# 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?

# What is Fitness?


Fitness is the ability to face every physical activity, like a tennis match, carrying the shop bags or the race for catching the bus. A good fitness is not the same as being a "super-athlete", but developing your capacities to your maximum. For instance: not looking like a zombie after having a walk or being strengthless after carrying your backpack for a while.

# On what depends your fitness?

Your fitness depends a lot on your personal characteristics. I mean, not everyone is the same: Your granny can´t do the same things than your parents, or an amateur volleyball player is different than a girl from the National Volleyball Team player. So, there are some variable and non-variable factors:

- NON- VARIABLE FACTORS:

- Genetics: Like your eyes or your skin have a color, in our genes is partially written if we are more resistant, stronger, flexible or well coordinated…
- Age and gender: every age has his own physical development and it´s a fact that for boys is easier to develop their strength, and for girls to be flexible, but there are also gum-boys and girls who would win in a strength-fight.


- VARIABLE FACTORS (in which we can take part):

- Health habits: correct diet, avoiding drugs, watch our hygene and a good rest are crucial for your fitness.
- Training or sedentary lifestyle: Regular physical exercise helps us to improve our capacities, but lying on the sofa or playing videogames leads to a worse fitness.

# Why is good for you to improve your fitness?

Maybe you think that is not necessary to work on your physical shape, but these are some examples about the importance of it:

- You will do physical activities better and with less effort: it will be easier for you to keep the rhythm in P.E. class, playing your weekend match or holding your nephew in your arms without pain in your back. That is because your heart will be more efficient, a higher capacity in your lungs and stronger muscles, ligaments and tendons.

- Avoiding sickness and injuries: there are conditiones like obesity, diabetes, joints problems, sore muscles that improve with a good health and exercise program.

- You will be better intellectually: being physically tired may cause that you need more time to study than normally.

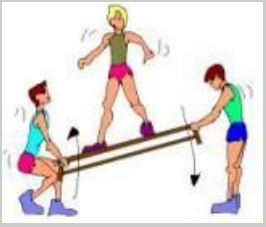
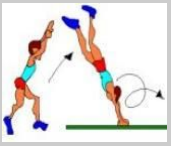
- You will enjoy physical activities and your relationship with others will be better: no more feeling unuseful when your friends play that difficult game.

# How do you improve your fitness?

If you want to improve your fitness, you should work on each ability:

## COMPONENTS OF FITNESS

| PHYSICAL ABILITIES | MOTOR SKILLS |
|---|---|

| STRENGTH | FLEXIBILITY | COORDINATION | BALANCE |
|---|---|---|---|
|  |  |  |  |
|  |  | AGILITY  | |
| ENDURANCE | SPEED | | |

In this chart you can see a definition and some examples for each ability or skill:

| Component | What are they? | Examples |
|---|---|---|
| BASIC PHYSICAL ABILITY | • Strength: ability to overcome resistance or to move weight | Shot put<br>Judo |
| | • Endurance: ability to sustain prolonged effort without fatigue | Marathon / Cycling race |
| | • Speed: ability that allows us to perform movements in as little time as possible | 100m. / Volleyball smash |
| | • Flexibility: ability to achieve a full range of movement | Taekwondo / Gymnastics |
| **Component** | **What are they?** | **Examples** |
| MOTOR SKILLS | • Balance: Ability that enables us to control our body's movements and hold any position against the force of gravity | Statics: in the train<br>Dinamics: a gymnast |
| | • Coordination: Ability to make movements in a precise and synchronised manner. | General: running, swimming<br>Specifics: eye-hand, foot… |
| | • Agility: Ability to use the body's resources to move through space in a rapid and harmonious way. | Parkour/tumbles in gymnastics |

## Physical Basic Abilities

### ENDURANCE

Improving this ability has some BENEFITS:

- Improves your physical health: respiratory and cardiovascular systems ☾ you´ll have more energy for everyday.
- Reduces injuries and sickness.

- Your body will be better in the natural process of aging.
- Eliminates fat and cholesterol in your body.
- Improves your mental health: it increases your effort and overcoming capacity.
- It is cheap and simple.

## ENDURANCE TYPES:

- Aerobic: When you make a low or medium effort for more than 3 minutes you´re using your aerobic endurance. For example: going for a ride, swimming or participating in a long race. This is good in your age.
- Anaerobic: When you make a maximum effort in a short period of time (less than 3 minutes), you are using anaerobic endurance. For example: short races (sprints), artistic gymnastics routine, playing a high level match…

## 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:

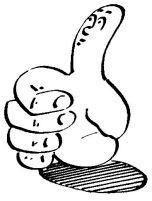
1. In your neck: on the carotid artery
2. In your chest: directly in your heart
3. In your wrist: go for the external artery

### • 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 |
| Stand-by (no exercise) | HR = beats in 30 seconds x 2 |

### • 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 your 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)

### • MAXIMUM HEART RATE (HRmax):

Your pulse has a roof. Maximum heart rate is the limit that you shouldn´t reach because you can hurt

yourself. To know what is your HRmax, use this formula:

| HRmax = 220 - age |
|---|


IF you work above your HRmax you could be in danger, so don´t play with your health!

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.

LET´S PRACTICE!

In class we will work on your endurance with these activities:
Warm- up and non-stop running.
Running Test.
Circuits.
Games and sports.

