

WHAT YOU SEE IS WHAT YOU GET (NOT!)

Master Teacher: Debra Duffy

Grade Level: 8 - 9 (or 7th graders with learner maturity level and pacing considered)

Time Allotment: Two - three class periods (90 - 135 minutes)

Overview: Students will become acquainted with three types of optical illusions along with the makers of the illusions, including Mother Nature and M.C. Escher. Students will have the opportunity to learn about how optical illusions are made, and possibly try their own hands at designing optical illusions.

Subject Matter: Language Arts (Arts, Science)

Learning Objectives:

The student will be able to:

- recognize and describe types of optical illusions
- define terms related to optical illusions
- recognize and identify patterns
- recognize how an artist's life contributed to his/her style
- employ secondary research skills to locate information
- compare and contrast different types of optical illusions
- write a variety of complete well-elaborated sentences

Standards:

Language Arts TEKS:

The student is expected to:

4(A) connect his/her own experiences, information, insights and ideas with the experiences of others through listening,

7(B) read regularly in instructional-level materials that are challenging but manageable (texts in which no more than approximately 1 in 10 words is difficult for the reader),

9(C) use multiple reference aids, including a dictionary and software, to clarify meaning and usage,

11 (C) support responses by referring to relevant aspects of text and his/her own experiences,

13 (C) use multiple sources, including electronic texts, experts, and print resources, to locate information relevant to research questions,

17 (A) write, using complete sentences and appropriately punctuated independent and dependent clauses,

17 (D) use appropriate adjectives to make writing more descriptive,

22 (B) interpret events and ideas gathered from video segments or technology presentations,

23 (B) compare and contrast print, visual and electronic media,

24 (A) select, organize, or produce visuals to complement or to extend meaning.

Media Components:

Video

Reading Rainbow series #801 - *Opt: An Illusionary Tale*

Web Sites

Trackstar

<http://trackstar.hprtec.org>

A teacher-made site with links to relevant information and artwork by M.C. Escher.

Materials:

Student worksheet

Computer lab

Pens, pencils, papers, display boards (if needed)

Prep for Teachers:

Prepare a PowerPoint presentation demonstrating an optical illusion. If this is not possible, draw on a poster board four concentric overlapping circles. Make sure that all students can see the optical illusion that is the introductory activity.

Bookmark website. Write the address on the board.

Cue videotape to starting spot.

Introductory Activity:

Direct all students to turn their attention to the computer screens, instructing them to watch the PowerPoint presentation without comment. The open end of the "can" will flip from one side to the other without warning.

Learning activities:

Step 1: Explain that the students will become acquainted with optical illusions and that there are many types of optical illusions.

Step 2: Solicit ideas about what makes an optical illusion, recording the answers on paper or on the board.

Step 3: Tell the students they will be learning about three specific types of optical illusions, even though there are many more.

Step 4: Distribute the worksheets. Instruct students that they will be using primarily context clues to locate the definitions of the words on paper.

Step 5: Provide students with **FOCUS FOR MEDIA INTERACTION**, telling them that they will first see an introduction to different simple optical illusions.

START TAPE with LeVar posing as a castle guard saying, "As a castle guard I cherish my trident..." **PAUSE TAPE** when LeVar is standing near two cartoon flowers and says, "...centers really are the same size."

Step 6: Provide a **FOCUS FOR MEDIA INTERACTION** by telling students to watch for the meaning and characteristics of "trompe l'oeil". Meanwhile, **FAST FORWARD TAPE** to red and white swirling circle with LeVar laughing and saying, "Some optical illusions are quick..."

Step 7: **PLAY TAPE** to where jewelry appears on a green background. **PAUSE TAPE**, then allow students to complete definitions and answers.

Step 8: Provide **FOCUS FORMEDIA INTERACTION** by telling the students that in the next segment they will see an artist at work creating trompe l'oeil, as well as learn about two more terms - horizon line and vanishing point.

Step 9: **PLAY TAPE** and continue until the artist completes his drawing on paper and is saying ".....this creates the illusion of distance..." **PAUSE TAPE**, allowing students to complete answers.

Step 10: Provide **FOCUS FOR MEDIA INTERACTION** by instructing students to look for the other information related to this art form.

Step 11: **PLAY TAPE** to where the artist has completed his carnival painting, the lights twinkle on the Ferris wheel, and the artists says, ..."nothing pleases me more" and music fades.

PAUSE TAPE, allowing students to complete answers.

Step 12: **FAST FORWARD** tape to LeVar standing in front of a mountain saying, "You can find optical illusions in television..."

Step 13: Provide a **FOCUS FOR MEDIA INTERACTION** by telling students to look for information relating to the optical illusions of nature.

Step 14: **PLAY TAPE** showing various animals, including a bird on a branch, then LeVar quickly appears on camera and says, "...You might find yourself looking at everything twice."

STOP TAPE.

Step 15: Instruct students to record their answers and clarify any points as needed. Obviously, students will tell you that they still are missing information. Inform them it is now time to make use of secondary sources on-line. Instruct them to go to the Trackstar website to the prepared track ID# 39575. They must choose the *text frames* option, then work at their own pace, following the links as shown on the site and answering the questions on the worksheet.

If the students finish early, they may go to related sites listed on Trackstar.

Culminating activity:

Students may design or find examples of illusions.

Cross-Curricular Extensions:

ART/MATH

Students can access contest sites for M.C. Escher related contests.

ART/COMPUTER

They can create a multi-media display about optical illusions and the artists for the school library.

SCIENCE

Students can study the two sides of the brain and the optical nerve.

Community Connections:

Students can talk to an eye specialist or neurologist about how and why visual illusions work.

Student Materials:

Worksheet

Computer lab

Pens, pencils, papers, display boards (if needed)

Worksheet

Vocabulary:

Define the following words through context clues (or use the dictionary)

woodcut_____

linocut_____

trompe l'oeil_____

camouflage_____

horizonline_____

vanishing point_____

mentor_____

emulate_____

tesselations_____

After watching the video, answer the following questions. Use complete sentences where indicated by *.

1. What are two characteristics of trompe l'oeil art?
2. *What did the artist do in order to give the feel of greater reality to his carnival painting?
3. What are three illusions of Mother Nature that we saw in this video?
4. What are two purposes of this type of natural optical illusion?

Now go to the site (<http://trackstar.hprtec.org>) Track ID # 39575 to answer the following questions about M.C. Escher.

1. What did Escher's father want him to be?
2. What happened in 1919 to change M.C. Escher's life?
3. *Describe his academic career.
4. When did he graduate from high school?
5. During WW II, what happened to his mentor? How did this event influence the rest of Escher's life?

Look at the four Escher art works entitled:

"Hand with Reflecting Sphere"

"Three Worlds"

"Ascending and Descending"

"Gravitation"

1. What are two things that they have in common?
2. What are two specific differences?
3. *Which of these Escher drawings appeals to you the most? Why?
4. *Use three powerful adjectives to describe M.C. Escher's life and/or work. Explain why you chose those three adjectives.
5. What are two specific points of comparison between tromp l'oeil and Escher's art?
6. What are two points of comparison between Escher's art and natural optical illusions?

7. *Between the two artists' works (Escher's and the artist from the video), which appeals to you more. Why?

8. *If you were to choose to emulate one of these two artists' styles, which would it be? Why?