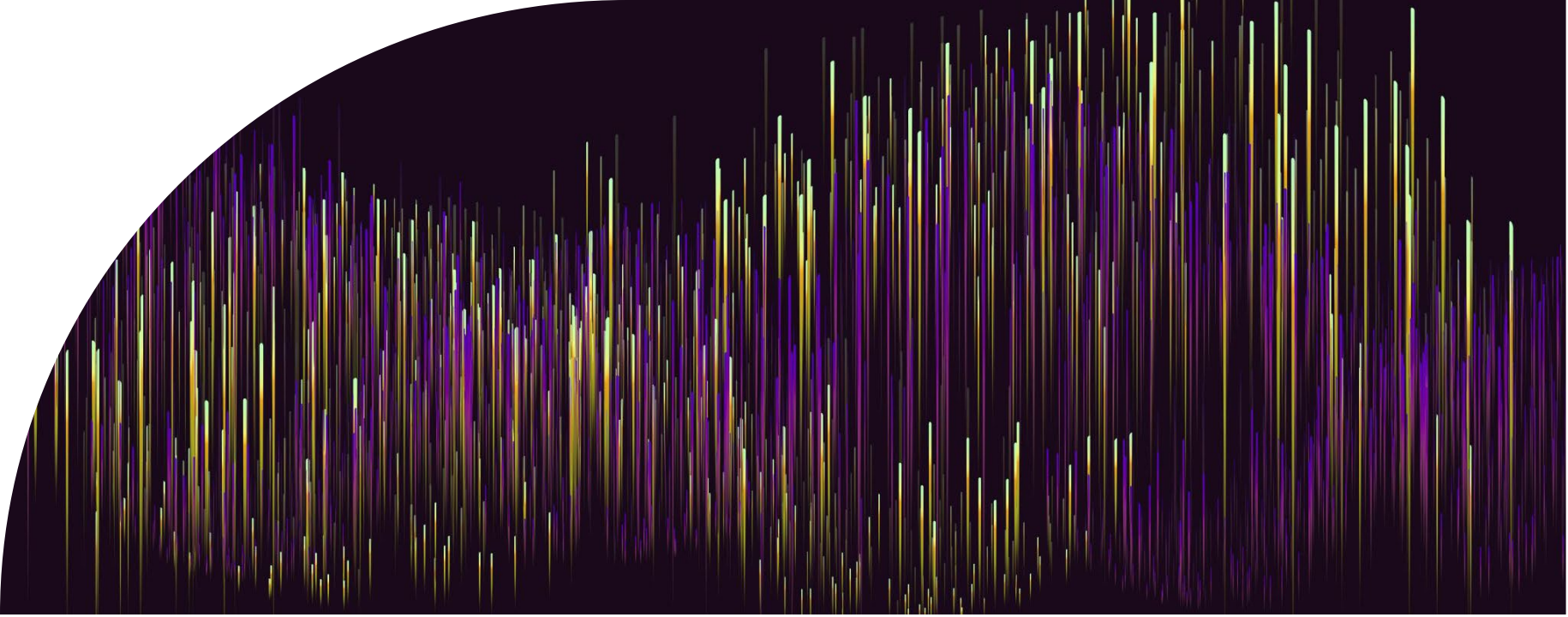


The top half of the slide features a decorative background. On the left, a semi-circular shape in a dark purple color is partially visible. The main area is filled with a dense field of vertical lines in various colors, including yellow, green, and purple, against a dark background. On the right side, there is a solid purple triangular shape pointing towards the top right corner, and a dark grey triangular shape pointing towards the bottom right corner.

# **Component 3**

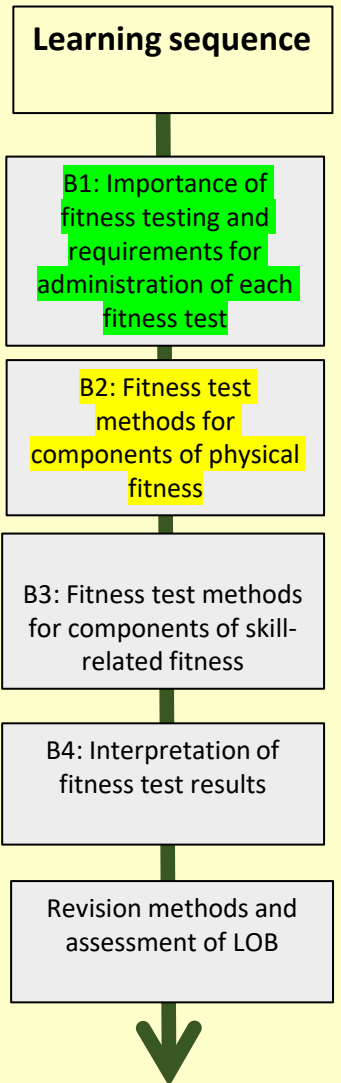
Developing fitness to improve other participants performance in Sport & Physical Activity