## SPEED

When someone talks about speed, we think in a sportsman/woman running fast. But speed is the ability that allows us to perform movements in as little time as possible, and not every movement requires us to run or move from one spot to another (for instance, hitting a tennis ball or catching a falling glass). So, just for your information, there are three types of speed:

➔ REACTION SPEED: We use this when we have to respond to an external stimulus (a sound, a visual signal…) by moving our body. For instance: the whistle before a race, getting out of the way when an object is about to hit us…

To work on this, you should train your senses, learning how to pay attention to the signals. Normally we play games for this, like: “red and blue” or “the catcher will be the last person in…”

➔ TRAVEL SPEED: We use this whenever we want to go from one site to other in the less time that we can, running, walking, swimming… To work on this, the better you can do is strengthen your muscles.

➔ GESTURAL SPEED: We use this when we have to make a sport movement quickly, for example: a smash in volleyball, a pass in basketball… To work on this, you have to strengthen your

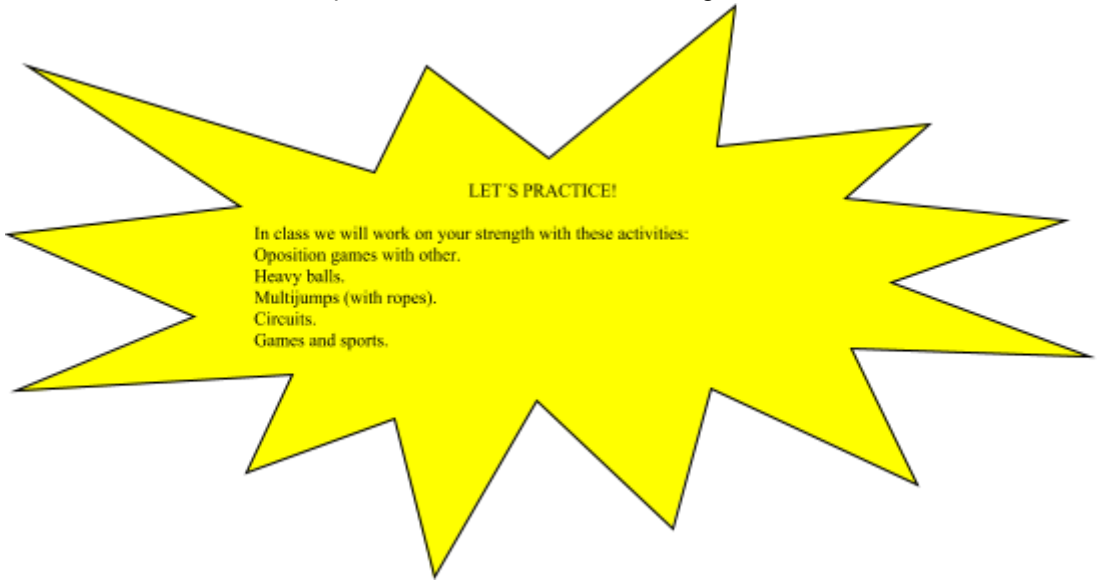

muscles and to improve your technique.

## STRENGTH

This is the ability to overcome resistance or to move weight, but you must work on it at the same time that you work on your flexibility, or you could have an injury or muscular shortening.

To work on your strength, it is important that you notice this:

- Not specific strength training is indicated before 16 years old. If you are younger than that you can practice your strength in a general and inespecific way, such as: opposition games or auto-exercises like sit-ups or push-ups. Your bone and muscle systems are growing now and too much strength exercises can lead to injuries or a growing-stop.
- ALWAYS make some warm-up exercises and some stretching at the end.




- In every exercise (specially when you move weight, like your backpack), you have to maintain a correct spine position, you can hurt yourself if you don´t.

# FLEXIBILITY

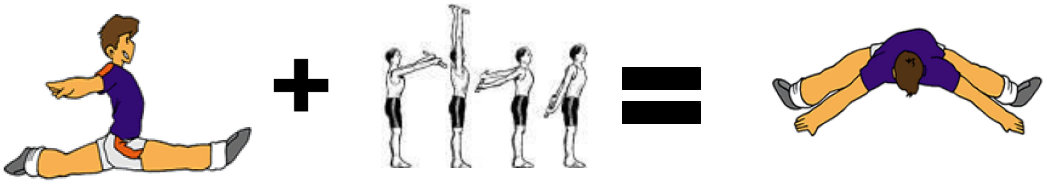
LET´S PRACTICE!

In class we will work on your flexibility with these activities:
Stretching and joints mobility exercises.
Flexibility in pairs.
Relax techniques.
Games and sports.

This ability is good for making big movements and to achieve a full range of movement with your joints. It is useful to avoid injuries and to have a healthy skeleton.

Flexibility is the sum of:

FLEXIBILITY = JOINTS MOBILITY + MUSCULAR ELASTICITY



- JOINTS MOBILITY: each joint has a range of movement, and we try to work on it to reach the maximum.
- MUSCULAR ELASTICITY: is the ability to restore the shape of a muscle once it has been stretched. It can be improved with careful stretching.

Now, here you can see some examples for how to stretch the main muscles in your body. If you don´t know how to stretch a muscle or what muscles is a stretching exercise for, ask your teacher!!

**ESTIRAMIENTOS**

# 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 to 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.