

## UNIT 2: FITNESS



In this unit we will learn the difference between basic physical abilities and motor skills. We will focus on aerobic endurance, strength, flexibility and coordination, but we will work on each and every one of them through the year.

At the end of the unit you should know:

- What is Fitness, and what does it consist of.
- What are physical abilities, motor skills, and the differences between them?
- How can you improve your physical abilities?

Physical fitness is the ability to do a daily physical workout without feeling too tired. For this, you need **the four "S's"**

**S**trength

**S**tamina

**S**peed

**S**uppleness



These are the components of physical fitness. In Spanish, we call them "Capacidades Físicas Básicas".

### **I. Stamina:**

Stamina helps your muscles to work for a long period of time.

With it, you can do exercises for a longer period of time, no matter the intensity. For example:

Cycling: In the Tour of France they ride more than 200km over a lot of days, but they also sprint!

Marathon runners run for more than 2 hours at a very fast pace.

Swimmers in the 1500m race

Footballers need to run for 90 minutes without being tired so they can dribble and shoot.



Stamina is also called Endurance.

There are two types of Stamina or Endurance: Aerobic and Anaerobic.

During **Aerobic activity**, your heart and lungs give your muscles plenty of oxygen, and you can do exercise for long periods of time at a medium intensity. (marathon, cycling..)

During **Anaerobic activity**, your muscles don't have enough oxygen. These exercises are shorter but have a very high intensity (100m sprint, a basketball attack). With anaerobic stamina, you can do these exercises faster and get tired later.

### IMPROVING YOUR AEROBIC ENDURANCE: ENDURANCE AND HEART RATE

To improve your aerobic endurance, you must practice exercise that make your cardiovascular system work in a medium intensity for a prolonged time. Examples for this are: non-stop running, aerobics, riding your bike or skating in a flat surface.

Heart rate (HR) or pulse is the number of times that your heart beats in one minute, and it's measured in "beats per minute" (bpm). Checking your HR is good to know how your heart is working and your fitness level.



#### • WHERE CAN YOU CHECK YOUR HEART RATE?

Use your index and middle fingers and put them in one of these:

1. In your neck: on the carotid artery
2. In your chest: directly in your heart
3. In your wrist: go for the external artery

#### • FOR HOW LONG?

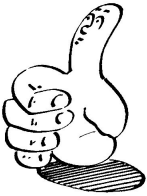


If you want your checking to be reliable, you use

this chart:

Hard exercise (for example: running)	HR = beats in 6 seconds x 10
Medium/soft exercise (for example: walking, stretching)	HR = beats in 15 seconds x 4

## HOW MANY BEATS SHOULD I HAVE?



If you want to improve your aerobic endurance, you should practice any kind of exercise, but try to keep your heart rate between 130 and 170 beats per minute.

So remember: everytime you are training, check your pulse.

- IF YOU ARE ABOVE 170 B.P.M., you are not improving your AEROBIC endurance, but ANAEROBIC. You should take it easier (run slower or take some rest between exercises). If you are working softly and you are above 170 b.p.m., that means that you are in bad shape: you should do more exercise or practice some sports in your free time. You need to train your body and heart or you could have some health problems.
- IF YOU ARE BELOW 130 B.P.M., that is not enough for improving your endurance, so you have to work harder (run faster, take less rest or ask your teacher what to do)

## WORK SYSTEM TO IMPROVE YOUR AEROBIC ENDURANCE: NON-STOP RUNNING

Non-stop running is the easiest, cheapest and simplest system to improve your aerobic endurance, but you should notice that:

- Run in a flat terrain if it is possible.
- Try to maintain a constant rhythm (that is, no changes in velocity or intensity). If you can run and talk at the same time, that is a good rhythm.
- Your HR should be between 130 and 170 b.p.m. to be effective.
- As you progress through your training, you must increase the running time.
- Remember to warm up your joints before you start running and do some stretching at the end.
- Use sport shoes with good cushioning, if you do, your joints will not suffer.



