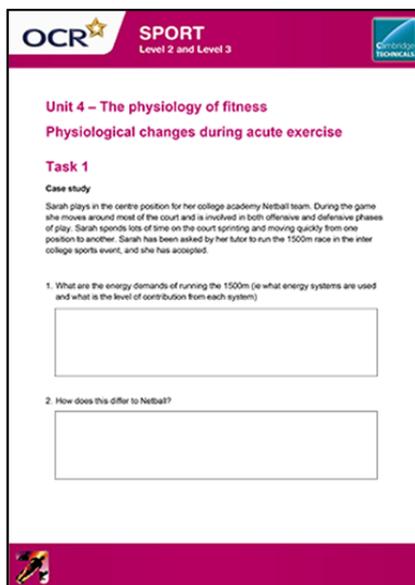


## Unit 4 – The physiology of fitness

### Physiological changes during acute exercise

#### *Instructions and answers for teachers*

*These instructions should accompany the learner task - OCR resource 'Physiological changes during acute exercise', which supports Cambridge Technicals in Sport Level 3 Unit 4 – The physiology of fitness.*



The screenshot shows the OCR resource page for 'Physiological changes during acute exercise'. It includes the OCR logo, the title 'Unit 4 – The physiology of fitness', and 'Task 1' with a case study about Sarah, a Netball player. The task asks for the energy demands of running 1500m and how this differs from Netball. There are two empty boxes for answers.

**Associated Files:**  
Physiological changes during acute exercise

**Expected Duration:**  
Task 1 – 30 mins



*This activity offers an opportunity for maths skills development.*



## Task 1

### Case study

Sarah plays in the centre position for her college academy netball team. During the game she moves around most of the court and is involved in both offensive and defensive phases of play. Sarah spends lots of time on the court sprinting and moving quickly from one position to another. Sarah has been asked by her tutor to run the 1500m race in the inter-college sports event, and she has accepted.

1. What are the energy demands of running the 1500m (ie what energy systems are used and what is the level of contribution from each system)?

*CP system 50m - 100m (low)*  
*LA System 100m - 400m (moderate)*  
*Aerobic system 400m -1500m (high)*

2. How does this differ to netball?

*Netball: CP system (High)*  
*LA system (Moderate)*  
*Aerobic system (low)*



3. How will performing the 1500m affect the following in comparison to netball?

a) Breathing rate

*Will increase due to greater use of aerobic system.*

b) Heart Rate

*Will increase due to the greater need for oxygen and CO<sub>2</sub> removal from the working muscles.*

c) Blood Pressure

*Will increase due to the increase in heart rate and blood flow.*

To give us feedback on, or ideas about the OCR resources you have used, email [resourcesfeedback@ocr.org.uk](mailto:resourcesfeedback@ocr.org.uk)

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