HOW we SEE IN 3D

Seeing in 3D

Binocular vision *(Stereoscopy)* is the ability to align and focus both eyes accurately on an object and then combine the visual images from each eye into a single, clear three dimensional perception. Difficulty seeing in 3D can arise when eye fatigue occurs, forcing the eyes to make adjustments to focus simultaneously on images that are near and far away.

First, you need two well-functioning eyes, with clear vision in each.

Second, you need to have mastered the task of focusing on objects near and far.

Third, you need to develop the ability to coordinate the movement of your eyes.

Fourth, you need to be able to 'fuse' the different images coming from each eye into one 3D perception.

Stereoscopy creates the illusion of three-dimensional depth from images on a two-dimensional plane. Human vision uses several cues to determine relative depths in a perceived scene.[4] Some of these cues are:

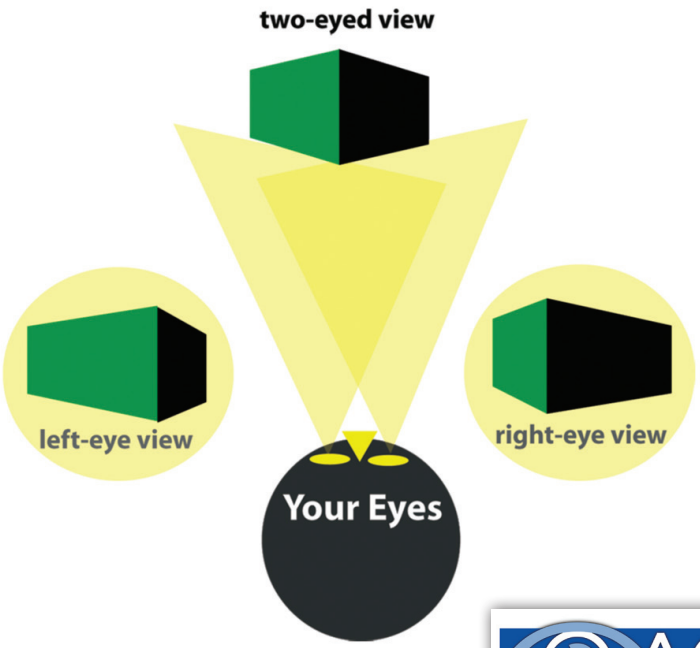
- *Stereopsis*
- *Accommodation of the eye*
- *Overlapping of one object by another*
- *Subtended visual angle of an object of known size*
- *Linear perspective (convergence of parallel edges)*
- *Vertical position (objects higher in the scene generally tend to be perceived as further away)*
- *Haze, desaturation, and a shift to bluishness*
- *Change in size of textured pattern detail*

Reflection Questions:

Which shape is 3D?

How can you tell which is 3D?





Source: 3DUniversity.net

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