شكراً لتحميلك هذا الملف من موقع المناهج الإماراتية

حل مراجعة نهائية وفق الهيكل الوزاري نخبة

التواصل الاجتماعي بحسب الصف الثامن

روابط مواد الصف الثامن على تلغرام

التربية الاسلامية	اللغة العربية	اللغة الانجليزية	الرياضيات

المزيد من الملفات بحسب الصف الثامن والمادة علوم في الفصل الأول

1	ملخص وشرح الدرس الأول Lesson1 how light travels مع امتحانات السنوات السابقة
2	ملخص وشرح الدرس الأول Properties Wave خصائص الموجة
3	أسئلة الامتحان النهائي بريدج
4	حل أسئلة الامتحان النهائي - انسباير
5	حل مراجعة الدروس المطلوبة وفق الهيكل الوزاري انسباير

Grade 8-Elite

Revision based on EOT

Ms. Shreya

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L.O 1- Relate how energy carried by waves corresponds to a wave's amplitude. (Explore mechanical wave properties by modeling mechanical waves using mathematical representations and identifying patterns in data gathered by observing a variety of mechanical waves

Tyrone gathers amplitude and energy data for four ocean waves, as shown in the table.

Four Ocean Waves

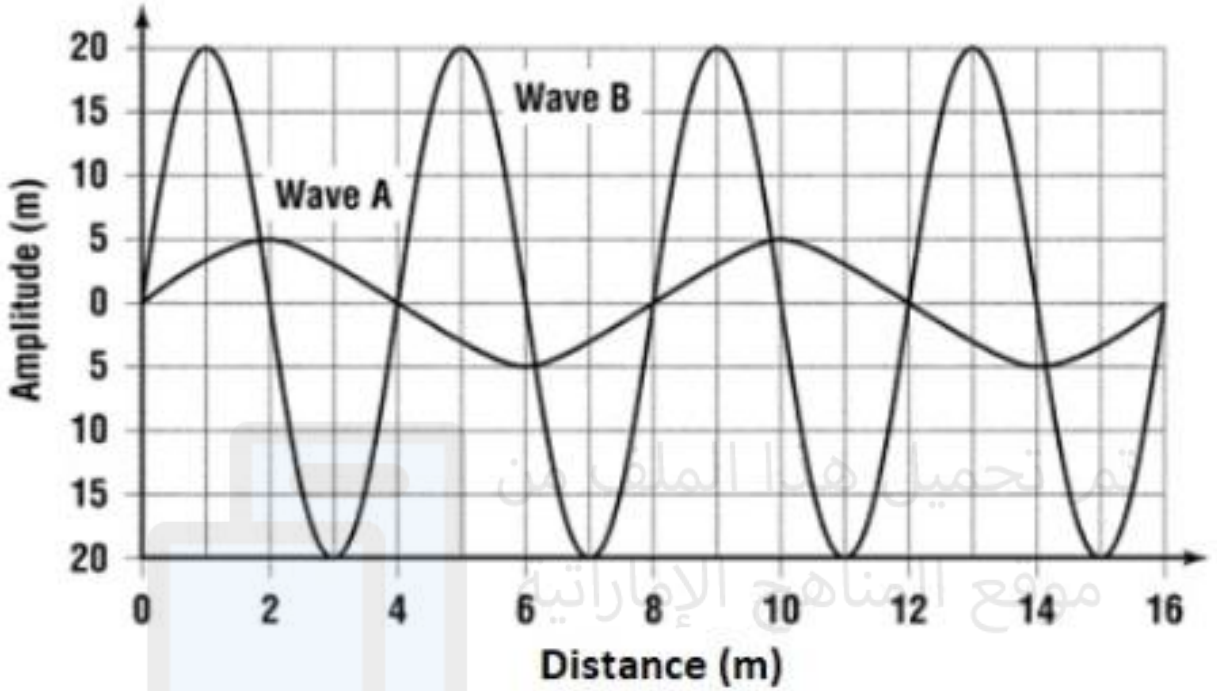
Wave	Amplitude (units)	Energy (units)
W	1	1
X	4	16
Y	7	49
Z	10	100

Which equation **best** represents the relationship between the amplitude (*A*) of an ocean wave and its energy (*E*), according to the data in the table?

