



Health & Fitness and the Role that Exercise Plays in Both

The Components of Fitness

Name _____

Class _____



	Description from Specification	Pupil comments – How confident do you feel on this topic?
3.1.1	Definitions of fitness, health, exercise and performance and the relationship between them	
3.2.1	Components of fitness and the relative importance of these components in physical activity and sport: cardiovascular fitness (aerobic endurance), strength, muscular endurance, flexibility, body composition, agility, balance, coordination, power, reaction time, and speed	

Health, Fitness, Exercise and Performance:

Use the following descriptors to complete the table below.

Physical activity which maintains or improves health and fitness

How well a task is completed

The ability to meet the demands of the environment

A state of complete emotional, physical and social well-being, and not merely the absence of disease and infirmity

	Definition
Health	
Fitness	
Exercise	
Performance	

Name a sport that you regularly participate in:

Do you need to be healthy in order to take part in this sport?

What are the fitness demands of this activity?

Name – Tyson Fury

Facts:

- Height: 6ft 9in
- Weight: 126kg
- Age: 33
- Married with 6 children
- Professional Boxer and World
- Suffered with depression in the past

Using the information given, answer the questions shown below using your own opinion (there is no right or wrong answer!).

Is this person healthy?

Is this person fit?

Does this person show a good performance in their sport?

Name – Ronnie O’Sullivan

Facts:

- Age: 46
- Snooker Player
- World Champion on Several Occasions
- 3 children (from different relationships)
- Suffered with addiction in the past



Using the information given, answer the questions shown below using your own opinion (there is no right or wrong answer!).

Is this person healthy?

Is this person fit?

Does this person show a good performance in their sport?

Hint – Make sure you know the definitions for all 10 components of fitness

Components of Fitness:

There are 11 components of fitness which help athletes to stay fit and healthy, as well as improving their skill level.

1. Cardiovascular Fitness

Definition	The ability to exercise the whole body for long periods of time
Sporting Example	
How I use it in my sport	

2. Muscular Strength

Definition	Your ability to exert force against a resistance
Sporting Example	
How I use it in my sport	

3. Muscular Endurance

Definition	Your ability to use voluntary muscles repeatedly without getting tired
Sporting Example	
How I use it in my sport	

4. Flexibility

Definition	The range of motion of your joints or the ability of your joints to move freely
Sporting Example	
How I use it in my sport	

5. Body Composition

Definition	The percentage of body weight that is muscle, fat or bone
Sporting Example	
How I use it in my sport	

6. Agility

Definition	The ability to control the movement of the whole body and change position quickly
Sporting Example	
How I use it in my sport	

7. Balance

Definition	Being able to keep the body stable, while at rest or in motion
Sporting Example	
How I use it in my sport	

8. Coordination

Definition	The ability to use two or more body parts together
Sporting Example	
How I use it in my sport	

9. Power

Definition	The ability to undertake strength performances quickly (strength x speed)
Sporting Example	
How I use it in my sport	

10. Reaction Time

Definition	The time between the presentation of a stimulus and the onset of movement
Sporting Example	
How I use it in my sport	

11. Speed

Definition	The rate at which an individual can perform a movement or cover a distance
Sporting Example	

Cricket is a sport that requires a number of components of fitness.

Fill in the tables below, ensuring that you mention each component of fitness at least once.

Activity – Football 	
Component of Fitness	Explain why this is important

Activity – Marathon Running 	
Component of Fitness	Explain why this is important

Activity - Tennis 	
Component of Fitness	Explain why this is important

Activity – Weight Lifting



Component of Fitness	Explain why this is important

Activity – Cycling



Component of Fitness	Explain why this is important

Activity – Gymnastics



Component of Fitness	Explain why this is important

Exam Question

Hint – Consider the wording of the question carefully – what does ‘relative’ mean?

Evaluate the relative importance of co-ordination and agility in cricket. (9)

[illegible]

Name each of the sportspeople shown below, label their sport and describe which component of fitness is most important to them. Make sure you use all 11 components of fitness.



Muscular strength and reaction time are components of fitness.

