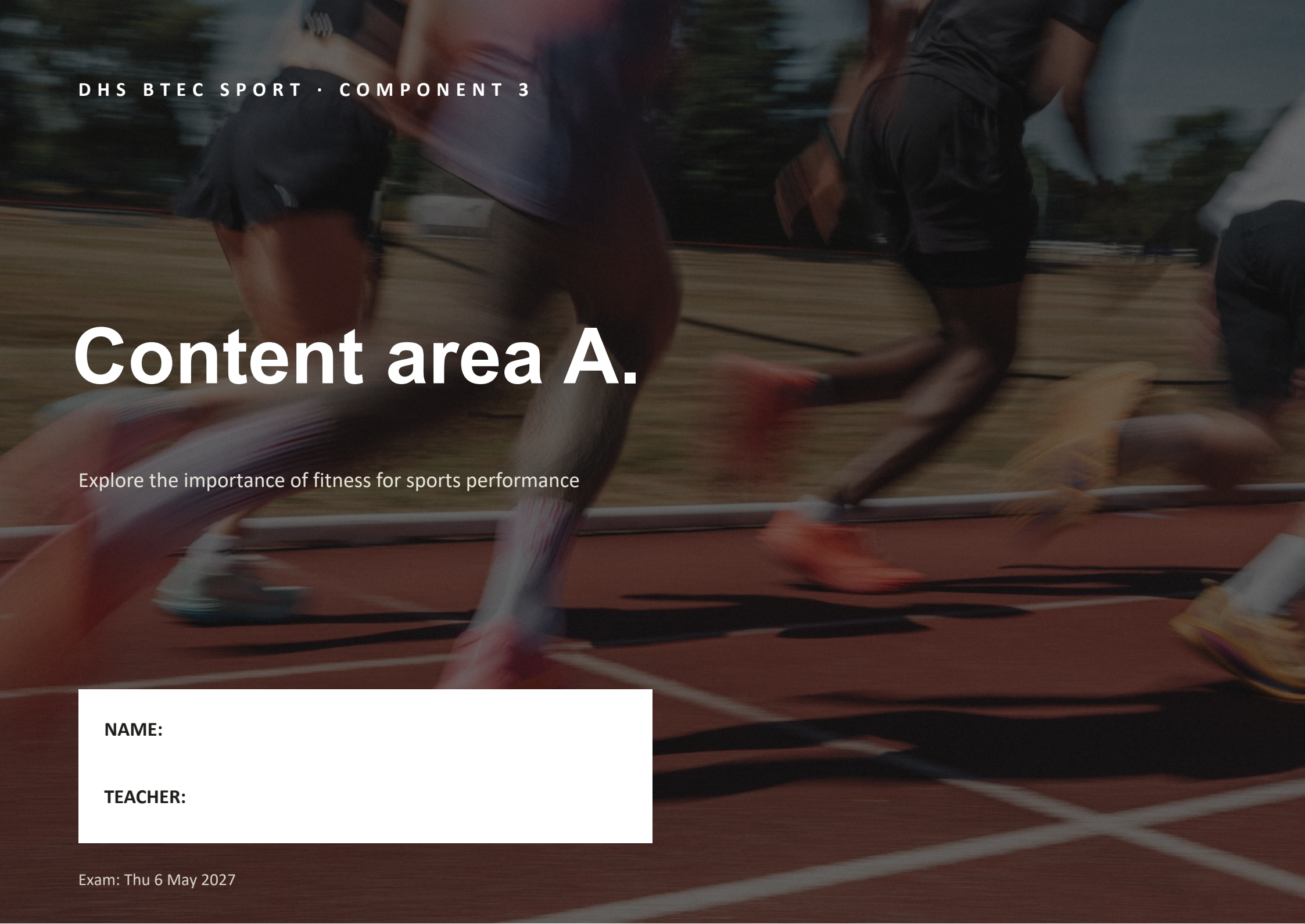

DHS BTEC SPORT · COMPONENT 3

Content area A.

