External assessment trial — Physical Education

Examiner's report

August 2017

Queensland Government | Queensland Curriculum & Assessment Authority

170690

For all Queensland schools

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Contents

Introduction

In Semester 1, 2017 the Queensland Curriculum and Assessment Authority (QCAA) trialled external assessment in Year 11 Physical Education.

The *External assessment trial — Semester 1, 2017* familiarised schools and students with subject-based external assessments and tested processes for their delivery. The trialled assessment was aligned to the *Physical Education Senior Syllabus 2010* and developed in consultation with subject experts from schools and universities. It was administered under secure conditions and marked externally.

A total of 2948 students from 103 schools were involved in the Physical Education external assessment trial, and 61 teachers participated in the online marking operation.

This report provides information on the Physical Education external assessment trial specifications, students' performance characteristics and aggregated results from all participating schools. The assessment was formative and provided an alternative to a task already being undertaken at participating schools.

The QCAA appreciates schools' participation in the external assessment trial. The teachers and students who participated in the trial have made a valuable and significant contribution to Queensland's new system of senior assessment.

To provide feedback on the trial or further advice, please contact Assessment Operations on telephone 1300 381 575 or by email at seaops@qcaa.qld.edu.au.

Claude Jones

Director, Assessment and Reporting Division
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Overall commentary

The Physical Education external assessment trial was a QCAA-developed examination conducted under supervised conditions on 2 June 2017.

The assessment was devised from the *Physical Education Senior Syllabus 2010*. It required students to demonstrate their understanding of Focus Area B: Process and effects of training and exercise, in one objective in each of the dimensions of:

- *Acquiring*
- *Applying*
- *Evaluating*.

Syllabus standards descriptors for physical performance were not assessed.

Schools were provided with supplementary materials to support the development of teaching and learning experiences.

The assessment contained two sections. Section A included 10 multiple-choice questions, assessing syllabus dimensions of *Acquiring* and *Applying*. Section B contained two short-response questions and an extended-response question, assessing syllabus dimensions of *Acquiring*, *Applying* and *Evaluating*.

In *Acquiring*, 81% of students achieved a passing grade — 5% at A standard, 31% at B standard, and 45% at C standard. In *Applying*, 78% of students achieved a passing grade — 5% at A standard, 39% at B standard, and 34% at C standard. In *Evaluating*, 61% of students achieved a passing grade — 5% at A standard, 20% at B standard, and 37% at C standard.

Statistics in this report may have been rounded, resulting in totals not equal to 100%.