## **B1: Importance of fitness testing and requirements for administration of each fitness test**

# Learning Intention: Do you know what tests should be done for the physical components of fitness?

<b>Tier 3 Vocabulary</b>	<b>Definition</b>
<b>Method</b>	The way in which something is done/executed.
<b>Physical components of fitness</b>	6 areas that are classed as physical COF. A state of health and well-being and, more specifically, the ability to perform aspects of sports, occupations and daily activities.
<b>Reliability</b>	Ensuring the test has been administered properly so results are reliable.
<b>Practicality</b>	If a test is useful to do and sensible at the same time.
<b>Variation</b>	A wide variety of athletes who need these COF.



# DO NOW ACTIVITY

SEE IF YOU CAN ANSWER THESE QUESTIONS WITH NO HELP OR REVISION

Q: Can you write down the acronym for PHYSICAL components of fitness?

Q: Can you write down what each of the letters stand for?

I Do

We Do

You Do

# Re-cap of information

Q: Can you write down the acronym for PHYSICAL components of fitness?

All My Friends Simply Scratch BMW's

Q: Can you write down what each of the letters stand for?

Aerobic endurance

Muscular endurance

Flexibility

Strength

Speed

Body Composition

# Fitness tests to measure Aerobic Endurance

If you go to a fresh page in your book but turn it landscape.

You will need to use this as a mindmap so put "aerobic endurance" in the middle.

There are 4 tests you are going to learn for aerobic endurance:

1. Multi-Stage fitness test (also known as the bleep test)
2. Yo-Yo test
3. Harvard step test
4. 12 minute cooper run or swim

You can section your page off into quarters to allow you the same amount of space to write notes.

I Do

We Do

You Do

# Aerobic Endurance (multi-stage fitness test)

Have a watch of this video, whilst you are watching the video maybe take some notes.



[Multi stage fitness test - YouTube](#)

I Do

We Do

You Do

# Aerobic Endurance (multi-stage fitness test)

## Equipment:

- 20 m measuring tape
- Prerecording of test
- Tape player
- Markers
- Scoring recorders

## Method:

- Athletes run between two lines 20m apart
- Keep up with a set of pre-recorded beeps on a tape or CD.
- Roughly every minute the level changes and the beeps get closer together.



## Practicality: (You could just write a P)

- Lots of people can do it at the same time
- 20m can be down outside and inside
- Doesn't cost a lot of money

## Validity: (you could just write a V)

- Can be reliable as the beeps are pre-recorded
- Need to make sure it is measured 20m perfectly

## Task (Independent):

In a different coloured pen could you write down 2 things that means the test might not be reliable. What could possibly go wrong?

I Do

We Do

You Do



# Aerobic endurance (Yo-Yo test)

Have a watch of this video, whilst you are watching the video maybe take some notes.



[Yo-Yo  
Intermittent  
Recovery Test  
Level 1 -  
YouTube](#)

I Do

We Do

You Do

# Aerobic Endurance (YoYo test)

## Equipment:

- Flat, non-slip surface
- Marking cones
- Measuring tape
- CD/Audio
- Recording sheets

## Method:

- Run between 2 cones marked 20m apart (cone B & C)
- Recover by walking around cone A (5m)
- When you get back to cone B get ready to run again
- Speeds increase each time and the recording will tell you the speed level you will do
- Can fail twice and then drop out
- Max of 91 shuttles and can last up to 29 minutes
- Starts at level 5, then skips to level 9 but will go up 1 every time thereafter.

## Practicality: (You could just write a P)

- Lots of participants can do it at the same time
- only requires 25m space
- Can be done inside and outside
- not too difficult to understand

## Validity: (you could just write a V)

- Measures maximal oxygen uptake well for all abilities
- It makes the athlete run for long periods of time to measure AE

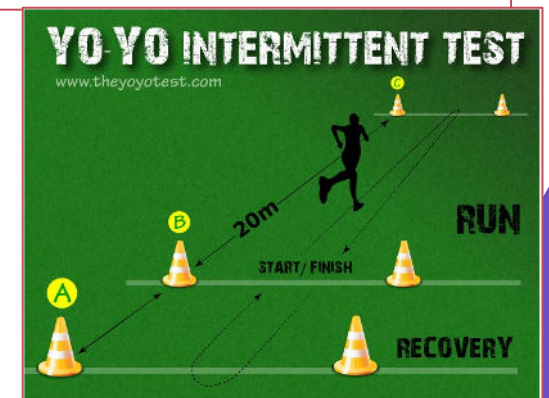
## Task (Independent):

In a different coloured pen could you write down 2 things that means the test might not be reliable. What could possibly go wrong?

