

Light Waves Homework

1. Label the parts of a wave using the words provided below:

Word Bank:

Amplitude

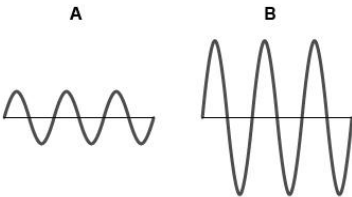
Wavelength

Crest

Trough



2. Which wave carries more energy?



3. Three things can happen when **light** encounters an object. The light will be:

_____ or _____ or _____

(or a combination of those things!)

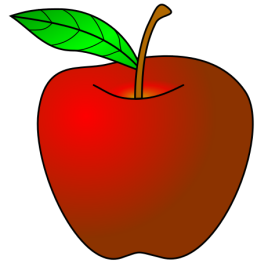
4. Pick 3 everyday objects. For each object, fill out the information in the chart below.

Object	I see: (describe it!)	Reflects (what colors)	Absorbs (what colors)	Transmits (what colors)	Produces (what colors)

5. Which materials can **reflect** light? Put an X next to objects that **reflect** light.

- | | | | |
|---|--------------------------------------|-------------------------------------|--|
| ☐ water | ☐ gray rock | ☐ leaf | ☐ mirror |
| ☐ wax paper | ☐ tomato soup | ☐ sand | ☐ potato skin |
| ☐ crumpled paper | ☐ shiny metal | ☐ dull metal | ☐ glass |
| ☐ red apple | ☐ the Moon | ☐ bedsheet | ☐ rough cardboard |
| ☐ rusty nail | ☐ clouds | ☐ soil | ☐ wood |
| ☐ milk | ☐ new penny | ☐ old penny | ☐ smooth sheet |
| ☐ aluminum foil | | | |

6. Imagine you are sitting at a table with a red apple in front of you. Your friend closes the door and **turns off all the lights**. It is **totally dark** in the room. There are **no windows** in the room or cracks around the door. **No light can enter the room.**



Which statement describes how you would see the apple in the dark:

- A. You will not see the red apple, regardless of how long you are in the room.
- B. You will see the red apple after your eyes have had time to adjust to the darkness.
- C. You will see the apple after your eyes have had time to adjust to the darkness, but you will not see the red color.
- D. You will see only the shadow of the apple after your eyes have had time to adjust to the darkness.
- E. You will see only a faint outline of the apple after your eyes have had time to adjust to the darkness.

7. Create a diagram to show how we see a **green grape** sitting on a plate in front of you:

- What is the **source** of the light? (draw and label it as “source”)
- What does the light from the source do when it encounters the object? (label it *reflect*, *absorb*, *transmit*)
- **Where** does the light go so that we **sense** it? (label the part of your body that detects light)
- Why does it appear green? (describe what **ALL** the colors are doing, ROYGBIV)

