1.4 The structure & functions of the skeleton – Part 3

Learning Objectives

- **Describe different movements that are created by the skeleton**
- Identify movements that occur at different hinge and ball and socket joints
- **Explain the movements occurring at range of different joints during sports performance**

Shoulder joint
Hip joint
Knee joint
Elbow joint
Ankle joint

Hinge joint
ball + socket.

circumduction.
rotation

flexion extension abduction adduction Plantar; Dorsiflexion

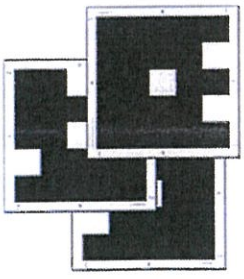
Record your success for the 3 Plickers questions:

plickers
clickers, simplified

Q1:

Q2:

Q3:

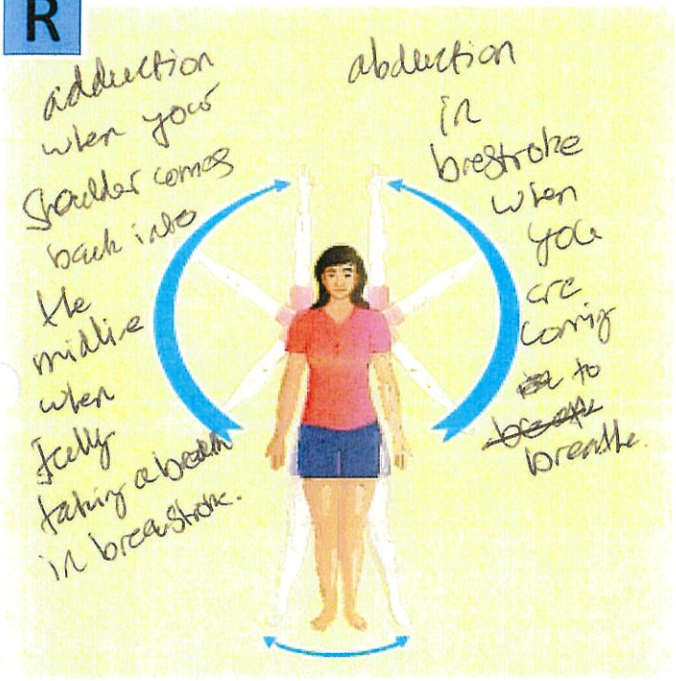


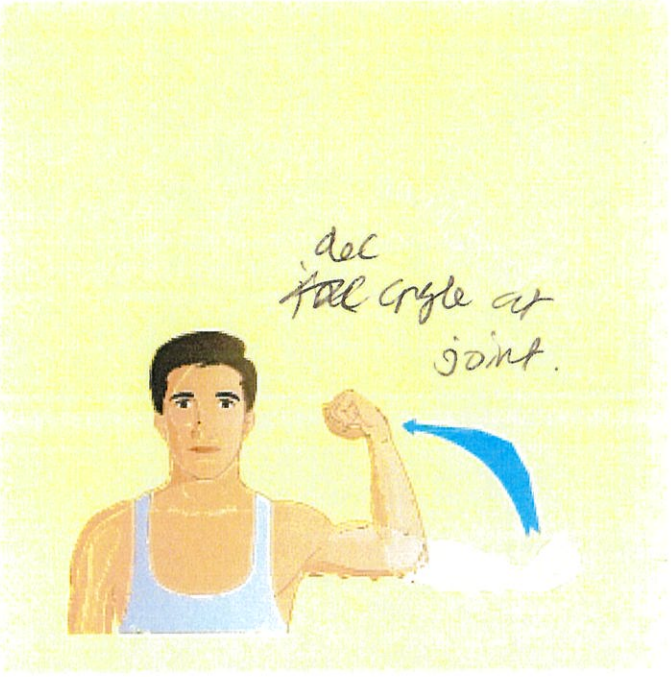
1.4 Joint action and movements

See pages 10-11

Identify the movements produced in the images and provide a sporting example.