Figure 1: Statewide student results — *Acquiring*

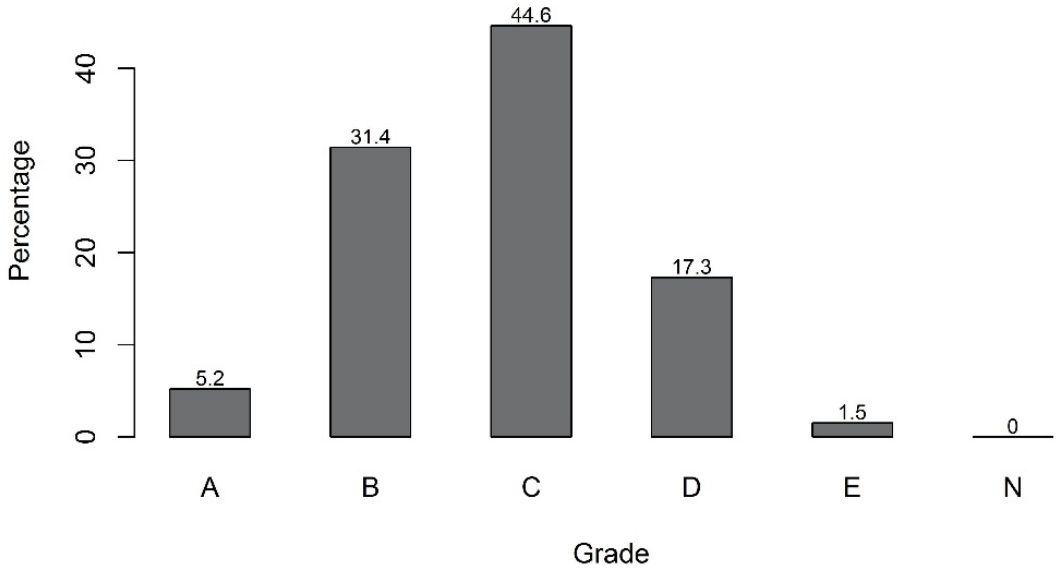


Figure 2: Statewide student results by gender — *Acquiring*

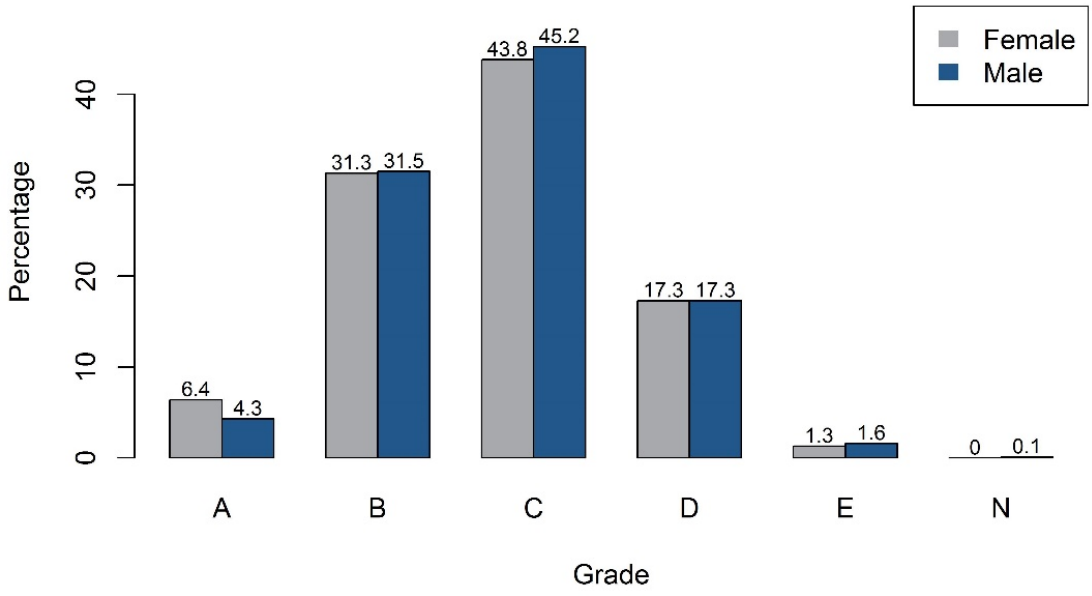


Figure 3: Statewide student results — *Applying*

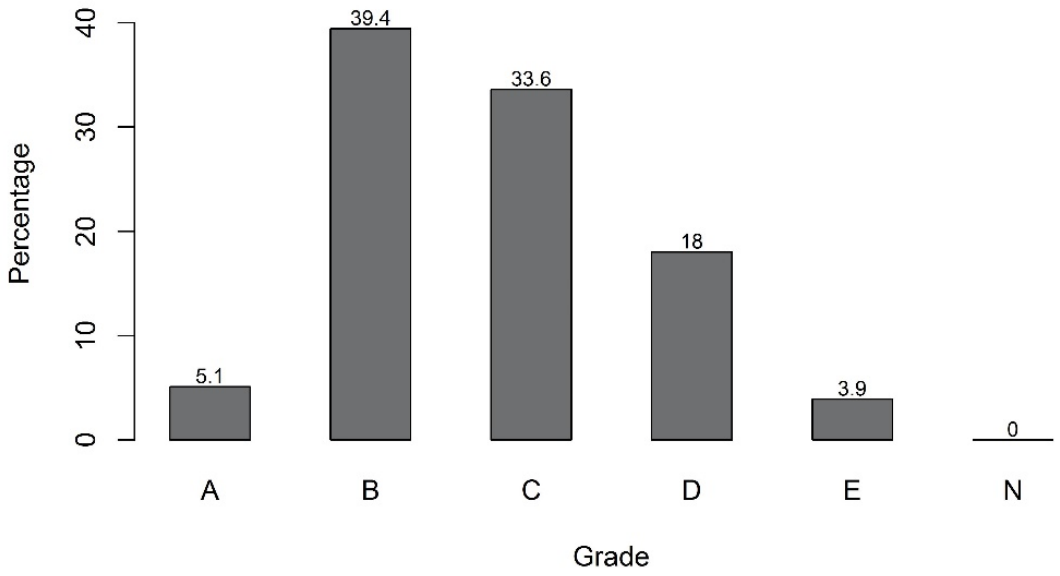


Figure 4: Statewide student results by gender — *Applying*

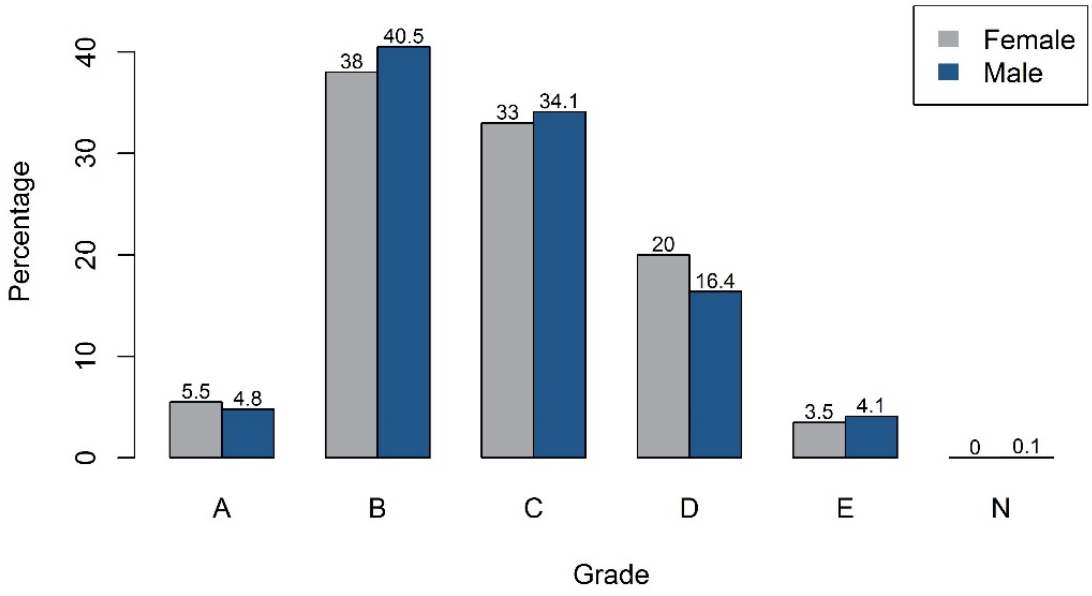


Figure 5: Statewide student results — *Evaluating*

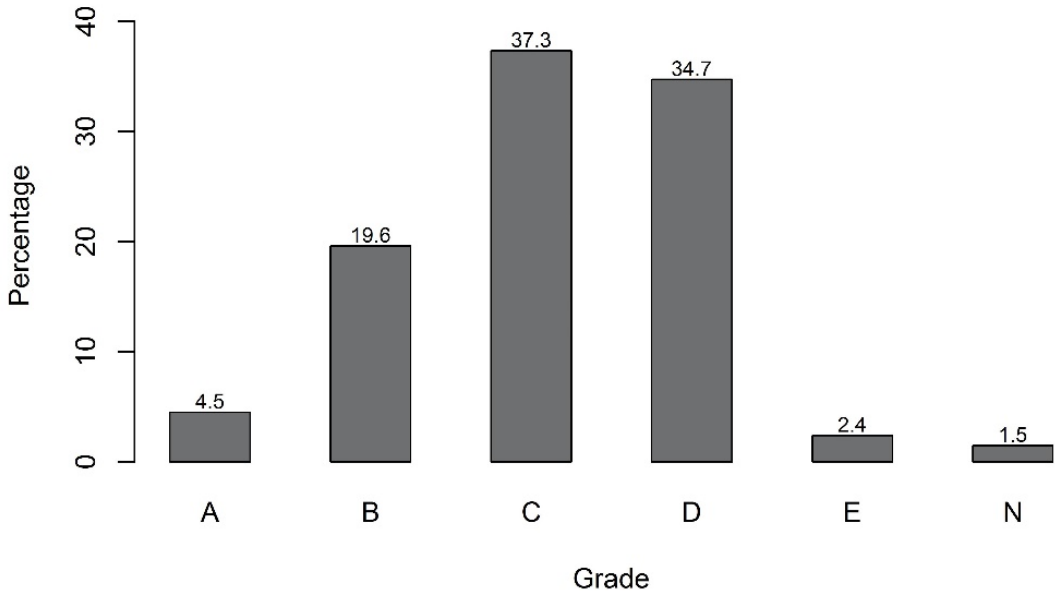
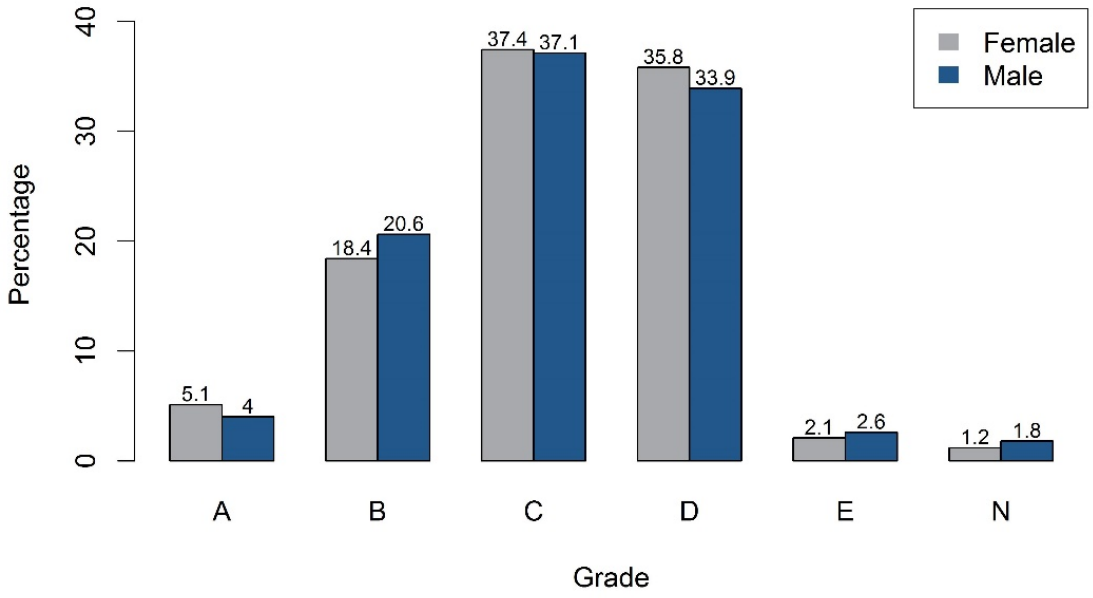


Figure 6: Statewide student results by gender — *Evaluating*



Sample responses and commentaries

The following section provides commentary on sample responses to the questions in the external assessment trial. The samples provide indicative student responses to each question. These responses have not been corrected for grammar, spelling or accuracy and are not necessarily exemplary. Every effort was made to mark responses, even when scanned scripts were difficult to read because students used a pencil, wrote in very small script, wrote illegibly or heavily edited their responses.

Multiple-choice questions

Questions 1–8 assessed *Acquiring*.

Questions 9 and 10 assessed *Applying*.

All multiple-choice questions were worth one mark each.

Question number	Students are required to demonstrate understanding of:	Correct answer	% correct responses
1	• energy systems and duration	C	86
2	• health-related fitness components	C	63
3	• energy systems, duration and intensity	D	74
4	• the production of ATP and fuel sources with regards to energy systems	B	42
