Visual Displays & Online Instruction

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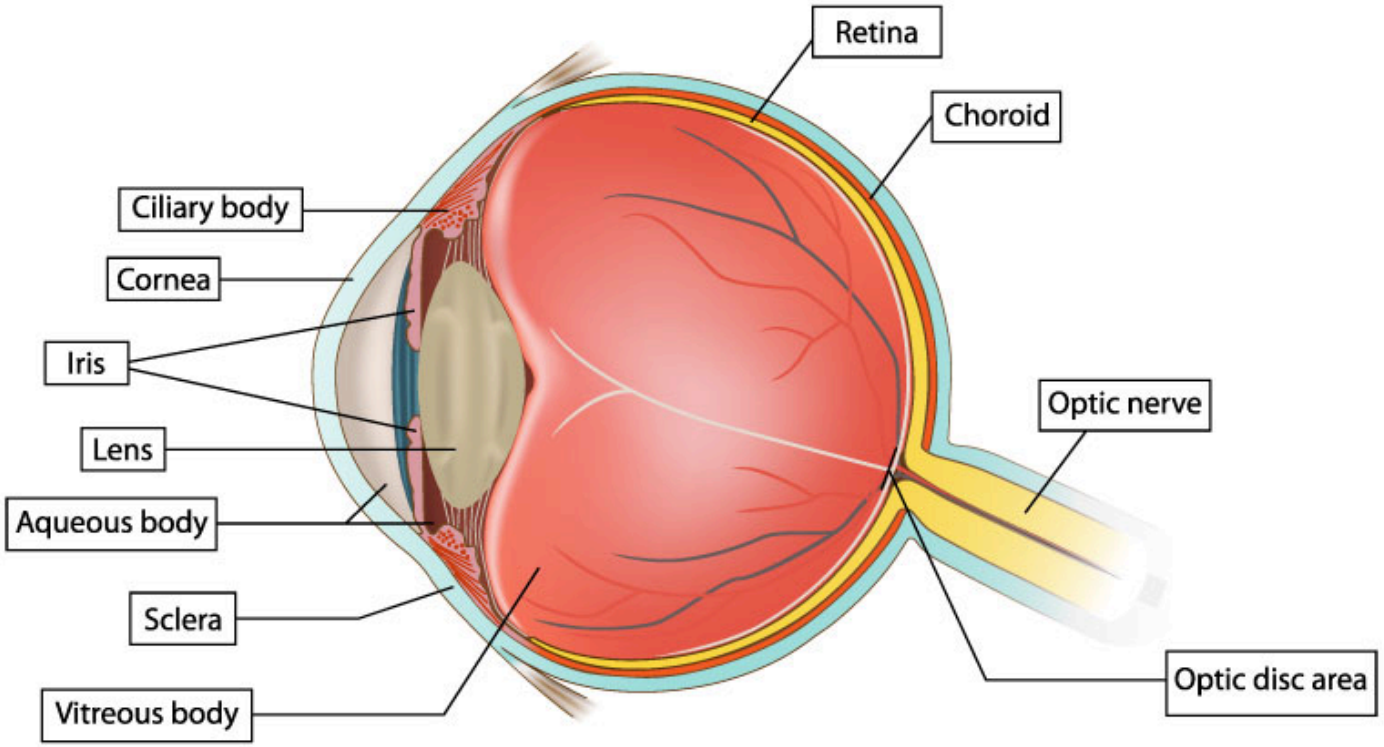
E
E P
T O Z
L P E D
P E C F D
E D F C Z P
F E L O P Z D
D E F P O T E C
L E F O D P C T
F D P L N C E O

Eye Test

If you've ever been to the eye doctor, then you have seen this chart. This is used to determine how good your vision is and if you need help seeing or not.

The Eye


Retina
Choroid
Ciliary body
Cornea
Iris
Optic nerve
Lens
Aqueous body
Sclera
Optic disc area
Vitreous body

Parts of the Eye

Cornea- transparent outer layer of the anterior eye wall

Ciliary body-secretes aqueous humor and contains the ciliary muscle

Iris- colored part of your eye around the pupil that regulates its size

Lens- transparent structure behind the iris that brings rays of light to a focus on the retina

Aqueous humor- watery fluid that fills the anterior cavity of the eye

Sclera- white fibrous outer layer of the eyeball (whites of your eye)

Parts of the Eye (continued)

Vitreous humor- fluid between the lens and the retina of the eye

Vitreous body- collagenous fibers and fluid in the posterior cavity of the eye

Retina- inner layer of the eye wall that contains the photoreceptors

Choroid- vascular, pigmented middle layer of the wall of the eye

Optic nerve- carries impulses from the eye to the brain; impulses converted into things you see

