



Worksheet 9 – Basic anatomy and biomechanics

1. Why is it useful for coaches to understand the body's structure (anatomy) and how it moves (biomechanics)?

2. Answer true or false to the following statements regarding anatomical terminology:

- The femur is superior to the fibula  True  False
- The pubis is inferior to the sacrum  True  False
- The ribs are anterior to the vertebra  True  False
- The mandible is posterior to the vertebra  True  False
- The humerus is medial to the pubis  True  False
- The radius is lateral to the ribs  True  False
- The carpals are proximal to the metacarpals  True  False
- The tarsals are distal to the metatarsals  True  False
- The eyes are superficial in relation to the skull  True  False
- The skin is deep in relation to the muscles  True  False

3. The skeletal system performs five main functions. List them and provide a brief description of each.

i.

ii.

iii.

iv.

v.

4. In relation to the skeleton, answer the following:

- a) A tennis player develops a stress fracture in the shin. What is the anatomical name of the injured bone?
- b) A gymnast falls heavily in training and breaks their collar bone. What is the anatomical name of the injured bone?
- c) A judo player lands awkwardly and breaks both the long bones in their forearm. What are the anatomical names of the injured bones?

5. An athlete's knee hyperextends. Answer the following in relation to hyperextension:

- a) What type of joint is the knee?

- b) Provide two other examples of this type of joint that are superior to the knee.
- c) Describe in words what is happening to the knee when it is hyperextended?

**6. What are the five main functions of muscles in the human body?**

- i.
- ii.
- iii.
- iv.
- v.

**7. There are two main categories of biomechanical analysis. Name them both and give a brief description of each**

- i.
- ii.

**8. A basketball coach is keen to increase the distance that the players are able to throw the ball down court in a match to increase the chances of scoring from a fast break. What three factors can the coach work on to increase that distance?**

- i.
- ii.
- iii.

**9. In sequential movements such as a volleyball serve movement begins where? What is transferred from one body part to the next moving part?**

10. Which of the following is a force level and which is a speed lever?



- Force lever
- Speed lever



- Force lever
- Speed lever