5	• intensity, heart-rate and training zones	C	63
6	• fitness components and duration	B	75
7	• training principles and interval training	D	45
8	• ATP-PC energy system and duration	A	74
9	• the contribution of the three energy systems during physical performance	A	58
10	• fitness components, training, duration and intensity	B	75

Short-response questions

QUESTION 11 (150 words)

Recommend an appropriate training method for Player 1. Justify your recommendation by referring to the duration and intensity of this player's movements.

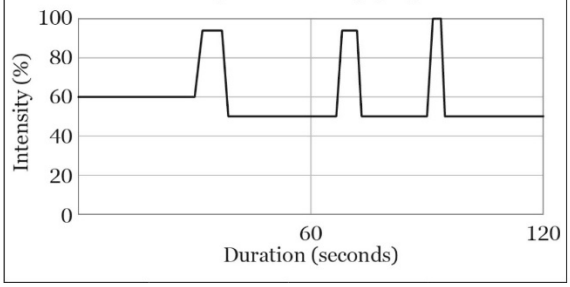
QUESTIONS 11–12

The tables below are movement summaries showing the performances of two different players (Player 1 and Player 2) during a two-minute modified game. The information in each table is represented graphically in an intensity graph.

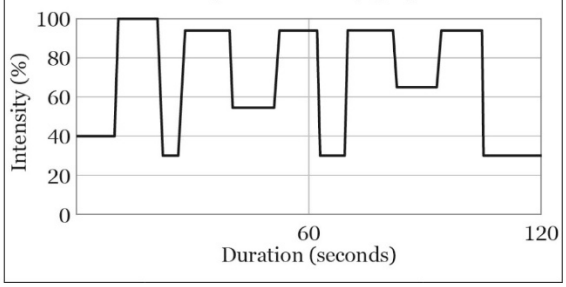
Player 1 movement summary			
Movement	**Duration (seconds)**	**Distance (metres)**	**Intensity (%)**
1	32	124	60
2	7	54	95
3	27	102	50
4	6	46	95
5	19	71	50
6	4	34	100
7	25	87	50

Player 2 movement summary			
Movement	**Duration (seconds)**	**Distance (metres)**	**Intensity (%)**
1	13	20	40
2	11	86	100
3	5	6	30
4	12	80	95
5	12	26	55
6	10	72	95
7	8	8	30
8	13	85	95
9	10	37	65
10	12	78	95
11	14	15	30

Player 1 intensity graph



Player 2 intensity graph



Students were required to recommend an appropriate training method for Player 1 by analysing movement summary data of this player's performance during a two-minute modified game. Students needed to justify their recommended training method by referring to the duration and intensity of Player 1's movements.

