Cortes de Cádiz Secondary school
El Molar
P.E. Department

3TH SECONDARY EDUCATION

PHYSICAL EDUCATION

Student: _____ | Group: ___

INDEX

Some values we can learn through physical activity and sport

DECÁLOGO DE VALORES

JUGADORES

1-Respeta a tus compañeros y rivales

2-Respeta y valora a tu entrenador

3-Se amable y educado con todo el mundo, compañeros, rivales, profesores, empleados etc. Saluda, pide las cosas por favor y da las gracias. Trata a los demás como te gustaría que te trataran a ti mismo.

4-Rechaza cualquier tipo de violencia física o verbal y cualquier tipo de discriminación en la pista y fuera de ella.

5-Ayuda y colabora con los demás como te gustaría que hicieran contigo.

6-Sé puntual y guarda el móvil durante las clases y entrenamientos.

7-Cuando juegues partidos,no hagas trampas. Lo importante es la diversión a través del juego, la amistad y la cooperación y no el resultado.

8-Cuando juegues partidos, respeta las reglas del juego y especialmente el código de conducta de la RFET y la Federación de Tenis de Madrid FTM

9-Ponte el objetivo de aprender y disfrutar durante el entrenamiento y la competición.

10-Valora los entrenamientos y esfuérzate en hacer lo que puedas, pero también valora el esfuerzo de tus padres que te ayudan día a día en tu práctica y desarrollo deportivo

ENTRENADORES

1-Piensa que eres un referente para tus alumnos. Por encima de enseñar tenis eres un educador y debes trasmitir valores.

2-Respresentas a tu Club y tienes una responsabilidad desde el punto de vista organizativo, ético y social.

3-Respeta y valora a tus alumnos, rivales, padres y árbitros. Rechaza cualquier tipo de violencia física o verbal y cualquier tipo de discriminación.

4-Planifica tus clases y entrenamientos. Esfuérzate en mejorar tus capacidades para crecer como profesional en coordinación con el director de la escuela. Sigue formándote, es clave para ayudar a mejorar a tus alumnos.

5-Adapta la metodología al nivel, edad y características del grupo.

6-Informa a los alumnos de forma clara sobre lo que quieres que hagan y de forma progresiva y eficaz.

7-Optimiza el tiempo de la clase/entrenamiento (tiempo real de práctica y número de repeticiones) y trata de motivar e ilusionar a tus alumnos, el ambiente en pista es fundamental.

8-Durante la clase o entrenamiento, evita "enrollarte" con los compañeros o con los padres, piensa que tu responsabilidad son tus alumnos en todo momento.

9-Sé puntual y guarda el móvil durante las clases o entrenamientos.

10-Da ejemplo.

PADRES

1-Recuerda que eres el principal referente de tu hijo

2-Respeta al entrenador, árbitro, compañeros y rivales de tu hijo.

3-Enseña a tu hijo a confiar en el entrenador y el equipo. Evita cuestionar en público a los profesores o entrenadores.

4-Si tienes que hablar con el profesor o entrenador de tu hijo, hazlo en privado siempre que puedas.

5-Dosifica tu presencia en las clases y entrenamientos y entrena tu autocontrol durante los entrenamientos y partidos.

6-Rechaza cualquier tipo de violencia física o verbal y cualquier tipo de discriminación en las instalaciones donde tus hijos participan entrenando o compitiendo.

7-Disfruta viendo jugar a tu hijo. Recuerda que el tenis es sólo un juego.

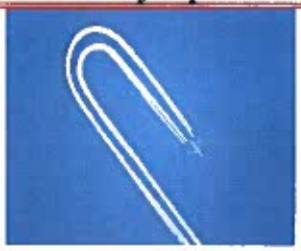
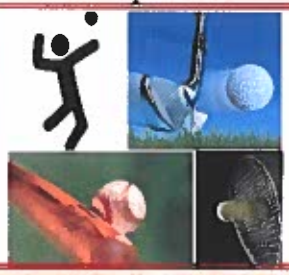
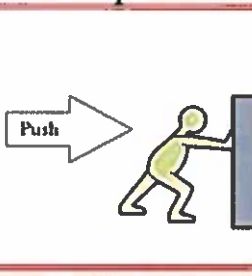
8-Después de las clases, entrenamientos o partidos, evita dar lecciones a tu hija, recuerda que necesita un padre/madre y amig@ no otro entrenador.

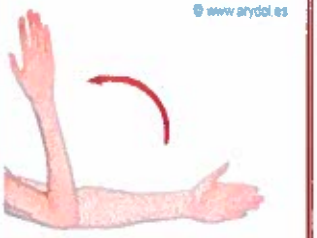
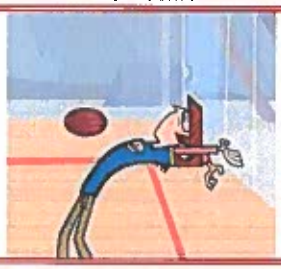
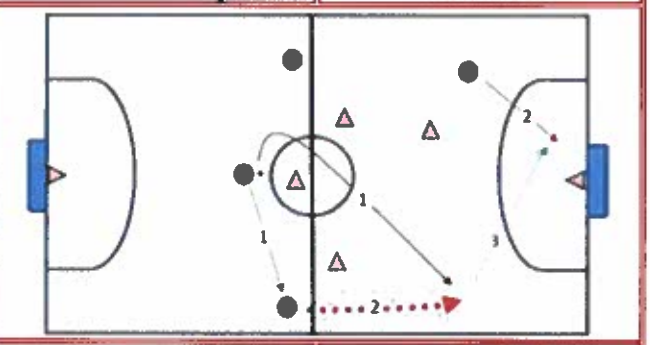
9-Piensa que siempre lo hace lo mejor que puede.

10-Piensa que con tu apoyo, tu hijo será feliz y eso le ayudará a disfrutar más en el día a día

UNCA SERÁS UN GRAN DEPORTISTA SIN SER ANTES UNA GRAN PERSONA

Some verbs related to physical education and movement

			
To walk	To run	To jump	On one leg jumps
			
To throw	To catch	To turn around	To crawl/to creep
			
To go backwards	To go straight	To turn	To skip a rope
			
Cross step running	Knees up	Sprint	Sidestep
			
Push ups	Squats	Sit ups	To stand up
			
To climb	To hit	To push	To pull

			
To bounce	To pass the ball	To dance	To jump hurdles
			
To dribble	To bend	To stretch	To tighten
			
To lie down	To relax	To make mime	To change of pace
			
To volley	To Dodge / to avoid	To run away	To chase
			
To juggle	To represent moods	To attack	To defend
			
To score	To score	To shoot	To be unmarked

1 Heart rate and cardiovascular system

1.- Heart rate

Heart rate is the number of times the heart beats per minute. With each heartbeat, blood is pumped out of the heart and into the arteries. Our arteries are forced to expand and then contract, which is called our pulse. The number of pulses in on minute is the heart rate. For a normal adult when resting this will be between 60 and 90 beats per minute (even 100). A pulse can be felt at points in the body where the arteries are close to the skin.

2.- Why should we know it?

Because it gives us a very basic idea of our health; when we are training it indicates whether the effort we are making is loose, soft, heavy or excessive. So we know that at rest:

- ✓ - 60 beats per minute is a very healthy heart (unless it is a disease).
- ✓ 60-80/90 beats per minute is the normal heart rate of a human being.
- ✓ 90-100 beats per minute: if repeated over time, consult your doctor.
- ✓ +100 beats per minute: a pathological or diseased heart (consult your doctor)

3.- What does the cardiovascular system do?

- It is responsible for transporting materials throughout the entire body.
- Take oxygen and nutrients to every cell.
- Removes carbon dioxide and other waste products from every cell.
- Carries hormones from the hormonal glands to different parts of the body.
- Maintains temperature and fluid levels.
- Prevent infections from invading germs.

4.- How can we measure our heart rate?

It is measured in beats per minute, with the index and middle fingers (never with the thumb, as it is very sensitive and it can cause us to count more beats), or with the palm of the hand. We have three main points for measuring our heart rate.