R





badminton Shot (Smash)

inc angle at joint

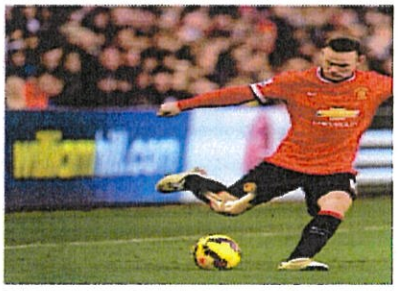
neck - Atlantoaxial joint
condyloid joint - wrist.

1.4 Joint action and movements

See pages 10-11

Each of the sporting actions in the photos below relies on a specific classification of joint. For each sporting action, name the type of joint and describe what it is about the design of the joint that makes it capable of performing the action.

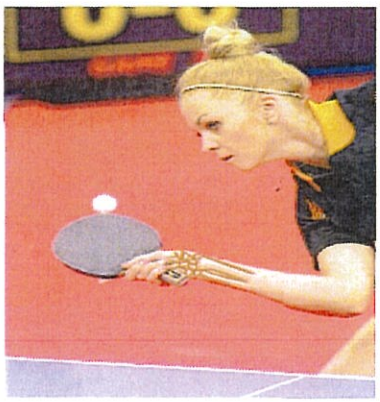
i



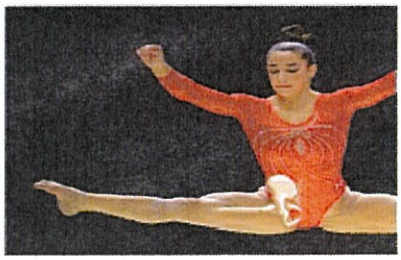
ii

iii

iv



v



vi

I. hinge joint flexion is shown

II. ball-socket abduction

III. extension elbow joint

IV. condyloid joint extension

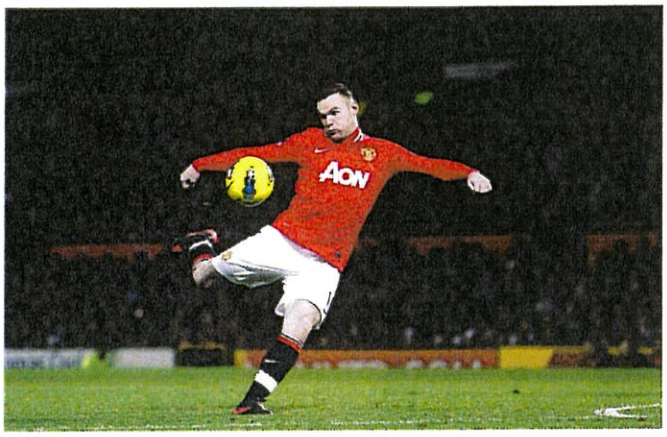
V. extension/rotation, abduction ball & socket

VI. ~~condyloid~~ joint PF

1.4 Joint action and movements

See pages 10-11

A Identify the movement produced in Wayne Rooney's **shoulder joints, right knee** and **left knee** in this image. away from midline.



In the shot he is showing abduction his shoulder joints are ball and socket joints.

In his right knee this is a hinge joint he is in flexion. in the other knee he is in extension when the joint is over 90° Angle is increasing.

V Identify the movements produced in the **shoulder, elbow and knee** joints of the performers pictured.