- $E = A$
- $E = A^2$
- $\frac{1}{E} = A$
- $\frac{1}{E} = A^2$

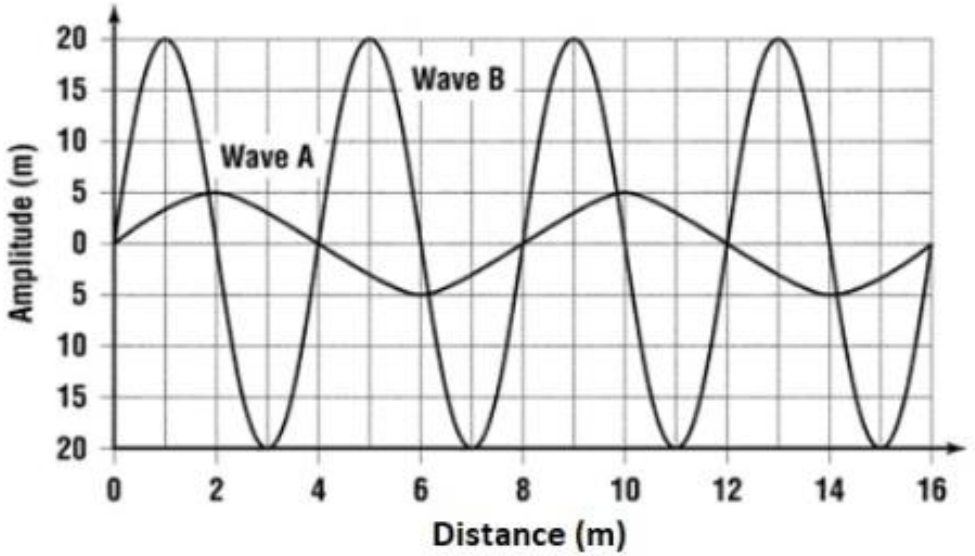
L.O 2- Identify the properties of a wave including wavelength and frequency. (Explore mechanical wave properties by modeling mechanical waves using mathematical representations and identifying patterns in data gathered by observing a variety of mechanical waves

What is the wavelength of Wave A?



- 4 m
- 5 m
- 8 m
- 20 m

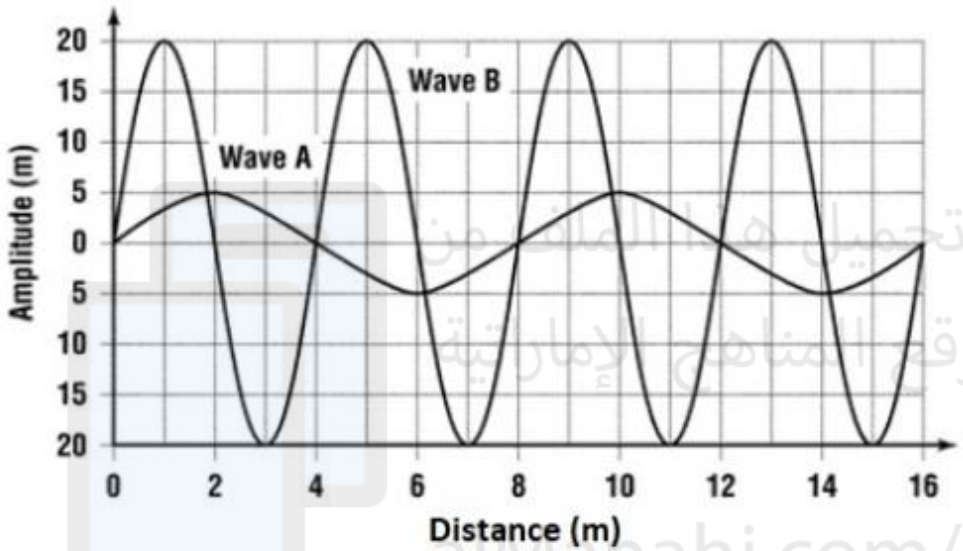
Wave B has the greater frequency.



