UNITED ARAB EMIRATES
MINISTRY OF EDUCATION

الإمارات العربية المتحدة
وزارة التربية والتعليم

Khalifa City A School - Cycle 1

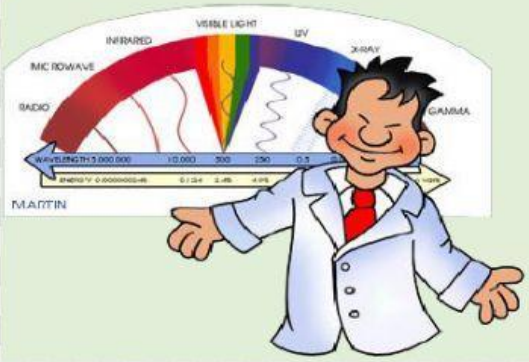
مدرسة مدينة خليفة أ / حلقة أولى

SCIENCE

CHAPTER 7- ENERGY

LESSON 3- LIGHT

PART 1

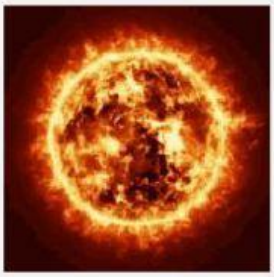


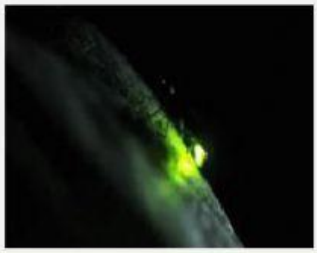
Created by- Nisha Tanwar

WHAT IS LIGHT?

- Light is a form of energy which we detect through our eyes.

- ## DIFFERENT SOURCES OF LIGHT



- Light comes from the sun, light bulb, fire, and many other sources.

NEWTON PRISM

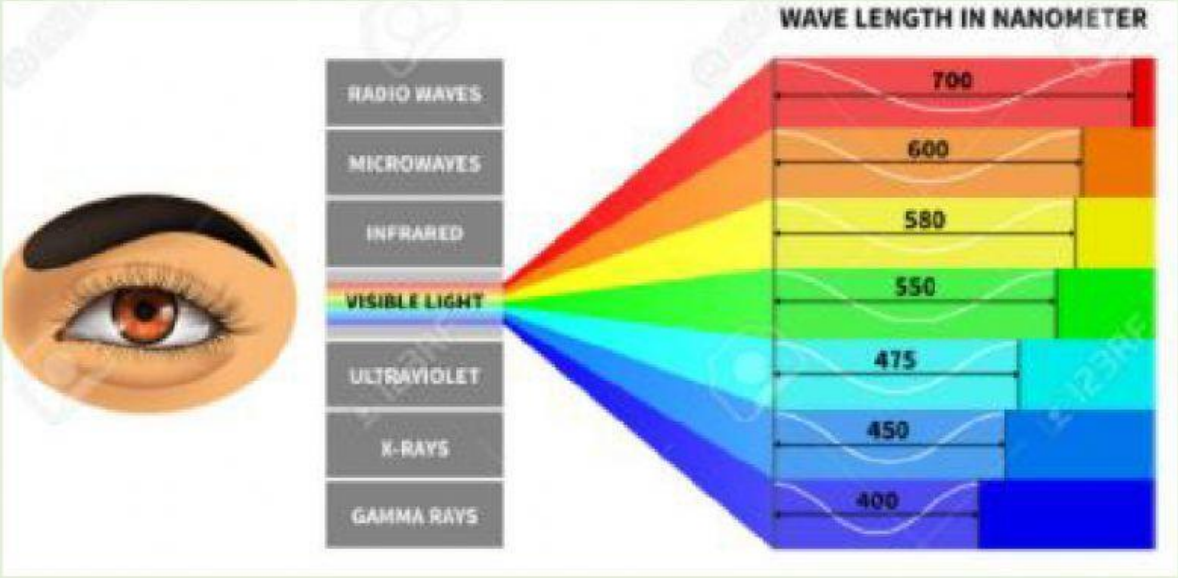
In the mid-1660s, young Isaac Newton wanted to learn about light and colors. One sunny day, Newton darkened his room. He made a small hole in his window shutter. The hole was just big enough for a beam of sunlight to shine through.

Newton then held a glass prism in the sunbeam. A prism is an object that separates white light into bands of colored light. With his prism, Newton saw all the colors of the rainbow!

WATCH VIDEO ABOUT NEWTON PRISM

THE VISIBLE SPECTRUM

- White light is a combination of seven colors.
- These colors make up the visible spectrum.
- Light travel in the form of waves.