Radial artery (wrist) Carotid (neck) Heart (chest, left side)

5.- How much time do we need to take our heart rate?:

- When we are resting we usually measure our heart rate in one minute, or we can measure it in half minute, and multiply by two → **30" x 2 / 60" x 1**
- After exercise, during the first minute after finishing it our body starts to recover, and our heart rate is lower. That is why we are going to measure our heart rate using one of the following options → **6" x 10 / 10" x 6 / 15" x 4**

6.- How can we improve our heart rate?

Medical studies reveal that to improve cardiovascular health we need efforts that are located between 60 – 85% maximum heart rate. So how do out what our maximum heart rate is? In this way:

WOMEN: 226 – age

MEN: 220 - age

Level of fitness:

- Low: 50 – 75% of MHR (maximum heart rate)
- Normal: 60 – 75% of MHR
- Good: 60 – 85% of MHR

7.- Our heart rate and sport.

The resting heart rate can vary between people, due to factors such as sex, age and health. For a healthy, resting adult it is between 60 and 90 (or even 100) beats per minute.

Endurance sportspeople will have a much lower rate, perhaps as low as 30 beats per minute. This is because their hearts are stronger and bigger, and are able to pump more blood in fewer beats than an unfit person. Their stroke volume (amount of blood pumped by the heart in each beat) is therefore greater. In this way we can increase the amount of oxygen going to our working muscles. This will help us to work harder and for longer in our sport.

Resting heart can be one way to show fitness level. Speed at which heart rate returns to normal after exercise is called the recovery rate. This rate can also be used to measure fitness.

8.- What happens to our circulatory system when we exercise?

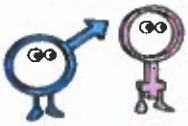
- As we work harder our muscles need more oxygen. The oxygen is delivered by our blood.
- The heart contracts more powerfully. It sends out a greater amount of blood with each contraction. Stroke volume increases.
- Blood circulation speeds up and greater amounts of oxygen-carrying blood reach the working muscles. Cardiac output increases.
- The pumping action of muscles forces more deoxygenated blood back to the heart more quickly.
- Blood flood in the areas of the body not in urgent need of oxygen, for example our digestive system, is reduced.
- Blood flow to the areas in greatest need of oxygen, for example our skeletal muscles, is increased.
- Blood vessels to skin areas become enlarged. This allows excess heat from muscles and organs to be lost more easily from the skin.
- During very hard exercise blood vessels will be reduced in size. Body temperature will then rise very quickly. It can cause overheating and fatigue.
- The oxygen going to the muscles can be up to three times the resting amount.
- Blood flow can be increased up to thirty times. Therefore, the working muscles can receive up to 90 times the amount of oxygen they receive at rest.

9.- Factors that change our heart rate:

AGE
As we grow up, our pulse decreases because our heart is bigger. (For example, a baby's heart beats at rest at 140 beats per minute).

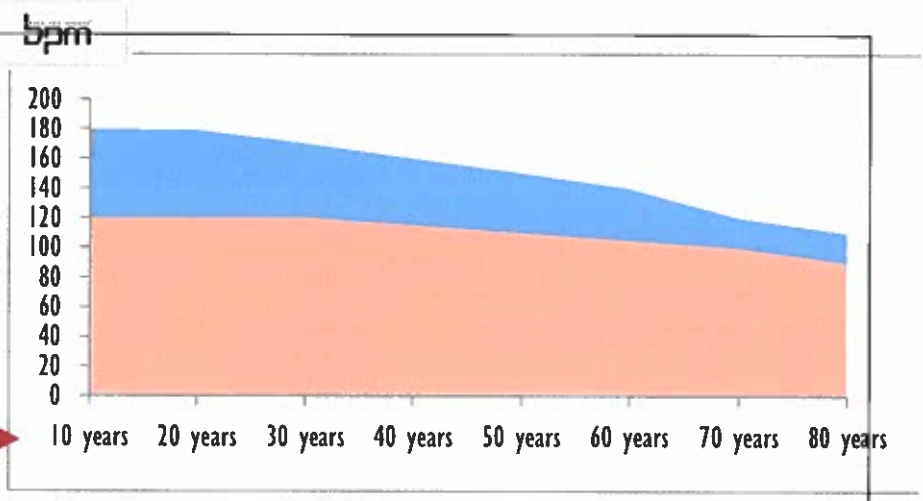
EXERCISE
People trained generally have less resting heart beats. This is because certain types of exercises increase heart size.

SEX
Women usually have more heart beats at rest because their hearts are smaller than men's hearts.



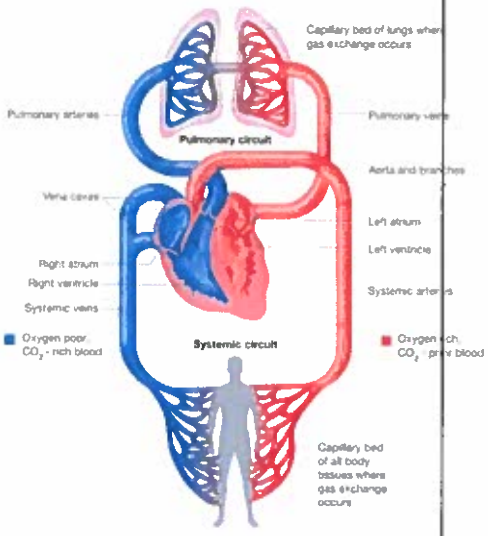
POSITION CHANGE
When we are getting up, more muscles are working, so the hearts needs to pump more.

As we grow up we need a lower heart rate to get healthy benefits. When walking, very old people get many more benefits than a teenager (if they were walking, too). As an example, for a person with a high-level physical condition, the ideal working area evolves like this:



10.- How does our heart work?

The heart is made up of special cardiac muscle which contract regularly, without tiring. It pumps blood first to the lungs, to exchange carbon dioxide for oxygen. Then blood with the new oxygen is returned to the heart to be pumped out around the body.



11.- Systemic circulation and pulmonary circulation:

- **Systemic circulation**: carries oxygenated blood from the heart to the rest of the body. The deoxygenated blood returns to the heart with waste products, which have to be removed from our body.
- **Pulmonary circulation**: carries deoxygenated blood from our heart to our lungs. Here carbon dioxide is exchanged for oxygen. Oxygenated blood is then carried to the heart.

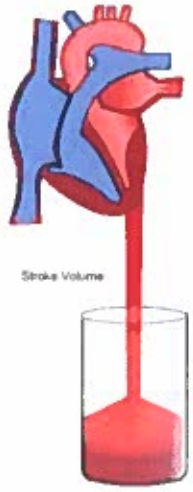
12.- Cardiac output:

As we have seen before, heart rate is the number of times the heart beats per minute. Stroke volume is the amount of blood pumped by the heart in each beat. When we exercise it increases.

Cardiac output is the amount of blood pumped out per minute. It is controlled by both heart rate and stroke volume:

Cardiac output = heart rate x stroke volume

In sport we usually want to increase the amount of blood going to working muscles. We can do this by increasing stroke volume, heart rate or both.

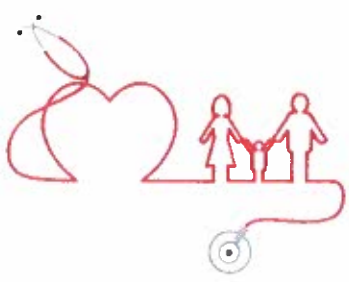


To increase cardiac output

Increase stroke volume
or
Increase heart rate
or
increase both

13.- Heartbeat irregularities:

- Arrhythmia: pulse is not regular; sometimes accelerates and sometimes slows.
- Bradycardia: it usually occurs in healthy hearts. The resting pulsations are less because the heart is bigger. If it is normal to have between 60 and 80 (or even 90) beats per minute, bradycardic people tend to have less than 60.
- Tachycardia: it is when you have more resting heart beats than normal, specifically above 100 beats per minute. It would be advisable to consult a doctor when this happens (mainly in adults).