3) Humans can hear frequencies as low as 21 Hz. If the sound is measured during 3 seconds, how many wavelengths pass?

- **A)** 7
- **B)** 24
- **C)** 63
- **D)** 18

8) What is the wavelength of Wave B?



- **A)** 4 m
- **B)** 5 m
- **C)** 8 m
- **D)** 20 m

L.O 3-Learn how waves, including sound waves, interact with matter. (Use structures to investigate how waves are reflected, absorbed, or transmitted through various materials, and develop models to describe the phenomena they observe.

ASK: What do you think happens when a wave hits a hard surface?

The wave gets reflected.

4) Movie theaters use sound proofing to reduce echoes. Soundproofing materials are designed to ___ _the sound.

absorb

8) Which of the following is NOT a way that waves interact with matter?

- ○ **A)** Waves can be reflected by matter.
- ● **B)** Waves are affected by gravity.
- ○ **C)** Waves can change direction when they travel from one material to another.
- ○ **D)** As waves pass through matter, some of the energy they carry can be transferred to matter.

L.O 4- Observe how different structures affect wave behavior. (Use structures to investigate how waves are reflected, absorbed, or transmitted through various materials, and develop models to describe the phenomena they observe)

ASK: Why can you hear people talking inside a room before you reach the open door? You can hear them because as the sound waves move through the doorway, they change direction and spread out.

2) You can hear sounds around the corner of a door due to the wave interaction called diffraction.

- (●) True
- ( ) False

L.O 5-Develop an understanding of how a wave model of light is useful for explaining the brightness and energy of light. (Develop and use models to describe light's path as straight lines and to describe how objects function to interact with light waves through reflection, absorption, and transmission

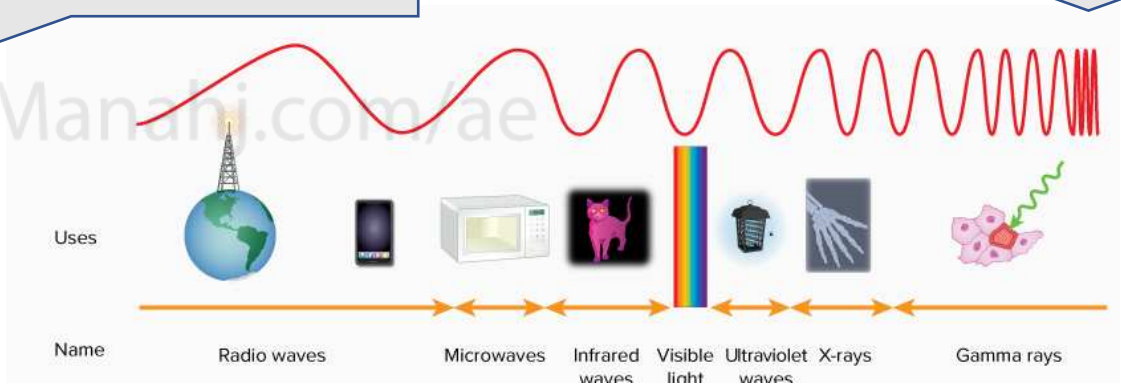
The energy of an electromagnetic wave is related to its amplitude.

- True
- False

The energy of electromagnetic wave depends on its frequency.
Higher the frequency, higher the energy.

