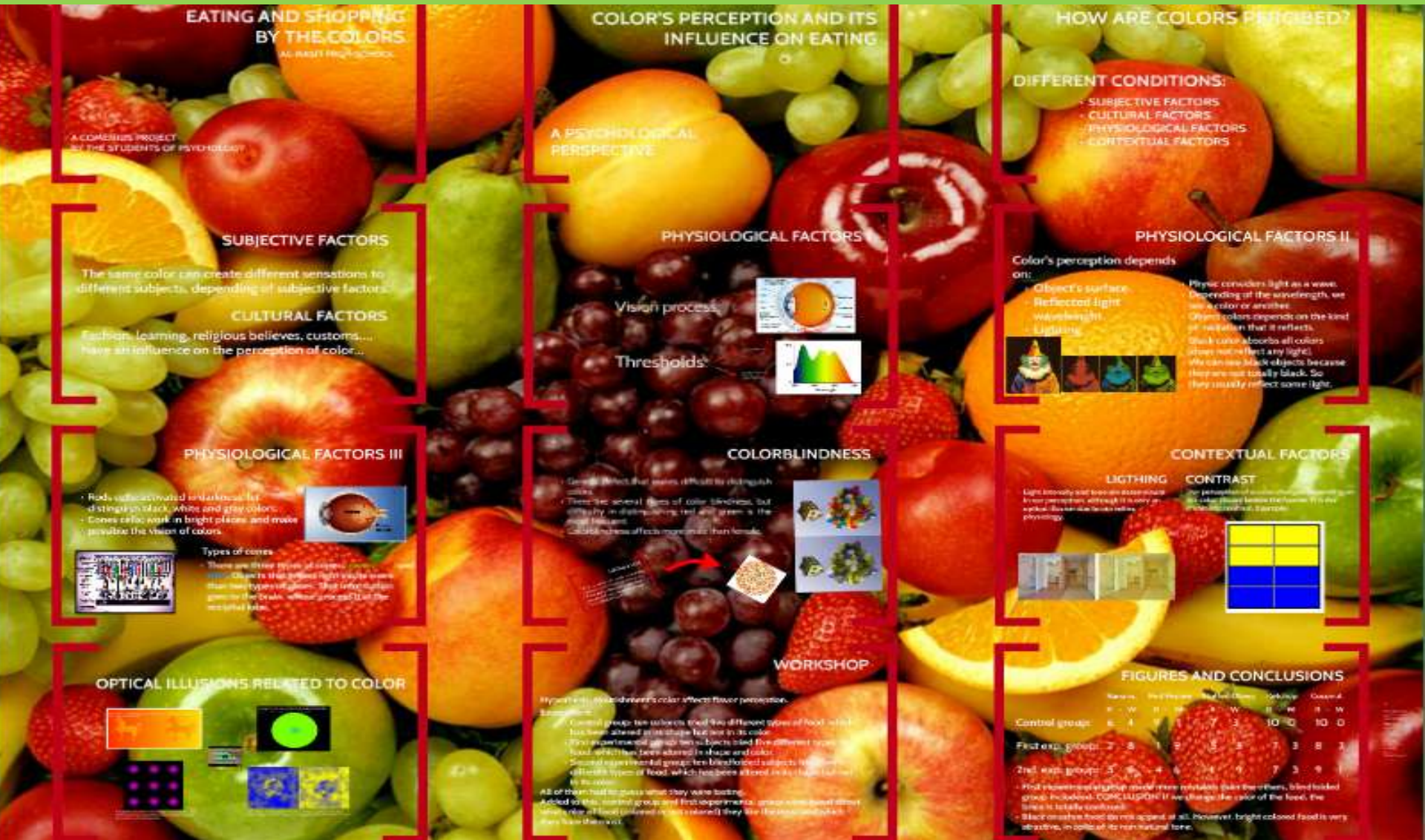
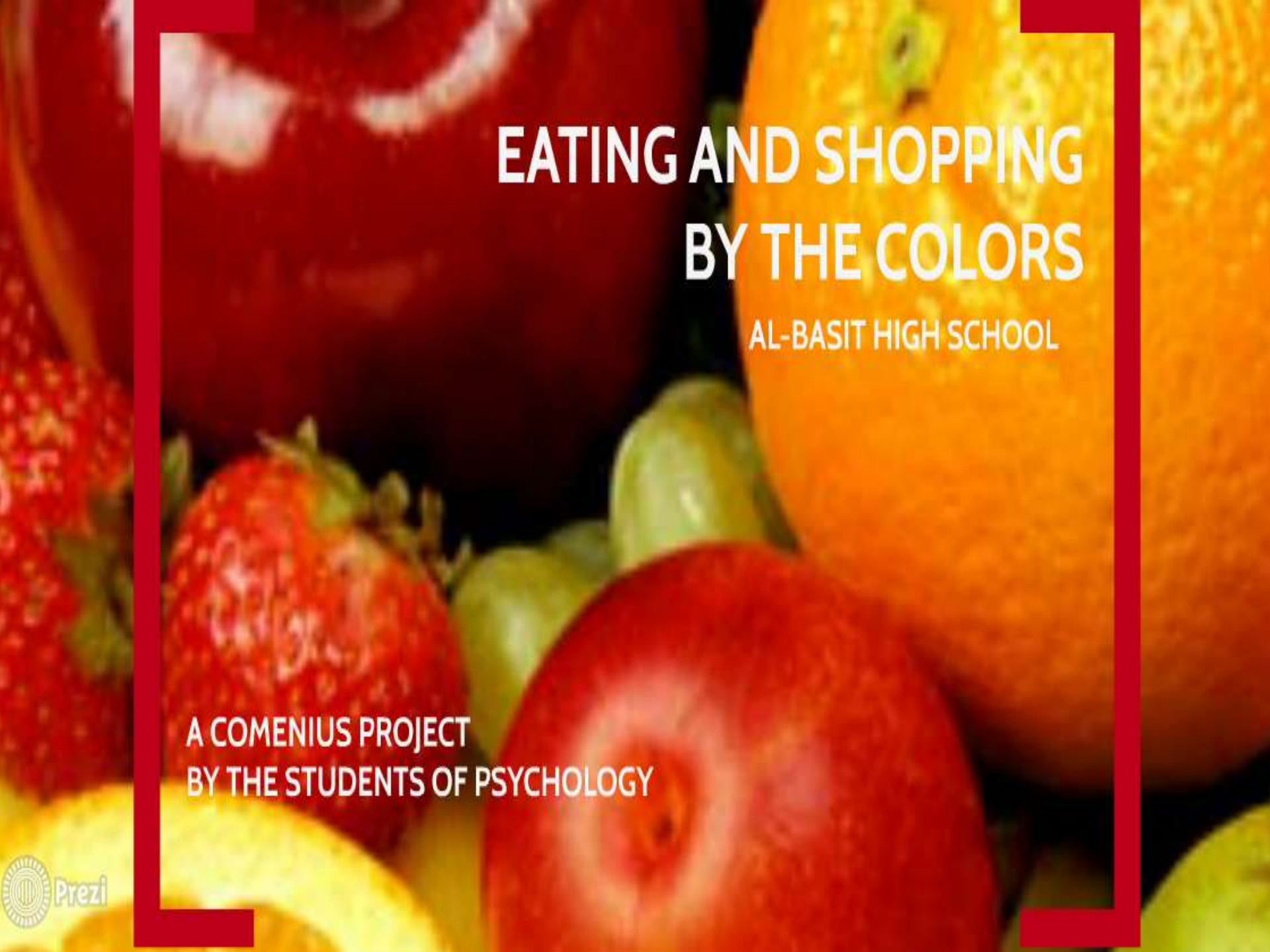
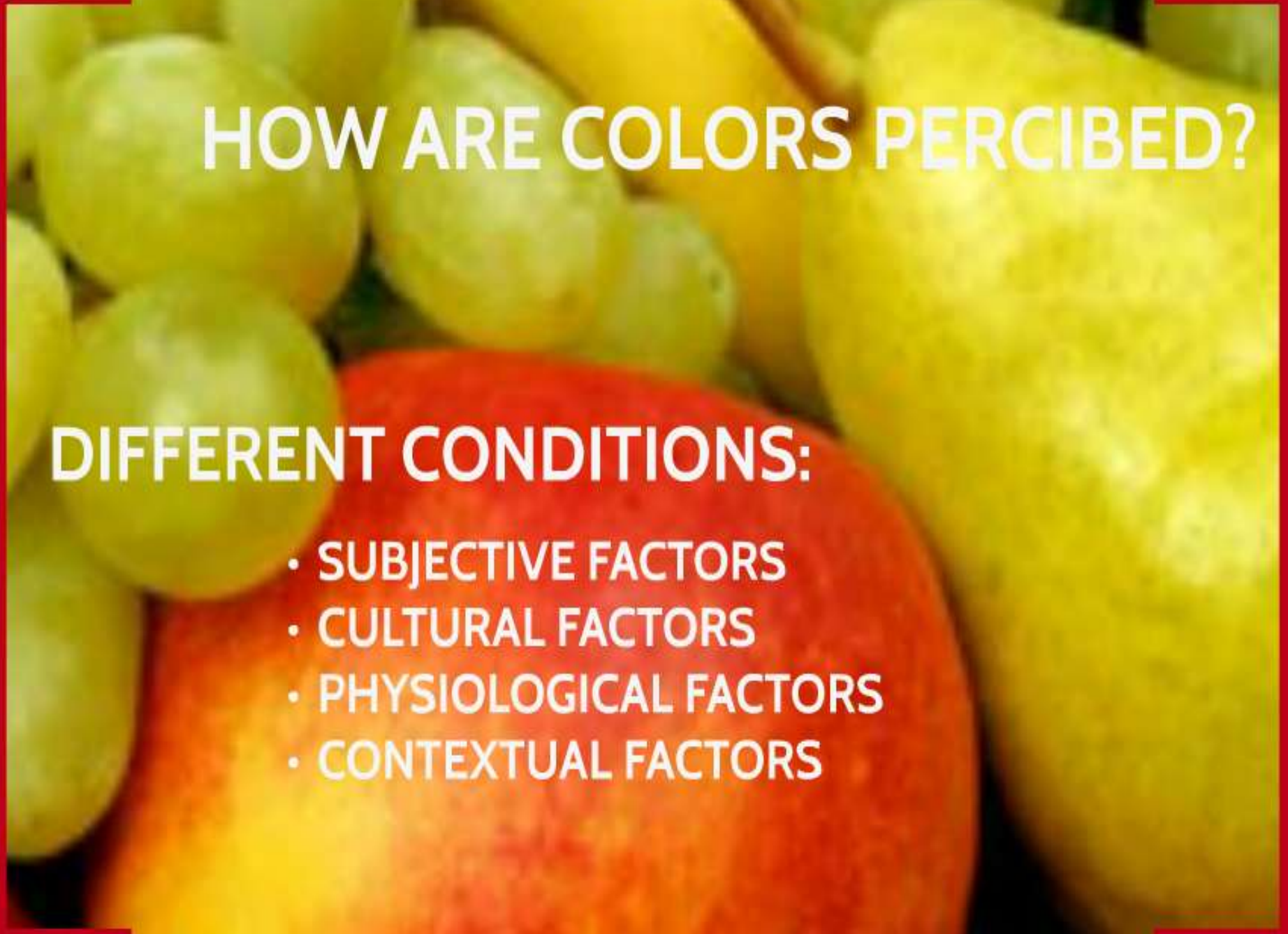
COLOR´S PERCEPTION AND IT´S INFLUENCE ON EATING




