

Health: What is Fitness?

STARTER: TRUE OR FALSE

- **1 Fitness only means making your muscles stronger.**
- **2 Athletes have a larger lung capacity than non-athletes.**
- **3 Exercise makes lung capacity smaller.**
- **4 Athletes breathe faster than non-athletes.**
- **5 Athletes' hearts beat faster than non-athletes.**
- **6 Athletes' hearts are more powerful than non-athletes.**
- **7 Training improves fitness.**
- **8 There is only one kind of fitness.**
- **9 Almost everyone can improve their fitness a little bit.**
- **10 Once you are fit, you stay fit.**

What is Fitness?

WALT: Describe the changes to our body caused by exercise

- I must explain changes in our body when we exercise
- I must be able to carry out a simple fitness test and should be able to draw a graph of the results
- I should explain how fitness affects the heart, lungs and muscles

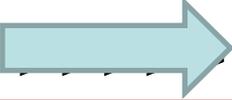
It's half time at the World Cup and you are playing. What is happening to your:



- Skin
- Pulse
- Breathing
- Skin colour

Why do these things happen?

- Your muscles need energy
- You get energy from food and the oxygen you breathe in
- Energy is provided by the respiration reaction:

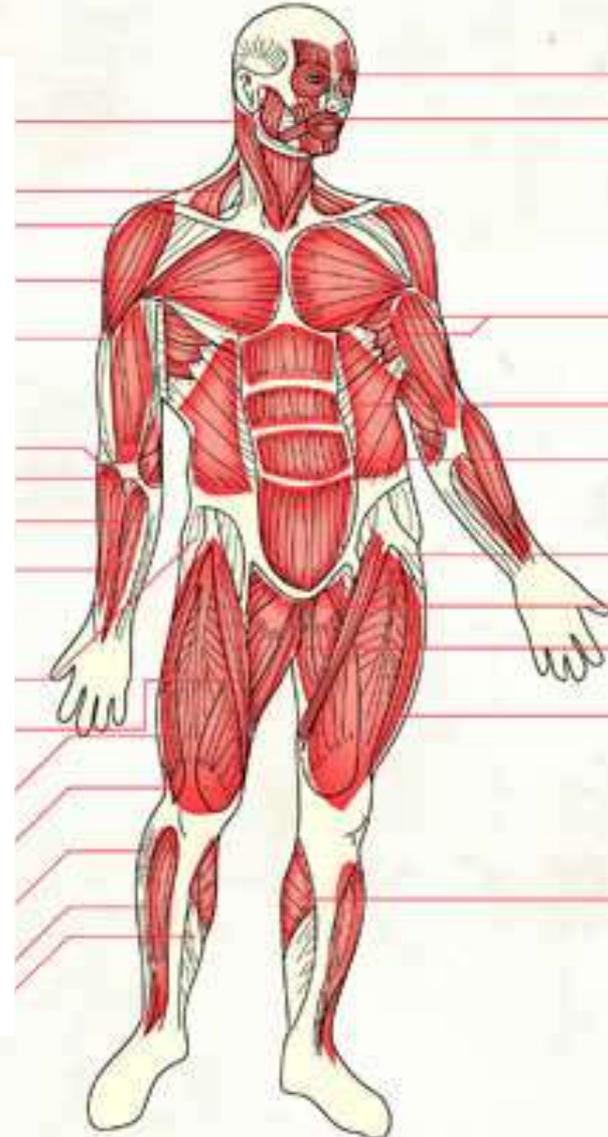
Glucose + oxygen  carbon dioxide and water

- 1) To transport glucose and oxygen to the muscles as fast as possible in your blood (specifically in the red blood cells), you breathe faster and your heart beats faster
- 2) The creation of energy causes you to get hot, therefore you sweat and your blood flows close to your skin surface to cool you

How your muscles get energy

MUSCLES (anterior view)

When muscles need to get energy from glucose they do this by changing the glucose into other chemicals such as water and carbon dioxide which releases the energy. We sometimes call this 'burning' the glucose. They use the oxygen being carried in the blood to help them do this. This is called **aerobic respiration**.



There are two main types of fitness

1. Cardio-pulmonary – how well your heart and lungs work
2. Structural fitness – the condition of your muscles and joints

Signs of fitness

1. Lower pulse rate
2. Stronger heart (it takes less effort for your heart to pump blood around)
3. Lower blood pressure
4. Slower breathing rate
5. Higher lung capacity (more air is left in the lungs after each breath – giving your body more access to oxygen)
6. Stronger muscles
7. Supple joints

We are going to go for a bit of a run

1. Now record your resting heart rate
2. Run around the pitch and record your heart rate immediately
3. Record your HR every 2 minutes until it has returned to its resting rate
4. Return to your desks and plot a graph of heart rate against time
5. How long did it take to return to its resting rate? Compare with the rest of the class.

- 1 Running 10 miles each day.
- 2 Weight lifting.
- 3 Smoking 1 cigarette a day.
- 4 Swimming 50 lengths.
- 5 Stretching exercises.
- 6 Sprinting 100 metres.
- 7 Meditation.
- 8 Cycling 50 miles each day.
- 9 Reading books on getting fit.
- 10 Running up and down a mountain every day.

Note whether
the following
activities are
most suitable
for a high
jumper, weight
lifter,
footballer or
none of them

ANSWERS

- **1 all; 2 weightlifter; 3 none; 4 footballer;**
- **5 all; 6 footballer/high jumper; 7 all;**
- **8 footballer; 9 none; 10 high jumper**

A-Level Question!!

(c) Describe **four** ways in which physical fitness may benefit the body.

1.

.....

2.

.....

3.

.....

4.

.....

- (c) reduced risk of CHD;
increased resistance to infection;
increased respiratory fitness/efficiency of gas exchange/**AW**;
reduces body mass/ref to obesity/maintains body mass;
improves posture/helps prevent back pain;
improves alertness/coordination/balance/decreases reaction time;
helps relieve stress;
increases life span;
improves strength/endurance/power;
improves flexibility of joints;
ref to effects on muscle tissue.

[4 marks max]

Plenary

- Close your books
 - In pairs – number yourselves 1 and 2
 - No 1s) **Describe** and **explain** the changes in your body that occur during exercise
 - No 2s) Describe and explain the characteristics of someone who is fit compared to someone who is not very fit