NCERT Exemplar Solutions for Class 6 Science
Chapter 8: Body Movements

Multiple Choice Questions

1. Which of the following parts of our body help us in movement?

(i) Bones
(ii) Skin
(iii) Muscles
(iv) Organs

Choose the correct answer from the options below:

- (a) (i) and (iii)
- (b) (ii) and (iv)
- (c) (i) and (iv)
- (d) (ii) and (iii)

Solution: (a) (i) and (iii)

Explanation: Bones form the structural framework of the body called the skeleton. The skeleton, along with muscles, helps our body parts move. Bones are hard and cannot bend on their own, but joints help the body in moving.

Muscles are like elastic bands that are attached to bones through tough connecting bands called tendons. Muscles help in movement of bones through contraction and pulling action. Bones are surrounded by muscles that facilitate movement.

2. Which of the following joints is immovable?

- (a) Shoulder and arm
- (b) Knee joint
- (c) Upper jaw and skull
- (d) Lower jaw and upper jaw

Solution: (c) Upper jaw and skull

Explanation: The upper jaw and skull have immovable joints because they are fixed joints. These joints provide stability and protection to vital organs like the brain rather than allowing movement.

3. Which of the following organisms does not have both muscles and skeleton for movement?

- (a) Dog
- (b) Snail
- (c) Earthworm
- (d) Human being

Solution: (c) Earthworm

Explanation:

- Human beings and dogs have an endoskeleton (internal skeleton) along with muscles
- Snails have an exoskeleton (external shell) and muscles
- Earthworms do not have a skeleton. They have two sets of muscles: one that makes them long and thin, and another that makes them thick. The contraction and relaxation of these muscles help in their movement.

4. Underwater divers wear fin-like flippers on their feet to:

- (a) swim easily in water

- (b) look like a fish
- (c) walk on water surface
- (d) walk over the bottom of the sea (sea bed)

Solution: (a) swim easily in water

Explanation: Divers wear fin-like flippers because when the muscles in their feet contract, it generates a wave-like motion. The flippers move in the opposite direction, exerting force against the surrounding water, which pushes the divers forward efficiently.

5. Snail moves with the help of its:

- (a) shell
- (b) bone
- (c) muscular foot
- (d) whole body

Solution: (c) muscular foot

Explanation: The muscular foot of a snail extends outside the shell and attaches to the ground during movement. The foot has a special gland that produces slimy mucus, creating a slippery track that helps the snail move smoothly.

6. How many muscles work together to move a bone?

- (a) One
- (b) Two
- (c) Three
- (d) Four

Solution: (b) Two

Explanation: Muscles work in pairs to move bones. When one muscle contracts to move a bone in one direction, another muscle contracts to move it back. This is because muscles can only pull, not push.

Very Short Answer Questions

7. Name the type of joint in your hand which helps you to grasp a badminton racquet.

Solution: Hinge joints present in our fingers help us grasp objects like a badminton racquet.

8. What would have happened if our backbone was made of one single bone?

Solution: If our backbone was made of one single bone, we would not have been able to bend and twist our back. The backbone is made of many small bones called vertebrae that allow flexibility.

9. Provide one-word answers to the statements given below:

1. Joint which allows movement in all directions.
2. Hard structure that forms the skeleton.
3. Part of the body with a fixed joint.
4. Help in the movement of body by contraction and relaxation.
5. Bones that join with chest bone at one end and to the backbone at the other end.
6. Framework of bones which gives shape to our body.
7. Bones which enclose the organs of our body that lie below the abdomen.
8. Joint where our neck joins the head.
9. Part of the skeleton that forms the earlobe.

Solution:

1. Ball and socket joint
2. Bone
3. Upper jaw with skull
4. Muscles
5. Ribs
6. Skeleton
7. Pelvic bones
8. Pivotal joint
9. Cartilage

10. Write the type of joint which is used for each of the following movements:

(a) A cricket bowler bowls the ball.
(b) A girl moves her head in right and left direction.
(c) A person lifts weights to build up his biceps.

Solution: (a) Hinge joint and ball and socket joint
(b) Pivotal joint
(c) Hinge joint

Short Answer Questions

11. Match the name of the animals given in Column I with their body parts used for movement given in Column II.

Column I	Column II
(a) Human being	(i) Fins
(b) Cow	(ii) Wings
(c) Snake	(iii) Legs
(d) Eagle	(iv) Whole body
(e) Fish	(v) Limbs

Solution:

Column I	Column II
(a) Human being	(iii) Legs
(b) Cow	(v) Limbs
(c) Snake	(iv) Whole body
(d) Eagle	(ii) Wings
(e) Fish	(i) Fins

12. Given below is a list of different types of movements in animals.

[Running, Jumping, Walking, Slithering, Crawling, Flying, Swimming, Creeping]
Write the types of movements seen in each animal:
(a) Duck
(b) Horse
(c) Kangaroo
(d) Snail
(e) Snake
(f) Fish

(g) Human beings
(h) Cockroach
Solution: (a) Duck – Walking, Flying, Swimming
(b) Horse – Running, Walking
(c) Kangaroo – Jumping
(d) Snail – Creeping, Crawling
(e) Snake – Slithering
(f) Fish – Swimming
(g) Human beings – Walking, Running, Jumping, Swimming, Crawling
(h) Cockroach – Walking, Flying, Running

13. Boojho fell off a tree and hurt his ankle. On examination, the doctor confirmed that the ankle was fractured. How was it detected?

