

Looking Without Seeing

**Introduction:**

This Pathway will use exhibits to investigate how we see things. Some exhibits, like Seeing Details or Peripheral Vision, address the physical parts of the eye. Other exhibits, Subjective Colors or Count the Bounces, demonstrate the power of your brain to transform what your eyes see. However, there are still many things we don't understand about what we see or don't see, like the exhibit Disappearer.

Before Your Visit

**The BIG question:**

**Is it possible to look at something and not see it?**

What do you think? Discuss or write your ideas or questions.



During Your Visit

**Directions:**

- It may help to work with a partner or two.
- Find the exhibits. You may work with the exhibits in any order.
- Play with the exhibit before you do any writing.
- **Have patience.** Everyone sees things differently and that's normal.

Explainers (in orange vests) are happy to help you find, use, and talk about exhibits.



Exhibit Title	Done?
<a href="#">Disappearer</a>	
<a href="#">Count the Bounces</a>	
<a href="#">Bright Black</a>	
<a href="#">The Edge Makes the Difference</a>	
<a href="#">Seeing Details</a>	
<a href="#">Disagreeing About Color</a>	
<a href="#">Eye Tracker</a>	
<a href="#">Peripheral Vision</a>	
<a href="#">Fading Disk</a>	
<a href="#">Cheshire Cat</a>	

## Disappearer

1. Try this exhibit.  
Hint: Spin the disk at a slow to medium speed. Be sure to look only at the yellow dot in the center.
2. Experiment with this exhibit in other ways. Try staring at another object instead of the yellow dot, stand on another side, place something from your pocket on the Plexiglas, or doing something else.  
What did you try?



What happened?

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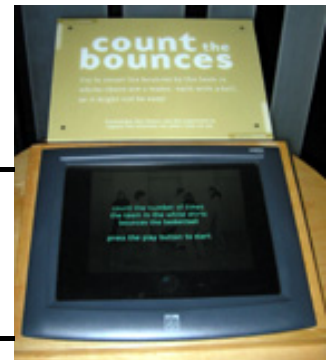
3. Repeat your experiment. Does the same thing happen every time?

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## Count the Bounces

1. Did you see something new the second time you watched the video?
2. Do you think your parents are right that you can't concentrate on what they are telling you while you watch TV? Why?



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## Bright Black

1. Which panel surprised you the most in this exhibit? Why?

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2. Cover the light shining from below. What changed?

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## The Edge Makes the Difference

1. Try this exhibit.
2. Although it may look like one uniform color, each of these halves actually changes from lighter on the left to darker on the right. Can you see this?

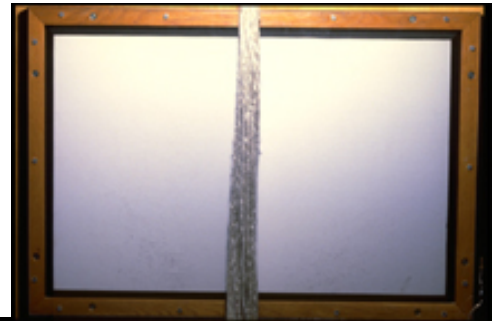
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3. Cover the border between the two halves with something very thin, like a hair. What did you use? Can you see the difference between the panels?

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## Seeing Details

The fovea is a spot in the center of your retina that has a great concentration of cone cells, allowing your eye to see fine details. The bright flash of light at this exhibit temporarily blinds your fovea but not the rest of your eye.

1. What does the blinded spot look like?

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2. Is it hard to read words when you blind your fovea?

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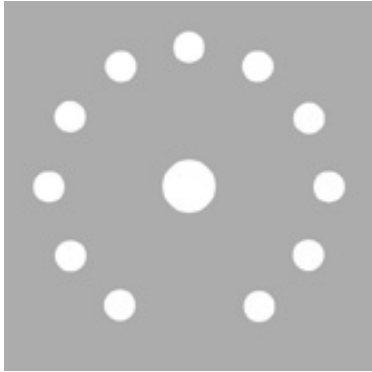
3. What else is affected? (Color? Seeing movement? Seeing shapes?)

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### Disagreeing About Color

1. Try this exhibit with a group of people. Record which circles match for different members of the group.



2. Stand back about 20 or 30 steps. From this distance, do you still think the same circle matches the center?

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3. There is no right answer to which circle matches the center. How do you feel about that?

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### Eye Tracker

1. Try this exhibit.  
Hint: Have patience. Sometimes the tracker won't work for people with glasses.
2. When the eye tracker is playing back the movement of your eye, look for patterns in what you looked at or didn't look at in the photos. What patterns did you find?

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## Peripheral Vision

1. When can you first begin to see the color?  
\_\_\_\_\_ degrees.
2. When can you first begin to read the word?  
\_\_\_\_\_ degrees.
3. When can you first begin to see the block itself?  
\_\_\_\_\_ degrees.



## Fading Disk

1. Try this exhibit.
2. The same effect happens when you look at the lightly colored parts of Colored Shadows (on the wall by the elevator) and Visual Uncertainty (a painting near the Light Demo table). Describe what happens after staring for a while at one of these two.

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## Cheshire Cat

1. Try this exhibit.  
Hint: Sometimes one eye works better than the other. Try putting your dominant or stronger eye towards the side.
2. Describe what it looks like when part of your friend's face disappears.

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## After Your Visit

### Putting it Together:

#### Is it possible to look at something and not see it?

What are some of the limitations of your vision? Discuss or write your ideas based on your experiences with at least two exhibits at the Exploratorium.

#### If you had the chance, what other type of seeing would you test?

Discuss or write your ideas.

[send your comments & suggestions](#)

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