Heart rate assessment I

Name and surnames:_____ Course and group:___

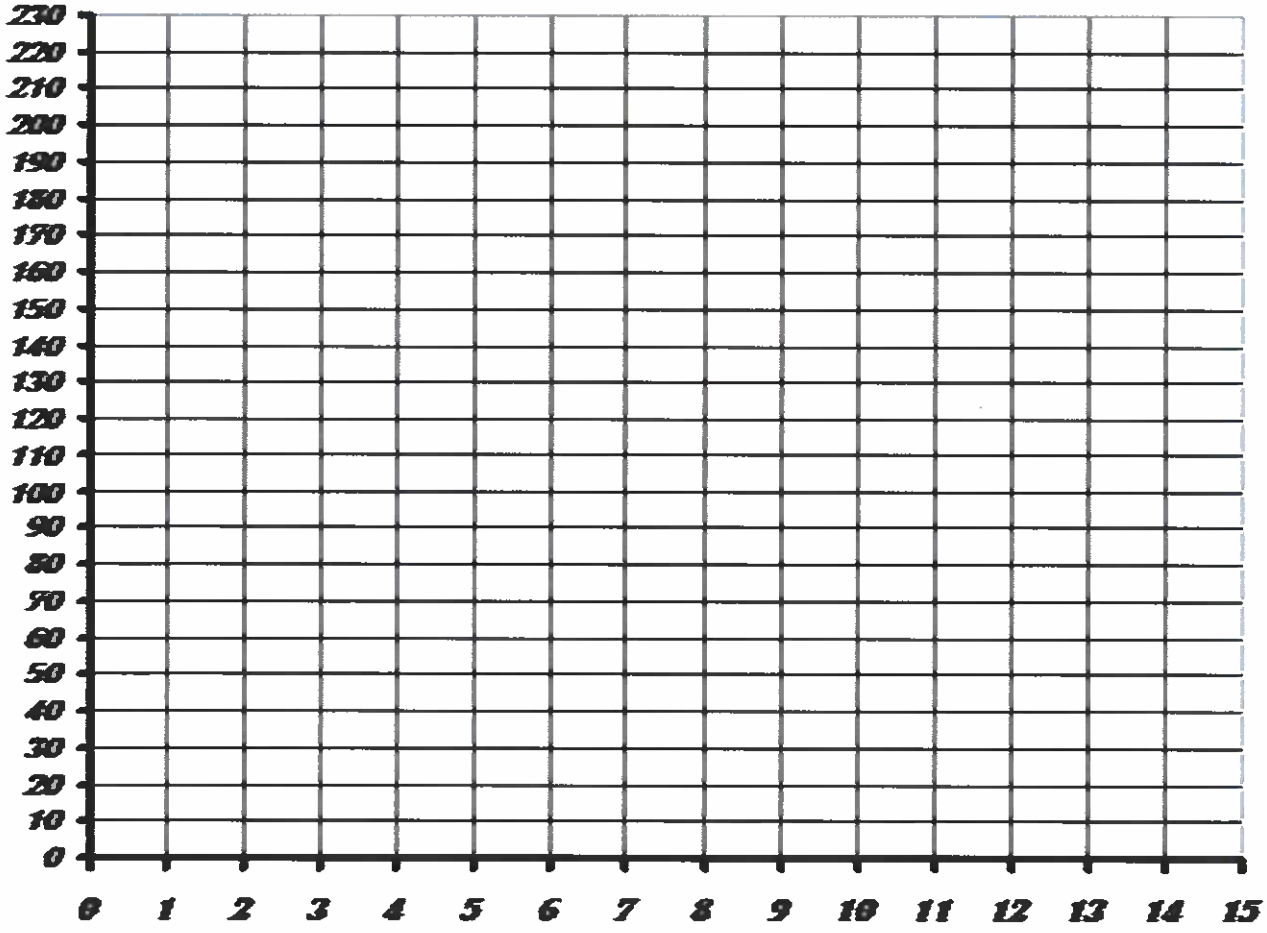
We are going to run: 2 x 8' continuous race / R: 3'

We will run two periods of eight minutes each, resting three minutes between each period. Every two minutes of continuous race we will take our heart rate.

You have to take your pulse in ten seconds (10"), multiply by six (in order to know what our heart rate is after exercising) and write the result down on this table.

	CONTINUOUS RACE				REST			CONTINUOUS RACE				REST		
	2'	4'	6'	8'	1'	2'	3'	2'	4'	6'	8'	1'	2'	3'
bpm in 10"														
bpm in 1´														

Now, take the numbers to the graph, draw the curve and answers the questions:



1. What is heart rate?
2. What is the normal heart rate when resting?
3. What is the maximum heart rate?
4. How can we find out what our maximum heart rate is?
5. What happens to our maximum heart rate throughout our life?
6. Talking about heart rate, what type of exercises should we avoid when we are old people?
7. What is the heartbeat interval in which aerobic stamina is worked?
8. Why do we measure our heart rate after exercising in ten or twelve seconds?
9. Why it is useful to measure our heart rate after exercising?
10. What is cardiac output?
11. You do an exercise in which you have been running for sixteen minutes. Is it a good exercise to improve your cardiovascular system? Why?
12. You do an exercise in which you have been running for sixteen minutes. Is it a good exercise to lose weight? Why?
13. Were you running at the same rhythm all the time? How can you know that?
14. Were you completely recovered after three minutes of resting? How can you know that?
15. While you were running, were you developing your aerobic stamina all the time? How can you know that?
16. Has there been any time in which you have been working anaerobic stamina? If so, when? If the answer is no, how can you know that?
17. Did you do all the exercises properly? How can you know that?
18. Say whether the following sentences are true or false (and, if they are false, explain why).
    - If you have Arrhythmia, your heart is always beating really fast.
    - If you have Bradycardia, your heart beats slower than usual, but this is good.
    - If you have Tachycardia, your heart beats faster than normal and you can do exercises faster than normal.
19. Draw five flexibility exercises for your legs, explaining which muscle is stretched.

Heart rate assessment II

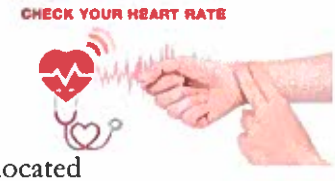
1. Which one of the following sentences is true?
   a) Systemic circulation is more important than pulmonary circulation.
   b) We could live without systemic circulation, but we couldn't live without pulmonary circulation.
   c) In every heart beat our heart is pumping deoxygenated blood to our lungs, and oxygenated blood to the rest of our body.
   d) Carbon dioxide is exchanged for oxygen in our heart.
   e) Waste products are in oxygenated blood.

2. Talking about our cardiovascular system, mark which one of the following sentences is false:
   a) It is responsible for transporting materials throughout the entire body.
   b) It takes oxygen and nutrients to every cell.
   c) It removes carbon dioxide and other waste products from every cell.
   d) It carries hormones from the hormonal glands to different parts of the body.
   e) It maintains temperature and fluid levels.
   f) There is not any false sentence.

3. Say which one of the following sentences is false:
   a) At rest, for some people having less than 60 bpm could be a bad sign.
   b) If I have 61 bpm when resting, it means that my heart rate is normal.
   c) If I have 89 bpm when resting, it means that my heart rate is normal.
   d) Having more than 120 bpm when I am doing physical activity means that I should go to the doctor.
   e) If when resting I had 97 bpm many times, I should go to the doctor.
   f) There is not any false sentence.

4. Say which one of the following sentences is false:
   a) Having a big cardiac output are good news if we are going to do any sport.
   b) We can increase our cardiac output by increasing our heart rate.
   c) We can increase our cardiac output by increasing our stroke volume.
   d) When we are exercise, our heart rate always increases.
   e) In the long run, improving our aerobic stamina increases our stroke volume.
   f) There is not any false sentence.

5. Say which one of the following sentences is false:
   a) As we work harder our muscles need more oxygen, and oxygen is delivered by our blood to every part of our body.
   b) Blood flow in the areas of the body that are not in urgent need of oxygen, for example our digestive system, is reduced.
   c) Blood flow to the areas in greatest need of oxygen, for example our skeletal muscles, is increased.
   d) The oxygen going to the muscles when exercising is more or less the same as the oxygen going to the muscles when resting.
   e) Blood flow can be increased up to thirty times. Therefore, the working muscles can receive up to 90 times the amount of oxygen they receive at rest.



