

Eye Spy

Lesson plan for grades 3-5

Lesson time: one 45-minute class

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Source: Tammie Jackson, South Carolina ETV Master Teacher

http://www.scetv.org/education/ntti/lessons/2006_lessons/eyespy.cfm

RESOURCES:

- *The Five Senses* (03:15 "Sight"). ETV's *StreamlineSC* video at www.streamlinesc.org. Note: If you don't have an account with ETV's *StreamlineSC*, check with your media specialist about an account.
- Eye Anatomy. <http://www.ao.org/eyecare/anatomy/> The Foundation of the American Academy of Ophthalmology and the National Eye Institute.
- See All You Can See. <http://isee.nei.nih.gov/> An education sight about eyes from the National Eye Institute. Includes parts of the eye and how all the parts work together, eye safety, printables and activities.
- National Eye Institute Education Programs. <http://www.nei.nih.gov/education/>

POTENTIAL CONCEPTS TEKS ADDRESSED THROUGH THIS LESSON:

§112.14. Science, Grade 3: 10A

§112.15. Science, Grade 4: 10A, 10B

§112.16. Science, Grade 5: 10A, 10B

PERFORMANCE OBJECTIVES (in order of increasing difficulty to permit tailoring to different age groups):

Students will apply the scientific method and will be able to:

- Discuss the importance or significance of sight in everyday life.
- Indicate the various parts of the human eye.
- Explain the functions of different parts of the eye.

MATERIALS:

- Activity sheets (per student) *The Eye* and *The Structure of the Eye*, located on ETV's *StreamlineSC* website as blackline masters with the video *The Five Senses: Sight*.
- Pencil (per student)
- Computer access (per student)
- Blindfold (per student pair)
- Chart paper and markers (per class)
- TV (per class)
- Bubble map (as applicable)
- AverKey converter

OVERVIEW:

In this lesson, students will examine how the human eye receives and transmits light from the environment. Through an activity, students will discuss the importance and significance of sight in the everyday lives of humans. One video presentation will guide students in the understanding of the functions of the human eye and record various parts of the eye. Students will view an Internet site of the function of the eye and record the uses of different parts of the eye. If they have learned about light in class, and reflection and refraction, these topics can be incorporated into this lesson. **This lesson relies on the use of computer media, so it is important for teachers to effectively guide intentional conversation and dialogue to accompany the exercises.**

TEACHER PREPARATION:

- Prior to presenting the lesson, download the video segment to your computer desktop or burn to a CD and preview. Bookmark the website used in the lesson on each computer in your classroom or use a Web site organizer, such as Portaportal (<http://www.portaportal.com>). Download Flash and Quick Time plug-ins (available at <http://www.macromedia.com>) on each computer.
- Download the activity sheets, "The Structure of the Eye and The Uses of the Eye" from [StreamlineSC](#) , and blackline masters with the video *The Five Senses* . The students will use this sheet to record information from the websites listed under "RESOURCES."

ENGAGE:

1. Ask students, "Why do you think seeing is important to humans?" Using an overhead, dry erase board or chart paper, complete a circle map with the students showing their responses. During this process, question the students as to why they feel their answer is essential to humans being able to see.
2. Go on a "sighted" (eyes open) walk and a "non-sighted" (blindfolded) walk as a class around the school or outside. Students should be in pairs to take turns being blindfolded and leading the one who cannot see.
3. When back in the classroom, have the students compare their experiences on the two walks. Record the responses on the chart paper (or board). What significance do these experiences hold? How might these influence how people live their lives every day?

EXPLORE & EXPLAIN:

1. Explain to the students that you are going to take a "tour" through the eye to see how light from the environment is received and transmitted by eyes. Provide students with the activity sheet, "The Structure of the Eye." At various times throughout the video, the video will be paused to offer them an opportunity to complete the sheet as each of the different parts of the eye is discussed. Allow the students to become familiar with the information by having an opportunity to read the passage before the video begins. Remind the students that they will only complete the section of the passage that is being discussed.

2. Cue the video segment "hearing" from the video *The Five Senses* : "sight" (03:15) Provide a **Focus for Media Interaction** by explaining to the students that they will locate where the "iris" should be in the passage and point to that specific place.
3. PAUSE the video when you hear, "The colored part of the eye is called the iris." Observe their responses for understanding. (Students should choose the second blank; "When you look at someone's eyes, you will see a colored part called the iris.") Confirm the correct answer and have students to write the answer in the blank. Provide a **Focus for Media Interaction** by explaining to the students that they will locate where the "pupil" should be in the passage and point to that specific place.
4. Press PLAY on the video. PAUSE the video when you hear, "Light comes into the eye through this hole. Observe their responses for understanding. (Students should choose the third blank, "In the middle of this colored part is a black opening that allows light into the eye; it is called the pupil.) Provide a **Focus for Media Interaction** by explaining to the students that they will view how the opening of the pupil can cause the iris to become small or large.
5. Press PLAY on the video. PAUSE when you hear, "If we are in bright light, the pupil is smaller than if we are in darker conditions." At that time have the students go back to their partner. They will observe how their partner's pupils become larger and smaller as the lights in the room are turned off and on. Provide a **Focus for Media Interaction** by explaining to the students that they will locate where the "muscles, lens, cornea, and retina" should be in the passage and point to that specific place.
6. Press PLAY on the video. PAUSE the video when you hear, "Behind the iris is a lens that helps to focus the light onto the retina at the back of the eye." Observe their responses for understanding. (Students should choose the answers; "The lens is held by muscles and focuses light on the back of the eye. The back of the eye is called the retina.") Provide a **Focus for Media Interaction** by explaining to the students that they must explain what would happen if there were no cones or rods in the eye.
7. Press PLAY on the video. PAUSE the video when you hear, "They also see black and white." Reiterate the use of having cones and rods in the eye. Discuss with the students what the effect would be if there were not room for cones and rods in the eye. Have the students locate the information in the passage that tells about "blind spots." Students will then need to write the answer in the blank.
8. PLAY the rest of the video.

ELABORATE:

1. Tell the students it is now time for them to examine the function of the eye by exploring information on the Internet. They will be required to complete a diagram of the eye and explain additional information they have learned about the eye. A particularly helpful resource for them to begin with could be: *See All You Can See* (<http://isee.nei.nih.gov/>), an education sight about eyes from the National Eye Institute.
2. Students will read the information on the web site and as they are reading they will use *The Eye*, worksheet you have downloaded from ETV *StreamlineSC* and distributed to label various parts of the eye. Navigate the site and locate additional information about the structures and functions of the eye.