EATING AND SHOPPING
BY THE COLORS
AL-BASIT HIGH SCHOOL
A COMENIUS PROJECT
BY THE STUDENTS OF PSYCHOLOGY
Prezi


COLOR'S PERCEPTION AND ITS INFLUENCE ON EATING
A PSYCHOLOGICAL PERSPECTIVE


HOW ARE COLORS PERCIBED?
DIFFERENT CONDITIONS:
• SUBJECTIVE FACTORS
• CULTURAL FACTORS
• PHYSIOLOGICAL FACTORS
• CONTEXTUAL FACTORS


SUBJECTIVE FACTORS
The same color can create different sensations to different subjects, depending of subjective factors.
CULTURAL FACTORS
Fashion, learning, religious believes, customs..., have an influence on the perception of color...

Age, personality, physical state, attention, personal motivations or preferences..., are individual factors.

Examples

If a kid witnessed a bloody accident, he might reject red color objects.

Someone can feel attached to some colors because they belong to his favorite football team, or his country's flag.


SUBJECTIVE FACTORS
The same color can create different sensations to different subjects, depending of subjective factors.
CULTURAL FACTORS
Fashion, learning, religious believes, customs..., have an influence on the perception of color...

- Children remember colors better than verbal directions. Combining lesson materials with colors can help children to memorize information.
- In a culture in which education is usually the same for all children, common patterns of perception of color appears (for instance, green for correct answers , red for failures).

Red color is conceived on different ways in different geographical areas:

- East: it is the luck color, used by brides.
- West: it represents emotion, danger, love, passion, but also violence and sexuality.
- China: it symbolizes good luck, celebration.
- South Africa: it is the color of mourning.

