

A LEVEL PHYSICAL EDUCATION (AQA) BRIDGING PROJECT 2021



Fig 1: Chris Froome winning the 2018 Tour de France

This bridging project should give you an overview of some of the topics that you will study in year 12. Some of the topics you may have already seen in year 10 and 11, this is an opportunity to develop your understanding of these, as well as researching some new topics.

The booklet is split into 7 sections:

- Applied Anatomy and Physiology
- Skill Acquisition
- Sport and Society
- Exercise Physiology
- Biomechanical principles of movement
- Sports Psychology
- The role of technology in sport

Any questions please email Ms Cheal or Mr Lee Dell.

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Chapter 1: Applied Anatomy and Physiology

Task 1: Explain how the cardiovascular and respiratory systems work to transport oxygen to the working muscles.

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Task 2: Describe the characteristics of the three different muscle fibre types by completing the table below:

Characteristic	Type I (Slow twitch)	Type IIa (Fast oxidative glycolytic)	Type IIb (Fast glycolytic)
Contraction speed (metres per second)			
Motor neurone size			
Motor neurone conduction capacity			
Force produced			
Fatigability			
Mitochondrial density			
Myoglobin content			
Capillary density			
Aerobic capacity			
Anaerobic capacity			
Myosin enzyme activity			

Chapter 2: Skill Acquisition

Task 3: Skills and movements can be classified into various groups. Using the skill of cycling (seen in fig 1) justify its placement on the following skill continua.

Environmental influencer:

OPEN _____ CLOSED

Justification:

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Muscular involvement:

GROSS _____ FINE

Justification:

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Pacing of skill:

SELF _____ EXTERNALLY

Justification:

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Continuity:

DISCRETE _____ SERIAL _____ CONTINUOUS

Justification:

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Organisational:

LOW _____ HIGH

Justification:

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Simplicity:

SIMPLE _____ COMPLEX

Justification:

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Task 4:

One way of improving performance is through the use of feedback. Explain how the following types of feedback could be used to improve the performance of an elite athlete such as Chris Froome.

1. Positive	2. Negative	3 Knowledge of results
4. Knowledge of performance	5. Intrinsic	6. Extrinsic

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Chapter 3: Sport and Society

Task 5:



The above image is the international governing body for cycling, what are the key characteristics, roles, and responsibilities of national governing bodies of sport?

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10:

Chapter 4: Exercise Physiology

Task 6: preparation for major competitions is important for world class athletes like Chris Froome. We need to be able to fuel our bodies with the right nutrients to help our performance. Explain how the following benefit an endurance athlete like Chris Froome:

Proteins:

Carbohydrates:

Fats:

Vitamins:

Minerals:

Water:

Task 7: using your knowledge of training methods, analyse the effectiveness of using interval training for endurance events like the Tour de France?

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Chapter 5: Biomechanical principles of movement

Task 8: Complete the following movement analysis table for the downward phase and upward phase of the leg during the cycle.



Joint	Articulating bones	Joint type	Joint action	Main Agonist	Contraction
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Downward phase

Hip					
Knee					
Ankle					

Upward Phase

Hip					
Knee					
Ankle					