Question 11 provided opportunities for students to demonstrate evidence of the syllabus dimensions of *Acquiring*, *Applying* and *Evaluating*. To demonstrate evidence of the *Acquiring* dimension, students needed to identify, recall and describe facts, terminology and principles about training methods in the context of Player 1's performance in the two-minute modified game. To demonstrate evidence of the *Applying* dimension, students needed to interpret and analyse information provided in the movement summary data for Player 1's performance. To demonstrate evidence of the *Evaluating* dimension, students needed to make decisions about an appropriate training method and justify their solution by using information and understandings gained in *Acquiring* and *Applying.*

Typically, students were able to describe a training method and the duration and intensity of Player 1's movements. Students were also able to analyse the movement summary data to identify movements of short or long duration and movements of high or low intensity. Students who performed better included an analysis of the movement summary data to identify the continuous nature of work performed by Player 1.

Students who responded to this question successfully justified a recommended training method for Player 1 that demonstrated work periods of high intensity and short duration, separated by rest periods. Students who performed better justified a recommended training method incorporating lower intensity work periods rather than rest, in order to demonstrate a continuous pattern of high and low intensity work over at least two minutes.

Sample response: Question 11

The student response that follows accurately uses the principles of duration and intensity to describe and justify the recommended training method of fartlek training. This evidence demonstrates comprehension of the principles of duration and intensity. The response also demonstrates an accurate analysis of Player 1's movements in the two-minute modified game by describing the three periods of increased intensity where movements were of a higher intensity and shorter duration. The response uses this information to justify the recommended training method by describing how fartlek training is performed with alternating periods of high and low intensity.

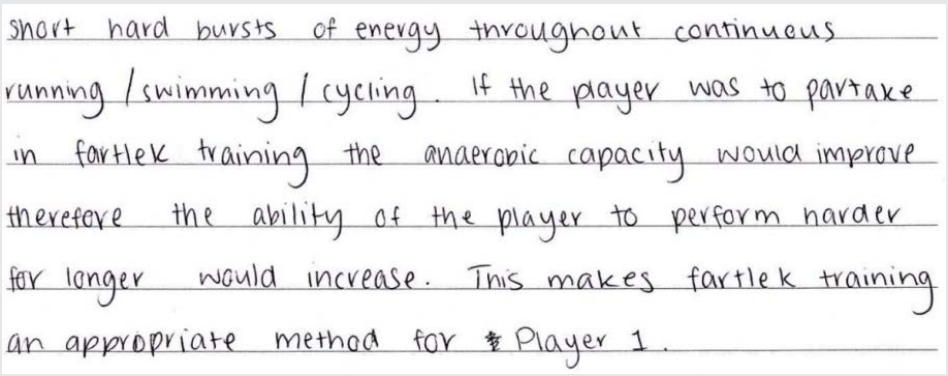
QUESTION 11 (150 words)

An appropriate training method for Player 1 would be Fartlek training due to the duration and intensity of the movements used throughout the two-minute modified game. Fartlek training targets an athletes ability to change pace and terrain, alternating between high-intensive work and low-intensive recovery. In the game, the player increases the intensity by 35-50% at three points throughout the game. In these high-intensive movements less distance is covered with a much shorter duration. This is suited to fartlek training because during fartlek a constant pace and intensity is not maintained. Rather it alters its intensity with

Recommendation of a training method identifying appropriate features of duration and intensity.

Accurate description of the fartlek training method.

Accurate description of Player 1's alternating pattern of movement. Accurate analysis of Player 1's movement data to identify the frequency of alternating movements and changing intensity of movement.


short hard bursts of energy throughout continuous running / swimming / cycling. If the player was to partake in fartlek training the anaerobic capacity would improve therefore the ability of the player to perform harder for longer would increase. This makes fartlek training an appropriate method for * Player 1.

Variations in intensity and duration of Player 1's movement data used as evidence to justify the appropriateness of the fartlek training method .

QUESTION 12 (150 words)

Compare and contrast Player 1 and Player 2 energy system contributions during the two-minute modified game.

Question 12 refers to the same data as Question 11, provided on page 7.

Students were required to compare and contrast Player 1 and Player 2 energy system contributions during a two-minute modified game. Analysing movement summary data for each player to identify movements of varying duration and intensity would enable students to make comparisons regarding the contributions of each of the three energy systems to each player's performance.

Question 12 provided opportunities for students to demonstrate evidence of the syllabus dimensions of *Acquiring* and *Applying*. The *Acquiring* dimension was demonstrated by students' comprehension of the principles of duration and intensity as they relate to the contributing energy systems in the two-minute modified game for each player. Students demonstrated evidence of the *Applying* dimension by providing an accurate analysis of the anaerobic energy system contributions, specifically, the ATP-PC energy system and the lactic acid energy system. Further, an analysis of Player 1 and Player 2 movements to compare their aerobic energy system contributions was necessary for a successful response.

Typically, students identified features of duration and intensity for a selection of energy systems and determined some use of the ATP-PC energy system or the lactic acid energy system by Player 1 or Player 2. Students often found it challenging to identify that the ATP-PC energy system contributes more towards Player 1's performance and the lactic acid energy system contributes more towards Player 2's performance.

Similarly, the accurate analysis of the contribution of the aerobic energy system in each player's performance was a demanding aspect of this question. Some students identified, from the movement summary data provided, that the sub-maximal movements in Player 1's performance relied on a significant contribution from the aerobic energy system. Emphasis on the discussion of the contributions of the aerobic energy system while comparing the energy system contributions for each player's performance enhanced students' responses.

Sample response: Question 12

The student response that follows demonstrates comprehension of all three energy systems and identifies features of duration and intensity when comparing and contrasting the contribution of the three energy systems. It is an appropriate analysis of the movement summary data for each player by discussing the duration and intensity of specific movements for each player. The response discusses Player 1's high intensity movements being below 10 seconds each, stating that for these particular movements, Player 1 predominantly uses the ATP-PC energy system.

This sample response successfully analyses the use of the aerobic energy system in Player 1's performance by addressing the movements of less than 75% intensity, describing them as recovery time and discussing how these specific movements rely on the use of the aerobic energy system. The response also provides evidence of the lack of such recovery time in Player 2's performance, meaning that they make significant use of the lactic acid energy system and limited use of the aerobic energy system due to the short recovery periods.

QUESTION 12 (150 words)

All three energy systems are used throughout the two-minute game, however the predominant system used by each player will vary. Player 1 uses less movements but each movement continues for longer and shorter duration. For the shorter burst of energy that use above 90% intensity, Player 1 predominantly uses ATP-PC. This is because the movements are of a high intensity and below 10 seconds in duration. For the lower intensity movements used by player 1, ~~lactic acid~~ oxygen system is the predominant, however it still uses more lactic acid than Player 2. Any movement below 75% intensity is predominantly aerobic because it is considered "recovery" time and your body is repaying the oxygen debt.