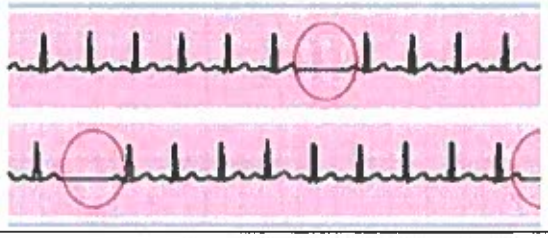
6. Say which one of the following sentences is false:
   a) To improve cardiovascular health we need to do efforts that are located between 60 – 85% maximum heart rate.
   b) If we keep doing efforts at 65% of our maximum heart rate it means that the exercise we do is always exactly the same.
   c) Endurance sportspeople could have 30 beats per minute when they are resting.
   d) We can properly do an exercise at 90% of our maximum heart rate.
   e) We can properly do some activities at 50% of our maximum heart rate.

7. Say which one of the following sentences is false:
   a) We can avoid the decreases of our maximum heart rate by training longer and harder, day after day, week after week.
   b) The older we are, the smaller our maximum heart rate is.
   c) If our maximum heart rate decreases, our capacity to do intense activity also decreases.
   d) The maximum heart rate for some people could be around 130 bpm.
   e) The maximum heart rate for some people could be around 207 bpm.
   f) As we grow up we need a lower heart rate to get healthy benefits. When walking, very old people get many more benefits than a teenager (if they were walking, too).

8. Say which one of the following sentences is false:
   a) When we are getting up, our heart rate gets faster.
   b) Babies have a higger resting heart rate than adults.
   c) People with a low level of physical condition generally have a lower resting heart rate than well trained people.
   d) Women usually have a higher resting heart rate than men.
   e) There is not any false answer.

9. Say which of the following sentence is the right one.
   a) The only points to measure our heart rate are the wrist, chest and carotid.
   b) When we are resting, we measure our heart rate for one minute.
   c) After exercising, it is a good thing to measure our bpm in 10 or 12 seconds, because in one minute we start to recover.
   d) b) and c) are right, but a) is wrong.
   e) a), b) and c) are right.
   f) a) and c) are right.

10. Heart beat irregularities. Which one is the true sentence?
    a) If you have Arrhythmia, your heart is always beating really fast.
    b) If you have Bradycardia, your heart beats slower than usual, but this is good.
    c) If you have Tachycardia, your heart beats faster than normal and you can do exercises faster than normal.
    d) If you have Bradycardia, you should go to the doctor.
    e) If you have Arrhythmia, your heart is healthy.



II Warm up

1.- What is a warm up?

It is a set of moderate and progressive exercises performed before a more intense effort (a physical activity such as working out, a match, a competition…).

2.- Objectives of a warm up:

- To avoid the risk of injury during an effort.
- To prepare us for the following effort, physically, physiologically and psychologically.

3.- Specific warm up:

It is performed after the general warm up, and involves exercises related to the sport that is going to be practiced next.

4.- Structure of the warm up:

Order	Body system	Type of exercise	Benefits	General warm up	Specific warm up
1	Cardiovascular and respiratory systems	Stamina.	Increased heart rate and blood flow. Increase the temperature of the body. Increases respiratory rate. More oxygen is supplied to the muscles.	Gentle aerobic exercises at 60 – 75% of our maximum heart rate. Running, cycling, swimming... The specific exercise depends on the activity we are going to do later.	
2	Locomotor system	Flexibility; (joint mobility and muscle elasticity exercises).	Lubricates the joints with synovial fluid. Take muscles and connective tissues through the full range of movement. It is easier for muscles to contract and stretch without injuries.	Exercises from head to toes or vice versa.	Exercises focused on those parts of the body that are going to work more in the following sport.
3	Nervous system	Strength. (Speed).	Increased intermuscular and intramuscular coordination (which prevents muscle breakage).	Exercises from head to toes or vice versa.	Technical movements of the sport we are going to practice.

5.- How do we perform a warm up?:

- Gentle exercise for the whole body, such as light jogging. This gradually increases our heart rate, our breathing and blood supply to the muscles. It increases the temperature of our muscles and prepares us mentally for the session.
- Exercises to move all parts of your body, from head to toe, and gentle stretching. These kind of exercises help us to prepare muscles, ligaments and joints, (which allows us to have a greater range of movements).
- Practising techniques and skills to be used in the session (prepare the body for specific exercises).
- End with some sprints or short fast races.

- It has to be progressive, from low-intensity to high-intensity exercises.
- It should last at least 10' or 15'.
- Our heart rate should increase to 140 beats per minute (bpm).
- Do not get tired, don't make too many repetitions of each movement and alternate the parts of the body you are moving.

4.- Some benefits of warming up properly:

- Increases heart rate and the blood flow to the working muscle, which results in decreased muscle stiffness, less risk of injury and improved performance.
- Increases muscle temperature (it increases the temperature of the body). A warmed muscle both contracts more forcefully and relaxes more quickly.
- It stretches the muscles, moves the joints and increases the range of movement - so you're ready to work and less likely to injure yourself.
- Increases respiratory rate so that more oxygen gets into your lungs, passes to your blood and reaches the muscles. Muscles need oxygen to work.
- It helps us to concentrate on training.

III Cool down

1.- What is cool down?

There is a group of light exercises that we perform at the end of a training session in order to bring the body gradually back to its resting condition (we should avoid going immediately from hard exercise to resting).

2.- Types of exercises:

All the exercises in cool down must have a low intensity, focusing on aerobic components. Some examples are the following ones:

- Light running, or just walking.
- Stretching.
- Respiratory exercises and relaxation exercises.

3.- Benefits of the cool down:

- It favors the arrival of oxygen to the cells, which helps to eliminate waste products (such as lactic acid) and improves our recovery after the effort.
- Light exercise makes sure that the blood continues to circulate well and prevents it pooling in the skeletal muscles, which may lower blood pressure and cause dizziness.
- It reduces the chances of fainting after an intense session.
- It decreases the chances of muscle stiffness, and helps the muscles to return to their initial muscle tone.
- It promotes a better recovery after the exercise.
- It makes the decrease in heart rate and blood circulation progressive.

Warm up assessment I

Write, on this page, a general warm up (choose your own exercises, don't copy those you have read on previous pages). Explain which ones prepare each system.

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20

Name and surname: _____

Group: _____ Qualification:

Warm up assessment II

Student: _____ Group: _____

ANALYSIS OF WARM UP

- Duration: _____ Do you think it was right? Why?

- Have you activated the main systems of your body? When?
  - Respiratory system:
  - Cardiovascular system:
  - Nervous system:
  - Locomotor system (musculoskeletal system):
    a) Muscles:
    b) Bones (joints):

- Have you increased your body temperature? How do you know that?

- Did you start with general exercises that affected your whole body? Did you ended up doing exercises specific to the sport?

- Did you follow an order when conducting the exercises? Which one? (from head to toes, or vice versa…)

- What parts of your body did you work during warm up? (was there a lack of any?)

- Were you tired at any time? (when?; why?; did you try to do that?; how could you have avoided it?)

- Were you been gradually increasing the intensity of exercises? (give an example of how).

- Did you include joint mobility exercises? (say one that you have done, explaining which joint was worked during it).

- Did you include muscle elasticity exercises? (say one that you have done, explaining which muscle was worked during it).

- Did you completely stop at any point, without doing any exercise?

- Did you done do kind of active resting during the warm up? (which ones?)

- What components of fitness did you work during your warm up? (write an exercise that you have done for each of them). If there, are any you missed? why did you not work them?

    - Strength

    - Stamina

    - Speed

    - Flexibility

- To sum up, how would you rate your warm up? Do you think it was good? Why?

IV Locomotor system

The locomotor system gives humans the ability to move. It is made up of the muscular system and skeletal system.