I Do

We Do

You Do



# Aerobic endurance (12 minute cooper run)

Have a watch of this video, whilst you are watching the video maybe take some notes.



[HOW TO TEST YOUR FITNESS!  
Better than a bleep test... The  
Cooper Run! - YouTube](#)

I Do

We Do

You Do

# Aerobic Endurance (12 minute cooper run)

## Equipment:

- 400-metre track
- Stopwatch
- Whistle
- Assistant

## Method:

- The athlete **warms up** for 10 minutes
- The assistant gives the command "**GO**", starts the stopwatch
- The assistant keeps the athlete **informed of the remaining time** at the end of each lap (400m)
- The assistant blows the whistle when the **12 minutes have elapsed** and records the distance the athlete covered to the nearest 10 metres

## Practicality: (You could just write a P)

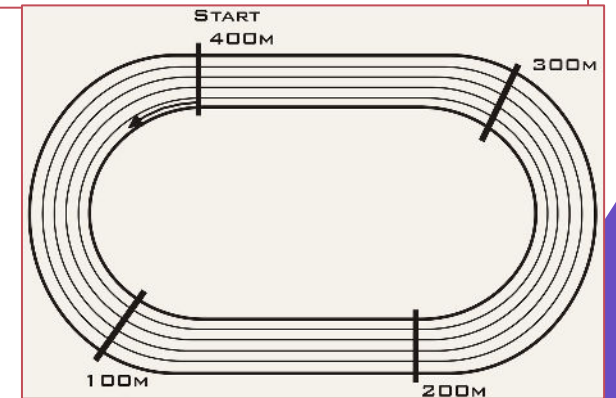
- Lots of participants can do it at the same time
- Might not be practical if a 400m track is needed

## Validity: (you could just write a V)

- Valid as it tests their **V02Max** which is a reflection of how well their heart and lungs work to keep them going.

## Task (Independent):

In a different coloured pen could you write down 2 things that means the test might not be reliable. What could possibly go wrong?



I Do

We Do

You Do

## TASK/HOMEWORK

You now know all 3 of the aerobic endurance tests.

Pick a challenge from below based on everything you have learnt so far:

Challenge 1: Select the test you think best measures aerobic endurance

Challenge 2: Can you write down each test and then what sports person (position if necessary) you think would need to do that test for their role.

Challenge 3: Explain 1 reason as to why you think that athlete should do that test.

TIME LIMIT:

7 minutes max

I Do

We Do

You Do

# Fitness tests to measure Muscular Endurance

If you go to a fresh page in your book but turn it landscape.

You will need to use this as a mindmap so put “muscular endurance” in the middle.

There are 3 tests you are going to learn for muscular endurance:

1. One minute-press up test
2. One minute sit up test
3. Timed plank test

You can section your page off into thirds to allow you the same amount of space to write notes.