Player 2 continues high intensity movements for longer than Player 1, most of which continue over 10 seconds. This means that the predominant energy system used throughout Player 2's performance is lactic acid. Less time is spent in recovery, therefore minimal use of the aerobic system occurs.

Accurate analysis of movement summary data to identify the different energy system contributions for each player.

Accurate analysis of Player 1's movement summary data to identify the predominant use of the ATP-PC energy system, due to the high intensity and short duration of the movements.

Accurate identification of the features of duration and intensity of the ATP-PC energy system.

Accurate analysis of movement summary data to identify the aerobic energy system contribution for Player 1.

Accurate comparison of the two players' performances to identify that Player 2 performs more frequent movements at higher intensity than Player 1.

Accurate analysis of movement summary data to identify that the lactic acid system contributes more towards Player 2's performance than the aerobic system.

Extended written response question

QUESTION 13 (400 words)

The circled standards in the table below show an athlete's results for five fitness tests.

Fitness test	Fitness component	Standards				
		Very good	Good	Average	Below average	Poor
Multistage fitness beep test (VO_2 max mL/kg/min)	Aerobic capacity	> 50.2	40.9 – 50.1	31.2 – 40.8	26.8 – 31.1	< 26.7
30-second agility test (number of laps)	Agility	> 12.0	10.0 – 11.0	8.0 – 9.0	7.0	< 6.0
40-metre sprint test (seconds)	Speed	< 5.2	5.3 – 5.5	5.6 – 5.8	5.9 – 6.2	> 6.3
400-metre run test (seconds)	Anaerobic capacity	< 64.9	65.0 – 69.9	70.0 – 75.9	76.0 – 82.0	> 82.1
Vertical jump test (centimetres)	Muscular power	> 63.0	58.0 – 62.9	53.0 – 57.9	46.0 – 52.9	< 45.9

Evaluate the athlete's suitability to perform in the physical activity that has been the focus of your study in Term 2.

Justify your response by referring to:

- energy systems and fitness components
- the principles of specificity, duration and intensity.

Students were required to analyse an athlete's fitness testing data for five fitness tests that measured a range of fitness components. This enabled students to evaluate the athlete's suitability to perform in the selected physical activity by using fitness test results to make judgments about the athlete's strengths and limitations, and how well they would perform specific movements in the selected physical activity.

Schools selected a direct interceptive physical activity to integrate with Focus Area B in the unit of work. Students drew upon their personal experiences during the unit of work to evaluate the athlete's suitability to perform in the selected physical activity.

Question 13 provided opportunities for students to demonstrate evidence of the syllabus dimensions of *Acquiring*, *Applying* and *Evaluating*. Students demonstrated evidence of the *Acquiring* dimension by describing fitness components and energy systems relevant to the selected physical activity and showing comprehension of the principles of specificity, duration and intensity as they relate to the physical activity. Evidence of the *Applying* dimension was demonstrated with accurate analysis of the athlete's fitness testing data as well as the specific movement requirements of the selected physical activity. Students demonstrated the *Evaluating* dimension by making judgments about the athlete's strengths and limitations in relation to fitness components and energy systems, in order to evaluate the athlete's suitability to perform in the selected physical activity. Judgments about how well the athlete would perform specific movements in the selected physical activity contributed towards a successful response.

Generally, students demonstrated comprehension of a range of fitness components and energy systems relevant to the selected physical activity and analysed a range of fitness test results from the athlete's data to determine strengths and limitations. Accurate analysis or specific movement references when evaluating the athlete's suitability for the selected physical activity was a challenging aspect of the question. Student responses made general statements about whether or not the athlete would be suitable to perform in the selected physical activity.

Sample response: Question 13

The student response that follows demonstrates an accurate description of fitness components and energy systems relevant to the selected physical activity of Touch football. It contains comprehension of a range of terminologies, principles and concepts related to energy systems, fitness components, duration, intensity and specificity.

The response demonstrates an accurate analysis of the athlete's fitness test results, and identifies a range of strengths and limitations related to fitness components and energy systems. It also accurately analyses specific movements in the selected physical activity, such as breaking through defensive lines, rucking, short bursts of speed, sudden stops and changes in direction. It makes specific reference to the duration and intensity of the 400 metre run test, linking it to the lactic acid energy system, and analysing its relevance to specific movements in Touch football by stating that this duration is too long for typical movements in the game, such as rucking.

The response makes discerning and justified evaluations of the athlete's suitability to perform in Touch football by making judgments about fitness component and energy system strengths and limitations. It also evaluates the relevance of particular energy systems to performing specific movements in Touch football. This is demonstrated by analysing the duration and therefore the energy system required to perform the 400 metre run test and applying this to the specific movement requirements of middles rucking the ball in attack. The response states that while this specific movement requires the lactic acid energy system, the duration is much shorter than the duration of the 400 metre run test. The response then evaluates the athlete's suitability to perform well in Touch football by making links between the average results for this test and the shorter duration of the specific movements to determine that the athlete would still be suitable.

QUESTION 13 (400 words)

Term 2 physical activity: Touch Football

Through the results of the athlete from various fitness tests, it can bee seen that the athlete is suitable te peform in touch football. The three energy systems (adenosine triphosphate-phosphocreatine, lactic acid and aerobic systems) as well as components of fitness such as agility, speed and aerobic capacity (both health and sport related) are important in touch and the specific field positions that they link to. First of all, the wing position relates to both the component of speed, but also to the phosphocreatine system because of the high intensity, short duration exercise they are involved in when sprinting through a gap in the defence line to score a try for example. The athlete achieved a 'good' result being between 5.3 and 5.5 seconds in the 40-metre sprint test in comparison to standardised data, thus proving their suitability for the wing position. Secondly, the link position links to both agility, anerobic capacity and the lactic acid system because of the high intensity

Accurate description of energy systems relevant to the selected physical.