Solution: The doctor must have detected swelling in the injured area and taken an X-ray of the ankle. X-ray technique produces images that show the bones in our body. By examining the X-ray, the doctor could confirm the fracture in the ankle bone.

14. Bones are hard structures and cannot be bent. But, we can still bend our elbow, knee, etc. How is this possible?

Solution: This is possible due to the presence of different types of joints between bones. We can bend body parts like elbows and knees because:

- These parts are not made of a single bone but consist of two or more bones
- These bones are connected by hinge joints
- The joints, along with muscles, help us bend these body parts
- Muscles contract and relax to facilitate movement at these joints

15. Which type of movement would have been possible if:
(a) our elbow had a fixed joint
(b) we were to have a ball and socket joint between our neck and head

Solution: (a) If our elbow had a fixed joint, there would be no bending movements possible. Only simple movements like pointing would be possible using the entire arm as one rigid unit.
(b) We would be able to rotate our head in all directions, including a complete 360° rotation, which would be dangerous and impractical.

16. Earthworms are known as 'farmer's friends'. Why?

Solution: Earthworms are called 'farmer's friends' because they improve soil quality in several ways:

- They burrow into the soil, making it loose and allowing air to pass through
- This burrowing helps water drain properly from the soil
- It becomes easier for soil to "breathe" (gas exchange)
- They increase soil fertility by excreting undigested organic materials into the soil
- Their activity enhances the overall texture and nutrient content of soil

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Long Answer Questions

17. (a) Unscramble the jumbled words and write them in the blank spaces provided.
(i) neosb → **Bones**
(ii) tnemevom → **Movement**
(iii) iontcaronct → **Contraction**
(iv) lsecsum → **Muscles**

(v) arctigeal → **Cartilage**
(vi) epahs → **Shape**
(vii) sangro inerlant → **Internal organs**
(viii) laxaeriont → **Relaxation**

(b) Read the following paragraph and fill in the blanks using the words you unscrambled.

(a) and (b) form the skeleton of the human body. They provide the framework, give (c) to the body and help in (d). They protect the (e). The bones are moved by alternate (f) and (g) of two sets of (h) attached to them.

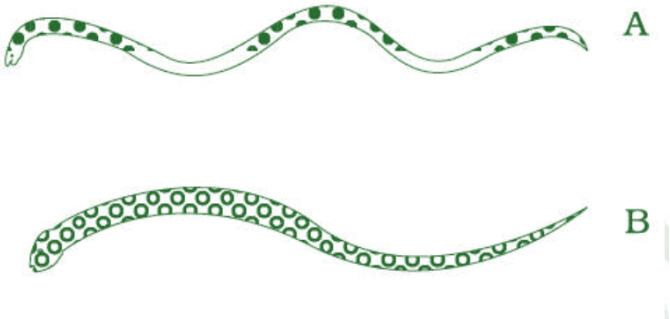
Solution: (a) **Bones**
(b) **Cartilage**
(c) **shape**
(d) **movement**
(e) **internal organs**
(f) **contraction**
(g) **relaxation**
(h) **muscles**

18. How is the skeleton of a bird well-suited for flying?

Solution: The following features make a bird's skeleton well-suited for flying:

1. **Lightweight bones:** Bones are hollow and light, reducing overall body weight
2. **Streamlined shape:** The body shape is streamlined, which helps move easily through air with minimal resistance
3. **Specialized hind limbs:** Bones of hind limbs are specialized for walking, hopping, and perching
4. **Modified forelimbs:** Bones of forelimbs are modified into wings specifically for flight
5. **Strong breastbones:** Breastbones hold flight muscles and are used to move wings up and down powerfully
6. **Strong shoulder bones:** Shoulder bones provide strong attachment points for wing muscles

19. In the figure, there are two snakes of the same size slithering on sand. Can you identify which of them would move faster and why?



Solution: Snake "A" will move faster than snake "B".

Explanation:

- A snake moves by forming loops in its body while slithering
- Each loop gives the snake a forward push by pressing against the ground
- Snake A has a larger number of loops formed in its body compared to Snake B

- Therefore, Snake A gets more forward pushes and moves much faster than Snake B, which has fewer loops
- The more loops a snake can form, the faster it can move across the surface

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Note: This document provides comprehensive solutions to all questions in NCERT Exemplar for Class 6 Science Chapter 8: Body Movements. The explanations are detailed and scientifically accurate to help students understand the concepts of body movements, joints, muscles, and skeletal systems in both humans and animals.