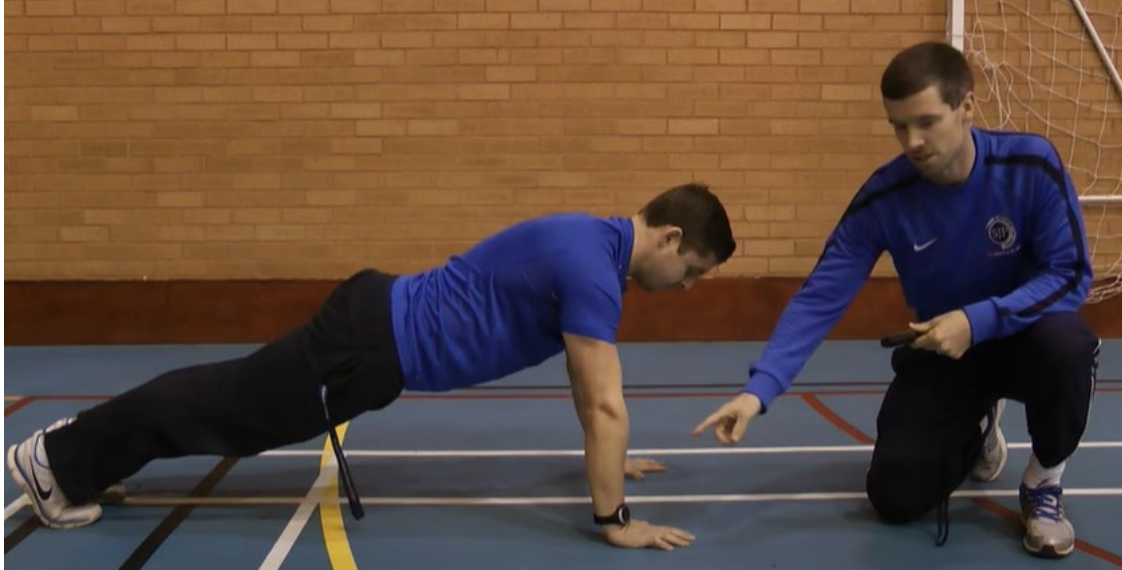
I Do

We Do

You Do

# Muscular Endurance (one-minute press up test)

Have a watch of this video, whilst you are watching the video maybe take some notes.



[One minute press-up test - YouTube](#)

I Do

We Do

You Do

# Muscular Endurance (one-minute press up)

## Equipment:

- Non-slip matt
- Stopwatch
- Assistant

## Method:

- The athlete lies on the ground, places their hands by the shoulders and **straightens the arms** see below (start position)
- The athlete lowers the body until the **elbows reach 90°** and then extends the arms to return to the start position.
- The athlete continues this press-up action, **with no rest**, until they are unable to continue or until 1 minute is up.

## Practicality: (You could just write a P)

- Can have multiple people do it at the same time
- Minimal equipment
- Quick and easy to do

## Validity: (you could just write a V)

- Makes the pectorals and deltoids work to push away from the floor and hold position at the top of the press up.



## Task (Independent):

In a different coloured pen could you write down 2 things that means the test might not be reliable. What could possibly go wrong?

I Do

We Do

You Do



# Muscular Endurance (one-minute sit up test)

Have a watch of this video, whilst you are watching the video maybe take some notes.



[One minute sit up test - YouTube](#)

I Do

We Do

You Do

# Muscular Endurance (one-minute sit up)

## Equipment:

- Non-slip matt
- Stopwatch
- Assistant

## Method:

- Lie on the mat with the knees bent, feet flat on the floor and hands on ears where they must stay throughout the test
- The assistant holds the athlete's feet on the ground
- The assistant gives the command "GO" and starts the stopwatch
- The athlete sits up touching the knees with their elbows, then returns to the floor.
- As many sit ups in 1 one minute are recorded down.

## Task (Independent):

In a different coloured pen could you write down 2 things that means the test might not be reliable. What could possibly go wrong?



## Practicality: (You could just write a P)

- Can have multiple people do it at the same time
- Minimal equipment
- Quick and easy to do

## Validity: (you could just write a V)

- Makes the abdominal muscles contract and relax so measures muscular endurance of a set of muscles, not all of them though.

I Do

We Do

You Do

# Muscular Endurance (Timed plank test)

Have a watch of this video, whilst you are watching the video maybe take some notes.



[Fitness Testing - Plank - YouTube](#)

I Do

We Do

You Do

# Muscular Endurance (Timed plank test)

## Equipment:

- Non-slip matt
- Stopwatch
- Assistant

## Method:

- The athlete, should make sure their forearms and toes are on the floor, but begin with their knees down until the assistant shouts GO.
- Once the athlete is in the correct position, the assistant starts the stopwatch.
- Athlete should keep a straight back.
- The athlete is to hold this position for as long as they can possibly hold it for.

## Task (Independent):

In a different coloured pen could you write down 2 things that means the test might not be reliable. What could possibly go wrong?



## Practicality: (You could just write a P)

- Can have multiple people do it at the same time
- Minimal equipment
- Quick and easy to do

## Validity: (you could just write a V)

- Allows more muscles to contract in the body to keep the athlete up off the floor. More core muscles are engaged

I Do

We Do

You Do

## TASK/HOMEWORK

You now know all 3 of the muscular endurance tests.

Pick a challenge from below based on everything you have learnt so far:

Challenge 1: Select the test you think best measures muscular endurance

Challenge 2: Can you write down each test and then what sports person (position if necessary) you think would need to do that test for their role.

Challenge 3: Explain 1 reason as to why you think that athlete should do that test.

TIME LIMIT:

10 minutes max

I Do

We Do

You Do

# Fitness tests to measure Flexibility

If you go to a fresh page in your book but turn it landscape.

You will need to use this as a mindmap so put "Flexibility" in the middle.

There are 3 tests you are going to learn for flexibility:

-Sit & reach test

-Calf muscle flexibility test

-Shoulder flexibility test

You can section your page off into thirds to allow you the same amount of space to write notes.

I Do

We Do

You Do

# Flexibility (Sit & reach test)

Have a watch of this video, whilst you are watching the video maybe take some notes.