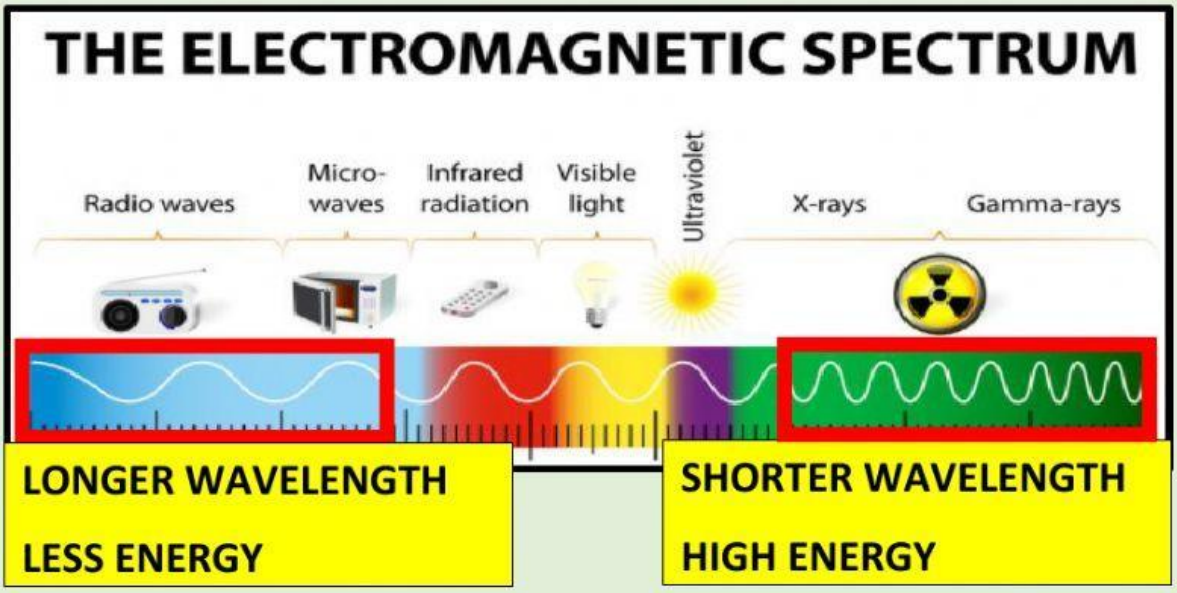


THE ELECTROMAGNETIC SPECTRUM

It is the range of waves that make up light

WAVELENGTH AND ENERGY

- **Each wavelength carries a different amount of energy**
- **The longer the wavelength the less energy it has**



HOW DOES LIGHT TRAVEL

REFRACTION

Bending of light when it passes from one medium to another.

- Light travels at different materials in different medium.
- When light travel from lighter medium to denser medium, it slows down.

REFLECTION

Bouncing back of light after hitting any hard surface.

- Shiny surface reflects almost all the light.
- Dull and rough surface reflect the least amount of light.
- If the desk doesn't reflect light, you cannot see it.

THE HUMAN EYE

Light will move through the eye as follows:

1. Cornea- thin tissue in the eye
2. Pupil- the black dot in the eye
3. Iris- Coloured part of the eye
4. Retina-a tissue at the back of the eye. The retina shows the image upside down
5. The retina changes the image into a signal
6. The Optic Nerve brings the signals to the brain
7. The brain sees the image right side up

WHAT CAN LIGHT PASS THROUGH?

TRANSPARENT OBJECTS- ALL light can pass through
TRANSLUCENT OBJECTS -Some light can pass through
OPAQUE OBJECTS- NO light can pass through

Glass lets light pass through it.

Plastic scatters light in different directions.

Wood prevents light from getting through.

IMPORTANT LINKS FOR PRACTICE

- **Click** here to practice more about light
- **Click** here to practice more about reflection

QUESTIONS FROM BOOK

1. What is the electromagnetic spectrum?

_____

_____

_____

2. Which color has the longest wavelength?

_____

_____

3. You are designing a window that protects people's privacy. What material would you use? Explain why.

_____

_____

_____

TYPE YOUR ANSWER

4. **Vocabulary.** When light rays bounce off a surface, it is called _____.

5. **Test Prep.** Light cannot pass through a(n) _____ object.

A transparent
B opaque
C translucent
D convex

6. **Test Prep.** Which light has the most energy?

A radio waves
B x-rays
C gamma waves
D microwaves

7. White light can be separated into different colors by a(n) _____.

8. What happens to the beam of a flashlight when it hits a mirror?

A It disappears.
B It becomes a new form of energy.
C It is reflected off the mirror.
D It goes into the mirror.

9. A window curtain blocks light. The curtain is

A translucent.
B transparent.
C opaque.
D convex.