Yellow color:

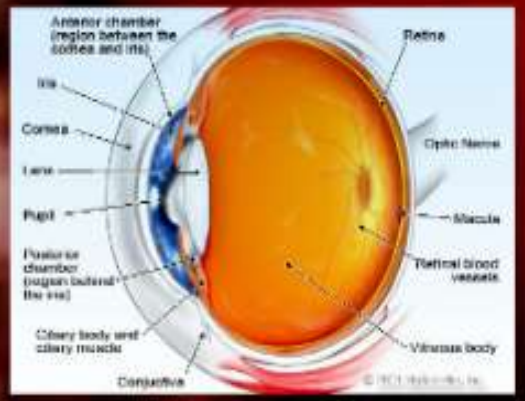
- West: It symbolizes illness, cowardice and contempt, but also friendship.
- East: It is a symbol of power and strength.

White color:

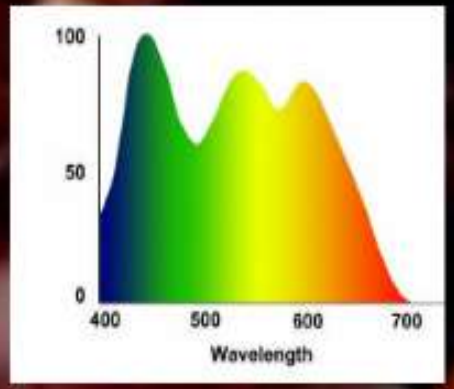
- West: It is color for brides, angels and peace. It symbolizes innocence, purity and novelty.
- East: In China it is the color of mourning. It means purity, but also bad luck. In Japan, white symbolizes death.

PHYSIOLOGICAL FACTORS I

Vision process.

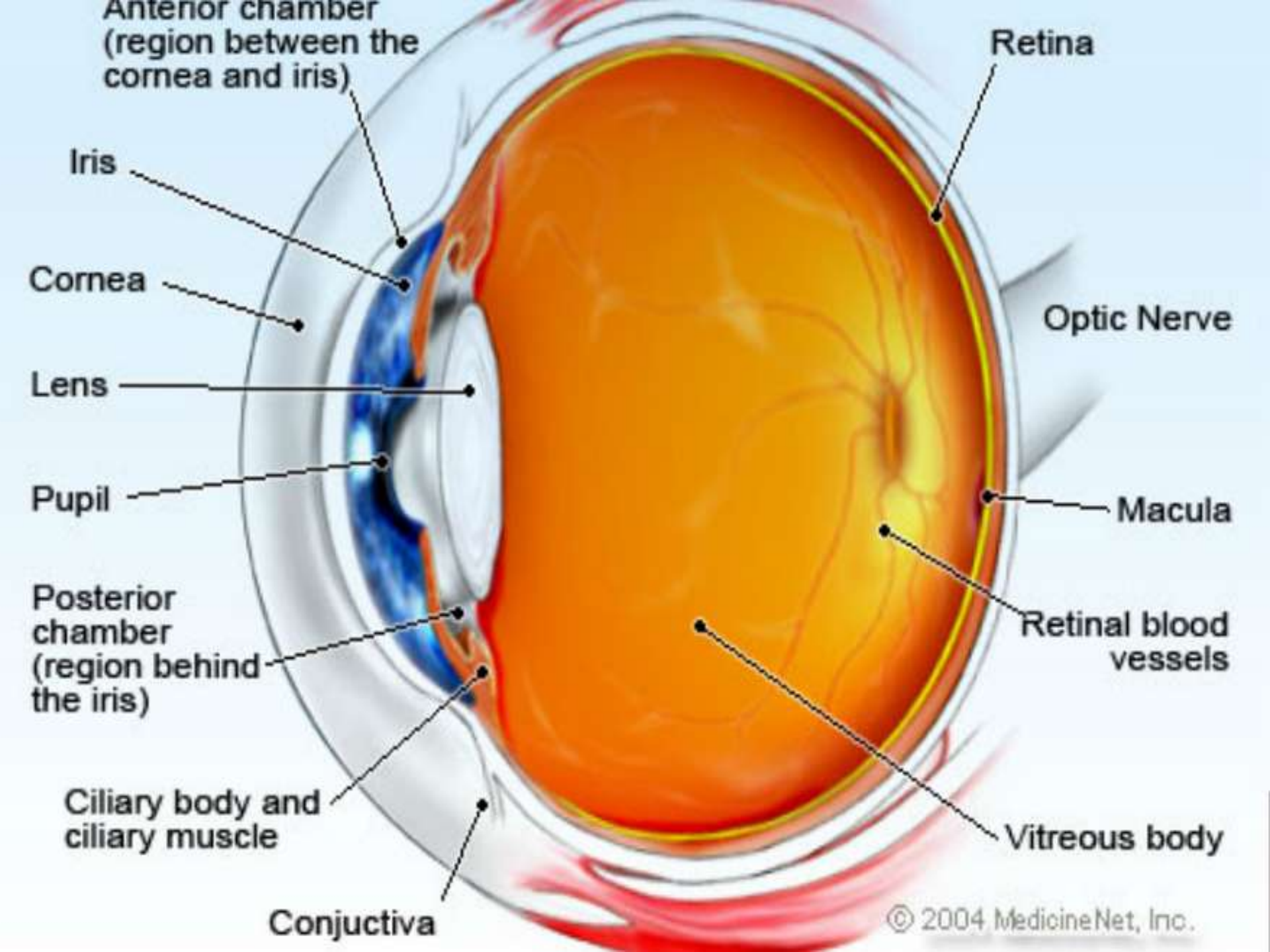


Thresholds:



Vision process.

- Eyes receive luminous energy (light - electromagnetic waves).
- It crosses cornea, pupil and lens until arriving to the retina.
- Cone cells and rod cells, placed in the retina, translate electromagnetic waves into nerve impulses.
- Through optic nerve, nerve impulse travels from eyes to the brain.
- The light that eyes receive does not come directly from the sun, but from the reflection on objects.


