

# The blind spot



Biology

Human Physiology

Hearing &amp; Seeing

Nature &amp; technology

From senses to measuring



Difficulty level

easy



Group size

1



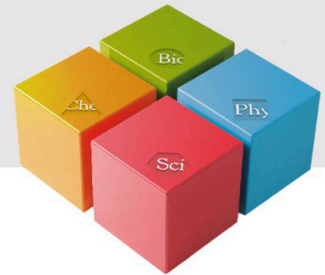
Preparation time

10 minutes



Execution time

10 minutes

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## Teacher information

### Application

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Human eye

That the world is not always as it seems is usually perceived by everyone in a different way. However, there are occasions when one can remind oneself that all people are to some extent the same. This is also the case with the otherwise so subjective perception.

This experiment shows in a simple way one of these opportunities by means of the blind spot which is made visible in this experiment but which is otherwise not perceptible in everyday life.

## Other teacher information (1/2)

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### Previous knowledge



The point of entry of the optic nerve into the retina of the eye is insensitive to light, since there are no light-sensitive elements - cones and rods - present. It is therefore called the blind spot.

### Principle



This experiment exploits the physiology of the eye and draws attention to things that are not perceived under normal circumstances.

## Other teacher information (2/2)

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### Learning objective



In this experiment, students are asked to demonstrate the presence of the blind spot.

### Tasks



Have the students look at the circular figure in the illustration with their left eye and then bring the illustration to a distance where the triangle disappears even though it should be visible.

The experiment can also be performed for the right eye by rotating the image by 180°.

## Safety instructions

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The general instructions for safe experimentation in science lessons apply to this experiment.

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## Student Information

## Motivation

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Human eye

Do we see what we see? And how do we know that this is the truth? This question has preoccupied philosophers since ancient times.

The following experiment shows vividly and simply that things are not always what they seem.

## Tasks

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Eye

Prove the presence of the blind spot.

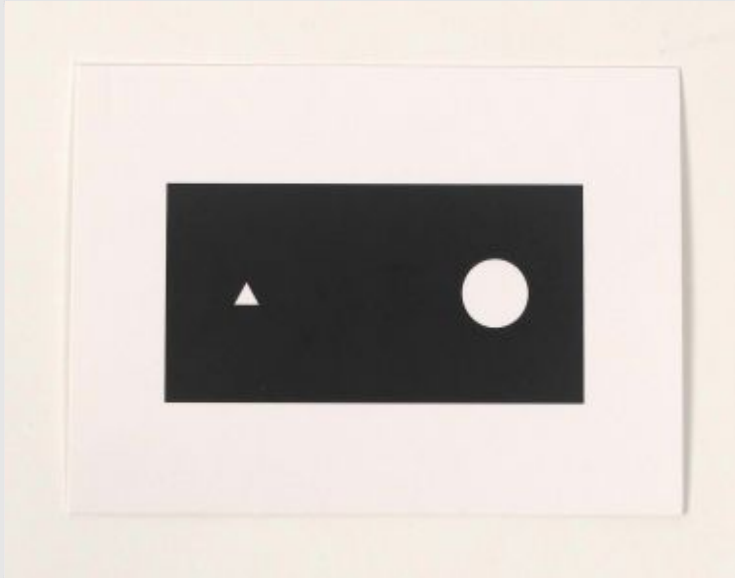
## Equipment

Position	Material	Item No.	Quantity
1	<a href="#">Physiological vision figures</a>	64949-00	1



## Procedure

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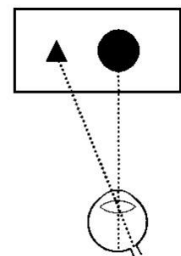
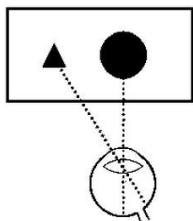


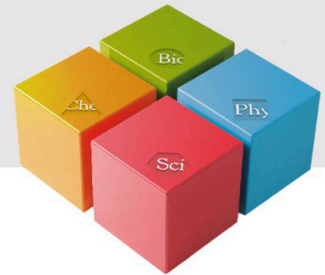
Consider the figure "Blind spot" in the abstrction of the clear visual range. The circular area should bee is located to the right of the Triangle. Close the right eye and fixiere the circular area with the left. The triangle musts then, without turns his gaze, on the left side a little blurred ...to be recognized.

Now move the figure under constant further Fixieslowly towards the eye. Watch in doing so blurred image of the triangle. When the triangle disappears, its image hits the blind spot exactly.

## Explanation

If you are too close, the image of the triangle hits the side of the retina (left image), too far away and it hits the back of the retina (middle image). If you get the distance just right, the image hits the retina where the optic nerve enters (right image). There are neither rods nor cones here. You can no longer see the triangle.



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# Report

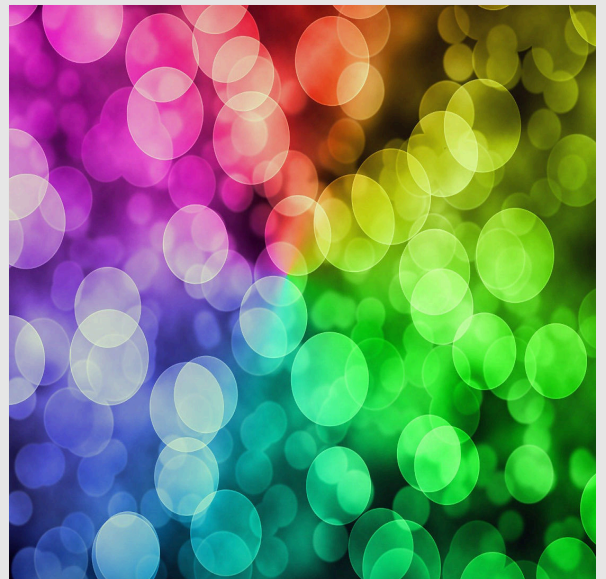
## Task 1

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Which elements in the eye are sensitive to light?

- The lens
- The optic nerve
- The rods
- The cones

Check





## Task 2

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What is the blind spot?

The region of the retina that lies directly on the opposite side of the lens.

The region of the retina where cones and rods are densest.

A symptom of poor eyesight.

The region of the retina where the optic nerve enters the eyeball.



## Task 3

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Rods perceive colors.

 True Incorrect Check

The lens focuses the light onto the retina.

 True Incorrect Check

Slide	Score/Total
Slide 13: eye sensitivity	0/2
Slide 14: The Blind Spot	0/1
Slide 15: Multiple tasks	0/2

Total  0/5

 Solutions

 Repeat