IV.a Skeletal system

1.- What does our skeleton do?

- Protects our delicate organs.
- Gives support, as our body needs a framework.
- Helps us to move (our muscles use our bones to create movement).
- Produces blood.

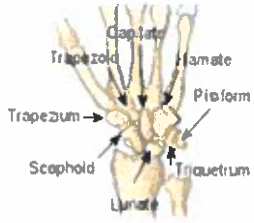
2.- Our skeletal system and sport:

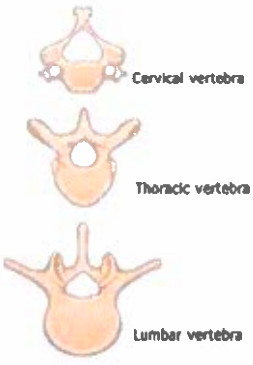
Exercise helps to develop the skeleton in young people, while we are growing up. Exercise can increase the width, the density and the strength of our bones. It has no effect on bone length, except if we don't choose the exercises we are going to do properly: bad exercises can be dangerous. For example, lifting heavy weights during the growing period can provoke an abnormal growth.

When we are adults, doing sport keeps the skeleton strong and healthy.

3.- What are the different bone types?

- Long bones: there are large bones in our legs, arms, fingers and toes. We use them in the main movements of our body.
- Short bones: these are small bones at the joints of our hands and feet. We use them in the fine movements of our body.
- Flat bones: these are bones in our skull, shoulder, girdle, ribs and pelvic girdle. We use them to protect the organs of our body.
- Irregular bones: these are the bones in our face and vertebral column. We use them to give our body protection and shape.





Long bone

Short bone

Flat bone

Irregular bone

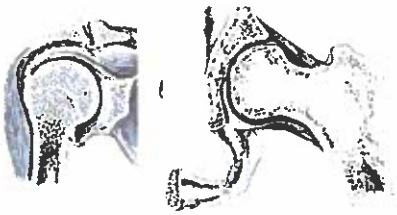
(Femur) (Hand bones) (Scapula) (Vertebrae)

4.- Bones and joints:

The adult human body is made up of about 206 bones, which are tough, light and strong. These bones are joined together by many joints (we have over 100 different joints in our bodies). A joint is a place where two or more bones meet.

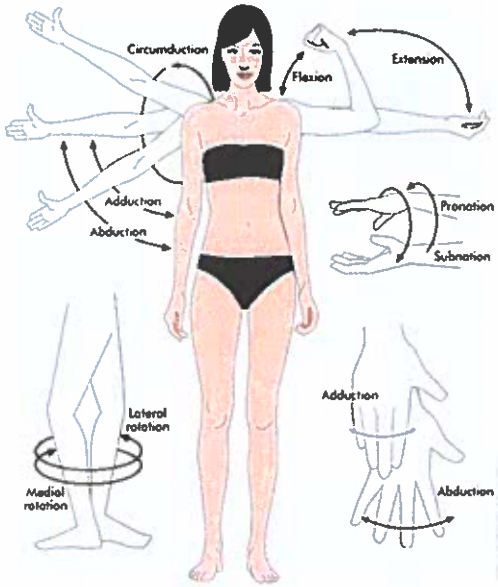
There are three different groups of joints, based on the amount of movement they allow:

- Freely movable joints: their movements are extensive (knee, hip, shoulder…).
- Slightly movable joints: their movements are slight (joints of the vertebral column, joints between the ribs and sternum).
- Immovable joints: no movement is possible between the bones (as it happens in the skull, or in the pelvic girdle).



Freely movable joints		Slightly movable joints	Immovable joints
(Hip)	(Shoulder)	(Vertebral column)	(Skull)

5.- Joint movements:



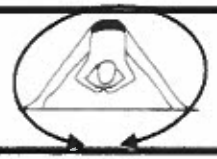
- Flexion: our limbs bend at a join.
- Extension: our limbs straighten at a join.
- Abduction: our limbs are moved away from a line down the middle of the body.
- Adduction: our limbs are moved towards a line down the middle of the body.
- Rotation: this is a circular movement (part of the body turns whilst the rest remains still).
  - Circumduction: the end of a bone moves in a circle (for example swinging your arm in a circle at the shoulder).

6.- Skeleton:

Our bones (formed mostly by calcium) form the skeleton, which is divided into the axial skeleton and the appendicular skeleton:

- Axial skeleton: skull, vertebral column, sternum and ribs.
- Appendicular skeleton: shoulder girdle, arms, hip girdle and legs.

JOINT MOVEMENTS

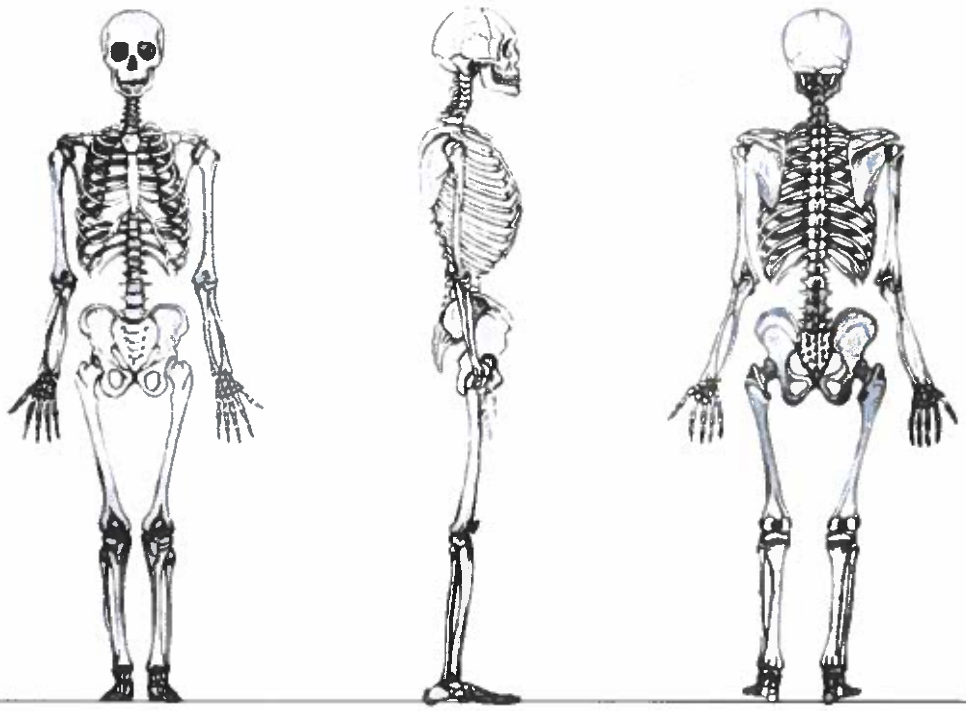
	Flexion	Extension/Hiperext	Abduction	Adduction	Lateral flexion	Rotation	Circumduction
Neck							
Shoulder							
Elbow							
Wrist							
Spinal column							
Hip							
Knee							
Ankle							

Skeletal system assessment I

1.-. Mark, for each one, what kind of bone it is:

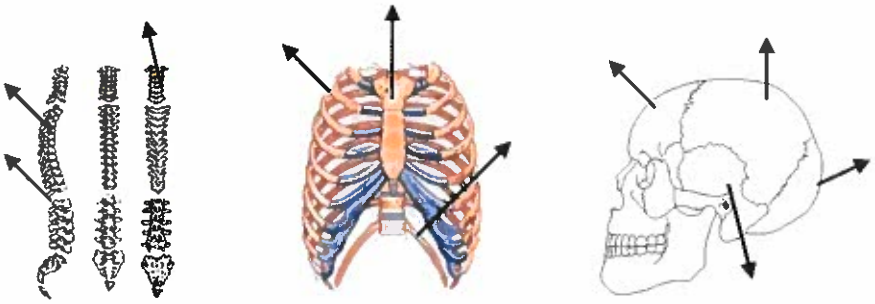
ENGLISH	Long bone	Short bone	Flat bone	Irregular bone
Skull				
Clavicle				
Sternum				
Ribs				
Vertebrae				
Coxal				
Sacrum				
Patella				
Femur				
Tibia				
Fibula				
Tarsals				
Metatarsals				
Phalanges of the foot				
Scapula				
Humerus				
Radius				
Ulna				
Carpals				
Metacarpals				
Phalanges of the hand				

2.- Label bones named in exercise one:



Skeletal system assessment II

1.- Write what these bones are called and what part of our body they protect:



Organs protected: _____ / _____ _____ / _____

2.- Write what bones form each joint, and what kind of joint it is:

- Knee (3 bones)_____
- Hip (coxo-femoral -2 bones-): _____

- Ankle (3 bones): _____
- Shoulder: _____
- Sternocostal articulations: _____

3.- Draw or explain an exercise in which you have to do...