Optic disc- region in the retina of the eye where sensory fibers exit, becoming part of the optic nerve

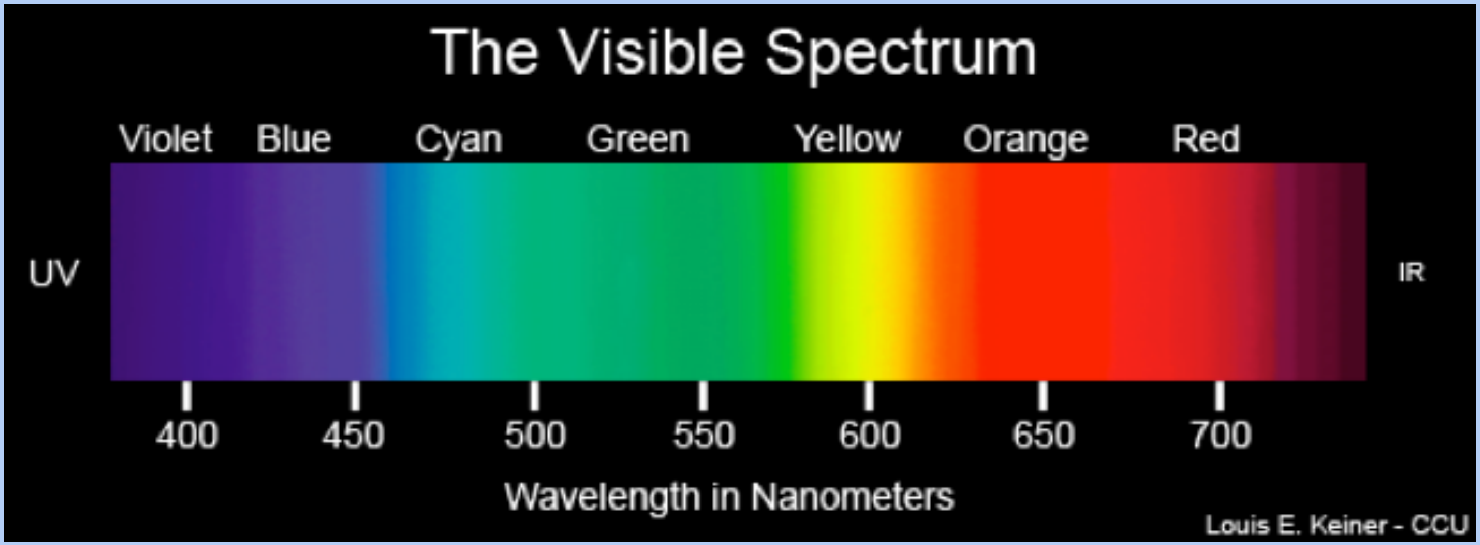
How the Eye Works

1. Light rays reflect off of an object and enter the eyes through the cornea.
2. The cornea bends the rays that pass through the round hole of the pupil.
3. The iris opens and closes, making the pupil bigger or smaller (regulating the amount of light passing through).
4. The light rays pass through the lens, which then changes shape to bend the rays of light more. The light is focused on the retina.
5. The retina contains millions of nerve cells (rods and cones) that convert light into electrical impulses.
6. The optic nerve sends those impulses to the brain, producing an image.

Rods and Cones

Rods- They are located outside the macula and extend to the outer edge of the retina. Rods provide peripheral vision, help detect motion, and help us see in dim light.

Cones - These are concentrated in the center of the retina in the macula. Cones provide sharp, clear central vision in bright light and detect colors and fine detail.


The Visible Spectrum
Violet
Blue
Cyan
Green
Yellow
Orange
Red
UV
IR
400
450
500
550
600
650
700
Wavelength in Nanometers
Louis E. Keiner - CCU

Variability

- Not everyone can see colors the same
- Visual acuity: Near vision, far vision, astigmatism
- Many different types of color blindness
- Trichromats- people with normal colour vision
- Anomalous trichromats- less accurate color distinctions
  - Deuteranomaly- reduced sensitivity to green light (most common)
  - Tritanomaly- reduced sensitivity to blue light (extremely rare)
- Dichromacy- total absence of function from one type of cone
  - Protanopia- can’t see red
  - Deuteranopia- can’t perceive green
  - Tritanopia- can’t perceive blue light