1. his Shoulder are both ball+Socket and are in abduction (away from the midline of the body). Abduction also in the hip joints as legs are also moved away from midline of the body. Extension both elbows as inc angle at the joint. elbow

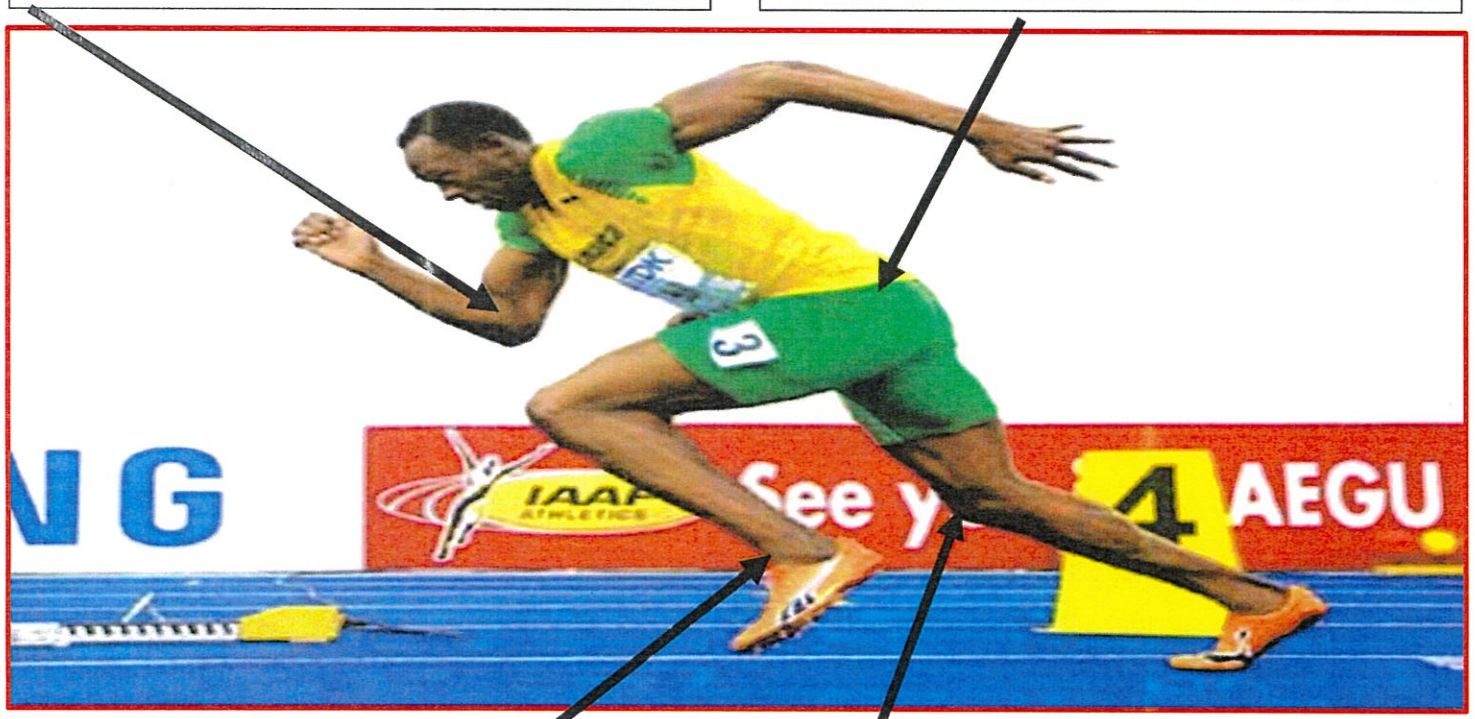
2. In each Shoulder joint adduction is shown as are close to the midpoint. In her knee there is slight flexion enabling her to be have good balance.

E Identify which joint and articulating bones are at each location identified **(1).** Then identify what type of joint it is **(2)** before identifying the type of movement which is taking place at that joint **(3).**

elbow joint.

1. elbow joint. ulnar radius humerus
2. ~~[illegible]~~ hinge joint.
3. ~~[illegible]~~ flexion

1. Hip joint - Pelvis femur
2. ball and socket
3. flexion



1. Ankle- fibula tibula, Talus
2. ~~[illegible]~~ hinge joint
3. ~~[illegible]~~ Dorse flexion

1. Knee joint- tibia, femur
2. ~~[illegible]~~ hinge joint.
3. extension

See pages 10-11