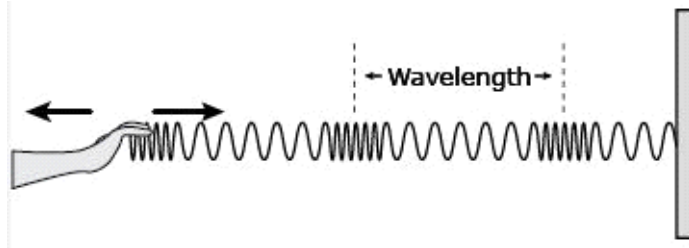


Exam not valid for Paper Pencil Test Sessions

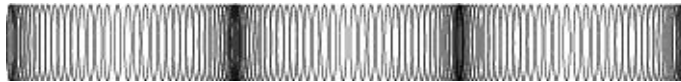
1



A student used a coiled child's toy to show the class about sound waves. What kind of waves did he demonstrate?

- A Light
- B X-ray
- C Compression
- D Radio

2

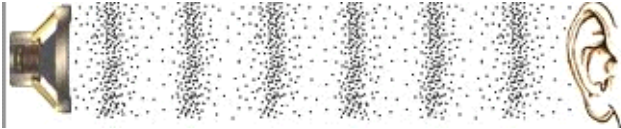


The part of the wave where the molecules are spread apart is called —

- A direction of travel
- B wavelength
- C compression
- D rarefaction

3 Click on all of the correct answer choices.

Which statements are true about compression waves?



Compression waves move the fastest through solids.

Compression waves change based on frequency and loudness.

Compression waves are created by vibrations.

Compression waves have areas of compression and areas of rarefaction.

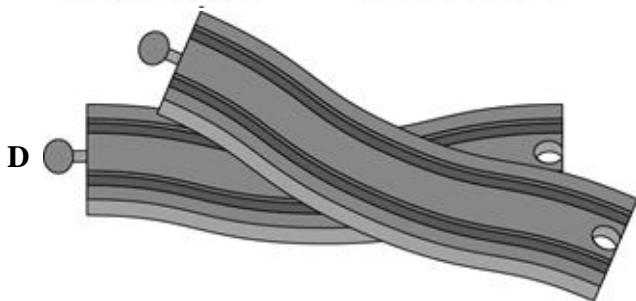
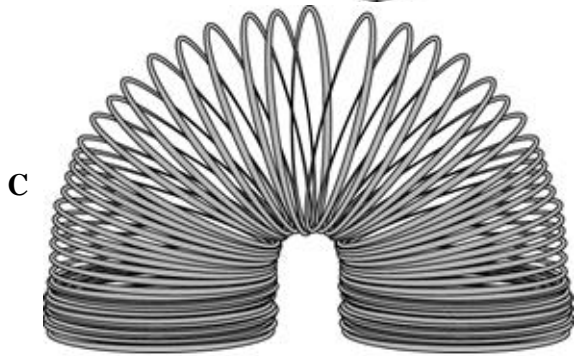
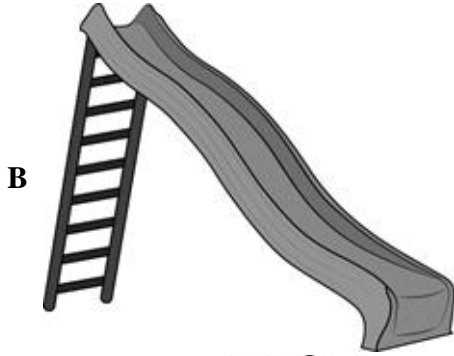
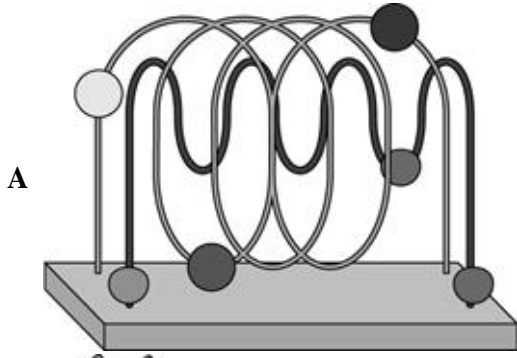
Compression waves move the fastest through liquids.

Compression waves are made only of molecules that are all very close together.

4 **Sound is a form of —**

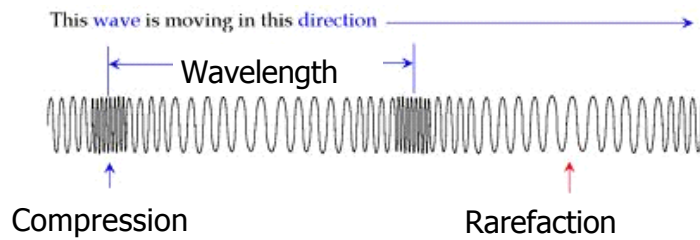
- A machine
- B light
- C energy
- D frequency

5 Which object could best be used to model a compression wave?



6 Click and drag the part of the wave to the correct box.

Identify the parts of a compression wave.