Anterior chamber (region between the cornea and iris)
Retina
Iris
Cornea
Optic Nerve
Lens
Pupil
Macula
Posterior chamber (region behind the iris)
Retinal blood vessels
Ciliary body and ciliary muscle
Vitreous body
Conjuctiva
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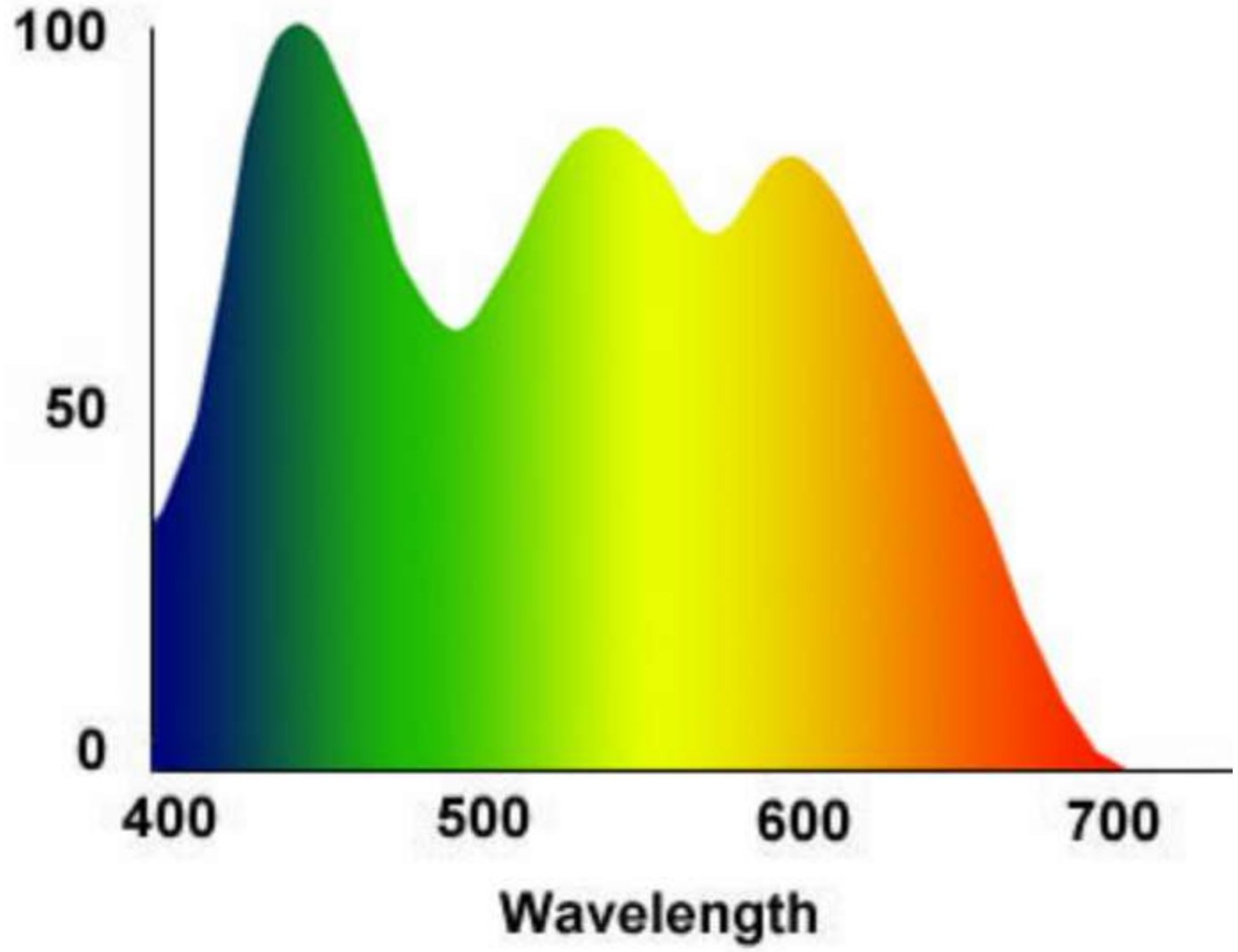
Thresholds:

- The highest level of a stimulus that a sense can detect.
- Our maximun optical threshold is, aproximately, 750 nm (red color).

Minimum threshold:

- It is the lowest level of a stimulus that a sense can detect.
- Under 400 nm (blue color) human eyes do not receive information.
- Someones think that under 400 nm eyes do not receive datas, but mind does (Subliminal perception).


100
50
0
400
500
600
700
Wavelength

PHYSIOLOGICAL FACTORS II

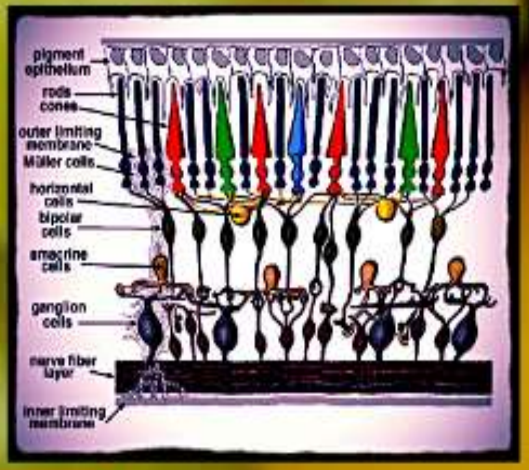
Color's perception depends on:

- Object's surface.
- Reflected light wavelenght.
- Lighting.

- Physic considers light as a wave.
- Depending of the wavelength, we see a color or another.
- Object colors depends on the kind of radiation that it reflects.
- Black color absorbs all colors (does not reflect any light).
- We can see black objects because they are not totally black. So they usually reflect some light.

