

Name _____
Date _____

Study Guide 9
Science 4 Lesson 82

Energy—Part 2

Fill in the blanks with the correct words to match the definitions.

- _____ sound _____ - form of energy produced when matter vibrates
- _____ vibrate _____ - to move back and forth rapidly and repeatedly
- _____ pitch _____ - the highness or lowness of a sound
- _____ light _____ - form of energy that moves in electromagnetic waves
- _____ absorb _____ - to take in
- _____ reflect _____ - to change the direction
- _____ refract _____ - to bend
- _____ transparent _____ - describes matter that allows light waves to pass through
- _____ translucent _____ - describes matter that allows only some light waves to pass through
- _____ opaque _____ - describes matter that does not allow light waves to pass through
- _____ renewable _____ - energy resources that are never used up or can be replaced in a short amount of time
- _____ non-renewable _____ - energy resources that cannot be replaced for millions of years

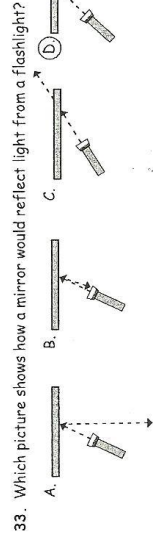
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54(F73)-SG-082a

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Science 4 Lesson 82

Energy—Part 2

- Circle the true statement.
A. Light travels faster than sand.
B. Sound travels faster than light.
C. Light and sound travel at the same speed.
- List three sources of light energy.
Possible answers: Sun _____ fire _____ light bulb _____
- Why is the Moon not a source of light energy?
_____ The Moon reflects light but does not give off electromagnetic waves.
- Why are we able to see objects?
_____ When an object reflects light, we can see the object.
- What color objects reflect the most light waves? _____ white _____
- What color objects absorb the most light waves? _____ black _____
- What causes objects placed in a glass of water to appear broken or larger?
_____ The refraction or bending of light waves through the water causes the object to appear broken or larger.



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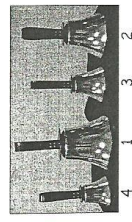
Match the Type of vibrations to the sound produced.

- | | |
|----------------------|------------|
| 13. large vibrations | high pitch |
| 14. small vibrations | loud |
| 15. fast vibrations | low pitch |
| 16. slow vibrations | soft |

17. Which type of matter do sound waves travel fastest through?
_____ Sound waves travel fastest through matter that is solid.

All of the bells in the photo are made of the same material.

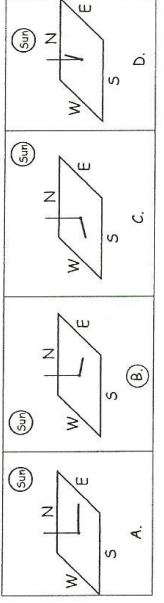
18. Write the numbers 1 to 4 below the bells to show the order of the bells from lowest pitch to highest pitch.



Write the letter L for light, S for sound, or B for both.

19. _____ L _____ can travel through a vacuum
20. _____ B _____ can be absorbed
21. _____ S _____ is produced when matter vibrates
22. _____ B _____ can be converted to other forms of energy
23. _____ S _____ cannot travel through a vacuum
24. _____ B _____ can be reflected
25. _____ L _____ can be refracted

34. Which picture shows the Sun and the shadow of a pole at 5 p.m.?



35. Which of the following best describes what happens to most light waves when they hit a smooth, shiny object such as a mirror?

- A. The light waves are absorbed.
- B. The light waves are reflected.
- C. The light waves are refracted.
- D. The light waves are magnified.

36. The main source of the Earth's energy is the _____ Sun _____.

37. List five renewable energy resources.

Possible answers: sunlight, moving water, wind, organic matter, thermal energy, wood, garbage

38. List two non-renewable energy resources.

Possible answers: oil, natural gas, coal, uranium

39. List four examples of biomass.

Accept reasonable answers: wood, animal waste, garbage, grains