7 **When frequency increases what else goes up?**

- A Frequency
- B Sound
- C Wavelength
- D Pitch

8 **The number of times an object vibrates in a given period of time is —**

- A sound
- B frequency
- C wavelength
- D pitch

9 **Vibrations cause —**

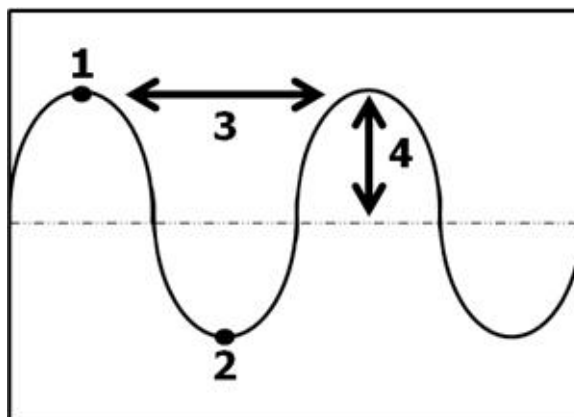
- A molecules
- B sound
- C mass
- D frequency

10 Choose the best answer to complete the sentence

The _____ of sound is the number of wavelengths in a given unit of time.

- A Amplitude
- B Compression
- C Frequency
- D Vibration

11



What is labeled number 4 on the diagram?

- A Crest
- B Amplitude
- C Trough
- D Wavelength

12 In a sound with a high pitch —

- A wavelengths cannot be compared to a low-pitched sound
- B wavelengths are shorter than in a low-pitched sound
- C wavelengths are longer than in a low-pitched sound
- D wavelengths are the same length as a low-pitched sound

SOUND LEVEL	
SOUND	DECIBELS
Jet airplane	140
Loud rock band	110
Noisy factory	90
Busy traffic	70
Conversation	60
Quiet radio	40
Whisper	20
Leaves rustling	10

Based on the Sound Level chart, who needs earplugs the most to protect his or her hearing?

- A An airplane controller
- B A lawn care person
- C A radio announcer
- D A traffic director

14 Sound travels slowest through —

- A liquids
- B gold
- C gases
- D solids

15 During a thunderstorm, you see the lightning before you hear thunder. This is because —

- A sound has longer wavelengths than light
- B light has a greater mass than sound
- C sound and light travel at the same speed
- D light travels faster than sound

16 A student uses a depth finder when driving his boat to make sure he is not driving in shallow water. What technology does a depth finder use?

- A Decibels
- B Molecules
- C Sonar
- D Pitch

17 Which can be caused by a vibrating tuning fork?

- A A loss of hearing
- B A power outage
- C Death of insects
- D Ripples in water

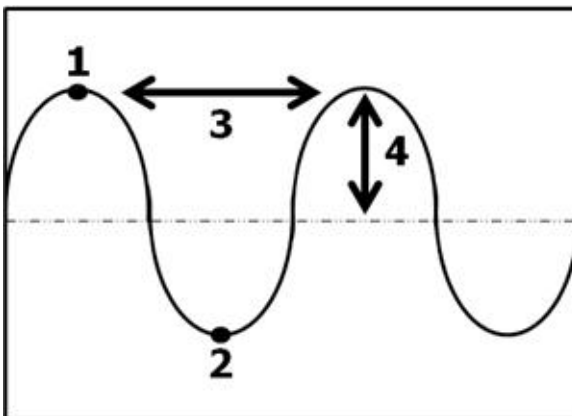
18 Some animals make and hear frequencies of sound vibrations (itches) that humans —

- A can mimic but can not hear
- B can make but can not hear
- C can not make or hear
- D can not make but are able to mimic

19 SONAR uses —

- A reflected sound
- B refraction
- C high-pitched sound
- D low sound

20



What is Point 1?

- A Height
- B Trough
- C Crest
- D Wavelength

21 The low point of a wave is the —

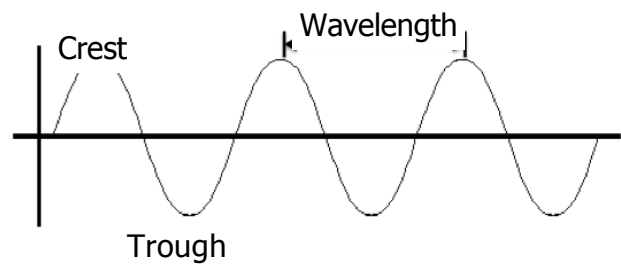
- A length
- B trough
- C crest
- D peak

22 **Which best describes light?**

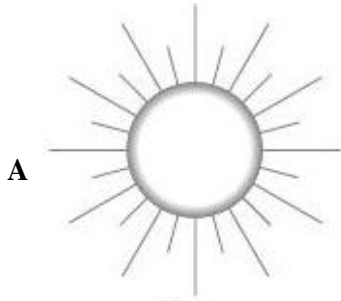
- A A form of energy
- B An empty vacuum
- C A black color
- D A compression wave

23 Drag the labels to the correct place on the image.

Label the wavelength, crest and trough on the transverse wave.