EXAMPLES

Normal v

Deuteranopia

Protanopia

Tritanopia

Red/Green Color Blindness

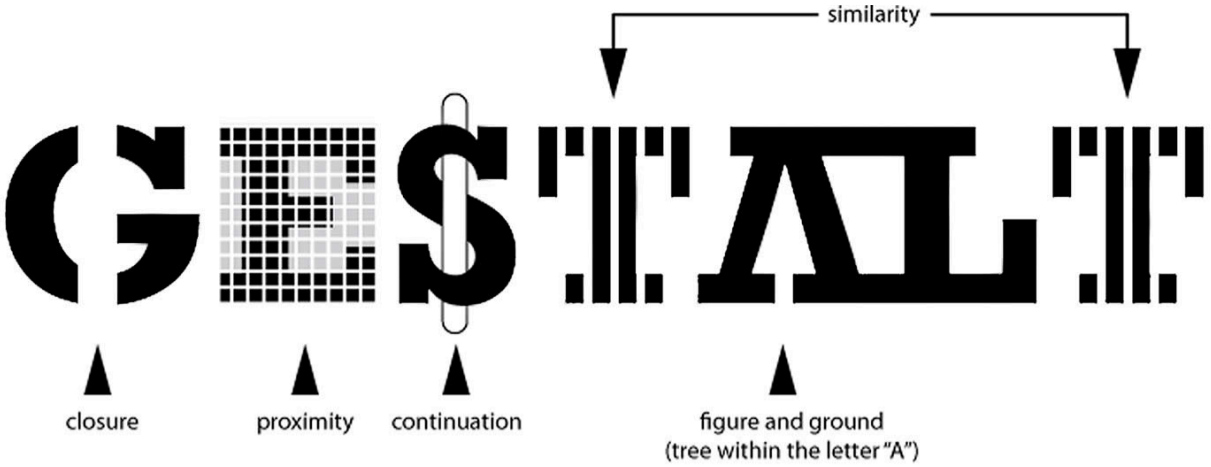
The reason that we call it red/green color blindness is because the cones that perceive red and green color overlap. This is the reason why people with deuteranopia and protanopia see in a similar way.

Additive & Subtractive Colors

- Applies to light source
- Computer Monitors
- Emitted Light
- Apples to reflected
- Light
- Printed images
- Pigments and paint

Gestalt Theory

Gestalt means “unified whole”. It refers to theories of visual perception developed by German psychologists in the 1920s. The theories attempt to describe how people tend to organize visual elements into groups when certain principles are applied. (graphicdesign.spokanefalls.edu)



Strong Figure Ground

You can see the figure clearly in these images.

Ambiguous Figure Ground

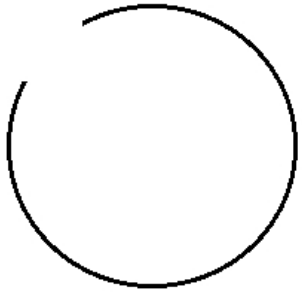
Ambiguous Figure Ground (Continued)

- A lamp or two people?
- A tree or a gorilla staring at a lion?

In these images there isn’t a definite figure and ground, they change as the eye perceives them differently.

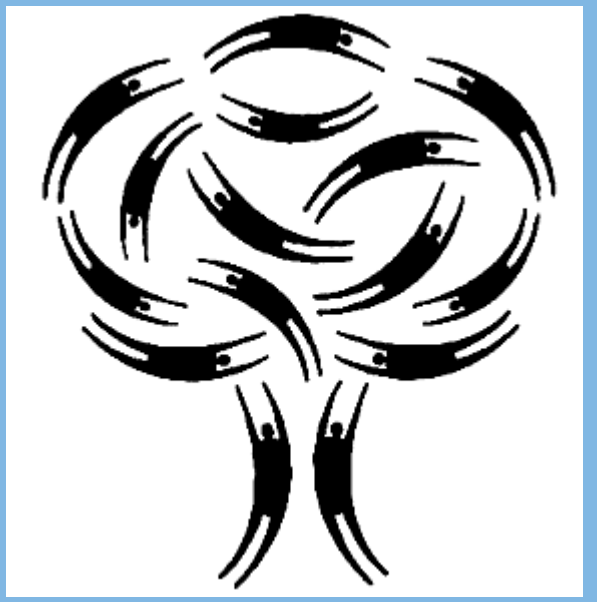
Closure

Even though these images and shapes aren't complete, our eyes complete them and this creates closure



Proximity

When items are close together, we usually perceive them as a group. These images contains individual shapes, but our eyes see them as a group.