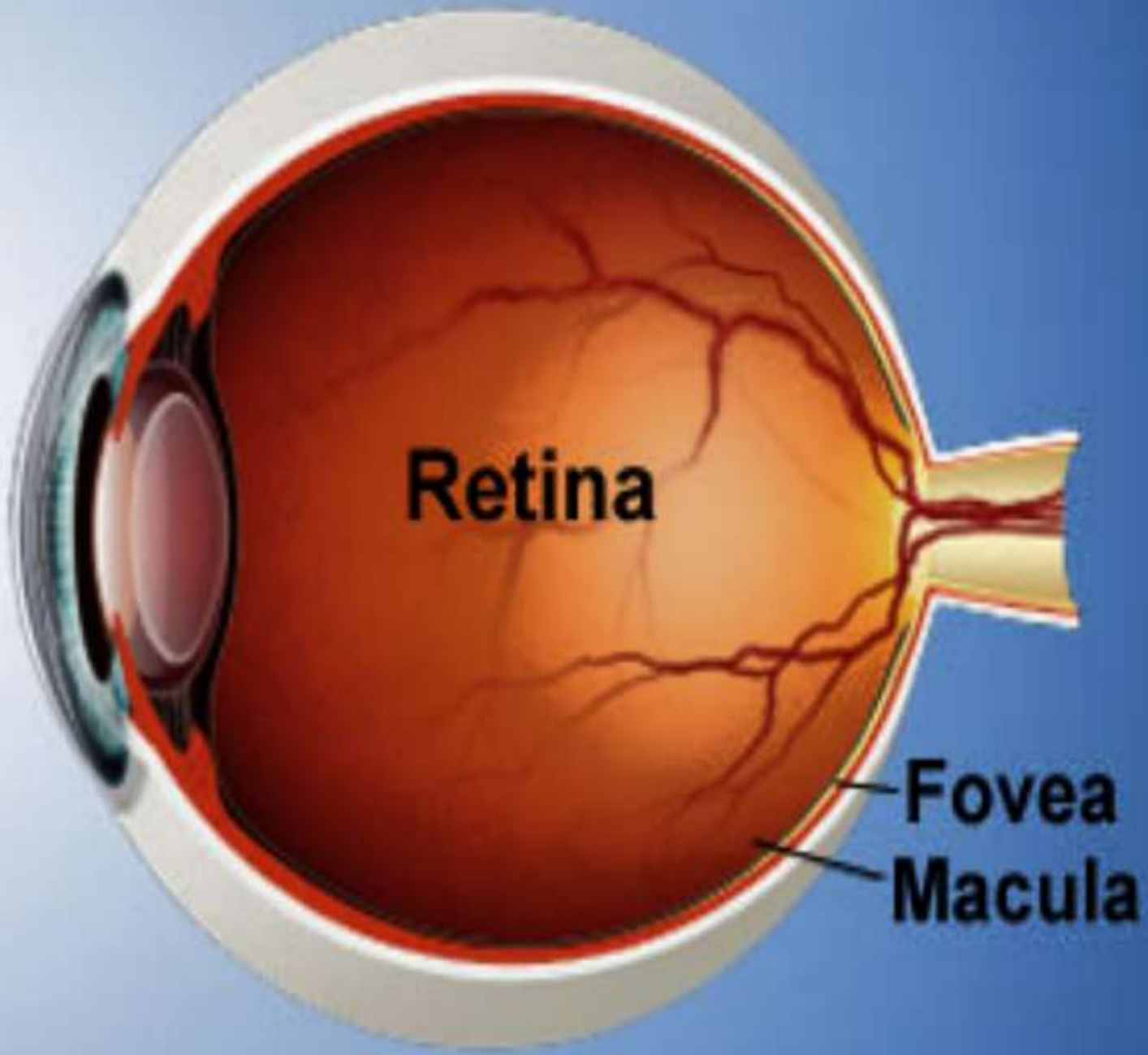
PHYSIOLOGICAL FACTORS III

- Rods cells: activated in darkness, let distinguish black, white and gray colors.
- Cones cells: work in bright places, and make possible the vision of colors.



Types of cones

- There are three types of cones: green, red and blue. Objects that reflect light excite more than two types of cones. That information goes to the brain, whose process it at the occipital lobe.


Retina
Fovea
Macula

Types of cones

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COLORBLINDNESS

- Genetic defect that makes difficult to distinguish colors.
- There are several types of color blindness, but difficulty in distinguishing red and green is the most frecuent.
- Colorblindness affects more male than female.

Ishihara test

- It is a series of cards containing colored circle dots at random sizes.
- These points form a number that people with normal sight can see, but a colorblind can not.

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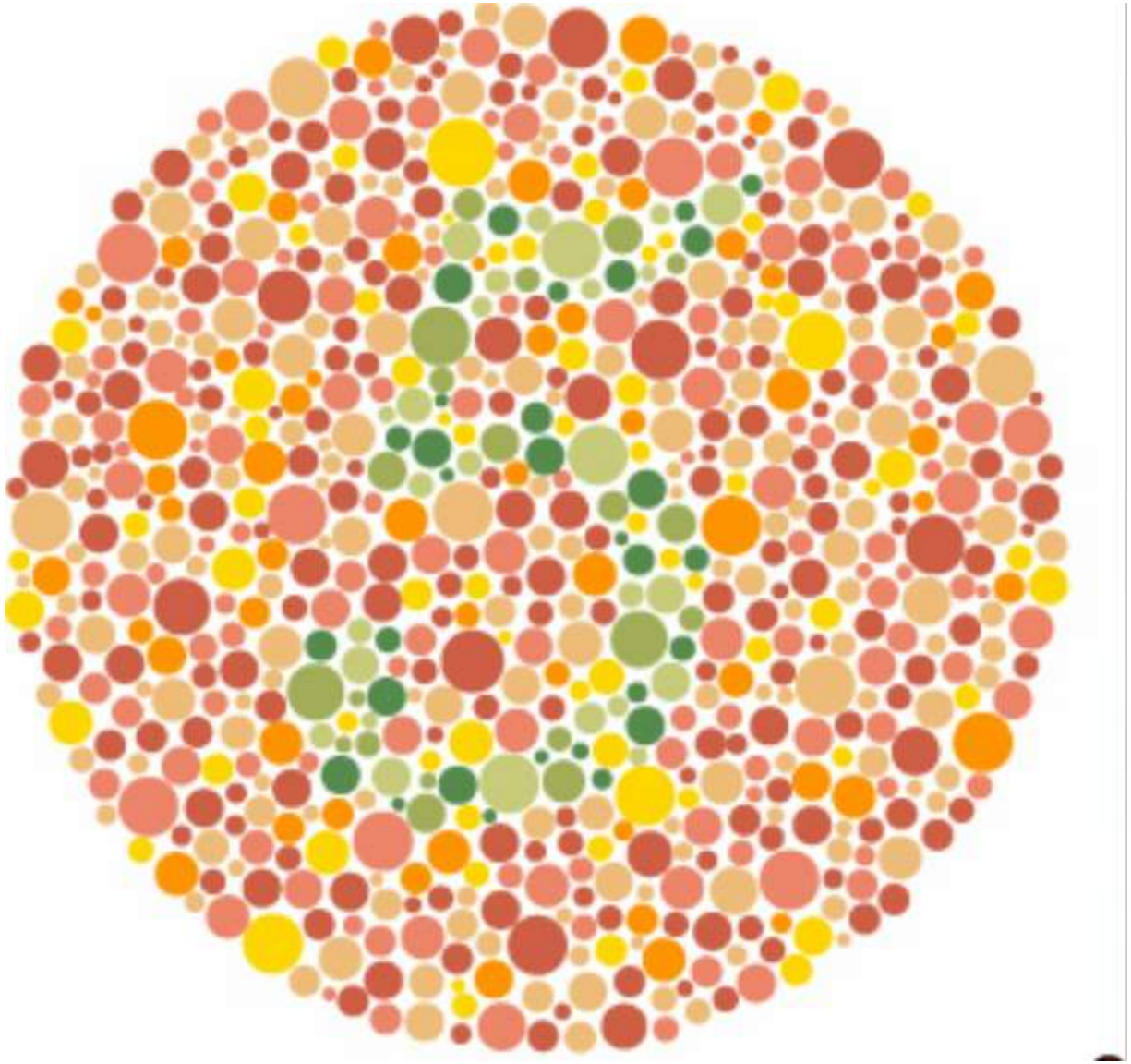