24 Which of these does *not* emit light waves?



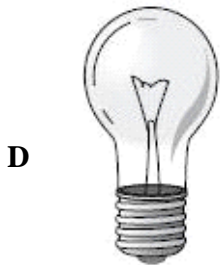
The sun



The moon



A campfire



A light bulb

25 Light bouncing off an object is called —

- A darkening
- B reflecting
- C bending
- D refracting

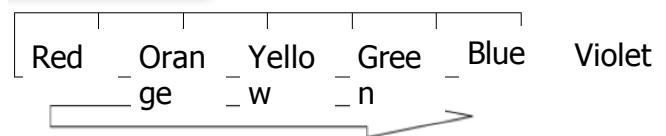


What happens when light passes through water?

- A No change is visible
- B Wavelengths are seen
- C Reflection
- D Refraction

27 Click and drag the colors into the correct order.

When white light shines through a prism, it is refracted. Place the visible colors in order from least refracted to most refracted.



28 **Which part of the spectrum has the longest wavelength?**

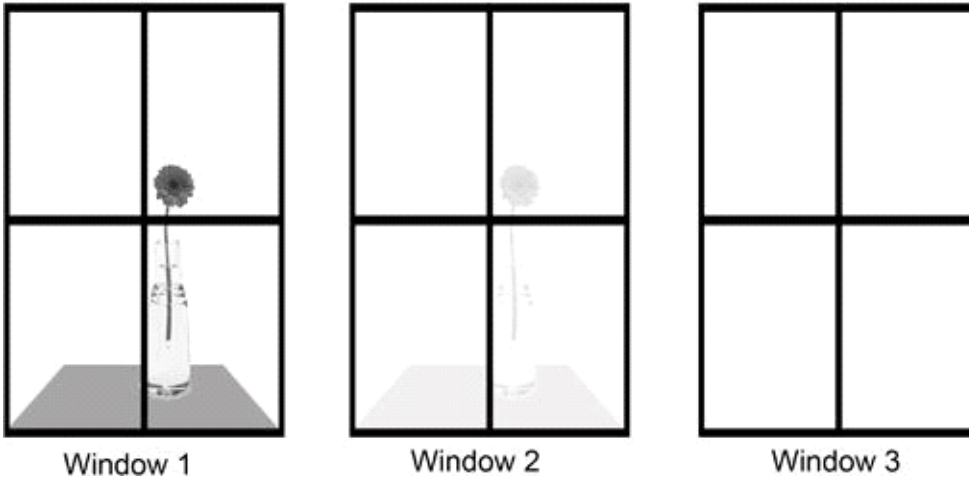
- A Orange
- B Blue
- C Yellow
- D Red

29 **Light travels —**

- A in straight lines
- B in ovals
- C in squares
- D in circles

- 30 **Objects are seen as different colors, because —**
- A objects do not reflect certain wavelengths
 - B objects reflect wavelengths and do not absorb others
 - C objects reflect certain wavelengths and absorb others
 - D objects cannot be seen in different colors

31



Which window is translucent?

- A Window 2
 - B Window 3
 - C None
 - D Window 1
- 32 **Which item reflects light?**
- A Prism
 - B Magnifying glass
 - C Wax paper
 - D Mirror
- 33 **Which item is NOT opaque?**
- A French fries
 - B Textbook
 - C Desk
 - D Pool water

- 34 **Which item is transparent?**
- A Metal bike
 - B Clear glass
 - C Painted bench
 - D Grassy field
- 35 **Which tool can be used to separate white light into colors of the visible spectrum?**
- A A lens
 - B A prism
 - C A wave
 - D A mirror
- 36 **Which is the correct order of the colors of the visible light spectrum?**
- A Red, orange, yellow, green, blue, and violet
 - B Orange, yellow, green, blue, violet, and red
 - C Red, orange, green, blue, violet, and yellow
 - D Green, blue, violet, red, orange, and yellow
- 37 **Light bending as it passes through a prism is an example of —**
- A deflection
 - B transparent
 - C reflection
 - D refraction
- 38 **An object that allows some, but not all, light to pass through is —**
- A mirrors
 - B transparent
 - C translucent
 - D opaque
- 39 **Light can travel through outer space. Sound cannot. Why?**
- A Light needs matter to travel but sound does not.
 - B Sound wavelengths are too small.
 - C Light does not need matter to travel but sound does.
 - D Sound wavelengths cannot be measured.

40 Which items are translucent?

- A Dark window shades
- B Clean windows**
- C Sunglass lenses
- D Painted walls