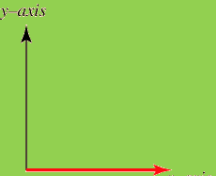
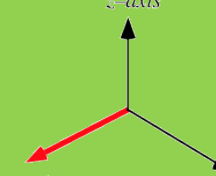


2D to 3D: Using One Point Perspective

What is 2D?
2D stands for two dimension i.e. X-axis and Y-axis or (length and width)

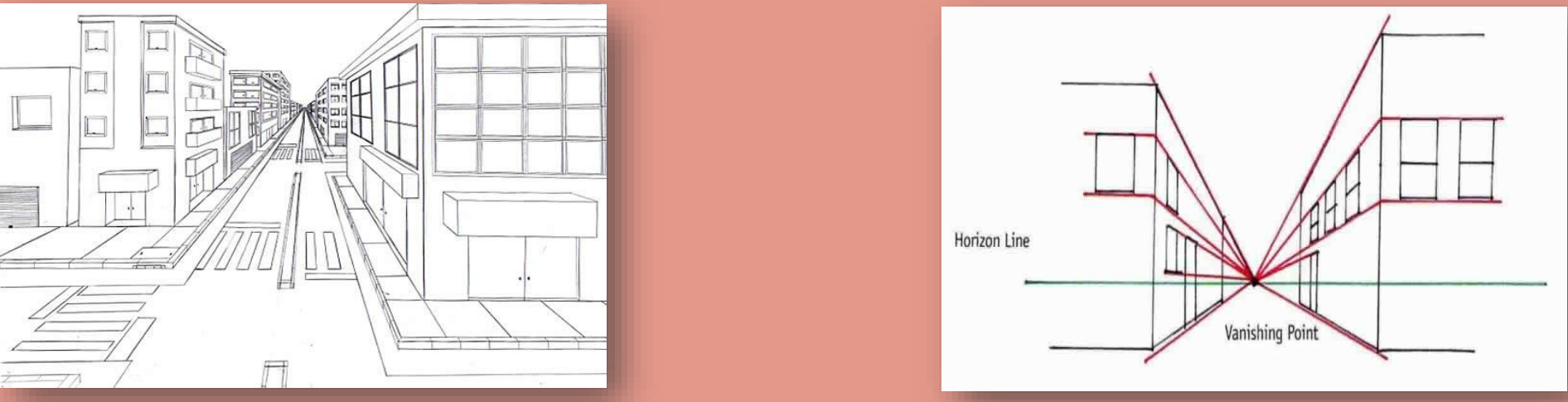


What is 3D?
3D stands for three dimensions that is X-axis, Y-axis and Z-axis or Length, Width and Height/Depth

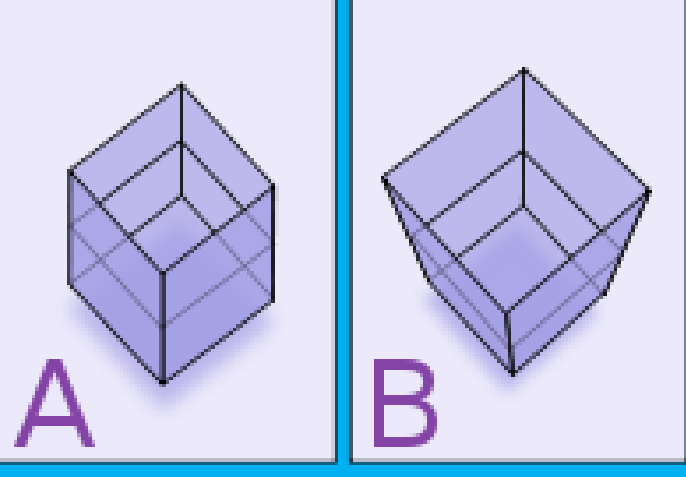


History of Perspective
In about 1413, Filippo Brunelleschi demonstrated the geometrical method of perspective

What is perspective?
Perspective in the graphic arts is an approximate representation on a flat surface (such as paper), of an 3d image as it is seen by the eye.
The two most characteristic features of perspective are
1-Objects look smaller as their distance from the observer increases
2-Objects are subject to **foreshortening**, meaning that an object's dimensions along the line of sight are shorter than its dimensions across the line of sight.