Low frequency→ low energy

High frequency→ high energy



L.O 6-Develop and use models to explain how the colors of objects depend on the object's material and the frequency (color) of the light

An apple looks red because it absorbs red light.

- ○ True
- ● False

An apple looks red because it **reflects** red light.

2) When white light shines through red glass, the glass _____.

- ○ **A)** absorbs all red light
- ● **B)** absorbs all light except red light
- ○ **C)** absorbs all green light
- ○ **D)** reflects all light except red light

1) A red ball reflects which of the following colors of light?

- ● **A)** red
- ○ **B)** all colors but red
- ○ **C)** green
- ○ **D)** white

4) In blue light, a red object would look _____.

- ○ **A)** blue
- ○ **B)** red
- ● **C)** black
- ○ **D)** white

L.O 7-Develop an understanding of refraction, or the bending of light at a surface between media. (Develop and use models to investigate how light interacts with matter through transmission and refraction. They will trace the path of light where it bends at surfaces between different transparent materials by examining the structure and function of convex and concave lenses)

Use the table to answer the following questions.

Medium	Index of Refraction
Vacuum	1.0000
Air	1.0003
Ice	1.31
Water	1.333
Oil	1.47
Ovenproof glass	1.47
Diamond	2.417

Which would cause light to bend the most after traveling through air?

- oil
- water
- vacuum
- diamond

3) *Use the table to answer the following questions.*

Medium	Index of Refraction
Vacuum	1.0000
Air	1.0003
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When light travels from air to oil, it bends toward the normal.

- True
- False

Higher the index of refraction, slower is the speed of light and it bends most towards the normal.

L.O 8-Explore the structure and creation of sound waves. This will lead them to understand how sound is made, travels, and is heard

Check your progress

Page 256- Q4- **Describe** each section of the human ear and its role in hearing.

The outer ear includes the part of the ear that we can see, the ear canal, and the eardrum; it gathers sound waves.
The middle ear includes the hammer, anvil, and stirrup; it amplifies sound.
The inner ear includes the cochlea; it translates sound waves into electrical signals

Q. Hearing loss is usually the result of damage to which part?

a) Outer ear
b) Ear canal
c) Hair cells
d) stirrup

Q. Which of these is NOT a part of outer ear?

a) Visible part of ear
b) Ear canal
c) Cochlea
d) eardrum

Q. A tough membrane that transmits sound from outer ear to middle ear.

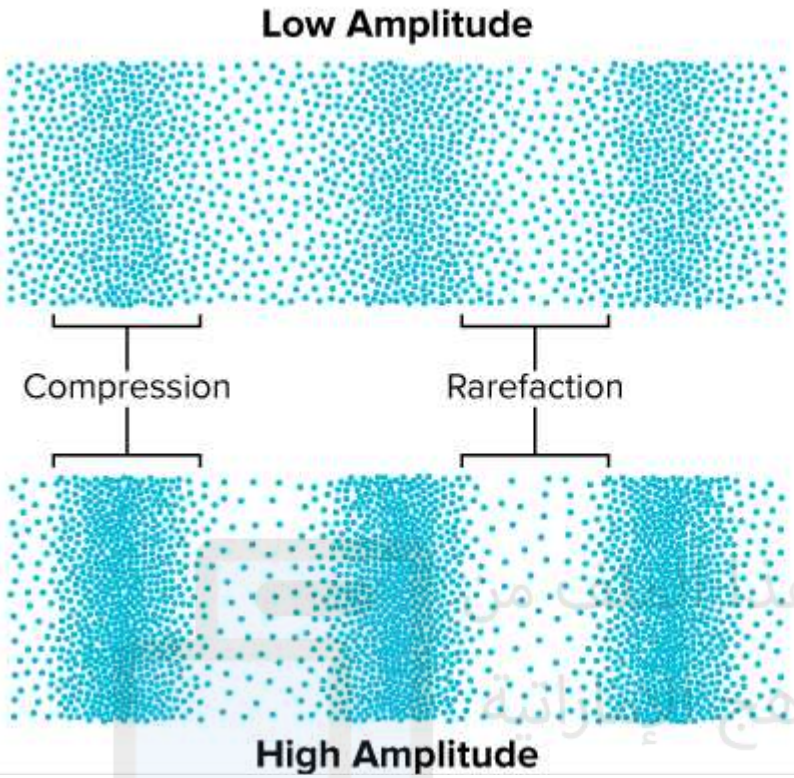
a) Anvil
b) Cochlea
c) Eardrum
d) Hair cell

