

# Learning About LASIK

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<b>Objective:</b>	To use the Internet to learn more about laser in situ keratomileusis (LASIK) surgery and how the eye works.
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**Grade Level:** 5-8  
**Subject(s):** Science, Health, Technology  
**Prep Time:** < 10 minutes  
**Duration:** 45 - 55 minutes  
**Materials Category:** Classroom

National Education Standards	
Science	4a, 7a, 7e
Mathematics	
Technology (ISTE)	7a, 7b, 10
Technology (ITEA)	
Geography	

## Materials:

- Computer lab with Internet access
- Student Sheets

## Related Links:

HowStuffWorks.com—How The Eye Works

<http://science.howstuffworks.com/eye1.htm>

HowStuffWorks.com—How LASIK Works

<http://health.howstuffworks.com/lasik.htm>

U.S. Food And Drug Administration—LASIK Eye Surgery

<http://www.fda.gov/cdrh/lasik>

## Supporting NASAexplores Article(s):

Space-Age Vision Care

[http://www.nasaexplores.com/show2\\_article.php?id=04-060](http://www.nasaexplores.com/show2_article.php?id=04-060)



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*Teacher Sheet(s)*

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## Pre-lesson Instructions

- Arrange time with the library or computer lab to allow the class ample time to complete the Web quest.
- Remind students of the school's Internet usage policy.
- Let students work individually or in groups.

## Guidelines

1. Write the word "LASIK" on the board. Ask students if they have heard of this term. As a class, come up with a definition of the word.
2. Explain that the class is going to learn about LASIK surgery and how the eye works.
3. Hand out the Student Sheets, and allow the students time to answer the questions in the computer lab.
4. When students have completed the Web quest, go over the answers as a class. (See the answer sheet for correct answers.)
5. Read the NASAexplores 5-8 article, "Space-Age Vision Care."

## Discussion / Wrap-up

- As a class, discuss what the students have learned about the eye and LASIK surgery.
- Refine the class definition of LASIK.

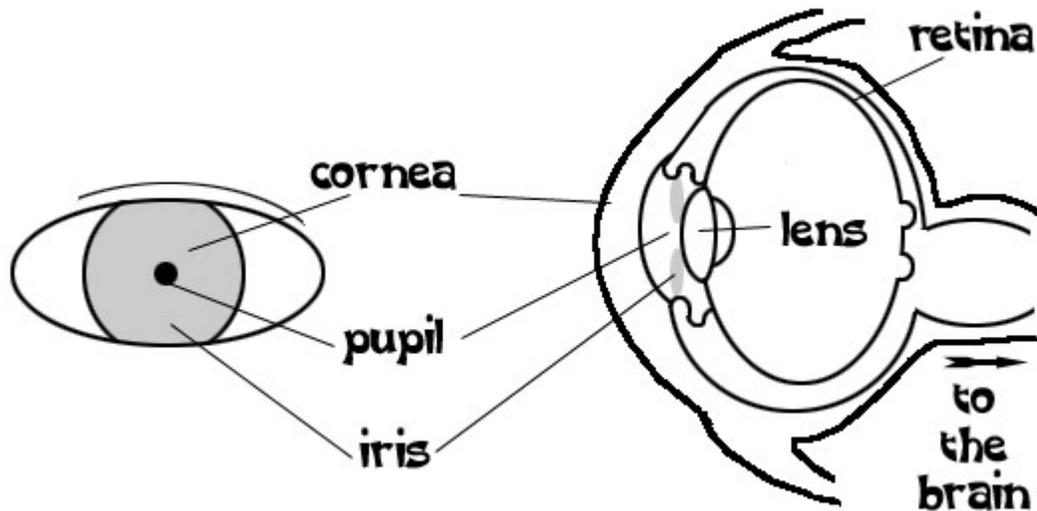
## Extensions

- Have the students talk to local doctors who perform LASIK surgery, or interview patients who have had the surgery done.