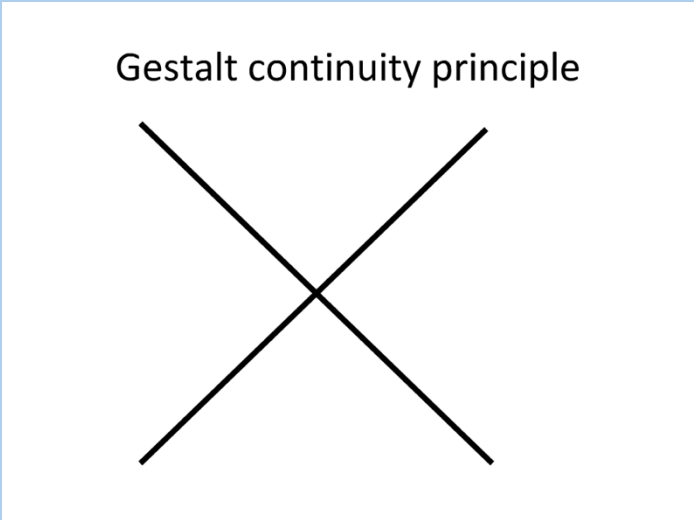


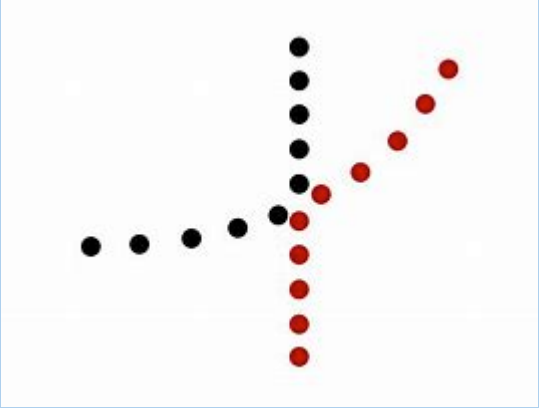
Similarity

The image of the eagle with the sun behind it contains 11 distinct shapes, but because they are similar we see it as one image. The coke logo is actually individual bottles, but we see it as one image and it looks like a smile.

Continuity

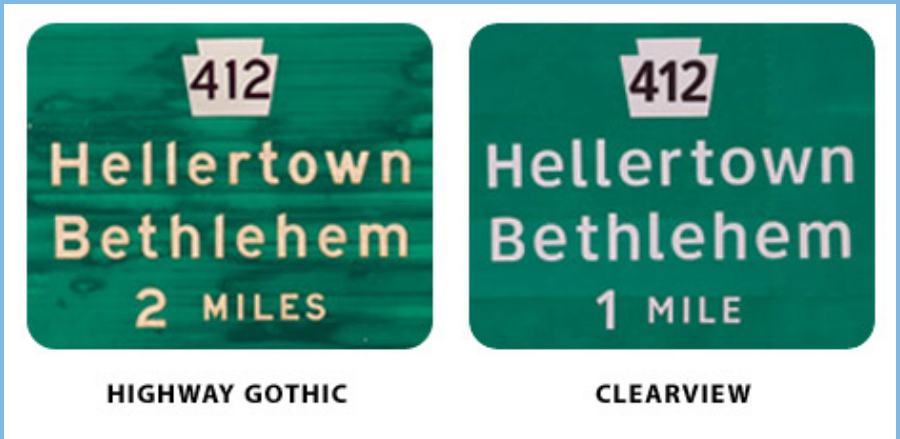
We tend to see a relationship between objects, even if they are separate things that are only in close proximity of each other.





Clearview vs. Highway Gothic

There are a mix of these two fonts on today's road signs. Most agree that the clearview font, rather than highway gothic, is easier to see in the dark when your headlights shine on it.



Online Instruction

- Nontraditional student friendly
- More interaction, rather than traditional lectures (discussion boards)
- Students must learn responsibility for their own learning.
- Can take your work with you
- Some people may have a hard time not having face-to=face contact with the professor

Facts about online classes

University of Potomac says that 77% of educators believe that online learning is just has good has face to face learning.

- 70% of student say that being taught either online or in traditional classrooms are effective
- 26% of student say that online classes are better than face to face classes

https://potomac.edu/learning/online-learning-vs-traditional-learning/

Online degrees and the Workplace

Previously, online college classes were seen as illegitimate, but that attitude has since changed, and many businesses treat degrees and certifications completed online as being equivalent to any traditional education methods.

Online classroom.org

Classroom vs online learning

- Though many may not favor the alternative online courses, there are many reasons why online classes can be just as helpful, if not better than traditional classroom courses.
- A whole classroom of other students can be distracting and destructive to a student's personal learning; both teachers and students can go off on tangents and the discussion can be swayed in a way that is completely irrelevant to the topic that is being taught

http://nccvoice.com/debate-online-classes-vs-classroom-learning/

What i think about online class -Taylor

I personally think that they are harder than face to face class, because there is a lot of work to keep up with.

I also think that they’re good in some ways. If you need to take a class over the summer, you can take it from home!

Which is more popular today?

Online learning is more popular, because many high schools now require their student to take online classes to better prepare them for college.

Works cited

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