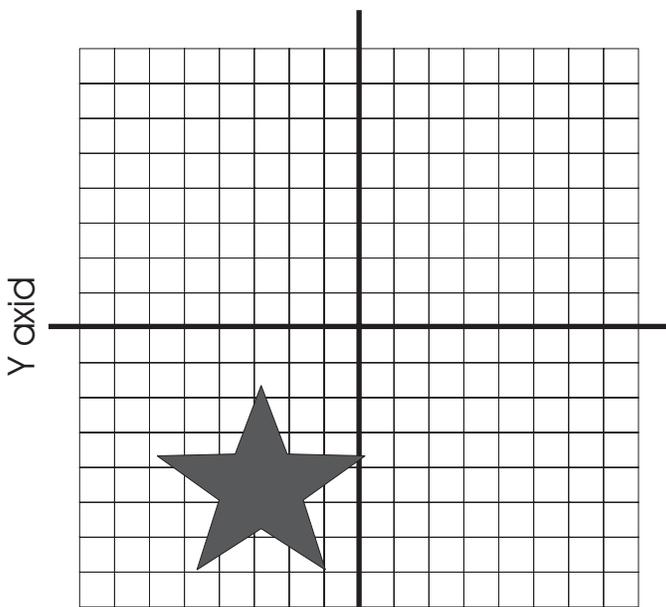# DEALING WITH OBJECTS

2D Programs

The greatest thing about using a computer to draw with. Is the ability to layout objects and type in exact placement, in scale with the real world.   When You are using a 2d Program like Corel Draw and Illustrator, the area that you draw in, is made up of points in space. These points are measured with X and Y coordinators. With these coordinators the computer and you know where a point is. An object like a Rectangle is made of four points with lines between that are called **vectors**. The computer keeps track of the points, the angle of the vectors, the color information, the

Type here for exact placement of object
Type in exact size of object here
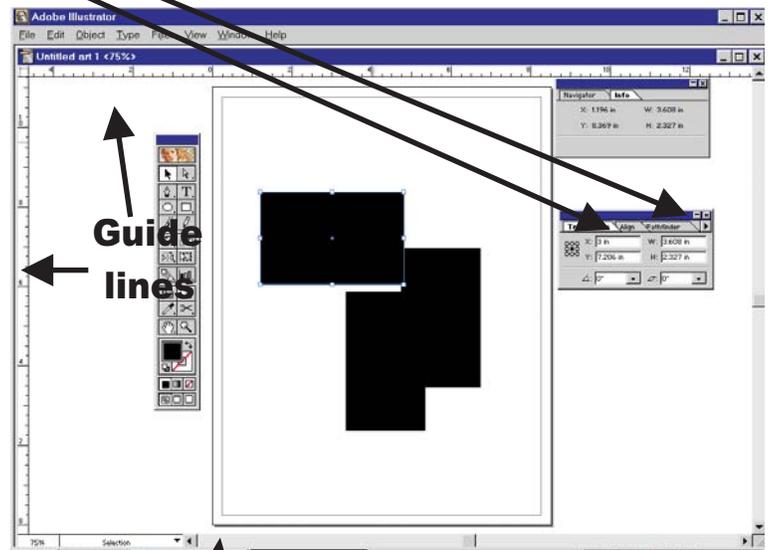
Guide lines

In Illustrator X=0,Y=0

er, and the placement of the objects. Maybe you remember the Algebra that you studied when you plotted and graphed formulas in math class. (Don't worry the computer does the math). In these vector programs, using the x and y coordinates you can draw a object and place it right where you want on the page and at the correct size. In Illustrator the center of the object is where the program has placed the X, Y, numbers.

Usually in these 2d vector programs the X=0,Y=0 points are placed on one of the corners of the page. You can tell by turning on the rulers to see where the 0 points are. You can also turn on the grids so you see them on the paper. These grids do not print so if you want a grid to print you should use the grid