## Learning About LASIK Web Quest Answer Sheet

1. Label the parts of the eyeball in the following diagram.



2. All light must pass through the cornea when it enters the eye.
3. The iris is the colored part of the eye. Less pigment makes the eyes blue, and more pigment makes the eyes brown.
4. The retina is the light-sensing portion of the eye. It contains rod cells, which are responsible for vision in low light, and cone cells, which are responsible for color vision and detail.
5. Conjunctivitis is another name for pinkeye.
6. How many muscles control the movement of the eye? Name three of them.  
*Six; medial rectus, lateral rectus, superior rectus, inferior rectus, superior oblique, and inferior oblique.*
7. Why does your eye have a blind spot?  
*The location on the retina where the optic nerve and blood vessels exit does not have any rods or cones. Without these sensors, this spot is not able to sense light.*
8. What are the role of the eyelashes and eyebrows?  
*They protect the eye from particles that may injure it.*

9. What does it mean to have 20/20 vision?  
*If you have 20/20 vision, it means that when you stand 20 feet away from an object, you can see what a “normal” human being can see from 20 feet away..*
10. Which vision is better, 20/40 or 20/10?  
*20/10*
11. What does LASIK stand for?  
*Laser in situ keratomileusis*
12. What is myopia? How does it affect your vision?  
*Myopia is also known as nearsightedness. A person with myopia can see objects that are closeup clearly, but distant objects are fuzzy.*
13. What is hyperopia? How does it affect your vision?  
*Hyperopia is also known as farsightedness. A person with hyperopia can see objects that are far away clearly, but objects that are closeup appear blurry.*
14. What eye condition is LASIK most effective at treating?  
*Myopia (nearsightedness)*
15. Write a quick summary of how LASIK surgery works.  
*LASIK surgery works by pulsing a laser at specific points on the surface of the eye. When the laser comes in contact with the cornea, small portions of the cornea are vaporized. This reshaping of the cornea leads to better vision.*



# Learning About LASIK

Student Sheet(s)

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## Materials

- Computer with Internet access

## Procedure

Using the information at the following Web sites, answer the questions below.

HowStuffWorks.com—How The Eye Works

<http://science.howstuffworks.com/eye1.htm>

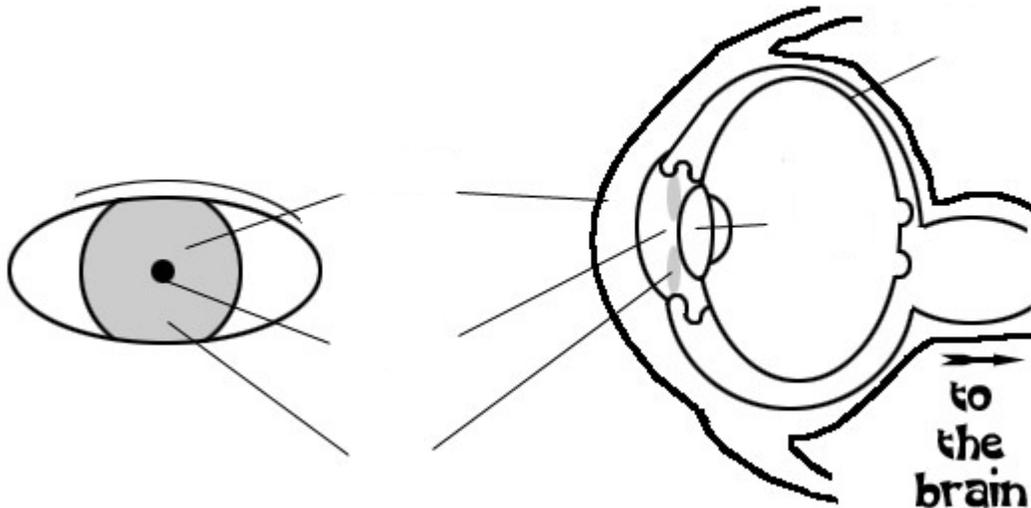
HowStuffWorks.com—How LASIK Works

<http://health.howstuffworks.com/lasik.htm>

U.S. Food And Drug Administration—LASIK Eye Surgery

<http://www.fda.gov/cdrh/lasik>

1. Label the parts of the eyeball in the following diagram.



Fill in the blanks for questions 2-5.

2. All light must pass through the \_\_\_\_\_ when it enters the eye.
3. The iris is the colored part of the eye. Less pigment makes the eyes \_\_\_\_\_, and more pigment makes the eyes \_\_\_\_\_.
4. The retina is the light-sensing portion of the eye. It contains rod cells, which are responsible for \_\_\_\_\_, and cone cells which are responsible for \_\_\_\_\_.
5. \_\_\_\_\_ is another name for pinkeye.

Answer the following questions.

6. How many muscles control the movement of the eye? Name three of them.
7. Why does your eye have a blind spot?
8. What are the role of the eyelashes and eyebrows?
9. What does it mean to have 20/20 vision?
10. Which is vision is better, 20/40 or 20/10?



11. What does LASIK stand for?

12. What is myopia? How does it affect vision?

13. What is hyperopia? How does it affect your vision?

14. What eye condition is LASIK most effective in treating?

15. Write a quick summary of how LASIK works.