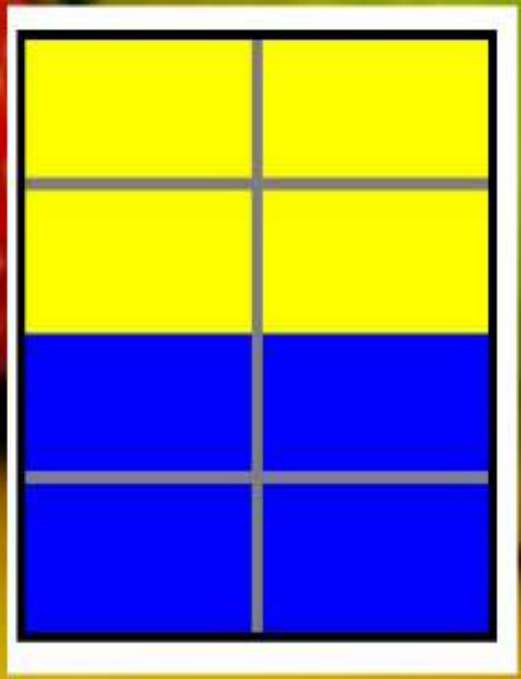
CONTEXTUAL FACTORS

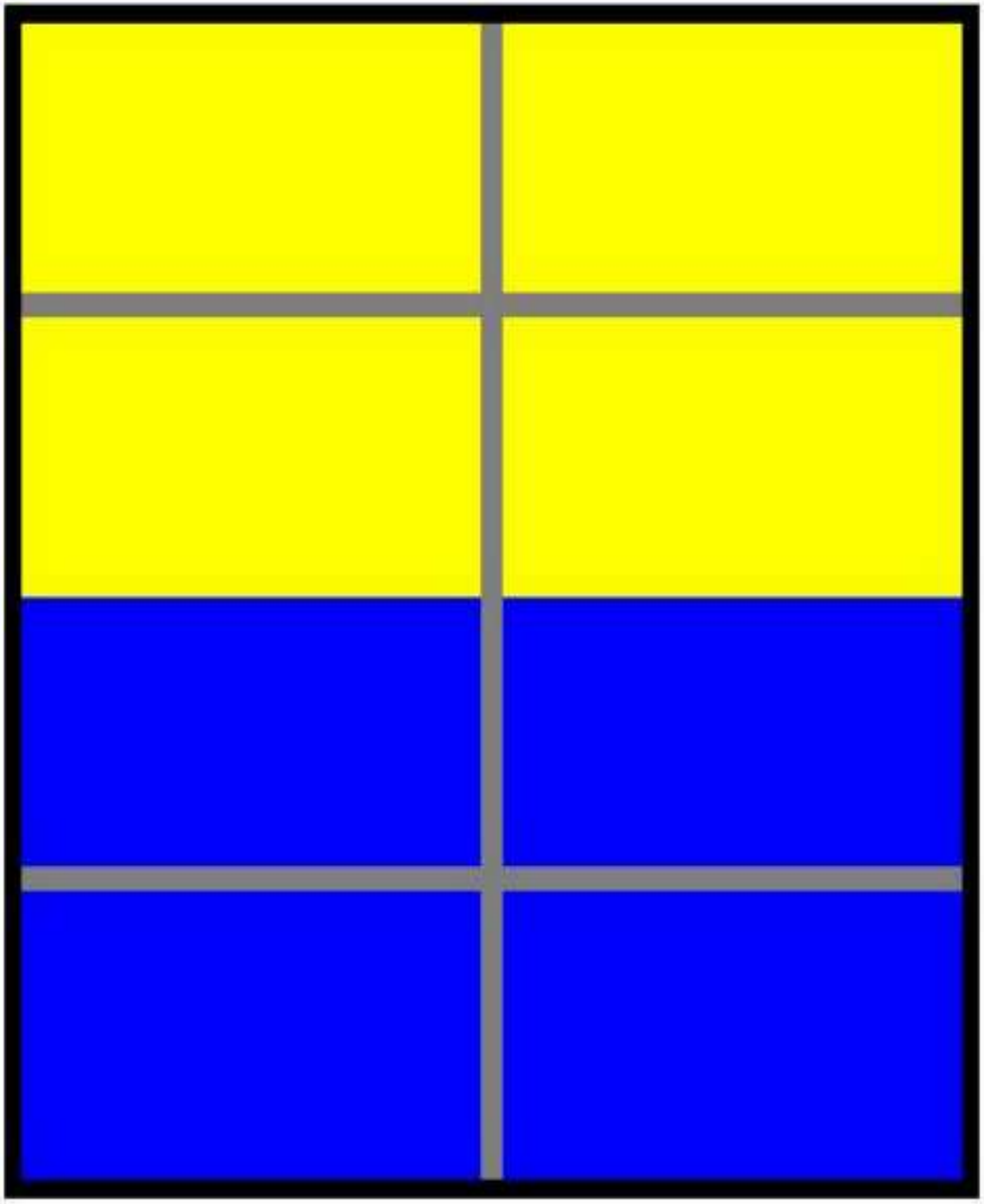
LIGTHING

- Light intensity and tone are determinant in our perception, although it is only an optical illusion due to our retina physiology.

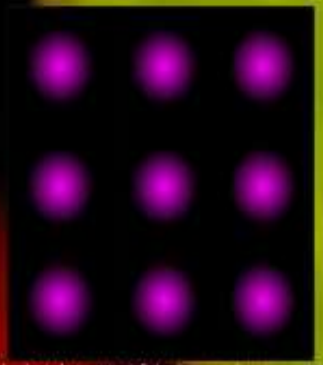
CONTRAST

- Our perception of a color changes depending on the color placed beside the former. It is the chromatic contrast. Example:

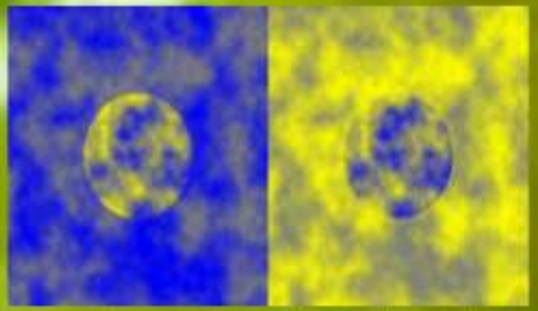




OPTICAL ILLUSIONS RELATED TO COLOR



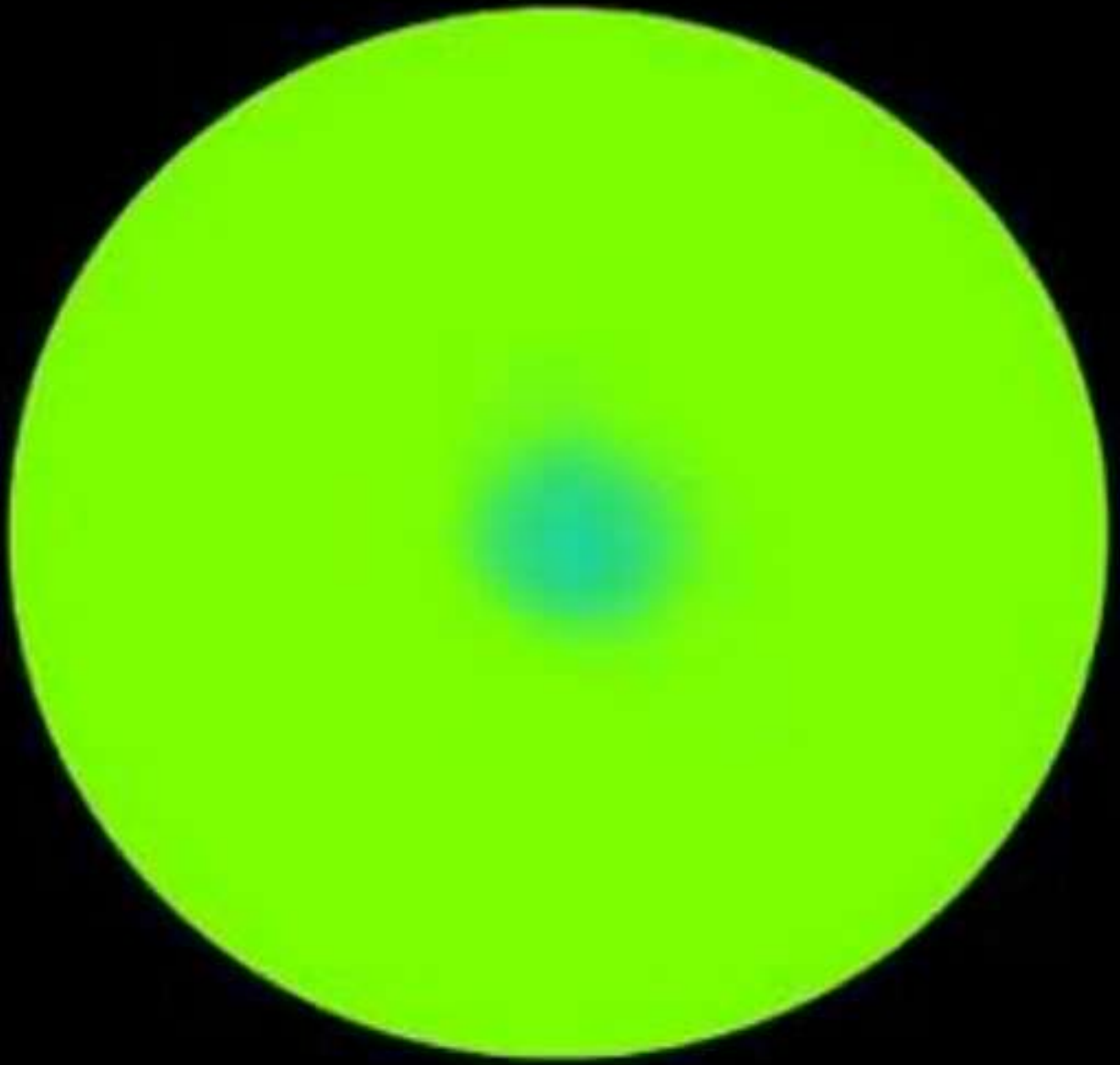
If we look at the center of the image, the surrounding ones will decrease their size and they will eventually disappear. Explanation: cone cell saturation.

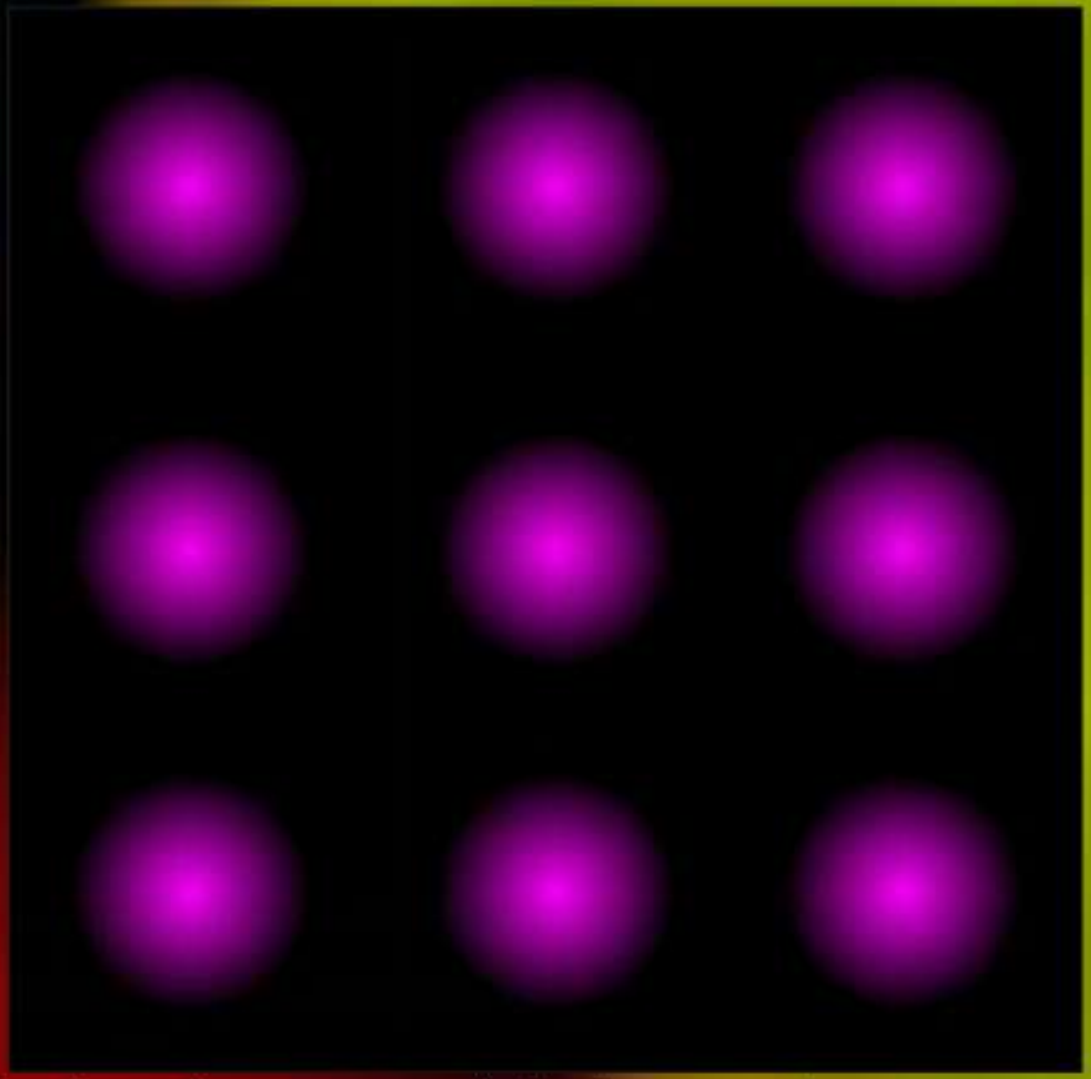


Both central circles are exactly the same (a blue one), although they look different. Explanation: changing the background we create this optical illusion.