[Sit and reach test - YouTube](#)

I Do

We Do

You Do

# Flexibility (Sit & Reach)

## Equipment:

- Sit & reach box
- Ruler
- Assistant

## Method:

- The athlete sits on the floor with their **legs fully extended** with the bottom of their **bare feet** against the box
- The athlete places one hand on top of the other, slowly bends forward and reaches along the top of the ruler as far as possible, holding the stretch for **two seconds**
- The athlete performs the test **three times**



## Task (Independent):

In a different coloured pen could you write down 2 things that means the test might not be reliable. What could possibly go wrong?

## Practicality: (You could just write a P)

- Only 1 person can do it at a time
- Expensive equipment
- Quick and easy to do

## Validity: (you could just write a V)

-It measures flexibility of the lower back and hamstrings. Only 1 area of the body and no other joints or situations.

I Do

We Do

You Do



# Flexibility (Calf muscle flexibility test)

Have a watch of this video, whilst you are watching the video maybe take some notes.



[Mobility Assessment: Ankle & Calf Flexibility | Athletes, Runners, Squats, High Heels - YouTube](#)

I Do

We Do

You Do

# Flexibility (Calf muscle flexibility test)

## Equipment:

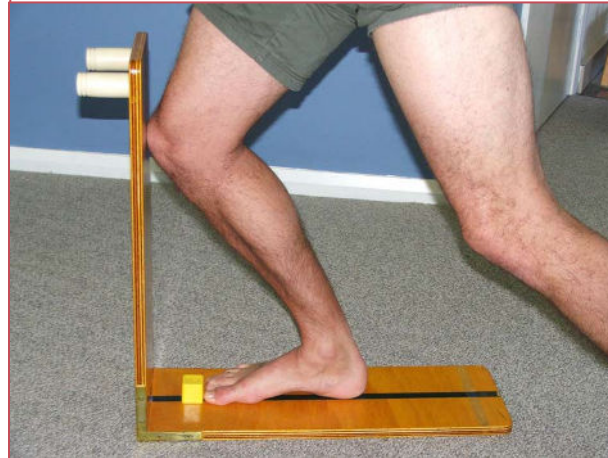
- Wall
- Ruler
- Tape measure

## Task (Independent):

In a different coloured pen could you write down 2 things that means the test might not be reliable. What could possibly go wrong?

## Method:

- The subject stands a **short distance** away from a wall, with one leg in front of the other.
- Keeping the **heel of the front foot on the ground**, try and bend at the knee and **touch the knee to the wall**. If done successfully, move further away from the wall and try again.
- Keep **repeating** this action until you are **unable to touch** the wall. Measure the distance from the front of the foot to the wall at the maximum distance the knee could touch the wall.
- Repeat the same procedure for each leg.



## Practicality: (You could just write a P)

- Only 1 person can do it at a time
- Cheap equipment
- Can take time if they keep moving back a lot

## Validity: (you could just write a V)

-It measures flexibility of the lower calf, which is only 1 muscle. May be appropriate to athletes who use their legs more.

I Do

We Do

You Do

# Flexibility (Shoulder flexibility)

Have a watch of this video, whilst you are watching the video maybe take some notes.



[Shoulder Flexibility Test - YouTube](#)

I Do

We Do

You Do

# Flexibility (shoulder flexibility test)

## Equipment:

- Tape measure

## Task (Independent):

In a different coloured pen could you write down 2 things that means the test might not be reliable. What could possibly go wrong?

## Method:

- Test your left shoulder by standing with your right arm straight up, then bend your elbow so your hand hangs behind your head.
- Keeping your upper arm **stationary**, rest your palm between your shoulder blades.
- Reach around behind you with your left arm so the palm is facing out and try to touch the fingers of both hands together.
- Reverse the procedure and repeat with the opposite shoulder.



## Practicality: (You could just write a P)

- 1 person at a time as it needs measuring
- Cheap equipment
- Quick to do

## Validity: (you could just write a V)

- It measures flexibility of the ball & sockets joint of the shoulder and surrounding muscles.

I Do

We Do

You Do

## TASK/HOMEWORK

You now know all 3 of the flexibility tests.

Pick a challenge from below based on everything you have learnt so far:

Challenge 1: Select the test you think best measures flexibility

Challenge 2: Can you write down each test and then what sports person (position if necessary) you think would need to do that test for their role.

Challenge 3: Explain 1 reason as to why you think that athlete should do that test.

TIME LIMIT:

10 minutes max

I Do

We Do

You Do

# Fitness tests to measure Speed

If you go to a fresh page in your book but turn it landscape.

You will need to use this as a mindmap so put "Speed" in the middle.