A flexion and extension of the elbow:

A flexion and extension of the ankles:

A flexion and extension of the spine:

4.-What movements involve the following joints? (in the drawing)

1.-Right shoulder:
- Aduccion
- Flexion
- Abduccion

2.-Neck (he's looking to his left)
- Extension
- Rotacion
- Flexion

1.- Right hip:
- Aduccion
- Flexion
- Abduccion

2.- Right elbow:
- Extension
- Rotacion
- Flexion

1.- Neck:
- Rotacion
- Hiperextension
- Flexion

2.- Spine:
- Hiperextension
- Flexion
- Aduccion

IV.b Muscular system

All our movements happen as a result of the shortening (contracting) and lengthening (extending) of muscles (we all have about 650 muscles).

1.- What does our muscular system do?

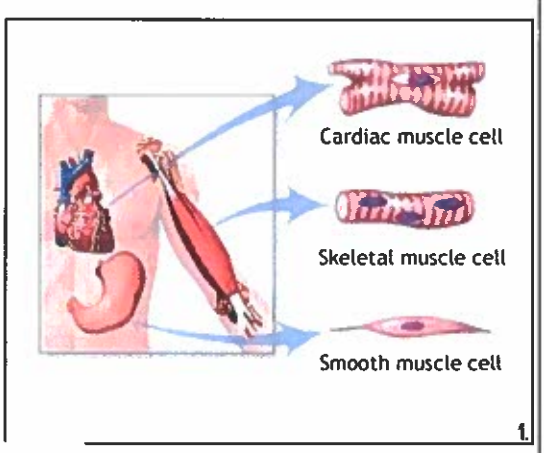
- Enable us to move our body parts.
- Give us our individual shape.
- Protects and keeps our abdominal organs in place.
- Enable us to maintain a good posture.
- Holds in the circulation of the blood.
- Generate body heat when they contract.

2.- Our muscles and sport:

Our muscles increase in size and strength when we follow a regular programme. This is called hypertrophy. When we do not use our muscles regularly they get smaller and weaker. We call this muscle atrophy. This loss of size and strength often happens when we are recovering from an injury. If we are waiting for a particular injury to heal we should try to exercise the rest of the body as much as possible.

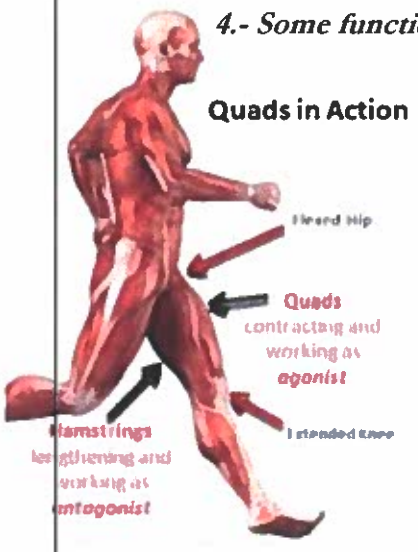
3.- What are the different muscle types?:

- Skeletal muscles: voluntary muscles, work as we instruct them. They are under our control. They make our bodies move. We use them for everyday and sporting activities (walking, running, jumping…).
- Smooth muscles: involuntary muscles, work automatically. They are not under our conscious control. They work our internal organs such as the stomach, gut and bladder.
- Cardiac muscle: heart muscle, is a very special type of involuntary muscle. It is found only in the heart. It contracts regularly, continuously and without tiring.

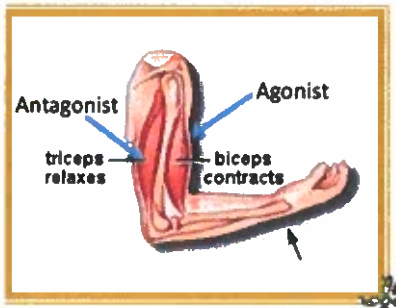


1.

4.- Some functions of muscles:



When we move, different muscles have different functions in every moment. Muscles do not work in isolation, but assembled in groups, and work together to bring about movement. According to its function, there are different types of muscles:

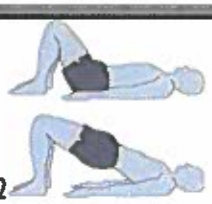


- Agonist: it is the muscle that contracts and moves a joint, the main muscle responsible of the movement.
- Antagonist: it is the muscle that relaxes in opposition to agonist (when it contracts, it provokes the opposite movement). If it did not relax, movement could not take place.

For example, biceps and triceps are antagonistic muscles: if both are contracted at the same time, there is no movement. If one is contracted and doing a movement, then the other is relaxed.

Muscular system assestment I

Name and surname: _____

1 	2 	3 	4 
Agonist: Antagonist:	Agonist: Antagonist:	Agonist: Antagonist:	Agonist: Antagonist:
5 	6 	7 	8 
Agonist: Antagonist:	Agonist: Antagonist:	Agonist: Antagonist:	Agonist:
9 	10 	11 	12 
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17 	18 	19 	20 
Agonist: Antagonist:	Agonist: Antagonist:	Agonist: Antagonist:	Agonist: Antagonist:

Write, for each exercise, which muscle is mainly worked during it (agonist muscle), and what is its antagonistic muscle (only in those exercises in which antagonistic muscle is required).

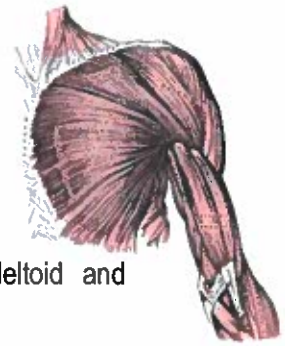
<u>Our major muscles (review)</u>:

Forearm flexors, forearm extensors, biceps, triceps, deltoid, pectorals, abdominals, obliques, trapezius, lumbar, latissimus dorsi, quadriceps, hamstrings, adductor, gastrocnemius, tibialis anterior, gluteals.

Muscular system assestment II

1. **Write whether each of the following sentences are true or false (and, if they are false, explain briefly why):**

- If our muscles contract many times in a few minutes, we feel hot.
- Our posture depends on our muscles.
- Muscles can move some joints of our body, but not all of them.
- Fit people have their muscles developed in the same way.



2. **What do the following muscles have in common?**
   - Biceps, triceps and deltoid:
   - Latissimus dorsi, pectoral and trapezius:
   - Which movement is made by all of these muscles: biceps, deltoid and hamstrings.