Y axid

**This Star was placed on the page with x-3, Y=3**

cent

tool. You can also grab guide lines to help line up several objects. The guide lines are at the edge of the rulers, click and drag them out onto your page, also the guide lines do not print. Remember that you don't have to work in these programs in inches. You can go to page setup and change the measurement units to one that you like better pixels, centimeters, points, didots, picas or one of the many other types of measurements units. I usually work in either inches, pica/points or centimeters when working in Corel Draw and Illustrator but I like pixels when working in Director, Photoshop or Premiere. In web design everything is in pixels.
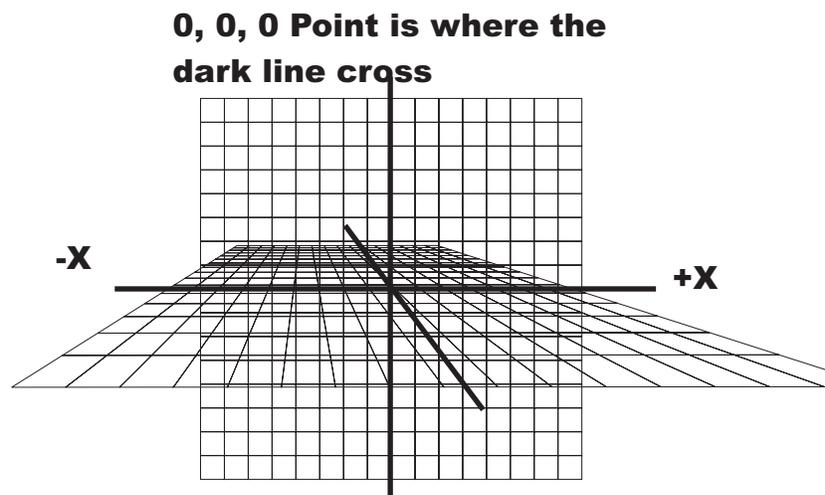
3D Programs

In 3D programs you add two more dimensions to your drawings, a Z axis for height (in Maya the Y axis is height and X and Z is flat) and a time factor (for animation). In most 3D programs they move the X, Y axis to define the thickness and

the width of the object. Usually the X=0, Y=0, and Z=0 is placed in the middle of the virtual world. This way you can have a plus or a minus in front of the X, Y, or Z to define the placement of the object. In Maya, the gizmo and the axis are color coded with red = X, green = Y, and blue = Z. RGB =XYZ

Y AXIS

X AXIS

Maya's world

Z AXIS

X axis =0
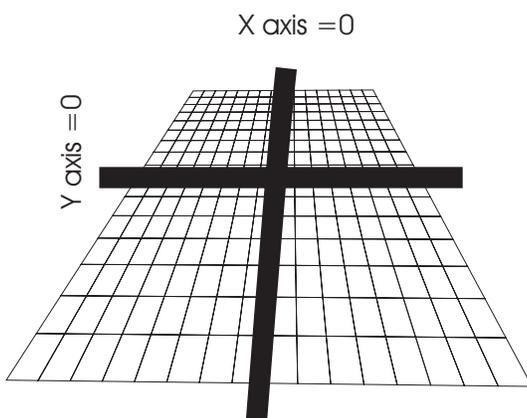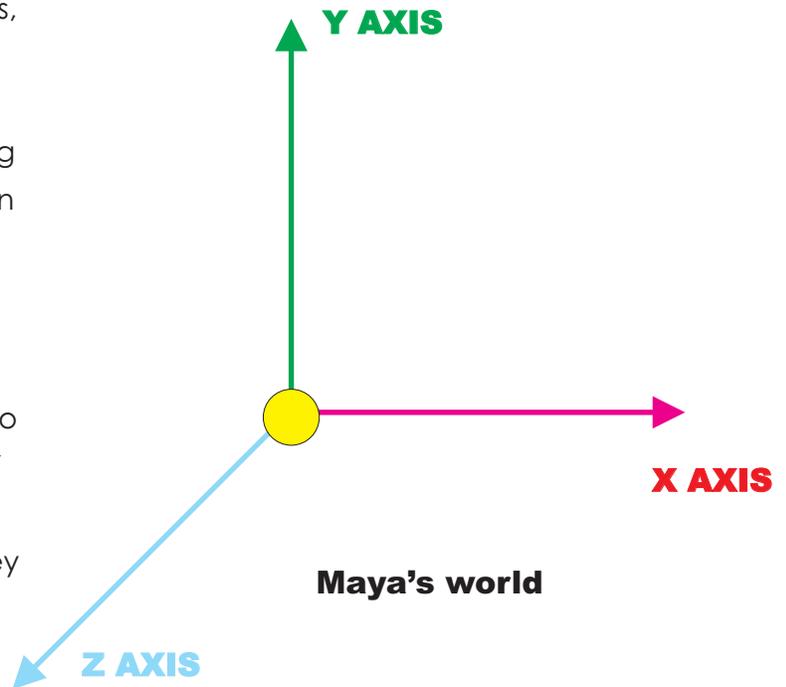
Y axis =0

The X, Y axis is on the horizontal plane in most 3D programs

0, 0, 0 Point is where the dark line cross

-X   **+X**

The Z axis is the height axis in 3D Studio Max, the Y Axis is the height in Maya