There are 2 tests you are going to learn for Speed:

-30 metre sprint test

-30 metre flying sprint

You can section your page off into half to allow you the same amount of space to write notes.

I Do

We Do

You Do

# Speed (30 metre sprint test)

Have a watch of this video, whilst you are watching the video maybe take some notes.



[Sports Performance Testing:  
30m speed test - YouTube](#)

I Do

We Do

You Do

# Speed (30m sprint test)

## Equipment:

- measuring tape or marked track (non-slip)
- Stopwatch or timing gates
- Cone markers,
- flat and clear surface of at least 50 meters

## Method:

- Start from a stationary position, with one foot in front of the other.
- The front foot must be on or behind the starting line.
- This starting position should be held for 2 seconds prior to starting, and no rocking movements are allowed.
- As soon as the timer shouts go, run as fast as you can through the next set of cones.



## Practicality: (You could just write a P)

- 1 person at a time as it needs timing
- Cheap equipment (unless using speed gates)
- Easy to do
- Quick to do

## Validity: (you could just write a V)

-It times how quickly you can move your body so is a really good indicator of speed from a static position.

## Task (Independent):

In a different coloured pen could you write down 2 things that means the test might not be reliable. What could possibly go wrong?

I Do

We Do

You Do



# Speed (30 metre flying sprint test)

Have a watch of this video, whilst you are watching the video maybe take some notes.



[30m fly sprint - YouTube](#)

I Do

We Do

You Do

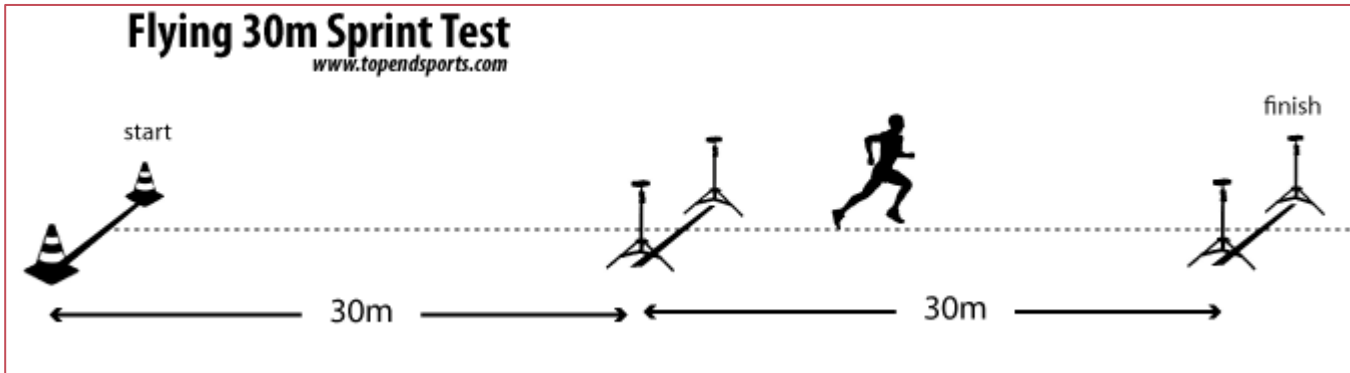
# Speed (30m sprint test)

## Equipment:

- measuring tape or marked track (non-slip)
- Stopwatch or timing gates
- Cone markers,
- flat and clear surface of at least 70 metres

## Method:

- Set up cones at 0, 30m and 60m along a straight line, and timing gates if available at 30m and 60m.
- The test involves a 30m acceleration area to enable the runner to get up to their maximum speed, then maximal sprinting over 30 meters.
- The tester stops the time when the athlete hits 60m (or the time will be shown if using speed gates)



## Practicality: (You could just write a P)

- 1 person at a time as it needs timing
- Cheap equipment (unless using speed gates)
- Easy to do
- Quick to do

## Task (Independent):

In a different coloured pen could you write down 2 things that means the test might not be reliable. What could possibly go wrong?

## Validity: (you could just write a V)

-It times how quickly you can move your body so is a really good indicator of speed from an accelerated running speed.

I Do

We Do

You Do

## TASK/HOMEWORK

You now know both the speed tests.

Pick a challenge from below based on everything you have learnt so far:

Challenge 1: Select the test you think best measures speed

Challenge 2: Can you write down each test and then what sports person (position if necessary) you think would need to do that test for their role.

Challenge 3: Explain 1 reason as to why you think that athlete should do that test.

TIME LIMIT:

10 minutes max

I Do

We Do

You Do

# Fitness tests to measure Muscular strength

If you go to a fresh page in your book but turn it landscape.