3. **What kind of muscle is the gastrocnemius? Write an example when we need to use our gastrocnemius in our daily lives.**

4. **What type of muscle is the gut?**

5. **What type of muscle is the heart?**

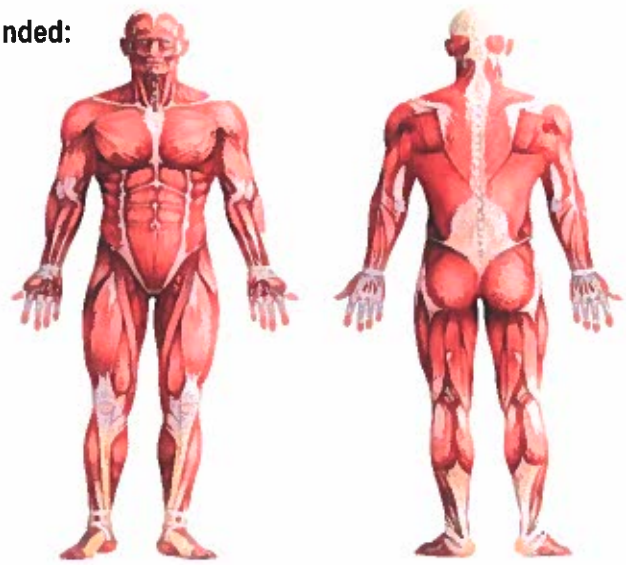
6. **What are the effects of hypertrophy on our muscles? When does it happen?**

7. **What happens to our muscles if we don't do any exercise?**

8. **Draw or explain one exercise in which the antagonistic muscle is the lumbar. Draw or explain one exercise in which the antagonistic is the triceps.**

9. **Mark where these muscles are founded:**

Forearm flexors, forearm extensors, biceps, triceps, deltoid, pectorals, abdominals, obliques, trapezius, lumbar, latissimus dorsi, quadriceps, hamstrings, adductor, gastrocnemius, tibialis anterior, gluteals.



Name and surname:

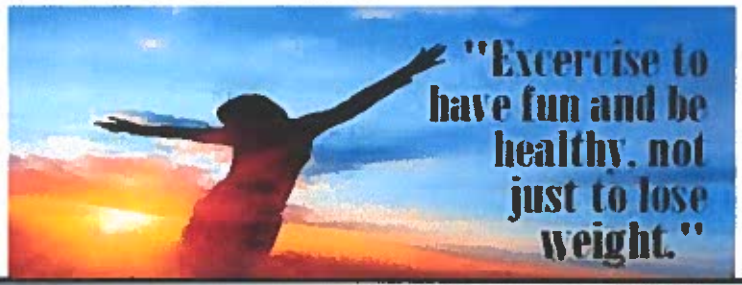
Group:

V Recommended levels of physical activity for health

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

According to the World Health Organization (WHO), the recommended levels of physical activity for health are the following ones (in order to improve cardiorespiratory and muscular fitness, bone health, cardiovascular and metabolic health biomarkers and reduced symptoms of anxiety and depression):

	Recommended (at least)	Additional health benefits	Type of exercises
5 – 17 years old	1 daily hour of moderate to vigorous-intensity physical activity	More than 60 minutes daily	Most daily physical activity should be aerobic. Vigorous-intensity activities should be incorporated, including those that strengthen muscle and bone, at least 3 times per week. Flexibility exercises.
18 – 64 years old	At least 150 minutes of moderate intensity aerobic physical activity throughout the week, or do at least 75 minutes of vigorous intensity aerobic physical activity throughout the week. Aerobic activity should be performed in bouts of at least 10 minutes duration. Muscle strengthening activities should be done involving major muscle groups on 2 or more days a week.	Moderate aerobic physical activity to 300 minutes per week, or 150 minutes of vigorous-intensity aerobic physical activity per week.	Aerobic physical activity. Muscle-strengthening activities should be done involving major muscle groups on 2 or more days a week. Flexibility exercises
65 years old and above			Aerobic physical activity. Flexibility exercises Adults of this age group with poor mobility should perform physical activity to enhance balance and prevent falls on 3 or more days per week. When adults of this age group cannot do the recommended amounts of physical activity due to health conditions, they should be as physically active as their abilities and conditions allow



World Health Organization

Web page of the World Health Organization:
www.who.int (also available in Spanish : www.who.int/es).

VI Physical condition Stamina

1.- Review:

Stamina is the ability to work for relatively long periods of time without becoming tired (it is the ability of the cardiovascular and respiratory systems to supply the exercising muscles with oxygen to maintain the exercise). The subcomponents of stamina (types of stamina) are aerobic and anaerobic. These are their characteristics:

	DURATION	INTENSITY	BEATS	OXYGEN SUPPLY	EXAMPLE
Aerobic	Long (it could last several hours)	Low or medium	120 – 170 (even 180)	Sufficient (good supply)	Marathon
Anaerobic	Short (from a few seconds up to 2–3 minutes)	High	More than 180	Insufficient	100m 400m

2.- How do we improve our stamina?

If we want to take care of our health, we should improve aerobic stamina. How:

- By regularly taking part in any continuous exercise involving the whole body.
- Alternate exercise days and rest days
- We should exercise at first for a minimum of 15 minutes (to improve our cardiovascular and respiratory systems), increasing this time as we become fitter.
- Three days a week is ok to maintain your level, four or more days a week to improve your level.
- Exercises must be progressive, generic and individualized (depending on each one).
- To keep healthy, heart rate should be between 60% and 85% of your maximum heart rate.

3.- Benefits of stamina training:

- Heart size increases: the pulse decreases when we are resting and the heart is more effective.
- Increases lung capacity, which improves respiratory efficiency.
- Increases the number of red blood cells: there is more oxygen present in the blood.
- Body weight is lower by mobilizing fat (over 30 min of aerobic effort).
- It makes the immune system stronger (body's defenses).

4.- How are we going to measure our stamina this year?

By doing the "Multistage fitness test", known as the beep test or Course-Navette: to measure VO_2 max we perform a number of 20 metre shuttle runs in time with beeps from a pre-recorded tape. After each minute the time interval between beeps get shorter so our running speed has to increase. We keep going until we can no longer keep up with the speed set by the beeps. At this point we stop and record the level.

We can check our score with published tables and so we can work out our VO_2 max.

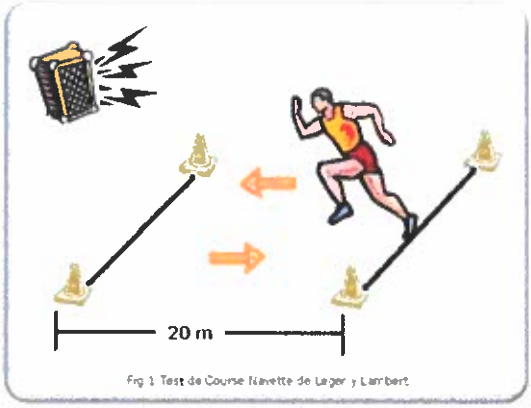


Fig 1 Test de Course Navette de Leger y Lambert

5.- Stamina training systems:

CONTINUOUS SYSTEMS

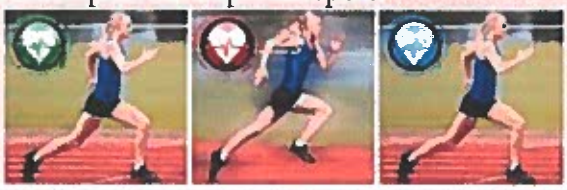
The exercise is performed without pauses. The work can last from 3' to several hours, usually at 60 – 85 % of our MHR (maximum heart rate). Good to:

- Improve our aerobic capacity.
- Improve health-related fitness (mainly cardiorespiratory fitness).
- Reduce amounts of body fat.
- Maintain fitness in the off season.

Examples: running, swimming, cycling, dancing, rowing…

Continuous race: race keeping at the same pace. Useful for beginners, athletes recovering from an injury, children elderly people, athletes at the beginning of a season.

Fartlek: race with pace changes (by time, by distance…); the intensity of the exercise varies. It can be adapted for a specific sport.



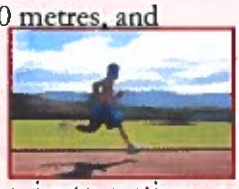
Complete training: continuous running combined with various exercises (other subcomponents of the physical condition are also worked, mainly the endurance strength). Originally they were performed in the nature.

FRACTIONAL SYSTEMS

Training using alternating periods of very hard exercise and rest. These are high-intensity exercises, usually (but not always) at more than 85% of our MHR. This training requires a good aerobic stamina base (we will only work the fractioned systems after having developed the aerobic stamina). Good to:

- Improve our anaerobic capacity (which helps us to improve both anaerobic stamina and displacement speed).
- Improve our aerobic fitness (depending on how we exercise).
- Improve the performance in a specific sport (to do it properly we should know the different distances a player is going to sprint in every sport).