Q. Which part of the ear is involved in amplifying sound?

a) Ear canal
b) Auditory nerve
c) Outer ear
d) anvil

L.O 9-Explore the properties of sound waves. This will lead students to understand how sound is measured

The following diagrams show a low-amplitude and a high-amplitude sound-wave.



a. Which diagram represents a loud sound?

High amplitude

b. Which diagram represents a soft sound?

Low amplitude

What does a sound's frequency most influence?

- ○ intensity
- ○ energy
- ○ amplitude
- ● pitch

L.O 10-Explore different ways that information can be encoded and transmitted, while obtaining, evaluating, and communicating information about the role of science in developing and using information technologies.

What is a *disadvantage* of using radio waves to transmit information?

- They do not permanently move matter.
- They can travel over long distances.
- They can be varied to hold information.
- They lose energy as they travel through mediums.

L.O 11-Explore the structure and creation of sound waves. This will lead them to understand how sound is made, travels, and is heard

Why does sound travel faster through a solid than through a gas?

Sound travels the fastest in solid than gas because solid particles are packed strongly together while the gas particles are far away from each other which makes the sound travel the slowest in it.

Solids have more density and elasticity.

When temperature of solids increases, speed of sound decreases.

When temperature of gases increases, speed of sound increases.

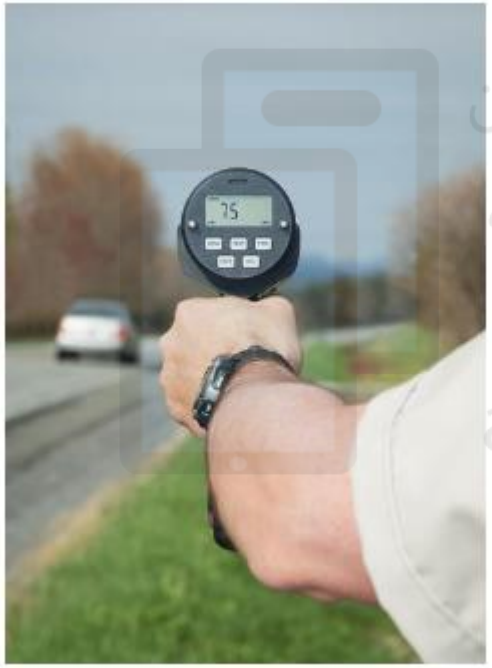
How does the temperature of a medium affect the speed of sound waves?

- ○ Temperature does not affect the speed of sound waves.
- ○ As the temperature of a medium decreases, sound waves travel more quickly through that medium.
- ○ As the temperature of a medium increases, sound waves travel more slowly through that medium.
- ● As the temperature of a medium increases, sound waves travel more quickly through that medium.

L.O 12- Explore the properties of sound waves. This will lead students to understand how sound is measured

How do police use the Doppler effect to detect speeding cars?