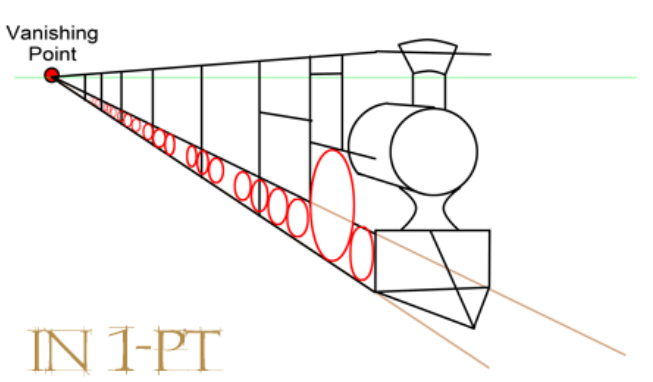


What is foreshortening ?
Two different projections of a stack of two cubes, illustrating oblique parallel projection foreshortening ("A") and perspective foreshortening ("B")
Foreshortening is the visual effect or optical illusion that causes an object or distance to appear shorter than it actually is because it is angled toward the viewer. Additionally, an object is often not scaled evenly: a circle often appears as an ellipse and a square can appear as a trapezoid.



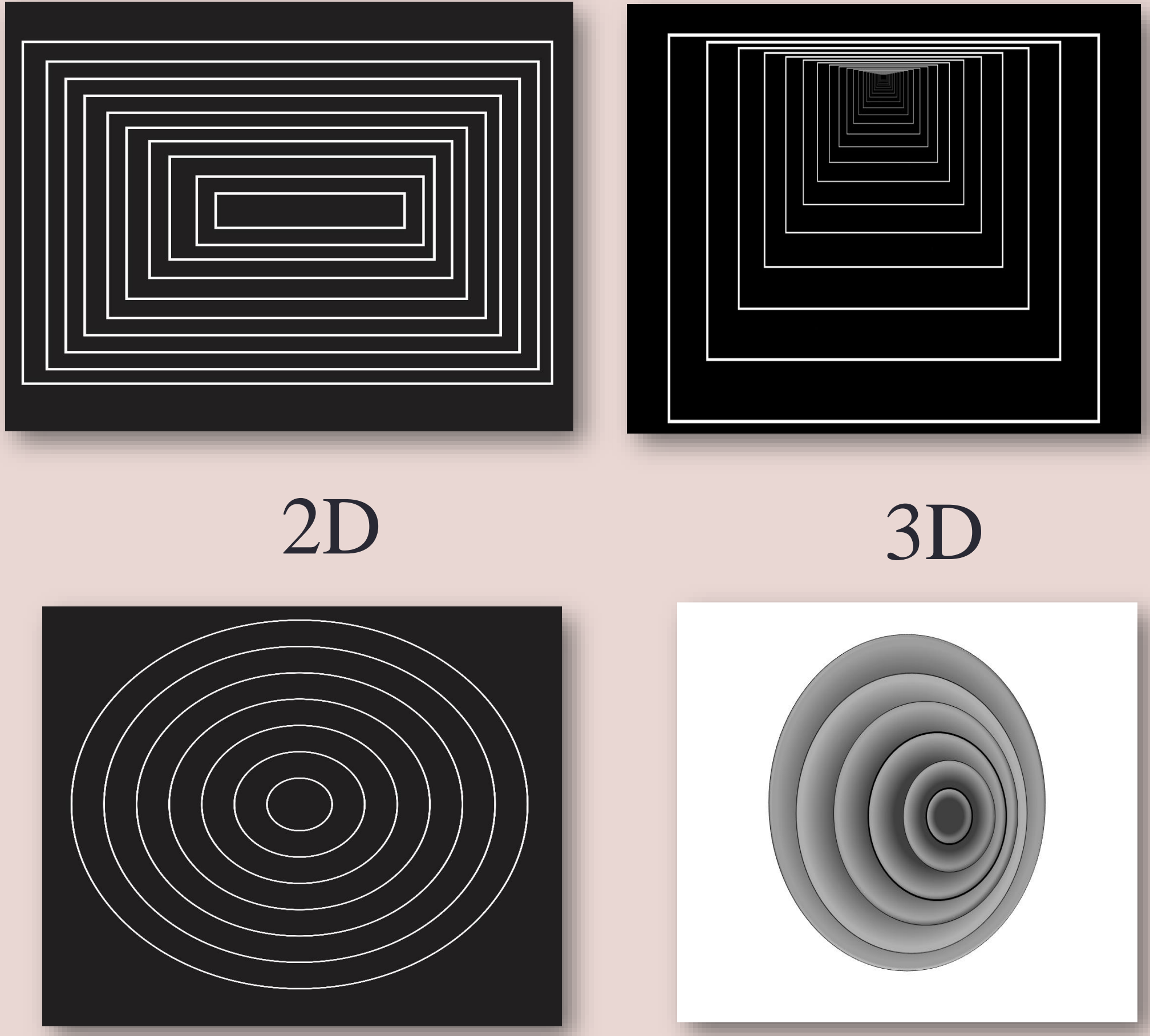
Two different projections of a stack of two cubes, illustrating oblique parallel projection foreshortening ("A") and perspective foreshortening ("B")