Accurate analysis of the athlete's results to identify fitness components as a strength or limitation.

for a longer period of time (typically lasting between 1-2 minutes) they are involved when creating options for other players to break the line of defence or step players for example. The athlete achieved a 'good' result between 10-11 laps in the 30-second agility test as well as an 'average' result between 70-75.9 seconds in the 400-metre run test, thus proving the athlete's suitability for the link position. Finally, the centre position relates to both the component of aerobic capacity but also to the aerobic system as the most predominant contributor of energy due to the long duration of submaximal exercise required when three player rucking up the field in the first few touchs of each set. for example. The athlete achieved a 'below average' result between 26.8 and 31.1 VO_2 max mL/kg/min which is not highly suitable for the centre position. In addition to this, in all positions on the touch field continuous exercise is involved in varying lengths of duration. Therefore, the aerobic capacity and effectiveness of an athlete's aerobic system are highly important in order to be a good player. However, if the athlete is placed in a position on the touch field that ~~is~~ corresponds to their strengths they will be ~~a~~ suitable to perform in the activity. In addition to this, after participating in various training sessions and full games relating to touch football, the athlete will improve all of the relevant energy systems and components of fitness.

Accurate analysis of the duration or intensity of specific movements in the selected physical activity.

Accurate analysis of the athlete's results to identify fitness components as a strength or limitation.

Evaluates the athlete's suitability to perform in the selected physical activity to make judgments about energy system and fitness component limitations and how well the athlete would perform specific movements.

Accurate analysis of the athletes' results to identify fitness components as a strength or limitation.

Recommendations and guidelines

- *Students are encouraged to practise a range of assessment techniques under exam conditions, including extended written-response questions, short-response questions and multiple-choice questions.*

  In this trial, students found the extended-response more challenging than other techniques. Developing the skills to respond to various types of items may improve students' ability to complete short and extended written responses. Students who received few or no marks in the *Evaluating* dimension, submitted a partial or incomplete extended written response.

- *To demonstrate evidence of the Acquiring dimension, students needed to accurately describe and identify a wide range of terms, principles and concepts relevant to the context in each question.*

  Generally, students were able to describe or identify fundamental terminology related to each question but were unable to demonstrate accurate comprehension of a range of terms. Students could enhance the evidence of the *Acquiring* dimension in their responses by practising use of terminology, principles and concepts as they relate to the context of the task, rather than recalling terms or stating definitions.

- *To demonstrate evidence of the Applying dimension, students needed to analyse data to identify principles and concepts relevant to player performance and evaluate an athlete's suitability to perform in a selected physical activity.*

  Students who performed better were able to discuss the contribution of the ATP-PC and lactic acid energy systems relevant to player performance more effectively than the contribution of the aerobic energy system. Students needed to analyse specific movements in their selected physical activity in order to make judgments about how well the athlete would perform these specific movements based on the strengths and limitations from their fitness testing data. Students who found demonstrating evidence of the *Applying* dimension challenging did not accurately analyse the duration and intensity of specific movements in the selected physical activity. Instead, students made broad statements about the athlete's suitability to perform. Analysis of movements in the selected physical activity were typically limited to the athlete being able to run fast, or work for extended durations at high intensity.

  Students could enhance the evidence of the *Applying* dimension in their responses by analysing specific movements in a selected physical activity. This would enable students to provide discerning and convincingly justified evaluations of the athlete's ability to perform specific movements based on their energy system and fitness component strengths and limitations. Students would benefit from learning experiences requiring students to compare and contrast data in a physical activity context.

- *To demonstrate evidence of Applying and Evaluating when responding to an item relating to a specific physical activity context, students would benefit from the active integration of learning experiences in, about and through the selected physical activity.*

  In this case, student learning related to Focus Area B should be authentic and based in real contexts. For example, applying knowledge of energy systems and fitness components or the principles of duration and intensity to understand the requirements of specific movements or movement sequences in the teaching and learning of a selected physical activity.

  Direct interceptive physical activity was selected for this trial, as it provided opportunities for students to demonstrate the full range of standards across the dimensions of *Acquiring*, *Applying* and *Evaluating* in Question 13. Schools that engaged students in units of work from physical activity categories other than direct interceptive limited student responses to Question 13, particularly in relation to the selection of relevant fitness components or energy systems.

Appendix 1: Instrument-specific standards matrix

	A	B	C	D	E
	The student work has the following characteristics:				
Acquiring	• in-depth comprehension of a wide range of terminologies, principles and concepts relevant to both the focus area and physical activity	• comprehension of a range of terminologies, principles and concepts relevant to both the focus area and physical activity	• comprehension of fundamental terminologies, principles and facts relevant to both the focus area and physical activity	• recollection and recognition of simple terminologies, principles or facts relevant to the focus area and physical activity	• recognition of some information associated with the focus area and physical activity
Applying	• insightful, independent and appropriate analysis and application of information relating to both the focus area and the physical activity	• independent and appropriate analysis and application of information relating to both the focus area and physical activity	• appropriate analysis and application of information relating to both the focus area and physical activity	• comparison and categorisation of information relating to the focus area and physical activity	• comparison or categorisation of information with assistance
Evaluating	• discerning, convincingly justified and independent evaluations, solutions and recommendations concerning the focus area and physical activity	• justified and independent evaluations, solutions and recommendations concerning the focus area and physical activity	• defended evaluations and solutions concerning the focus area and physical activity	• superficial evaluations or solutions concerning the focus area and physical activity	• directed responses to problems concerning the focus area and physical activity

Appendix 2: Marking guide

Question 11

Item 11a: Acquiring	✓
Accurately describes: • Player 1's alternating or repeating pattern of movement using duration and intensity • a training method.	**4**
Accurately describes: • Player 1's movements using duration and intensity • a training method.	**3**
Describes: • duration or intensity in a movement context • some features of a training method.	**2**
Recalls: • the terms duration or intensity • a training method.	**1**
Does not satisfy any of the above descriptors.	**0**

Item 11b: Applying	✓
Accurately analyses Player 1's movement summary data to identify: • continuous and alternating or repeating movements for 2 minutes • movements of short duration of 4–7 s or 34–54 m and high intensity 95% or higher • movements of longer duration 19–32 s or 71–124 m and lower intensity 50–60%.	**4**
Accurately analyses Player 1's movement summary data to identify: • alternating or repeating movements • movements of short duration and high intensity • movements of longer duration and lower intensity.	**3**
Accurately identifies changes in duration and intensity in Player 1's movement summary data.	**2**
Identifies changes in duration or intensity in Player 1's movement summary data.	**1**
Does not satisfy any of the above descriptors.	**0**

