

Name: _____

Date: _____

Grade 4 Light and Sound Science Review

17. What are the 3 tiny bones in the middle ear?

hammer, anvil, stirrup

18. What is the passageway between the outer ear and the eardrum?

ear canal

19. What part of the ear contains the cochlea?

inner ear

20. What part of the ear vibrates when it is hit with sound waves?

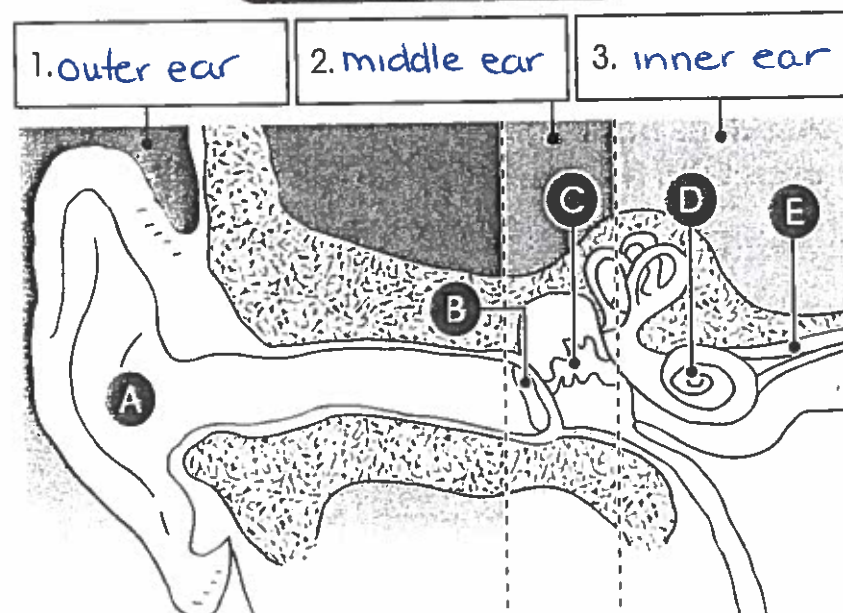
eardrum.

21. Label the part of the ear.

When a sound is made outside the outer ear, our **earflap** in the **outer ear** will collect the sound waves and the sound waves travel along the canal and strike the **eardrum** in the **middle ear**. The eardrum vibrates and sends the vibrations to the three tiny bones – the **hammer**, **anvil**, and **stirrup**. These three bones make the vibrations larger and pass them to the **cochlea** in the **inner ear**. Then the motion of the vibrations is changed into signals that are carried by **nerves** to the brain.



Cross-Section of an Ear



- A ear flap
- B ear drum
- C tiny bones
- D cochlea
- E nerve

1. What is a light source?

Anything that gives off light

2. What are two types of light sources? Give 3 examples of each one.

| | Natural | Artificial |
|-----|--|---|
| Ex. | Stars Fire Fire-fly Lightning Moon | TV screen Neon sign Store element lamp |

3. What safety problems would there be if there were no artificial lights?

- could not drive in the dark
- people could get hurt - trip or fall in the dark

4. What are some things that affect how light behaves?

Anything that crosses the path of a light ray - i.e. air, water, dust, humans

5. What objects do you know that bend light?

prisms

6. What are some objects that would reflect light well?

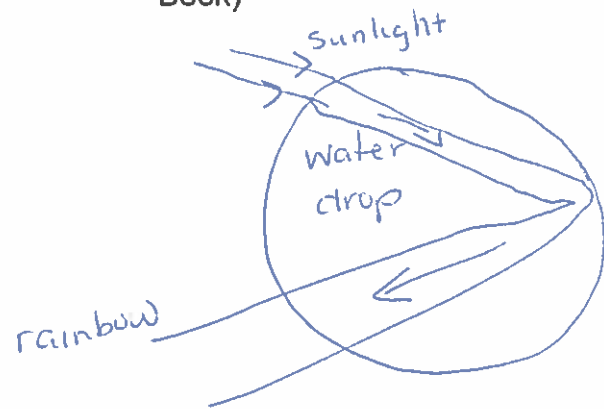
shiny objects
mirrors

7. What is special about the reflection you see in a mirror?

The reflected light makes an image - a reflection - that matches the original image almost perfectly.

8. Sunlight appears to travel in a straight line. What causes light rays to bend?

Draw a diagram to help explain your answer (Hint - page 58 in Nelson Literacy Book)



9. What is the scientific term to describe light bending?

refraction

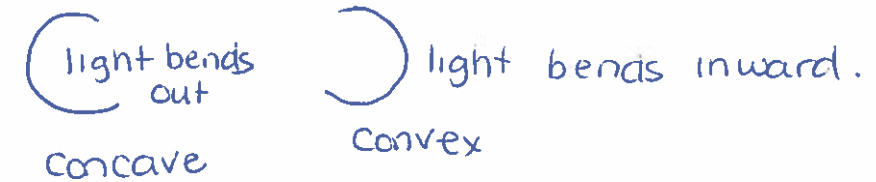
10. How are rainbows created?

Sunlight + raindrop = rainbow

11. What is light?

a form of energy

12. What is the difference between a concave and a convex lens?



13. Write the definitions for "transparent", "translucent", and "opaque", and give 2 examples of each.

transparent - something that transmits light and we can see through - window, air, contact lenses

translucent - transmits some light - more difficult to see through - frosted glass, plastic wrap, tissue paper

opaque - does not transmit light - cannot see through black construction paper, wood, brick, textbook.

14. What causes sound?

Vibrations

15. What sequence of events occurs when we hear a sound? (hint - page 105 of Nelson Literacy book)

Sound enters ear and hits the eardrum. The vibrations hit the tiny bones and go to the cochlea. It then goes to the nerve which sends a signal to the brain.

16. Why is it better to build a movie theatre with soft materials rather than with hard materials such as bricks and concrete?

Soft materials so the sound vibrations can be absorbed and there is no echo.