs and sketches. They are also used for producing the final outline of a design. Fine pens are relatively cheap and come in a range of colours.

**T-Squares** are use to draw horizontal lines. They are especially useful when constructing accurate orthographic drawings or architectural drawings. A T-Square is normally used with a drawing board, set squares and clips. It must be pushed firmly against the edge of the drawing board when it is being used.

**Set Squares** are used to draw accurate angles. The most common are 45 and 60/30 degrees. When using set squares they should always used along with a T-Square. The Set-square rest on the straight edge of the T-Square and this ensures when the angle is drawn that it is accurate.

A **ruler** is possibly one of the most important pieces of drawing equipment. Rulers should only to used to measure distances with lines being drawn with T-Squares and Set Squares. However, most people use rulers to draw straight lines. But it must be remembered that the edge of a ruler is not guaranteed to have a perfectly straight edge unlike a good T-Square or Set Square.
Circle templates are very useful. They are plastic with a number of accurate circles cut out. They are used to draw circles of set diameters/sizes and are particularly useful if the circle is small. Small circles are difficult to draw using a traditional compass because the compass can easily slip on the paper. With a template the circle diameter is selected and a sharp pencil is used to draw round the cutout circle.

Ellipse templates are similar to circle templates and these are useful for drawing ellipse/oval shapes accurately.

A craft knife is used to cut out card shapes. It is important that a steel ruler is used as the sharp blade of the craft knife is less likely to slip. A cutting mat should be placed below the card being cut. Also, if a plastic ruler is used the knife can easily cut into its straight edge, damaging it. Great care must be taken when using a craft knife as they are very sharp, if they slip they can cut hands and fingers very badly.

Pencil sharpeners are essential for sharpening pencils. Accurate drawings cannot be produced unless they are sharp. However, when shading a blunt pencil is sometimes useful.

A craft knife can also be used to sharpen pencils. Normal pencil sharpeners tend to shorten the lead as the sharpener is turned. This means that the pencil needs sharpening often. On the other hand when using a craft knife, the lead can be left quite long. Also, a small piece of glass paper can be used to give a precise edge to the lead. A ‘chisel’ shaped point is ideal for drawing accurate lines.
A Flexi-curve is used to draw curves. It can be formed into almost any curve as it is flexible. Flex-curves are useful as they are simply shaped to form the desired curve. However, a flex-curve is delicate and if forced into a tight curve it will break.

French Curves are purchased in sets of three or four. They are used to draw curves by finding the section of curve that matches the desired shape on the profile of the curve. Some French Curves also have either circles or ellipses of various sizes cut out. These can be used in the same way as circle or ellipse templates.

A Parallel Rule is used to draw parallel lines. It is basically two rulers held together by two linkages. The linkages provide the parallel motion. The rulers have scales either metric, imperial or both.

An Adjustable Square is a set square which can be adjusted to almost any angle. When adjusted a small screw is hand tightened, locking the set square in position. This means that there is no need to have both 45 and 30/60 degree set squares. They are much more expensive than normal set squares.

A compass cutter is extremely useful if you are attempting to cut circles in card or paper. Using scissors often produces poor results but a compass cutter usually cuts accurately. The compass cutter can be adjusted to cut circles of varying sizes. The cutting point is a craft knife blade. Care should still be taken when using this type of cutter.