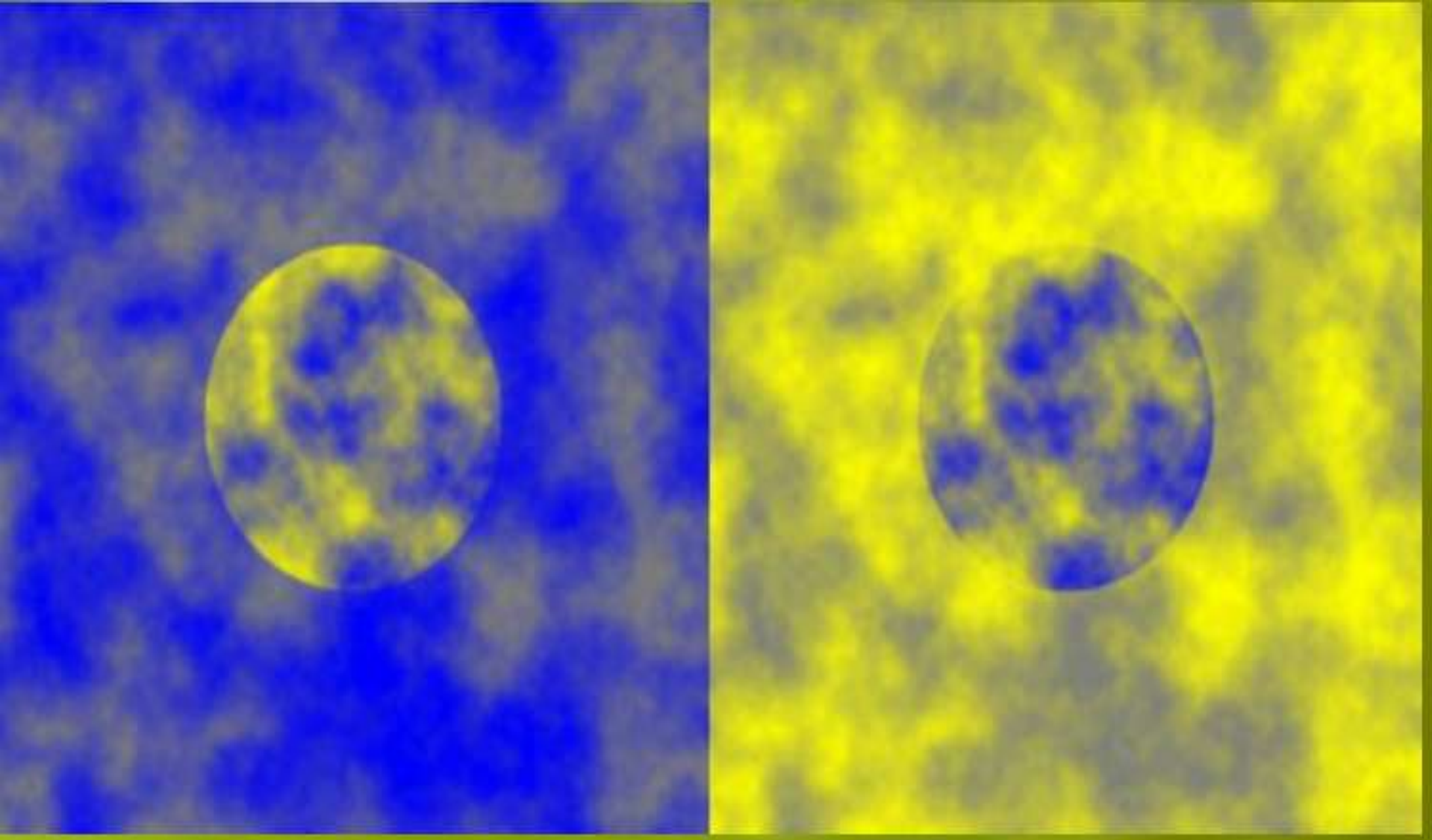
The color of the horses looks different, but it is the same. Explanation: the shading off background, in contrast with color of the horses, creates the illusion.

If we look at the blue spot, it will gradually disappear. Explanation: cone cell saturation. A post-imagen can appear also.





If we look at the center of the image, the surrounding areas will decrease their size and they will eventually disappear. Explanation: cone cell saturation.



Both central circles are exactly the same (a blue one), although they look different. Explanation: changing the background we create this optical illusion

WORKSHOP

Hypothesis: Nourishment's color affects flavor perception.

Experiment:

- Control group: ten subjects tried five different types of food which has been altered in its shape but not in its color.
- First experimental group: ten subjects tried five different types of food which has been altered in shape and color.
- Second experimental group: ten blindfolded subjects tried five different types of food which has been altered in its shape but not in its color.

All of them had to guess what they were tasting.

Added to this, control group and first experimental group were asked about what color of food (colored or not colored) they like the most and which they hate the most.
















FIGURES AND CONCLUSIONS

	Banana		Red Pepper		Stuffed Olives		Ketchup		Coconut	
	R	W	R	W	R	W	R	W	R	W
Control group:	6	4	9	1	7	3	10	0	10	0
First exp. group:	2	8	1	9	5	5	7	3	8	2
2nd. exp. group:	5	5	4	6	1	9	7	3	9	1

- First experimental group made more mistakes than the others, blindfolded group includeed. CONCLUSION: If we change the color of the food, the brain is totally confused.
- Black or ochre food do not appeal at all. However, bright colored food is very atractive, in spite of its non natural tone.

Main Resources:

http://roble.pntic.mec.es/~mbedmar/iesao/quimica/teoriafi.htm
http://cala.unex.es/cala/epistemowikia/images/thumb/6/69/TomateLuz.png/288px-TomateLuz.png
http://www.ub.edu/pa1/node/55

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