Explore the importance of fitness for sports performance

NAME:

TEACHER:

Exam: Thu 6 May 2027

HOW THE EXAM AWARDS MARKS

Component 3 is the only exam. It is marked by someone who has never met you, using a mark scheme. Learning how that mark scheme works is worth as much as learning the content.

The mark scheme's own words: *"Award 1 mark for identifying a correct reason and 1 mark for a linked expansion." "Must have the identification to be awarded the expansion."*

Command verb	What it asks for	Usual marks
State, name, identify, give	recall from memory, or select the correct answer. No explanation needed	1
Describe	two or more linked descriptive points on features, uses or processes. No reason needed	2 to 3
Explain	a justification of the point: the reason, way, benefit or importance	2 to 4
Complete the table by stating	one point that identifies, and a second that justifies or explains the first	2 to 4
Assess, evaluate	weigh the factors and reach a supported judgement. Marked in levels	6 to 9

Read the command verb first and decide the length before you write. Then on every question worth two or more marks: identify, then expand.

WHICH SPORTS NEED WHICH COMPONENTS

Complete each row with the sports and events that rely on the component. Use the specification's own examples where you can.

Component	The sports and events that need it, and what it lets the performer do
Aerobic endurance	
Muscular endurance	
Muscular strength	
Speed	
Flexibility	
Body composition	
Power	
Agility	
Reaction time	
Balance	
Coordination	

IDENTIFY, THEN EXPAND

For each performer: name the component, then write the linked expansion that says what it lets **them** do in **their** sport. Two marks each time.

Worked example. Rachel is a cross-country runner racing for forty minutes. "Aerobic endurance (1) so she can keep running for the full forty minutes without fatiguing (1)."

Performer	Component (the identification)	What it lets them do in their sport (the linked expansion)
A 100m sprinter		
A gymnast on the beam		
A shot putter		
A badminton player		
A netball centre		

Check: does every expansion name the sport? An expansion that would fit any performer is not linked.

THE BASIC PRINCIPLES: FITT

Complete each definition, then apply it to a performer of your choice.

Performer and sport: _____

Letter	Definition	Applied to your performer
F Frequency	the number of training s_____ completed over a period of time, usually per w_____	
I Intensity	how h_____ an individual will train	
T Time	how l_____ an individual will train for	
T Type	how an individual will train, by selecting a training m_____ to improve a specific component of fitness	

Intensity is how hard. Time is how long. Swapping them is the most common slip in this topic.

THE ADDITIONAL PRINCIPLES OF TRAINING

Seven principles. Complete each definition, then say what would go wrong for a performer if it were ignored.

Principle	Definition	What goes wrong without it
Progressive overload	training needs to be d_____ enough to cause the body to a_____, improving performance	
Specificity	training should meet the n_____ of the s_____, or the fitness goals to be developed	
Individual differences	training should meet the needs of an i_____	
Adaptation	changes to the b_____ due to increased training l_____	
Reversibility	if training s_____, or intensity is lowered, fitness gains are l_____	
Variation	altering types of training to avoid b_____ and maintain m_____	
Rest and recovery	to allow the body to r_____ and a_____	

EXAM PRACTICE: NAME AND APPLY

Mai's coach uses the additional principles of training to design a training programme for Mai, a high jumper. Complete the table by naming the additional principle represented by each letter, and describing how it would be applied to Mai's programme. **(4 marks)**

(i) Additional principle represented by a letter	**(ii) Description of how it would be applied to Mai's programme**
P O	
S	

How it is marked. 1 mark for naming each principle, 1 mark for describing how it is applied, and you must have the name to get the description mark. The real mark scheme accepted: "Progressive overload (1) training needs to be harder, for example increasing the weight, causing the body to adapt (1)" and "Specificity (1) training should be specific to your sport and the fitness goals to be developed (1)."

My mark: / 4

MEASURING INTENSITY: HEART RATE

HR max = 220 minus age

Work these out. Show the calculation every time: a wrong answer with the right method still earns method marks.