Item 11C: Evaluating	✓
Justifies a recommended training method for Player 1 by identifying appropriate features, specifically: • at least 2 minutes of alternating or repeating work periods • work periods of 4–10 s duration or 30–60 m and above 90% intensity • work periods of 15–40 s duration or 70–130 m and 40–60% intensity.	**5**
Justifies a recommended training method for Player 1 by identifying appropriate features, specifically: • alternating or repeating work periods • work periods of short duration and high intensity • work periods of longer duration and lower intensity.	**4**
Justifies a recommended training method for Player 1 that shows work periods of varying duration and intensity.	**3**
Recommends training for Player 1 that shows work periods of varying duration or intensity.	**2**
Describes features of training.	**1**
Does not satisfy any of the above descriptors.	**0**

Training Method	Features
Interval training	changes in intensity, changes in duration, alternating periods of work (high intensity) and rest (no movement, sub-maximal or low intensity).
Circuit training	a sequence of exercises with set work and rest periods that can change in intensity and duration.
Continuous training	long duration, sub-maximal intensity with no variance. No alternating periods of work and rest.
Fartlek training	continuous training with changes in intensity (alternating high intensity and submaximal work).

- Duration may be referred to as a measure of distance and/or time.

Question 12

Item 12a: Acquiring	✓
Accurately identifies the features of duration and intensity of the 3 energy systems, specifically: • ATP-PC (less than 10 second duration, high intensity)* • lactic acid (up to 120 second duration, high intensity)* • aerobic (longer durations, sub-maximal intensity)*.	**4**
Accurately identifies the features of duration and intensity of at least 2 energy systems: • ATP-PC (short duration or less than 10 seconds, high intensity) • lactic acid (moderate duration or up to 120 seconds, high intensity) • aerobic (longer duration, sub-maximal intensity).	**3**
Accurately identifies some features of duration or intensity of energy systems.	**2**
Identifies some features of an energy system.	**1**
Does not satisfy any of the above descriptors.	**0**

Item 12b: Applying 1 (anaerobic energy systems)	✓
Analyses the movement summary data to accurately identify that: • the ATP-PC system contributes more towards Player 1's performance and the Lactic Acid system contributes more towards Player 2's performance • player 1 performs movements of 4–7 s durations or 34–54 m and above 95% intensity with longer periods of low intensity work • player 2 performs frequent movements of 10–13 s durations or 72–86 m and above 95% intensity with minimal low intensity work.	**3**
Analyses the movement summary data to accurately identify that: • the ATP-PC system contributes more towards Player 1's performance and the Lactic Acid system contributes more towards Player 2's performance • player 2 performs more frequent high intensity and short duration movements than player 1.	**2**
Identifies anaerobic energy system contributions of player 1 and player 2.	**1**
Does not satisfy any of the above descriptors.	**0**

Item 12c: Applying 2 (aerobic energy system)	✓
Analyses the movement summary data to accurately identify that: • player 1 uses the aerobic system to perform longer durations of work at 50–60% intensity • player 2 makes limited use of the aerobic system with most of the work performed above 85% intensity.	**3**
Analyses the movement summary data to accurately identify that the aerobic system contributes more towards Player 1's performance than Player 2's performance.	**2**
Identifies the use of aerobic energy by Player 1 or Player 2.	**1**
Does not satisfy any of the above descriptors.	**0**

* Time and durations are approximate and can vary.

- Duration may be referred to as a measure of distance and/or time.
- Aerobic system may also be referred to as the oxygen system or the oxidative system (NOT aerobic capacity).
- Lactic acid energy system may also be referred to as: the anaerobic glycolysis energy system (NOT anaerobic system or anaerobic capacity).
- ATP-PC energy system may also be referred to as: creatine phosphate energy system, alactacid energy system, ATP-CP (NOT anaerobic system or anaerobic capacity or ATP).
- Sub-maximal may be referred to as intensity at or below 60%.

Question 13

Item 13a: Acquiring	✓
Accurately describes: • fitness components relevant to the selected physical activity for all fitness tests • energy systems relevant to the selected physical activity.	5
Accurately describes: • fitness components relevant to the selected physical activity for 4 fitness tests • an energy system relevant to the selected physical activity.	4
Accurately describes: • 3 fitness components relevant to the selected physical activity • an energy system relevant to the selected physical activity.	3
Accurately recalls some features of fitness components and an energy system.	2
Recalls some features of fitness components or an energy system.	1
Does not satisfy any of the above descriptors.	0

Item 13b: Applying	✓
Accurately analyses the: • athlete's results for at least 4 fitness tests to identify fitness components as a strength or limitation • duration or intensity of specific movements in the selected physical activity.	5
Accurately analyses the: • athlete's results for 3 fitness tests to identify fitness components as a strength or limitation • duration or intensity of specific movements in the selected physical activity.	4
Accurately analyses the: • athlete's results for 2 fitness tests to identify fitness components as a strength or limitation • duration or intensity of specific movements in the selected physical activity.	3
Accurately analyses the: • athlete's results for a fitness test to identify a fitness component as a strength or limitation • duration or intensity of specific movements in the selected physical activity.	2
Describes: • a movement in the selected physical activity • a fitness test result.	1
Does not satisfy any of the above descriptors.	0

Item 13c: Evaluating	✓
Evaluates the athlete's suitability to perform in the selected physical activity by using at least 4 fitness test results to make judgments about: • energy system and fitness component strengths or limitations • how well the athlete would perform specific movements.	5
Evaluates the athlete's suitability to perform in the selected physical activity by using 3 fitness test results to make judgments about: • energy system and fitness component strengths or limitations • how well the athlete would perform specific movements.	4
Evaluates the athlete's suitability to perform in the selected physical activity by using 3 fitness test results to make judgments about: • energy system or fitness component strengths or limitations • how well the athlete would perform specific movements.	3
Evaluates the athlete's suitability to perform in the selected physical activity by using 2 fitness test results to make judgments about: • energy system or fitness component strengths or limitations • how well the athlete would perform specific movements.	2
Makes a statement about the athlete's suitability to perform in the selected physical activity.	1
Does not satisfy any of the above descriptors.	0

Guide to features of direct interceptive physical activities	
Small field/court e.g. netball, basketball, futsal, European handball	• Limitations: aerobic capacity or aerobic energy system (multistage fitness test), anaerobic capacity or lactic acid energy system (400 m run test) • Work: moderate to long durations (2–15 minutes) of sub-maximal intensity, short durations (3–15 seconds) of high intensity • Work: short durations of lower intensity work (10–30 seconds)
Large field/court e.g. soccer, AFL, Touch, hockey	• Limitations: aerobic capacity or aerobic energy system (multistage fitness test), anaerobic capacity or lactic acid energy system (400 m run test) • Work: long durations (5–45 minutes) of sub-maximal intensity, moderate durations (30–120 seconds) of high intensity • Work: short to moderate durations of lower intensity work (10 seconds to 5 minutes), moderate durations of rest, e.g. substituting in touch

- Aerobic system may also be referred to as the oxygen system or the oxidative system (NOT aerobic capacity).
- Lactic acid energy system may also be referred to as: the anaerobic glycolysis energy system (NOT anaerobic system or anaerobic capacity).
- ATP-PC energy system may also be referred to as: creatine phosphate energy system, alactacid energy system, ATP-CP (NOT anaerobic system or anaerobic capacity or ATP).