You will need to use this as a mindmap so put “Muscular Strength” in the middle.

There are 2 tests you are going to learn for Muscular strength:

-Grip dynamometer test

-1 Rep Max

You can section your page off into half to allow you the same amount of space to write notes.

I Do

We Do

You Do

# Muscular strength (hand grip dynamometer)

Have a watch of this video, whilst you are watching the video maybe take some notes.



[Hand grip dynamometer test - YouTube](#)

I Do

We Do

You Do

# Muscular strength

## Equipment:

- Grip
- Assistant

## Method:

- The athlete using their **dominant hand**, applies as much **grip pressure** as possible on the dynamometer
- The assistant records the maximum reading (**kg**)
- The athlete repeats the test **3 times**
- The assistant uses the **highest recorded** value to assess the athlete's performance. Then swap hands.

## Task (Independent):

In a different coloured pen could you write down 2 things that means the test might not be reliable. What could possibly go wrong?



## Practicality: (You could just write a P)

- 1 person at a time as it needs timing
- Expensive equipment
- Easy to do
- doesn't require a long warm up

## Validity: (you could just write a V)

- It only measures strength in the forearm so could be classed as not a valid test of strength

I Do

We Do

You Do

# Muscular strength (1 Rep Max)

Have a watch of this video, whilst you are watching the video maybe take some notes.



[Fitness Test - 1RM Test - YouTube](#)

I Do

We Do

You Do

# Muscular strength (1 rep max-depends what muscle)

## Equipment:

- Free weights OR fixed weights

(remember there are a few you can do:

- Bench press
- Squat
- Deadlift
- Lat Pulldown)

## Task (Independent):

In a different coloured pen could you write down 2 things that means the test might not be reliable. What could possibly go wrong?

I Do

## Method:

- It is important to reach the maximum weight without prior fatiguing the muscles. After a warm up, choose a weight that is achievable.
- Then after a rest of at least several minutes, increase the weight and try again.
- The athlete chooses subsequent weights until they can only repeat one full and correct lift of that weight



We Do

## Practicality: (You could just write a P)

- 1 person at a time as it needs timing
- Expensive equipment
- Can take a lot of time
- Requires a long warm up

## Validity: (you could just write a V)

- Because there are at least 4 exercises you can do it can measure all over max body strength, but only pick ones suitable to your sport/position.

You Do



## TASK/HOMEWORK

You now know both the Strength tests.

Pick a challenge from below based on everything you have learnt so far:

Challenge 1: Select the test you think best measures strength

Challenge 2: Can you write down each test and then what sports person (position if necessary) you think would need to do that test for their role.

Challenge 3: Explain 1 reason as to why you think that athlete should do that test.

TIME LIMIT:

10 minutes max

I Do

We Do

You Do

# Fitness tests to measure Body Composition

If you go to a fresh page in your book but turn it landscape.

You will need to use this as a mindmap so put "Body Composition" in the middle.

There are 3 tests you are going to learn for Body composition:

-Body Mass Index (BMI)

-Bioelectrical impedance analysis (BIA)

-Waist to hip ratio

You can section your page off into half to allow you the same amount of space to write notes.

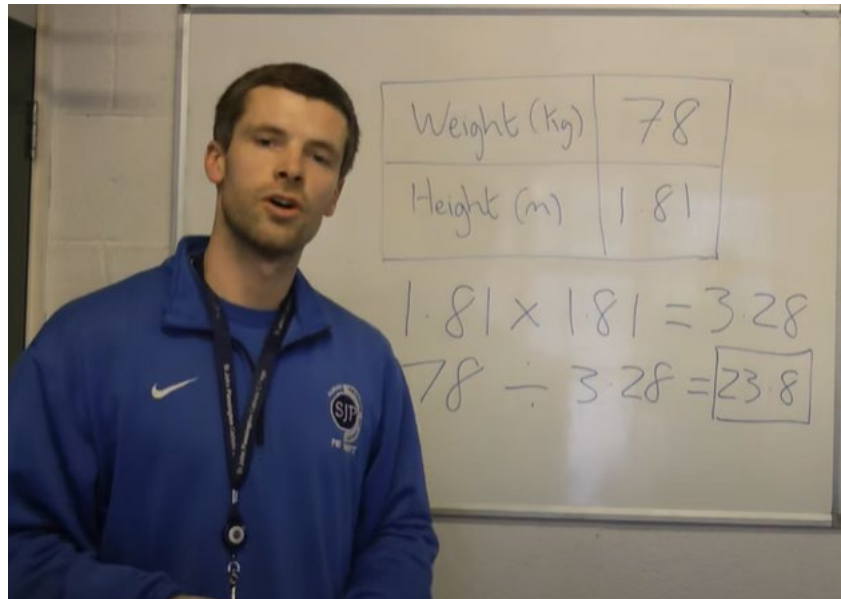
I Do

We Do

You Do

# Body Composition (BMI)

Have a watch of this video, whilst you are watching the video maybe take some notes.



