

Light



How does matter affect the way you perceive and use light?

Before You Read

Before you read the chapter, think about what you know about light. Record your ideas in the first column. Pair with a partner, and discuss his or her thoughts. Write those ideas in the second column. Then record what you both would like to share with the class in the third column.

| Think | Pair | Share |
|-------|------|-------|
| | | |

Chapter Vocabulary

| Lesson 1 | Lesson 2 | Lesson 3 | Lesson 4 |
|---|---|---|--|
| <p>NEW light reflection transparent translucent opaque transmission absorption</p> <p>REVIEW electromagnetic radiation</p> <p>ACADEMIC image</p> | <p>NEW law of reflection regular reflection diffuse reflection concave mirror focal point focal length convex mirror</p> | <p>NEW refraction lens convex lens concave lens rod cone</p> | <p>NEW optical device refracting telescope reflecting telescope microscope laser hologram</p> |

Lesson 1 Light, Matter, and Color

Predict three facts that will be discussed in Lesson 1 after reading the headings. Record your predictions in your Science Journal.

Main Idea

What is light?

I found this on page _____.

I found this on page _____.

I found this on page _____.

Details

Characterize light.

Light is electromagnetic radiation that you see. Like all forms of electromagnetic radiation, light...

...has properties of _____
and _____.

particles called

energy carried by particles depends
on _____

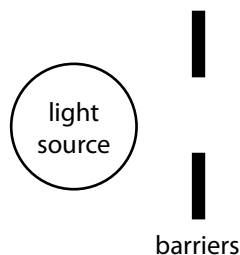
...can travel through

or _____.

Key Differentiate luminous from illuminated light sources.

| Luminous | Illuminated |
|-------------|-------------|
| Definition: | Definition: |
| Examples: | Examples: |

Key Model the path of light. Show what happens when light encounters barriers.



Lesson 1 | Light, Matter, and Color (continued)


Main Idea

Light and Matter


I found this on page _____.

I found this on page _____.

Details

 **Differentiate** ways that different types of materials affect light that strikes them.

| Types of Materials | | |
|--------------------|-------------|--------|
| Transparent | Translucent | Opaque |
| | | |

 **Define** 3 ways that light waves can behave when they strike matter. Then make a check mark in the proper columns to indicate which types of materials are involved with each behavior.

| Behavior of Light Waves | Type of Materials | | |
|-------------------------|-------------------|-------------|--------|
| | Transparent | Translucent | Opaque |
| Transmission: | | | |
| Absorption: | | | |
| Reflection: | | | |

Lesson 1 | Light, Matter, and Color (continued)

Main Idea

Light and Color

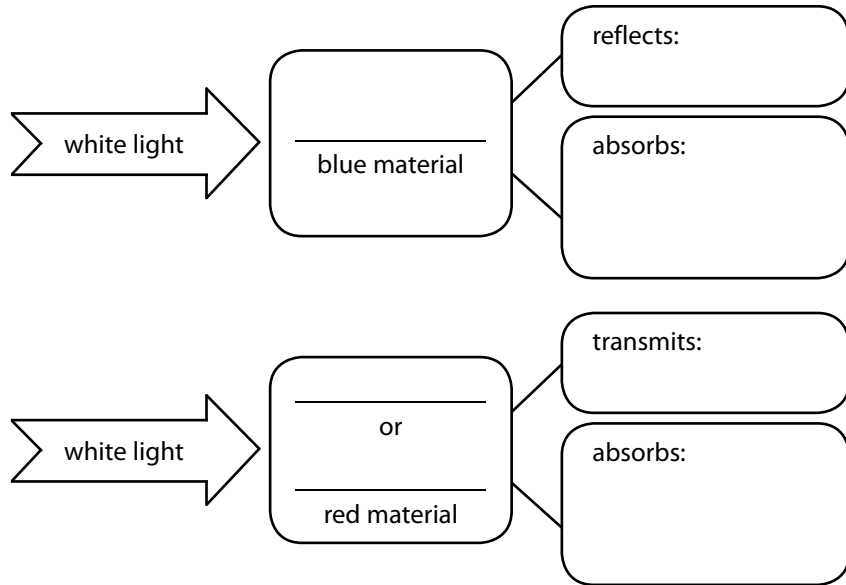
I found this on page _____.

I found this on page _____.

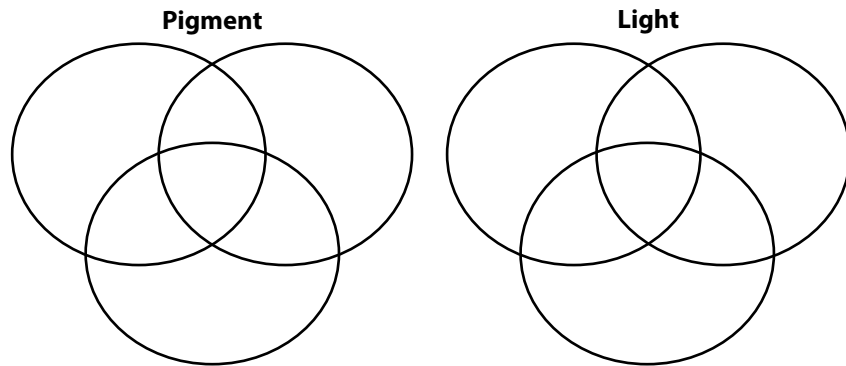
I found this on page _____.

Details

Diagram the transmission, absorption, and reflection of colors of light.



Model the combination of colors of pigment in contrast with the combination of colors of light. Use colored pencils or crayons to indicate the colors if you have them.



Analyze It Use what you have learned about the transmission and reflection of light waves to explain why you would want to wear a white shirt instead of a black one outside on a hot summer day.