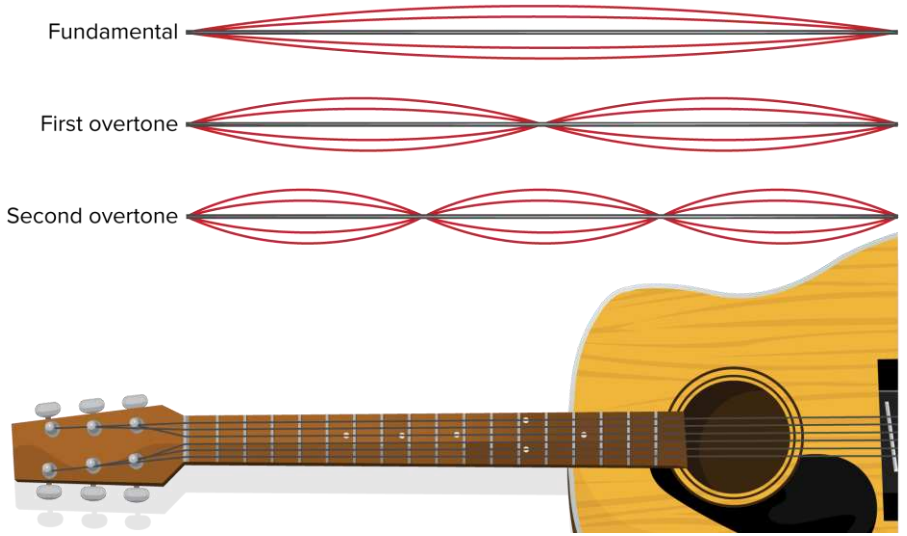
In addition, police radar guns, such as the one shown in the photo, use the Doppler effect to measure the speeds of cars. The radar gun sends radar waves toward a moving car. The waves are reflected from the car and their frequency is shifted, depending on the speed and direction of the car. From the Doppler shift of the reflected waves, the radar gun determines the car's speed.



L.O 13-Explore sound in music. This will lead them to understand how music is made and how it is different from noise

What is the frequency of the second overtone if the fundamental frequency is 308 Hz?

- ○ 154 Hz
- ○ 308 Hz
- ○ 616 Hz
- ● 924 Hz



Second overtone= fundamental X 3

=308 X 3 =924 Hz

Note: Please draw and solve ☺

L.O 14- Explore the properties of sound waves. This will lead students to understand how sound is measured

Page 262- Q9

Identify the range of human hearing in decibels and the level at which sound can damage human ears.

Humans can generally hear sounds above 0 dB.
Sounds above 85 dB can damage human hearing after prolonged exposure.

L.O 15- Explore sound in music. This will lead them to understand how music is made and how it is different from noise

Explain how two instruments could be used to produce a pulsing sound, and identify the name for this pulsing sound.

One instrument could be set to play a note at a slightly different frequency from the other instrument. The resulting pulsing sounds are called beats.

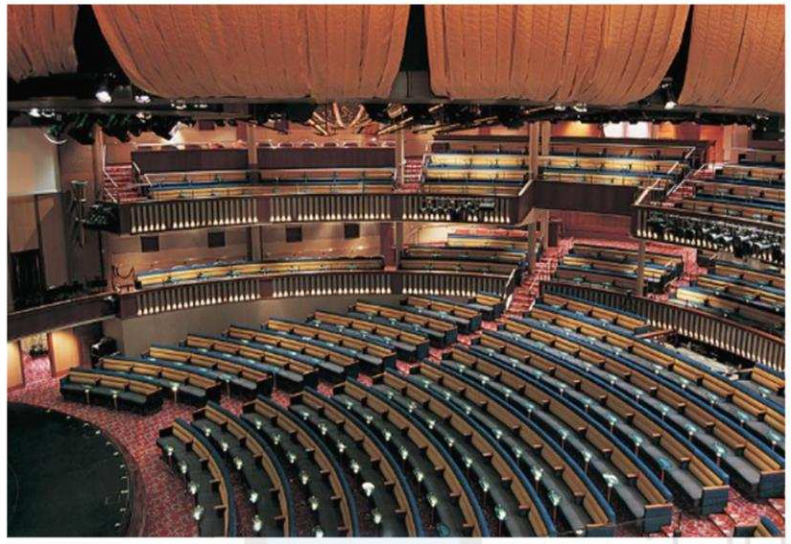
A string on a guitar vibrates with a frequency of 440 Hz. Two beats per second are heard when this string and a string on another guitar are played at the same time. What are the possible frequencies of vibration of the second string?