Assess the importance of each of these components of fitness to a weight lifter.

i) Muscular Strength (3)

ii) Reaction Time (3)

Define the term muscular endurance. (1)

Give one example of why a rugby player requires good muscular endurance. (1)

Key Terms:

Health – A state of complete emotional, physical and social well-being and not merely the absence of disease and infirmity

Exercise – Physical activity that maintains or improves health and fitness

Fitness – The ability to meet the demands of the environment

Performance – How well a task is completed

Cardiovascular Fitness – The ability to exercise the whole body for long periods of time

Muscular Strength – Your ability to exert force against a resistance

Muscular Endurance – Your ability to use voluntary muscles repeatedly without getting tired

Flexibility – The range of motion of your joints or the ability of your joints to move freely

Body Composition – The percentage of body weight that is muscle, fat or bone

Agility – The ability to control the movement of the whole body and change position quickly

Balance – Being able to keep the body stable, while at rest or in motion

Co-ordination – The ability to use two or more body parts together

Power – The ability to undertake strength performances quickly (strength x speed)

Reaction Time – The time between the presentation of a stimulus and the onset of movement

Speed – The rate at which an individual can perform a movement or cover a distance



Health & Fitness and the Role that Exercise Plays in Both The Components of Fitness

Teacher Answer Booklet



	Description from Specification	Pupil comments – How confident do you feel on this topic?
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3.2.1	Components of fitness and the relative importance of these components in physical activity and sport: cardiovascular fitness (aerobic endurance), strength, muscular endurance, flexibility, body composition, agility, balance, coordination, power, reaction time, and speed	

Health, Fitness, Exercise and Performance:

	Definition
Health	A state of complete emotional, physical and social well-being, and not merely the absence of disease and infirmity
Fitness	The ability to meet the demands of the environment
Exercise	Physical activity which maintains or improves health and fitness
Performance	How well a task is completed

Name a sport that you regularly participate in:

Cricket

Do you need to be healthy in order to take part in this sport?

Emotional health is required as the concentration required when batting or bowling would be hard to accomplish if stressed or anxious.

Physical health is required as the game is difficult to play effectively if suffering from illness or infirmity.

Social health is required in order to successfully discuss tactics with teammates.

What are the fitness demands of this activity?

To be able to stand in the field for long periods of time and to show the required speed cardiovascular fitness to run between the wickets and to bowl effectively.

Name – Tyson Fury

Facts:

- Height: 6ft 9in
- Weight: 126kg
- Age: 33
- Married with 6 children
- Professional Boxer and World
- Suffered with depression in the past



Using the information given, answer the questions shown below using your own opinion (there is no right or wrong answer!).

Is this person healthy?

This answer will be based on opinion.

Is this person fit?

This answer will be based on opinion.

Does this person show a good performance in their sport?

This answer will be based on opinion.

Name – Ronnie O’Sullivan

Facts:

- Age: 46
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Using the information given, answer the questions shown below using your own opinion (there is no right or wrong answer!).

Is this person healthy?

This answer will be based on opinion.

Is this person fit?

This answer will be based on opinion.

Does this person show a good performance in their sport?

This answer will be based on opinion.

Hint – Make sure you know the definitions for all 11 components of fitness

1. Cardiovascular Endurance

Definition	The ability to exercise the whole body for long periods of time
Sporting Example	Marathon Running
How I use it in my sport	Individual Pupil Answer

2. Strength

Definition	Your ability to exert force against a resistance
Sporting Example	Weightlifting
How I use it in my sport	Individual Pupil Answer

3. Muscular Endurance

Definition	Your ability to use voluntary muscles repeatedly without getting tired
Sporting Example	Cycling
How I use it in my sport	Individual Pupil Answer

4. Flexibility

Definition	The range of motion of your joints or the ability of your joints to move freely
Sporting Example	Swimming
How I use it in my sport	Individual Pupil Answer

5. Body Composition

Definition	The percentage of body weight that is muscle, fat or bone
Sporting Example	Boxing
How I use it in my sport	Individual Pupil Answer

6. Agility

Definition	The ability to control the movement of the whole body and change position quickly
Sporting Example	Rugby (Side-Step)
How I use it in my sport	Individual Pupil Answer

