

# Schematic of the Eye and Visual System Activity Sheet

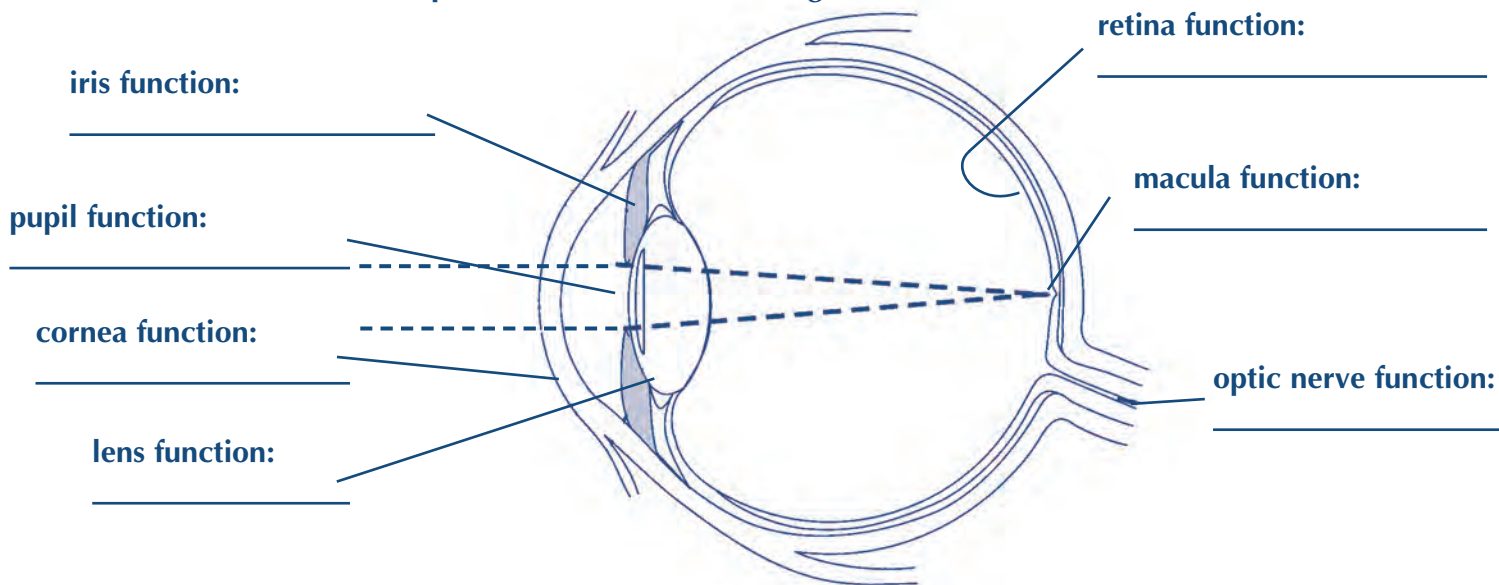
Grades 9-12

## Vision Quest

Use this sheet to help you take notes about the parts of the eye and the workings of the visual system.

1. What three things does vision require? \_\_\_\_\_

2. Note the function of each part named in the following schematic.



3. Two types of light-sensitive nerve cells are found in the retina. Name each type and describe its function.



4. When the cornea "refracts" light rays, what is it doing? \_\_\_\_\_

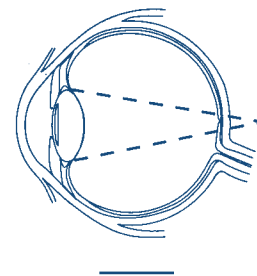
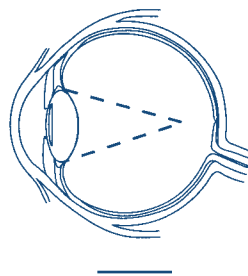
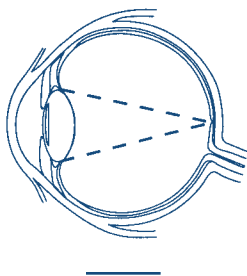
5. What is visual acuity? \_\_\_\_\_

6. What is myopia? \_\_\_\_\_

7. What is hyperopia? \_\_\_\_\_

8. Which condition is illustrated in each of the following diagrams?

- a. hyperopia
- b. myopia
- c. good visual acuity



9. According to optometrists, how often should students age 6 through 18 obtain eye exams? \_\_\_\_\_



# Basic Eye Anatomy Quiz

Grades 9-12

Vision Quest

Student's name: \_\_\_\_\_ Grade: \_\_\_\_\_

*Place a "T" or "F" in each blank to indicate if the statement is true or false. If the statement is false, change the words to make it true.*