442 Hz or 438 Hz

Q. A guitar string vibrates at 420 Hz and another string vibrates at 423 Hz, what will be the beat in this case?

a) 3 Hz
b) 2 Hz
c) 4 Hz
d) 5 Hz

L.O 16-Explore the uses of sound in technology. This will lead them to understand how sound is used to make images of things that cannot be seen



Cloth drapes, cushioned seats, and carpeted floors help reduce reverberations because they can absorb sound.

Soft surfaces absorb sound and hard surfaces reflect sound.

Get it?

Explain whether the drapes are more likely to absorb or to reflect sound energy.

Answer: absorb

The echoing effect produced by many reflections of sound is called ___.

- ○ resonance
- ○ rarefaction
- ● reverberation
- ○ intensity

Describe some differences between a gym and a concert hall that might affect the amount of reverberation in each.

L.O 17- Explore the uses of sound in technology. This will lead them to understand how sound is used to make images of things that cannot be seen

Get it?

Describe how sonar detects underwater objects.

Answer: First, a sound wave is emitted from the SONAR. Sound travels through water and is reflected when it hits something solid. A hydrophone picks up the signal.

Because speed of sound in water is known, distance can be calculated by measuring time.

L.O 18- Explore the structure of electromagnetic waves. This will lead them to understand the similarities and differences between electromagnetic waves and other waves

Get It?

Identify What determines whether sparks are ejected from a metal when light shines on it?

Answer: the frequency of light

L.O 19- Explore the structure of electromagnetic waves. This will lead them to understand the similarities and differences between electromagnetic waves and other waves

Read Page 282-
Last paragraph

Waves as particles

In 1887, Heinrich Hertz found that he could create a spark by shining light on a metal. (Today, we know that this spark means that electrons were ejected from the metal.) Hertz found that whether sparks occurred depended on the frequency of the light and not the amplitude. Because the energy carried by a sound wave or water wave depends on its amplitude and not its frequency, this result was mysterious.

In 1905, Albert Einstein provided an explanation. An electromagnetic wave can behave and can be modeled as a particle called a photon. A **photon** is a massless bundle of energy that behaves like a particle. The photon's energy depends on the frequency of the wave and increases as the wave's frequency increases. Although many features of electromagnetic waves are explained well by using the wave model, others are better explained using the particle model.

L.O 20-Explore the electromagnetic spectrum. Understand how the properties of electromagnetic waves change as they become more energetic.

Check you progress- Page 290

Q9- **Identify** the beneficial effects and the harmful effects of human exposure to ultraviolet waves.

Useful UVs

You probably know that UV waves cause sunburn. But some exposure to ultraviolet waves is healthy. Ultraviolet waves striking the skin enable your body to make vitamin D, which is needed for healthy bones and teeth.

Ultraviolet waves are also used to disinfect food, water, and medical supplies, as shown in **Figure 13**. When ultraviolet light enters a cell, it damages protein and DNA. For some single-celled organisms, such as bacteria, this damage can mean death.

Hugh Threfall/Getty Images

Ultraviolet waves make some materials fluoresce (floo RES). Materials that fluoresce absorb ultraviolet waves and reemit the energy as visible light. Police detectives sometimes use fluorescent powder to reveal fingerprints.

Harmful UVs

When you spend time in the Sun, you might wear sunscreen to prevent sunburn. Most of the UV waves that reach Earth's surface are longer-wavelength UVA rays. The shorter-wavelength UVB rays are the primary cause of sunburn and skin cancers, but UVA rays contribute to skin cancers and skin damage, such as wrinkling.

Read Page 288 in textbook.