

SUNRISE/SUNSET

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Lesson Summary for Grade 3

Students discover what causes the dramatic colors of a sunset by seeing the changing color of light as it passes through a clear container of water to which milk is gradually added. Students measure the liquids and observe what happens to the water and the color of light as it changes. They then analyze the results of the investigation and suggest explanations for the observed behavior of the light.

Science Activity

Students observe the changing colors of light as it passes through a liquid containing a substance in suspension.

Source: Sarquis, A.M.; Sarquis, J.L. *Fun with Chemistry*, Vol. 2; Institute for Chemical Education: Madison, WI, 1993; pp 323–327.

Key Science Topics:

- light energy
- projected color

Key Process Skills:

- predicting
- measuring
- observing
- analyzing
- inferring

Ohio Proficiency Learning Outcomes for Science:

Fourth Grade

- I-2 Select instruments to make observations and/or organize observations of an event, object, or organism.
- I-6 Evaluate a simple procedure to carry out an explanation.
- III-14 Identify and/or describe the relationship between human activity and the environment.

Introducing the Activity

- Demonstrate how colors can be projected by overlapping colored transparency paper on the overhead projector.
- Display photos of real sunsets.
- In a dark room, allow students to see what the projected flashlight looks like as it passes through the air toward them.

Procedure

This activity demonstrates the effect suspended particles have on the color changes observed in the sky at dusk.

Follow the procedure in *Fun with Chemistry*, Vol. 2; pp 323–327.

Art Activities

1. Draw pictures of a sunset.
2. Sing/listen to “Sunrise, Sunset” from *Fiddler on the Roof*.
3. Compare black and white movies to colored films.
4. Manipulate the color and tint on a television screen.

Language Arts Activity

Students read *Appellemando’s Dream* by Patricia Polacco and write descriptive paragraphs.

Ohio Proficiency Learning Outcomes for Language Arts:

Fourth Grade

Reading:

- I-4 Identify and interpret vocabulary (words, phrases, or expressions) critical to the meaning of the text.
- II-5 Analyze the text, examining, for example, actions of characters, problem/solution, plot, or point of view.
- II-7 Compare and contrast elements, such as characters, settings, or events.
- II-9b Select fiction and nonfiction materials in response to a topic or theme.

Writing:

- I-2 Use details to support the topic.
- III-4 Use a variety of words.

Students read *Appellemando’s Dream* by Patricia Polacco. In this story, Appellemando and his friends share a secret. They can see his dreams drifting from his head. In cooperative groups, students write persuasive paragraphs to convince classmates their color choice is the best.

Mathematics Activity

Students create a sunrise/sunset chart indicating the hours of daylight each day.

Ohio Proficiency Learning Outcomes for Mathematics:

Fourth Grade

- VI-17 Apply the use of tools to measure lengths, using centimeters and inches including recognizing the positions of whole numbers and fractions on a number line.

Assessment

Have students draw a before and after illustration of their observations. Then explain what caused the colors on the white paper background to change.

References

Jones, R. *Harcourt Science*; Harcourt: Orlando, FL, 2000; Unit F, p. F46.

Sarquis, A.M.; Sarquis, J.L. *Fun with Chemistry*, Vol. 2; Institute for Chemical Education: Madison, WI, 1993; pp 323–327.