7. Balance

Definition	Being able to keep the body stable, while at rest or in motion
Sporting Example	Gymnastics
How I use it in my sport	Individual Pupil Answer

8. Coordination

Definition	The ability to use two or more body parts together
Sporting Example	Tennis
How I use it in my sport	Individual Pupil Answer

9. Power

Definition	The ability to undertake strength performances quickly (strength x speed)
Sporting Example	100m Sprint
How I use it in my sport	Individual Pupil Answer

10. Reaction Time

Definition	The time between the presentation of a stimulus and the onset of movement
Sporting Example	Badminton
How I use it in my sport	Individual Pupil Answer

11. Speed

Definition	The rate at which an individual can perform a movement or cover a distance
Sporting Example	Football (Striker)
How I use it in my sport	Individual Pupil Answer

Fill in the tables below, ensuring that you mention each component of fitness at least once.

Activity - Football	
Component of Fitness	Explain why this is important
Muscular Endurance	A player must use the quadriceps repeatedly to take shots throughout the match
Speed	Required to beat a defender to the ball
Coordination	Foot-eye coordination is used for passing and shooting

Activity – Marathon Running	
Component of Fitness	Explain why this is important
Body Composition	A high percentage of bone in relation to fat and muscle means that a runner will be light weight
Cardiovascular Endurance	The heart and lungs must work for a long period of time to supply oxygen

Activity - Tennis	
Component of Fitness	Explain why this is important
Coordination	Hand-eye coordination must be used to play effective shots
Reaction Time	Players must react to the stimulus of the ball as it comes over the net
Power	A serve requires strength and speed working together

Activity – Weight Lifting	
Component of Fitness	Explain why this is important
Power	Strength and speed must combine to lift the heaviest weight possible
Strength	Strength is required in order to work against a heavy resistance

Activity – Cycling	
Component of Fitness	Explain why this is important
Muscular Endurance	The quadriceps must repeatedly work incredibly hard, particularly when cycling up a hill or mountain
Cardiovascular Endurance	The heart and lungs must work together for long periods throughout a race
Speed	Track cyclists often work for short periods with their legs working at a very high speed

Activity – Gymnastics	
Component of Fitness	Explain why this is important
Balance	Events such as the beam require exceptional balance in order to produce twists and turns
Flexibility	This will allow performers to show aesthetically pleasing body shapes and performances

Exam Question

Hint – Consider the wording of the question carefully – what does 'relative' mean?

Cricket is a sport that requires a number of components of fitness.

Evaluate the relative importance of co-ordination and agility in cricket. (9)

A01 – Coordination is the ability to use two or more body parts together.

A02 – This is very important during cricket as hand-eye coordination is used for batting in order to pick up the relatively small ball that is travelling at speed and pick an appropriate shot.

A03 – Without good hand-eye coordination a batsman may find that they miss the ball altogether or perhaps don't find the middle of the bat and struggle to score runs.



A01 – Agility is the ability to control the movement of the whole body and to change position quickly.

A02 – Agility isn't vitally important in cricket as the key skills of batting and bowling don't require fast changes of direction all of the time.

A03 – However some degree of agility is required in order for batsmen as they change direction when running between the wickets, and for fielders who may need to change position when reacting to the movement of the ball.

A01 – Whether agility or coordination are more important for a cricketer is likely to come down to their role as a player.

A02 – As discussed batsmen and bowlers are likely to require a greater degree of coordination than agility, but a wicket keeper would need to be very agile in order to react to the ball.

A03 – A wicketkeeper is required to change direction quickly in reaction to the ball moving in the air (swing), off the floor (spin) or coming off the edge of the bat. Without agility they wouldn't be able to produce an effective performance in their role.

Pupils should also use an effective introduction and conclusion. The conclusion may refer to other components of fitness that are of importance to a cricketer.

Name each of the sportspeople shown below, label their sport and describe which component of fitness is most important to them. Make sure you use all 11 components of fitness.