- \_\_\_\_\_ 1. Vision requires three things: light, eyes and hyperopia.
- \_\_\_\_\_ 2. The transparent outer covering of the eye is called the cornea.
- \_\_\_\_\_ 3. The size of the pupil is controlled by muscles in the iris, the colored part of the eye.
- \_\_\_\_\_ 4. For good visual acuity to occur, the lens must focus light rays precisely on the cornea at the back of the eye.
- \_\_\_\_\_ 5. Rods are light-sensitive cells found in the retina's macula that transmit messages about color and fine detail to the brain.
- \_\_\_\_\_ 6. Messages from the cells in the retina are carried to the brain by the optic nerve.
- \_\_\_\_\_ 7. Light rays that are being refracted are being blocked.
- \_\_\_\_\_ 8. Nearsightedness or myopia occurs when the lens focuses light rays at a point in front of the retina.
- \_\_\_\_\_ 9. Hyperopia often makes near objects easier to see clearly than those at a distance.
- \_\_\_\_\_ 10. Doctors of optometry recommend that students (age 6 through 18) have their eyes examined every year.



# Vision and Eye Health Presentation Worksheet

Grades 9-12

**Vision Quest**

Plan your oral presentation using this outline. Remember to include a visual aid such as a chart, graph, model, poster, diagram or volunteer from the audience.

**Topic:**

**Attention-getting introduction:**

**Statement of credibility: (research and resources used)**

**Body of the speech: (key points to be made)**

1.

2.

3.

4.

5.

**Conclusion: (main message you want the audience to remember about your topic)**



# Sports Vision Performance

Grades 9-12

## Activity Sheet (page 1 of 2)

**Vision Quest**

Visual skill	Some sports that use this skill	Activity to enhance performance	How activity can be adapted for practicing your favorite sport	Record of practice repetitions
<b>Visual concentration</b> is the ability to screen out visual distractions.	Golf, tennis, baseball, basketball, racquetball, billiards, bowling	Practice putting a golf ball into a paper cup while a friend stands to the side waving his or her arms at irregular intervals.		
<b>Eye tracking</b> is the ability to follow an object with your eyes using minimal head movement.	Any sport with a ball or fast moving opponent	Balance a book on your head while you watch cars pass on a street or a ball being rolled at varying speeds between two people. Balancing the book helps ensure your eyes, rather than your head, are doing most of the movement.		
<b>Peripheral vision</b> is the ability to increase your visual awareness of action that occurs in your side vision without turning your head.	Any sport (including football, soccer or hockey) where important action on the playing field does not always happen directly in front of you	Watch TV with the side of your head turned toward the screen. Try to look straight ahead while describing what you see on the screen "out of the corner of your eye." Turn the volume off to eliminate clues.		
<b>Depth perception</b> is the ability to judge the distance between you and other (often moving) people and objects quickly.	Any sport requiring awareness of (and the ability to respond quickly to) changing views of the ball, opponents, your teammates, boundary lines and other objects	Have a friend hold a straw about two feet in front of you, parallel to the ground. Practice inserting a tooth pick into the straw each time your friend moves it from spot to spot. (Note: Your friend should stop for a second after each movement.)		

(continued on page 2)

**Note to students and parents:** The South Dakota Optometric Society recommends that students age 6 through 18 obtain eye examinations every year. Be sure to tell your doctor of optometry about any sports you play!



Visual skill	Some sports that use this skill	Activity to enhance performance	How activity can be adapted for practicing your favorite sport	Record of practice repetitions
<b>Visual memory</b> is the ability to process and remember a fast-moving, complex view of people and things.	Any sport (including football, basketball, hockey and surfing) where you must be aware of (and able to react to) rapidly changing opponents and conditions	Page through a magazine and glance at a complicated illustration for a second. Pass the page to a friend and see how much of the image you can reconstruct from memory. If this becomes easier after a few tries with different illustrations, challenge your memory further by glancing at a new illustration for a second and waiting ten seconds before you begin reconstructing what you saw.		
<b>Focal flexibility</b> is the ability to change focus quickly from near to far (or far to near) objects so you can react quickly.	Ball sports, hockey and running	Post a newspaper on a wall at eye level about 15 feet from you and hold another newspaper at arm's length. Focus on a headline on the wall, then switch focus to a headline at arm's length. Alternate reading headlines on both newspapers and see how quickly and smoothly you can change focus.		
<b>Eye-hand-body coordination</b> is the ability to make your hand, limbs and body respond quickly to visual stimuli.	Any sport requiring a quick reaction time such as football, hockey, basketball and tennis	Place a small square of masking tape on an old stereo turntable and try to touch it with a pointer as it revolves at 33 or 45 rpm. Another fun option: playing video games can help improve your eye-hand coordination and reaction time!		
<b>Visualization</b> is the ability to picture yourself going through the motions of a successful move or play mentally.	Any sport that requires concentration and eye/hand or eye/body coordination (for example, tennis, basketball, volleyball, hockey and bowling)	Practice rolling a softball into a brown paper bag or volleying a ball over a net with a partner. After several successful times, sit down, close your eyes, and visualize yourself achieving that successful roll or volley in your mind several times. Try the activity again for a few minutes, pause, visualize and repeat.		