### Benefits of regular stamina training:

- Your heart grows larger and thicker
- You have more capillary.
- Your breathing capacity increases.
- It's easier to maintain your ideal weight

Aerobic Exercise is very good for your health. It develops your heart, your lungs and your circulatory system.

### 2. Strength:

Strength is the ability to use muscles against a resistance (a force or a weight).

With it, you can move or lift weights, and you can move your body weight more easily.

Some sports in which strength is important:

Weightlifting: to lift as much weight as you can.



Judo: to throw your opponent.

Climbing: you need to move your body weight up the mountain.

Athletics: to jump higher or longer and to throw the javelin or hammer.

There are **three types of strength**.

**Maximum strength:** to lift very high weights (aizkolaris lift very heavy stones)

**Explosive strength:** to do a movement as fast as we can, moving a small weight (javelin throwers, for example)

**Resistance-strength:** to do exercises with medium weights for a long time (in judo, combats last 4 minutes, rowers must move the boat for a long time also)

**Benefits of developing your strength:**

-You have more muscular power size.

-Your muscles and tendons grow in

-You can move weights easier (including your own body).  
posture in daily life and sports

-It helps you keeping a good

### 3. Speed:



Speed is the ability to do one or more movements in a short period of time.

Some examples of sports where speed is important:

Fifty metres swimmers, react quickly to the horn and swim very fast.

Handball goalkeepers react very fast to stop balls.

Fencers must move fast to touch the opponent with their sword.

When we talk about the speed to move from one place to another (running, biking or swimming), we call it a sprint.

Speed means reacting quickly and moving fast.

So you can find three types of speed:

**Reaction speed:** moving as fast as you can after the referee blows the whistle in a 100m sprint. In team sports there is also reaction speed: chasing your opponent when he runs away from you, or reacting to a volleyball spike quickly.

**Speed of an isolated movement:** e.g. a karate kick or a tennis service must be very quick.

**Speed of combined movements:** any sprint in running or swimming, a dribbling in football...

**Benefits of speed training:**

-Speed is basic in all sports. Even in a marathon, the winner is the fastest!

-It is related with coordination and agility. If you react and move fast, you have an advantage in all sports.

-Speed training develops and makes your muscles grow.

#### 4. Suppleness:

Suppleness is the ability to have a wide range of movement with any part of your body. It is also called Flexibility.

Flexibility is very important in all sports, because with it, you have better performance and less injuries.

It is important for gymnasts, for hurdle runners or tae-kwondo fighters to do kicks.

Flexibility depends on the joint range of movement and the stretching ability of the muscles around it.



There are two types of flexibility:

**Dynamic Flexibility:** you use it when you do wide, ample and relaxed movements.

**Static Flexibility:** you use it when you hold one position for some seconds. There is no

movement.

*Flexibility is the only physical ability that decreases as you grow older.*

*You need to spend a little time everyday to maintain and enhance it.*

### **Benefits of suppleness training:**

-Your range of movement in joints is bigger, so you can accelerate your arms and legs for a longer distance. Then, you can kick, throw and hit faster and stronger.

-You have less injuries.

-Your movements are not limited.

-Your muscles are more elastic and more powerful.





# UNIT ACTIVITIES

## 1. FILL IN THE GAPS:

- a) Components of fitness are ..... skills and ..... basic .....
- b) Endurance is a physical ..... and it allows us.....
- c) There are ..... types of endurance: ..... and .....
- d) Maximum Heart Rate is .....
- e) Heart Rate is ..... and it is measured in .....

2. You want to improve your endurance and you have decided to start training yourself. Explain what would you do and how will you know if you are improving or not.

3. Name 4 muscles that you know and describe or draw a stretching exercise for each one of them.

4. Choose 2 sports (individual sports, team sports... whatever you like) and explain what physical basic ability is the most important in them and why.