Tom Daley – Body Composition



Adam Peaty - Flexibility



Joe Root - Coordination



Mo Farah – Cardiovascular
Endurance



Marcus Smith - Agility



Tyson Fury – Strength



Jamie Vardy - Speed



Emma Raducanu – Reaction
Time



Simone Biles - Balance



Geraint Thomas – Muscular
Endurance



Dina Asher-Smith - Power

Muscular strength and reaction time are components of fitness.

Assess the importance of each of these components of fitness to a weight lifter.

i) Muscular Strength (3)

Mark One – Muscular strength is the ability to exert force against a resistance

Mark Two – This is very important to a weight lifter as the bigger force that they can create, the heavier the weight they can lift

Mark Three – Therefore muscular strength will allow the weight lifter to improve their performance and have a better chance of winning a competition

ii) Reaction Time (3)

Mark One – Reaction Time is the time between the presentation of a stimulus and the onset of movement

Mark Two – This isn't vitally important to a weight lifter as this event isn't about completing the lift in a certain amount of time or reacting quickly to a stimulus,

Mark Three – Therefore reaction time will not improve the performance of the weight lifter

Define the term muscular endurance. (1)

Your ability to use voluntary muscles repeatedly without getting tired

Give one example of why a rugby player requires good muscular endurance. (1)

A rugby player is required to use their upper and lower body muscles again and again to make tackles during a match

Key Terms:

Health – A state of complete emotional, physical and social well-being and not merely the absence of disease and infirmity

Exercise – Physical activity that maintains or improves health and fitness

Fitness – The ability to meet the demands of the environment

Performance – How well a task is completed

Cardiovascular Fitness – The ability to exercise the whole body for long periods of time

Muscular Strength – Your ability to exert force against a resistance

Muscular Endurance – Your ability to use voluntary muscles repeatedly without getting tired

Flexibility – The range of motion of your joints or the ability of your joints to move freely

Body Composition – The percentage of body weight that is muscle, fat or bone

Agility – The ability to control the movement of the whole body and change position quickly

Balance – Being able to keep the body stable, while at rest or in motion

Co-ordination – The ability to use two or more body parts together

Power – The ability to undertake strength performances quickly (strength x speed)

Reaction Time – The time between the presentation of a stimulus and the onset of movement

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Health & Fitness/The Components of Fitness

Mark Scheme

Q1.

- i) Define the term Reaction Time. (1)

Mark One – The amount of time between the presentation of a stimulus and the onset of movement

- ii) Give one example of when a cricket player would use reaction time in a match. (1)

Mark One – When a batsman sees the ball come out of the bowlers hand he must react to the direction it is going in order to play a shot

Accept other appropriate answers

Q2. Flexibility is a component of fitness. Assess the importance of flexibility to the performance of a badminton player **(3 marks)**

Mark One – Flexibility is the range of motion of your joints or the ability of your joints to move freely

Mark Two – This is important for a player in badminton as it means they will have the flexibility in their legs to get low in order to play a drop shot

Mark Three – Therefore flexibility will have a positive effect on performance and result in more points won.

Accept other appropriate answers

Q3. Define the terms health and fitness **(2 marks)**

Mark One – Health is a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity

Mark Two – Fitness is the ability to meet the demands of the environment

Q4. Sienna is a gymnast. Her coach has asked her to work on her flexibility.

Evaluate how improving this component of fitness will impact Sienna's performance in gymnastics. **(3 marks)**

Mark One – Flexibility is the range of motion of your joints (or the ability of your joints to move freely)

Mark Two – Flexibility is vitally important in gymnastics due to the requirement to bend and stretch your limbs in various ways/gymnastics is based on aesthetics and stretching the limbs further will allow a greater aesthetic appreciation for those watching and judging

Mark Three – Therefore improved flexibility will increase her performance and give her a better chance of winning competitions

Q5. Toby is a 100m sprinter and he has been working on speed, cardiovascular fitness and flexibility. Evaluate the relative importance of each of these components of fitness in terms of their impact on Toby's performance as a 100m sprinter. (9 marks)

A01 – Speed is the rate at which an individual can perform a movement or cover a distance

A02 – Speed is of high importance to a 100m sprinter. It is relatively more important than both cardiovascular fitness and flexibility