[BMI Testing - YouTube](#)

I Do

We Do

You Do

# Body composition (BMI)

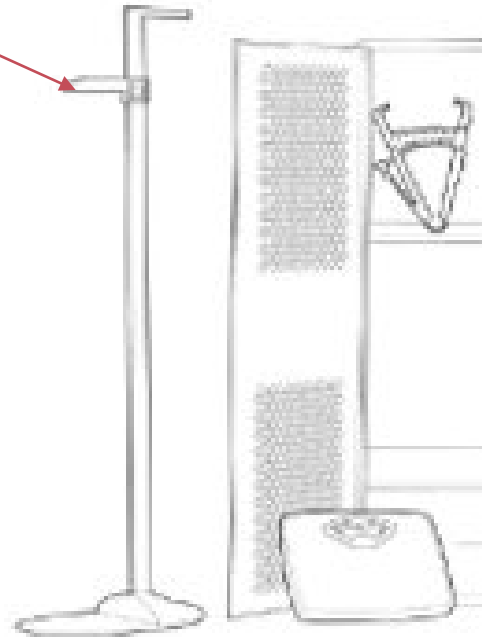
## Equipment:

- Weighing scales
- Tape Measure/Stadiometer
- Calculator

## Method:

- -Measure weight in Kg (scales)
- -Measure height in metres (stadiometer)
- -Calculate by using following equation:

$$\text{BMI} = \frac{\text{Weight (Kg)}}{\text{Height (m)} \times \text{Height (m)}}$$



## Practicality: (You could just write a P)

- Can be done anywhere.
- Can be quick.

## Validity: (you could just write a V)

- If measurements are accurate from scales and stadiometer the equation is easy to do
- Equation needs to be done correctly

## Task (Independent):

In a different coloured pen could you write down 2 things that means the test might not be reliable. What could possibly go wrong?

I Do

We Do

You Do

# Body Composition (BIA)

Have a watch of this video, whilst you are watching the video maybe take some notes.



[Bioelectrical Impedance Analysis - YouTube](#)

I Do

We Do

You Do

# Bio-Electrical Impedance Analysis (BIA)

## Equipment:

- -Stadiometer
- -Pads x 4
- -Machine
- -Partner

## Method:

- -BIA means Bio-electrical impedance Analysis
- -Attach pads to wrist and ankle on right side of body
- -Electrical impulses are sent from one side of body to the other.
- -If the resistance is high so is the amount of body fat
- More current needed-the more fat you have

## Task (Independent):

In a different coloured pen could you write down 2 things that means the test might not be reliable. What could possibly go wrong?



## Practicality: (You could just write a P)

-Its is very effective and accurate  
-Is done in a secure setting with qualified individual.

## Validity: (you could just write a V)

-If the machine works properly there is no way the result can be wrong as it measures resistance

I Do

We Do

You Do

# Body Composition (Waist to hip ratio)

Have a watch of this video, whilst you are watching the video maybe take some notes.



[Fitness Test Waist to Hip Ratio Measurement - YouTube](#)

I Do

We Do

You Do

# Waist to hip ratio

## Equipment:

- Tape measure
- Calculator

## Method:

- Measure your waist circumference at the narrowest point between your ribs and hips.
- Measure your hip circumference at the widest part of your buttocks.
- Divide your waist circumference by your hip circumference.
- The result is your waist-to-hip ratio, or WHR.

## Task (Independent):

In a different coloured pen could you write down 2 things that means the test might not be reliable. What could possibly go wrong?



## Practicality: (You could just write a P)

- Can be done anywhere
- Is quite easy to do
- Doesn't take too long

## Validity: (you could just write a V)

- Tape measures are accurate in their use
- If you use the calculation then the result cannot be wrong

I Do

We Do

You Do



# Homework

To prepare you for later (this is something we encourage people to do at A-Level), go away and do a small 20 minute research task on a fitness test that is coming up in the next few lessons.

I would like to research the following areas:

- The test name
- The COF it measures
- How to do it
- Pre-test procedures

Due in:

Next lesson

I Do

We Do

You Do

# Where are we at in Learning Outcome B???

B1: Importance of fitness testing and requirements for administration of each fitness test  
(COMPELTED)

B2: Fitness test methods for components of physical fitness (NEXT)

B3: Fitness test methods for components of skill-related fitness

B4: Interpretation of fitness test results