# Learning Resource

# Movement Analysis

TASKS, QUESTIONS & ANSWERS

43 pages

### **INTRODUCTION**

EXAMPLES OF MAJOR MOVEMENTS FROM A VARIETY OF SPORTS ARE ANALYSED IN TERMS OF THE MUSCLES, BONES, JOINTS ACTIONS INVOLVED IN A NUMBER OF TASKS IN WHICH QUESTIONS AND ANSWERS ARE EMBEDDED TO AID AND TEST UNDERSTANDING.

#### **CONTENTS**

BREASTROKE	p2
SPRINT	p10
PRESS UP	p14
SQUAT	p17
THROWING	p22
RACKET STROKES	p25
KICKING	p29
JUMPING	p32
LEVERS	p35

## **Movement analysis**

### Task 1 Analysis of Breastroke

**a** Observe a video or a drawn action sequence of a performer swimming breaststroke. Read through the following description of the techniques and answer the questions concerning the movements involved in the spaces provided.

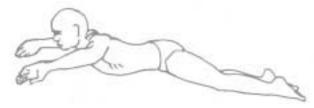
In breaststroke, the pull of the arms consists of an outward and inward sculling motion of the hands. Each hand follows the same line. From the side, the body is streamlined (straight) and submerged with the head facing down.



**b** Name the muscles in the back that keep the body in this streamlined position:

Erector spinae

The thighs move upward to lift the legs, the hands scull to a point just wide of the shoulders. The head and shoulders, in unison lift gradually.



**c** As the thighs move upward, what action is involved at the hips, and which muscles are involved? What are the origins and insertions of these muscles?

### Hip joint

Action = Flexion

Main agonist 1 =  $\overline{\text{Iliopsoas}}$ 

Origin = Lumbar vertebrae & Iliac crest

Insertion = Femur

Main agonist 2 = Rectus femoris

Origin = Iliac spine

Insertion = Patella tendon

**d** Name the bones that form the hip joint and the type of joint involved.

### Hip joint

Bones Femur & Ischium of pelvic girdle

Type of joint Ball & Socket