Appendix 3: Assessment glossary

Term	Definition
acquiring	the dimension of *acquiring* involves the retrieval and comprehension of information and the reproduction of learned physical responses
aesthetic activities	any physical activity with characteristics that place an emphasis on creating a performance and the visual appeal of the performance. Performances are usually judged against criteria
analyse	dissect to ascertain and examine constituent parts and/or their relationships; break down or examine in order to identify the essential elements, features, components or structure; determine the logic and reasonableness of information; examine or consider something in order to explain and interpret it, for the purpose of finding meaning or relationships and identifying patterns, similarities and differences
apply	use knowledge and understanding in response to a given situation or circumstance; carry out or use a procedure in a given or particular situation
applying	the dimension of *applying* involves the application of acquired information and learned physical responses
comprehend	understand the meaning or nature of; grasp mentally
consider	think deliberately or carefully about something, typically before making a decision; take something into account when making a judgment; view attentively or scrutinise; reflect on
context	the circumstances which surround a particular situation or event
decide	reach a resolution as a result of consideration; make a choice from a number of alternatives
define	give the meaning of a word, phrase, concept or physical quantity; state meaning and identify or describe qualities
demonstrate	prove or make clear by argument, reasoning or evidence, illustrating with practical example; show by example; give a practical exhibition
design	produce, e.g. a plan, simulation, model, project; plan or fashion; form or conceive in the mind
determine	establish, conclude or ascertain after consideration, observation, investigation or calculation; obtain the only possible answer; decide or come to a resolution
develop	elaborate, expand or enlarge in detail; add detail and fullness to; cause to become more complex or intricate
devise	think out; plan; contrive; invent
direct interceptive activities	any physical activity that requires opponents to occupy and compete for the same space through body contact, blocking, avoiding opponents and controlling implements

Term	Definition
discuss	examine by argument; sift the considerations for and against; debate; talk or write about a topic, including a range of arguments, factors or hypotheses; consider, taking into account different issues and ideas, points for and/or against, and supporting opinions or conclusions with evidence
document	support (e.g. an assertion, claim, statement) with evidence (e.g. decisive information, written references, citations)
evaluating	the dimension of *evaluating* uses information, understandings and skills previously gained in *acquiring* and *applying* to make decisions, reach conclusions, solve problems and justify solutions and actions
Focus Area A	Learning physical skills
Focus Area B	Processes and effects of training and exercise
Focus Area C	Equity and access to exercise, sport and physical activity in Australian society
generate	produce; create; bring into existence; produce by a chemical process
identify	distinguish; locate, recognise and name; establish or indicate who or what someone or something is; provide an answer from a number of possibilities; recognise and state a distinguishing factor or feature
indirect interceptive activities	any physical activity where players occupying space critical to their opponents and little to no body contact occurs. Players or teams are often separated by a net.
integration	the subject matter selected for study is derived from the focus areas and must be integrated with the selected physical activities being relevant to and contextualised within those physical activities (syllabus, p. 6)
interpret	use knowledge and understanding to recognise trends and draw conclusions from given information; make clear or explicit; elucidate or understand in a particular way; bring out the meaning of, e.g. a dramatic or music work, by performance or execution; bring out the meaning of an artwork by artistic representation or performance; give one's own interpretation of; identify or draw meaning from, or give meaning to, information presented in various forms, such as words, symbols, pictures or graphs
investigate	carry out an examination or formal inquiry in order to establish or obtain facts and reach new conclusions; plan, collect, search, inquire into, interpret and draw conclusions about data and information
justify	give reasons or evidence to support an answer, response or conclusion; show or prove how an argument, statement or conclusion is right or reasonable
learning	the modification of behaviour through interaction with the environment; knowledge acquired by systematic study; a relatively permanent change in performance, brought about by experience, excluding changes due to maturation and degeneration

Term	Definition
make decisions	select from available options; weigh up positives and negatives of each option and consider all the alternatives to arrive at a position
modify	change the form or qualities of; make partial or minor changes to something
performance activities	any physical activity performed in isolation. Performances in this physical activity category are usually measured against a set of standards
personalisation	learning experiences and assessment opportunities, where possible, should relate to students' personal experience, enabling students to make meaning of complex understandings through connections with their real-life contexts (syllabus, p.6)
physical activity	body movement that is produced by a contraction of skeletal muscle and that increases energy expenditure; broad term that includes playing games and sport; includes activities such as dance, yoga and tai chi; and many other forms of active recreation
physical activity learning context	involves a team, individual and/or lifestyle focus, selected from categories of physical activity; includes classroom-based activities, participation in physical activity, laboratories, field studies, excursions, community events, technology-enhanced learning tasks and outside-school experiences, involving self and others
predict	give an expected result of an upcoming action or event; suggest what may happen based on available information
propose	put forward (e.g. a point of view, idea, argument, suggestion) for consideration or action
recognise	identify or recall particular features of information from knowledge; identify that an item, characteristic or quality exists; perceive as existing or true; be aware of or acknowledge
specific	clearly defined or identified; precise and clear in making statements or issuing instructions; having a special application or reference; explicit, or definite; peculiar or proper to something, as qualities, characteristics, effects, etc.
sport	a human activity that has physical exertion, skills, tactics and strategies as a primary focus, with elements of competition, and for which rules and patterns of behaviour governing an activity exist formally through organisations
summarise	give a brief statement of a general theme or major point/s; present ideas and information in fewer words and in sequence
team	a number of people associated in some joint action