

Exploratorium Cookbook I

A Construction Manual for Exploratorium Exhibits
Revised Edition

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
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www.exploratorium.edu/store

Blind Spot



Description

The visitor is shown a card with the above diagram (on a larger scale). By closing the right eye and looking only at the , the  can be made to disappear by holding this page about 8" away. The blind spot, where the optic nerve enters the eye, subtends about 6°. At a distance of 8", the blind spot is a circle that is about 3/4" in diameter.

The Exploratorium has a number of exhibits on visual adaptation that show various subtle ways in which the eye and brain work together to construct pictures of the world from retinal images that are

incomplete or cluttered with things like the shadows of blood vessels. You can see another example of visual adaptation using Figure 2. Make the circle disappear, just as you did earlier. Does the line disappear along with the dot, or is it filled in?

Apparently, the eye and brain are prepared to supply whatever they assume is hidden behind the blind spot. In the Life Science Library book *Light and Vision* (Time-Life Books, New York, 1966), there is a photograph of an apple and an orange on a blue background. When either fruit is hidden by the blind spot, the field is a continuous expanse of blue.

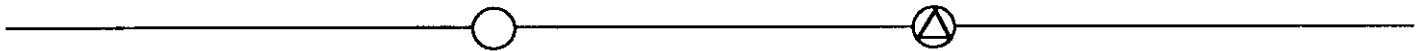


Figure 2

Related Exploratorium Exhibits

EYE PHYSIOLOGY

Binocular Vision (Eyeballs); Blood Cells (Corpuscles of the Eye); Blood Vessels (Blood Vessels of the Eye); Cow's Eye Dissection; Eyeballs (Eyeball Machine); Macula; Pupil



VISUAL ADAPTATION

Fading Dot; Peripheral Vision; Persistence of Vision

Exploratorium Exhibit Graphics



To do and notice:

Hold this card at arm's length and cover your right eye. Watch the  and slowly bring the card toward you. At one point you will stop seeing the . It will reappear as you continue to bring the card toward you.

What is going on:



At one spot inside the eye where nerve fibers join into the retina there are no light receptors. When you hold the card so that the light from the  falls on this spot, you can't see the .

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