A03 – Improving speed will have a positive impact on Toby's performance as a 100m runner as his finishing time will decrease and he will have a greater chance of winning races. Toby should heavily prioritise improving his speed during his training. Interval training will help achieve this

A01 – Cardiovascular fitness is the ability to exercise the whole body for long periods of time

A02 – Cardiovascular fitness is not very important for a 100m sprinter. It relates to the fitness of the heart and lungs and it is relatively less important than both speed and flexibility

A03 – This is because a 100m sprint lasts for a short period of time and requires anaerobic respiration and powerful movements. Training the cardiovascular system will improve aerobic respiration but not anaerobic respiration. However, having a base level of cardiovascular fitness might help Toby recover following races or heavy training sessions

A01 – Flexibility is the range of motion of your joints or the ability of your joints to move freely

A02 – Flexibility is quite important for a 100m sprinter. It is relatively more important than cardiovascular fitness but less important than speed

A03 – Improving flexibility won't have a direct impact on Toby's performance as a 100m sprinter. However, being more flexible will prevent him from picking up injuries such as hamstring or quadricep strains. Staying fit and healthy will mean that he can spend more time training will ultimately mean that he is a faster athlete



Name: _____

Health & Fitness/The Components of Fitness

Date: _____

Total marks available: 19

Total marks achieved: _____

Percentage: _____

Q1.

- i) Define the term Reaction Time. (1)

.....

- ii) Give one example of when a cricket player would use reaction time in a match. (1)

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Q2. Flexibility is a component of fitness. Assess the importance of flexibility to the performance of a badminton player **(3 marks)**

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Q3. Define the terms health and fitness **(2 marks)**

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Q4. Sienna is a gymnast. Her coach has asked her to work on her flexibility.

Evaluate how improving this component of fitness will impact Sienna’s performance in gymnastics. **(3 marks)**

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Q5. Toby is a 100m sprinter and he has been working on speed, cardiovascular fitness and flexibility. Evaluate the relative importance of each of these components of fitness in terms of their impact on Toby’s performance as a 100m sprinter. **(9 marks)**

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[illegible]

Health



A state of complete **emotional, physical and social** well-being, and not merely the absence of disease and infirmity

Fitness



The ability to meet the **demands** of the **environment**

Exercise



Physical activity which maintains or improves **health** and **fitness**

Performance



How well a task is **completed**

Cardiovascular Endurance

Ability of heart and lungs to supply oxygen to the working muscles



Reaction Time

The time taken to initiate a response to a stimulus



Muscular Endurance

The ability of a muscle or muscle group to undergo repeated contractions avoiding fatigue

Power

The ability to undertake strength performances quickly

$\text{Power} = \text{Strength} \times \text{Speed}$



Speed

The rate at which an athlete can perform a movement or cover a distance



PE COMPONENT 1 - COMPONENTS OF FITNESS



Coordination

The ability to use two or more body parts together at the same time



Body Composition

The percentage of body weight that is muscle, fat or bone



Strength

The ability to overcome a resistance



Balance

Maintenance of the centre of mass over the base of support



Agility

The ability to move and change direction quickly whilst maintaining control



Flexibility

The range of movement possible at a joint



Health



A state of complete _____, **physical** and _____ well-being, and not merely the absence of disease and infirmity

Fitness



The ability to meet the _____ of the _____

_____ Ability of heart and lungs to supply oxygen to the working muscles



Exercise



Physical activity which maintains or improves _____ and _____

Performance



How well a task is _____



_____ The time taken to initiate a response to a stimulus



_____ The ability of a muscle or muscle group to undergo repeated contractions avoiding fatigue

_____ The ability to undertake strength performances quickly
Power = Strength x Speed



_____ The rate at which an athlete can perform a movement or cover a distance



PE COMPONENT 1 - COMPONENTS OF FITNESS



_____ The ability to use two or more body parts together at the same time



_____ The percentage of body weight that is muscle, fat or bone



_____ The ability to overcome a resistance



_____ Maintenance of the centre of mass over the base of support



_____ The ability to move and change direction quickly whilst maintaining control

_____ The range of movement possible at a joint