Performer	HR max (show your working)	60% of HR max	85% of HR max
Rachel is 16			
Mai is 15			
Adam is 17			
Their coach is 42			
A masters athlete is 55			

TARGET ZONES AND TRAINING THRESHOLDS

Complete both zones with the percentages the mark scheme accepts, then say what training in each one develops.

Aerobic training zone

_____ to _____ % of HR max

What it develops:

_____

_____

Anaerobic training zone

_____ to _____ % of HR max

What it develops:

_____

_____

Now work out both zones for these performers:

Performer	HR max	Aerobic zone (bpm)	Anaerobic zone (bpm)
A 16-year-old runner			
An 18-year-old sprinter			
A 40-year-old cyclist			

THE BORG RPE SCALE, 1RM AND 15RM

The Borg scale runs from _____ to _____ RPE × _____ = heart rate (bpm)

RPE reported	Heart rate (bpm)	Heart rate measured	RPE
11		140 bpm	
14		170 bpm	
18		90 bpm	

Why would a coach use RPE as well as a heart rate monitor?

Repetition maximum. **1RM** is the maximum weight that can be lifted _____ time, and measures muscular s_____. **15RM** is the maximum weight that can be lifted _____ times, and is used for muscular e_____.

A performer's 1RM is 80kg. What weight would they lift at 70% of their 1RM? Show your working:

TECHNOLOGY, AND THE ANSWERS THAT SCORE NOTHING

Three technologies measure exercise intensity. Name each and say what it gives the performer or coach.

Technology	What it gives the performer or coach
H_____ r_____ m_____	
S_____ w_____	
A_____	

THE MARK SCHEME REFUSES

On this exact question the examiner accepted **heart rate monitor** and refused all of these: "fitness tracker", "fitness band", "heart rate" on its own, and "sports vest". Name the device precisely. A nearly-right word scores zero.

Other answers you have met that the mark scheme refuses. Add to this list all year:

SELF-TEST

Cover your notes. Mark it against the knowledge organiser on the next page. This is exam content: it has to be automatic by May.

1. **Which two components do events lasting more than 30 minutes need?**

2. **What do the four letters of FITT stand for?**

3. **Name all seven additional principles of training.**

4. **What is the formula for maximum heart rate?**

5. **State both training zones as percentages of HR max.**

6. **What is the range of the Borg scale, and how do you turn an RPE into a heart rate?**

AREA A KNOWLEDGE ORGANISER

A1 Components and sports

Aerobic and muscular endurance: events over 30 minutes.
Muscular strength: force, e.g. throwing events.
Speed: fast movement, e.g. sprinting.
Flexibility: wide range of movement around a joint, e.g. gymnastics, martial arts.
Body composition: low body fat, e.g. gymnastics; high muscle mass, e.g. sprinters.
Power: explosive movement, e.g. gymnastics, basketball.
Agility: quick changes of direction, e.g. dodging, freestyle skiing.
Reaction time: quick decision or response to a stimulus.
Balance: control of the distribution of weight, or remaining upright and steady.
Coordination: two or more body parts, e.g. hand, eyes and tennis racquet.

A2 Principles of training

FITT.
Frequency: sessions over a period of time, usually per week.
Intensity: how hard.
Time: how long.
Type: the training method chosen to improve a specific component.

Additional principles.
Progressive overload: demanding enough to cause the body to adapt.
Specificity: meets the needs of the sport or the fitness goals.
Individual differences: meets the needs of the individual.
Adaptation: changes to the body due to increased training loads.
Reversibility: gains are lost if training stops or intensity drops.
Variation: avoid boredom, maintain motivation.
Rest and recovery: allow the body to recover and adapt.

A3 Exercise intensity

HR max = 220 – age.

Aerobic training zone: 50 to 85% of HR max.
Anaerobic training zone: 80 to 100% of HR max.

Borg RPE scale: 6 to 20.
RPE × 10 = heart rate in bpm.

1RM: maximum weight lifted once, for muscular strength.
15RM: maximum weight lifted fifteen times, for muscular endurance.

Technology: heart rate monitors, smart watches, apps.

On every question worth two or more marks: identify, then give a linked expansion that names the performer's sport. Without the identification, the expansion usually scores nothing.