What is one point perspective?
A one-point perspective drawing means that the drawing has a single vanishing point, usually (though not necessarily) directly opposite the viewer's eye and on the horizon line. All lines parallel with the viewer's line of sight recede to the horizon towards this vanishing point. This is the standard "receding rail on track" phenomenon.




What is vanishing point?
In graphical perspective, a vanishing point is a point in the picture plane that is the intersection of the projections (or drawings) of a set of parallel lines in space on to the picture plane. When the set of parallels is perpendicular to the picture plane, the construction is known as one-point perspective.

Models



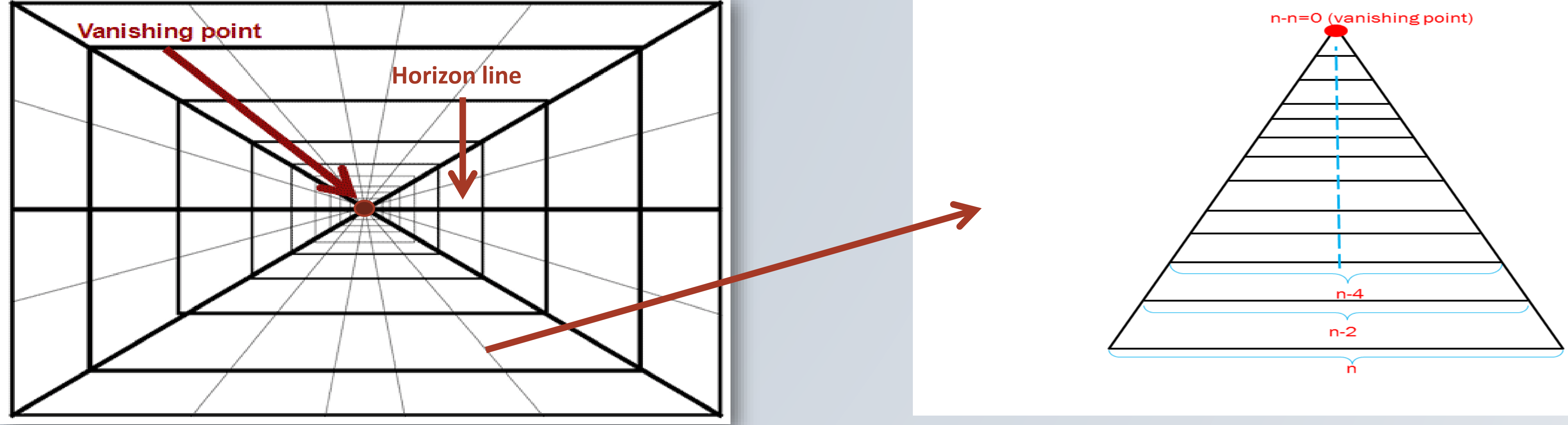
2D 3D

Real Life examples



Metro track in tunnel **Corridor**

MATHEMATICAL EXPLANATION
Of
How does model show one point perspective?



STEP-1: TAKE A RECTANGULAR SHEET OF LENGTH 'n' Unit AND CERTAIN WIDTH 'm' Unit OR CIRCULAR DISK OF RADIUS 'n' Unit.
STEP-2: TAKE INFINTE (AS MANY AS POSSIBLE) RECTANGULAR/CIRCULAR CUT OUT OF EQUAL WIDTH FROM THAT SHEET/DISK .
STEP-3: NOW ARRANGE ALL THESE RECTANGLE/CIRCLE AT VERY SMALL DISTANCE (NEGLIGIBLE BUT UNIFORM DIATANCE).
STEP-4: WHOLE ARRANGEMENT STARTS SHOWING ONE POINT PERSPECTIVE. A 2D OBJECT(RECTANGULAR SHEET/CIRCULAR DISK) HAS TRANSFORMED INTO A 3D OBJECT.