

P

oint of Views and Perceptions

Art communicates creatively allowing emotional expression, but **Mathematics** communicates truthfully disallowing emotional expression. That is why you need both art and mathematics in your life!

"Better to be without logic than without feeling"

said Charlotte Bronte, an English novelist.

An intellectual friend of mine asked me to try to imagine a sculpture with 3 different points of view observable. We will call it "The Thing". See a triangle from one point of view, from another you see a square, and from yet another you see a circle. Draw a 2D representation of what you imagine and then perhaps made a 3D sculpture of it. If you try this it will energize your creative thought processes and help resolve problems in communicating with others who may see things and think differently than you do.

Point of view (POV) is something different than perception. Point of View is how you see something from where you are standing or with your present thoughts while perception is your understanding of what you see with what you know. The two are inter related concepts as are the concepts of planes, perspectives, and proportions (relative sizes/ratios) defined within the context of real or imagined physical space allocations limits. Plane is any flat 2 dimensional surface or a face; perspective is a technique of depicting volumes and spatial relationships on a 2 dimensional surface and uses proportions in the drawing so that the relative size of its different parts that are in the diverse parallel planes get smaller as they recede into the background.

For the purposes of visualizing "The Thing" as it might appear in a sculpture first try to draw it. Everyone can "draw" with a pencil and paper but it is fun to try using the computer and the Microsoft accessory, the Paint program, which is easy to learn with the use of its help documentation. You need nothing else

than the willingness to experiment and refine your drawing till you are satisfied that it communicates visually what is being discussed. Explore, discover, LEARN, GROW, and THINK BETTER!

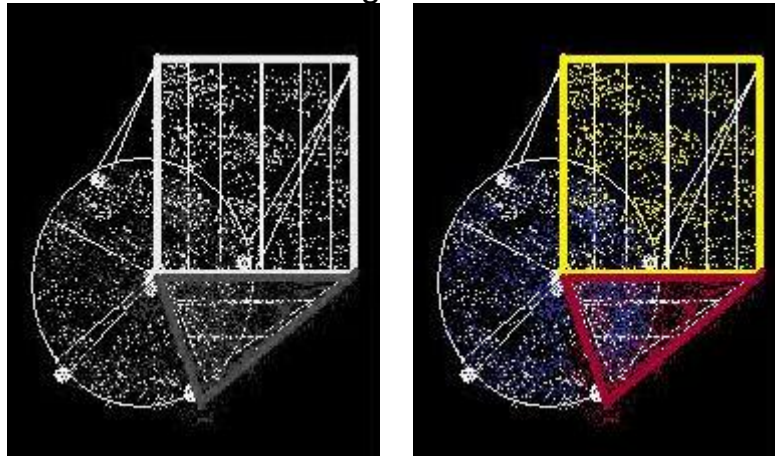
Mathematics and drawing (art) both improve our thinking skills and we become better problem solvers: as Pythagoras would say "Geometry is knowledge of the eternally existent " and "There is geometry in the humming of the strings. There is music in the spacings of the spheres" ; "A mathematician who is not also a poet will never be a complete mathematician" said Karl Weierstrass ; "How can it be that mathematics, being after all a product of human thought independent of experience, is so admirably adapted to the objects of reality?" said Albert Einstein; "No employment can be managed without arithmetic, no mechanical invention without geometry" said Benjamin Franklin.

Spend some time in design mode on thinking about "The Thing". There are lots of possibilities convex and concave options and interior spaces defined as desired various planes slices to reveal inner shapes 2 D out of the 3 D .. and apparently what you create may not at all be like what I drew a rough idea of below..... so the square and its plane is perpendicular to the circle's plane? and I wonder if the triangle has any hint of being a pyramid somewhere in the form there are so many possibilities with "The Thing". Shapes are 2 dimensional while forms are 3 dimensional and so there is plane geometry (2 dimensions) and solid geometry (3 dimensions) and geometry laws proving the area and volume of things. Just contemplating "The Thing" which has at least 3 POV (square, circle, triangle as 2 D planes) existing in 3 D increases the thinker's creative energies.

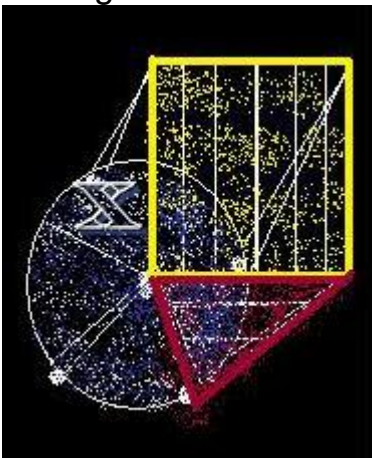
I realize that the rough drawing I made of "The Thing" as a simulacrum from one POV seeing the circle that there are two different perceptions of "The Thing" with the circle in front side or the circle at the bottom. Then I realized that Maurice C Escher's art does the same thing we all have the same vantage point in observing his work yet our minds have multiple perceptions of it. Referencing the drawings below with your mind's eye you can see two orientations (2 perceptions) from your 1 Point of View looking at the drawing and you can see that if "The Thing" were moved in 3 D that it would have different "faces" such that you can see the triangle, or the circle, or the square faces (planes or sides). Since only one perception of the alternate possibilities can be reality of the actual form in a static position (not movable), reality will be defined as an agreement as to which perception will be realized and become the ultimate "Thing" sculpture. Let's agree that the circle's plane that

is closest to us and we are facing it side "y" showing while the one not agreed to is that the circle's plane in on the bottom with the side "x" of it showing is to not be the reality of "The Thing"...

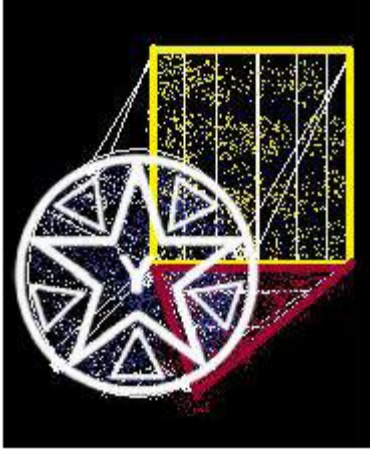
I hope no one is color blind but they still might see the 2 different perceptions of the drawing of "The Thing" I imagined to satisfy the conditions of "The Thing" given the one vantage point (and same perspective) in the drawing simulacrum of "The Thing".



now view the 2 different perceptions with different orientation of the same drawing



Circle at bottom as base, X side of circle visible, yellow square on top, red triangle on side height of form



Circle as front face, y side visible, yellow square in back with form resting on bottom triangle ...

Because of the two different cognitive perceptions that can be seen with our eyes, we must choose or agree to the reality of what we are seeing and so I choose the reality that the circle with the inscribed star with inscribed Y variable and the 5 equilateral triangles surrounding the the star inside the black box. Of course, if this “Thing” were made into a solid form then both perceptions of the form could be "realized" by moving the form to rest on its circle base or on its triangle base in its space. Since two things can not exist in the same space at the same time, the concept of movement of the same thing in a given space for given point in time and then we see the many multiple POV (s) of the form and we have similar perceptions of what we are seeing.

There are many “Things” in our life and existing in this world. As human beings, we can exercise, explore, and allow our mind to be free of physical world limitations giving creativity and imagination using both art and mathematics an opportunity to discover and resolve differences productively.