Case Details

Case Title:

I Spy Lots of Lights!

Author(s):

Bethany Turner, Emory University
Katherine Shamsid-Deen

Date Published:

3/19/2008

Grade Level(s):

Middle School

Subject(s):

Physical Science

Summary:

You receive a letter from the US Department of Defense and an envelope marked "Top Secret". According to the letter, you have been assigned to a risky, top-secret night mission for which you now must carefully prepare. Your team of elite spies must decide what equipment you will need to bring, and the choices you make for each kind of equipment will determine whether or not your mission succeeds!

Suggested Citation:

Turner, B. L., & Shamsid-Deen, K. K. (2008). *I spy lots of lights!*. Retrieved June 03, 2012 from Emory University, CASES Online Web site: http://www.cse.emory.edu/cases/casedisplay.cfm?case_id=169

Learning Objectives:

1. Describe the electromagnetic spectrum (ES).
2. Explain color blindness and color perception.
3. Relate wavelength, frequency and angstroms.
4. Discuss how light behaves in various contexts.
5. Differentiate regular and diffuse reflection.
6. Simulate wavelengths and frequencies of different regions of the ES.
7. Describe how white light interacts with a prism to refract into the constituent colors of the visible spectrum.
8. Explain how light interacts with light versus dark materials.
9. Explain how mirrors can be used to manipulate angles of reflection.
10. Explain how laser light diffuses in the presence of particulate materials.

National/State Standards:

Georgia Performance Standards Addressed:
SCSh3. Students will identify and investigate problems scientifically. (NSES Content Standard A).
S8P4. Students will explore the wave nature of sound and electromagnetic radiation. (NSES Content Standard B)