



Main Ideas, Key Points, Questions:

After watching the video segment, write down key points, main ideas, and big questions.



Objective(s):

- *Differentiate the colors of visible light based on wavelength and frequency.*
- *Understand how light addition and subtraction contributes to the creation of specific colors of light.*



Notes:

During the video segment, use words, phrases, or drawings to take notes.



Summary:

After watching the video segment, write at least three sentences explaining what you learned. You may ask yourself: "If I was going to explain this to someone else, what would I say?"

Answer the following.

1. Is the visible color of an object caused by the light it absorbs or the light it reflects?

The visible color of an object is caused by the light it reflects.

2. List the colors of the visible spectrum from longest to shortest wavelengths:

R *ed* _____

O *range* _____

Y *ellow* _____

G *reen* _____

B *lue* _____

I *ndigo* _____

V *iolet* _____

3. Using the list above, which color of light has the greatest frequency?

Violet light has the shortest wavelength and therefore the greatest frequency.

4. What are the three primary colors of light?

red, green, blue

5. Which color of light forms when all three primary colors of light are combined at the same intensity?

White light forms when red, green, and blue light are combined at the same intensity.

6. Define translucent in your own words.

Translucent material allows some, but not all, light to pass through.

Answer the following.

7. Which type of material does not allow light to pass through?

Opaque material does not allow light to pass through.

8. The lumen is a unit of measurement for what quantity?

Lumens measure luminous flux or the rate of transmission of light energy.

9. Which color of light does chlorophyll absorb?

Chlorophyll absorbs red light and reflects green light, which is why plants often appear to be green.

10. List the secondary colors of light that form when the following primary colors are combined:

red and green *yellow*

red and blue *magenta*

blue and green *cyan*

11. When complementary colors of light are combined, *white* light forms.

12. How do pigments cause specific colors to be seen by an observer?

Pigments use color subtraction, reflecting the colors that are seen by an observer.

13. The receptors in the eye that are more sensitive to light are called *rods*, and the receptors that are more sensitive to color are called *cones*.