Interval training: the recovery between breaks is not complete, the exercise is performed again when the bpm is 120. We have to consider the number of intervals, intensity and duration both of the work interval and the rest interval. Usually distances are between 60 and 400 metres, and repetitions are between 10 and 20.



Some examples:
3x5'(170 bpm)/2'30" (for aerobic stamina). (Which means: we have to run five minutes three times at 170 beats per minute, resting 2'30" between each series).
12x100m/120bpm (for anaerobic stamina). (Which means: twelve series of 100 metres, resting until our bmp is 120bpm)

Training repetitions: each repetition is performed at 85-100% of the maximum heart rate, with a complete recovery between each exercise (the next repetition of the exercise is done when the beats return to the resting heart rate). This training is good to accustom muscles to keep working with a high oxygen debt.

MIXED SYSTEMS

Both stamina and another subcompo-nent of physical condition are worked.

Inclines: runs uphill (that develops explosive strength -or power-) or downhill (which improves speed).

Circuit: normally consists of about ten different exercises, with a time period to perform each one (for example, 1' per station) and a rest period between each exercise (for example 30"). To avoid fatigue, the stations should be structured in a way that consecutive exercises use different muscle groups. We usually work at 40 – 60% of your repetition max.

Stamina assessment I

1. **Choose a sport in which both aerobic and anaerobic stamina are needed (and write an example of when they are needed).**

2. **Between what % of our maximum heart rate should we work to do healthy exercises?**

3. **Say whether the following sentences are true or false (if they are false, explain why):**
   - If our heart size increases, then our resting heart rate decreases.
   - The more oxygen our body has, the faster we can exercise, and with less fatigue.
   - There is no way to do an anaerobic exercise for 57 minutes.
   - In the Course Navette test the effort is mainly aerobic, but in the end it becomes to be anaerobic.

4. **What is the minimum amount of time we have to do aerobic exercise if we want to lose weight?**

5. **What are each of the following stamina training systems called?:**
   - Alternative periods of very hard exercise and rest are:
   - Continuous running combined with different exercises:
   - Running slowly, and then fast, and then slowly, and then fast, and so on…:
   - When we are also developing our muscle strength:
   - When we are running at the same pace all the time, for a very long time:
   - When we need a complete recovery before starting a new series.
   - Recommended to lose weight:
   - Depending on how we exercise, we can improve both our aerobic stamina or our anaerobic stamina:
   - Good to maintain fitness in the off season:
   - Good to take care of our health:

6. **Answer the following questions, and explain your answers:**
   - If two people are running with the same beats per minute, are they always running at the same speed?
   - If two people are running at the same speed, and one person is in shape but the other isn't, what is the difference between them?
   - If two people are running the same time, it means that both are in the same physical condition?
   - If two people are in really good condition, can one of them be much better than the other in aerobic stamina, but not in anaerobic stamina?

Stamina assessment II

COMPLETE TRAINING

Name(A):_____ Bpm at rest: ___

Name(B):_____ Bpm at rest: ___

Name(C):_____ Bpm at rest: ___

Beats per minute after running

	Lap 1	Lap 2	Lap 3	Lap 4	Lap 5	Lap 6	Lap 7	Lap 8	Lap 9	Lap 10	1´ later	2´ later	3´ later
A													
B													
C													

Stage 1: jumping from hoop to hoop on one leg (two times with each leg)

Stage 2: with arms extended, raise and lower the medicine ball

Stage 3: sit ups (20)

Stage 4: jumping rope (30 jumps)

Stage 5: push ups (10)

Stage 6: working the lumbar muscle (10)

Stage 7: jumps on the stairs (10 jumps)

Stage 8: with weights, flexion and extension of the elbow (15 times)

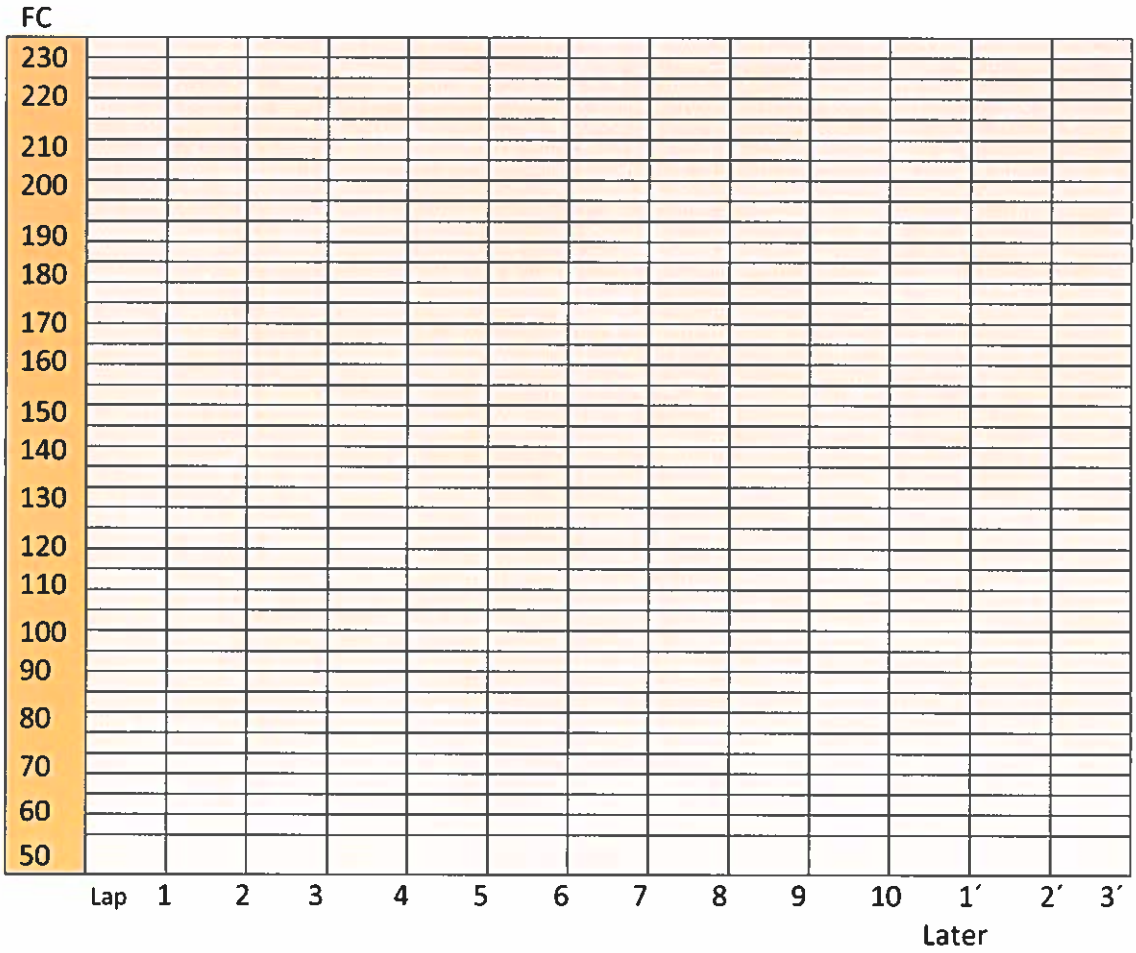
Stage 9: passes with the medicine ball –from the chest- (10 passes)

Stage 10: passes over the head with the basketball (15 passes)

In even laps, perform the following exercises until you reach the first corner:

- Lap 2: give someone a piggyback (carry them)
- Lap 4: jumps with feet together (front - back) on each line
- Lap 6: leapfrog jumps
- Lap 8: sprint to the corner

GRAPHIC (paint each line with a different color)



ANSWER THE FOLLOWING QUESTIONS:

- What are the characteristics of "Complete training"?
- Was the race pace constant? How do you know?
- How should exercise be? (aerobic or anaerobic). What are the characteristics of this type of work?
- Between what % of the maximum heart rate should you have reach during the exercise? Calculate that interval for yourself. According to that, did you do the exercise properly?
- In the long term, what adaptations occur as a result of the practice of these exercises? (mention one for each of the systems involved on the exercise).
- Which of all three is in better physical shape? Why?

1.- What is it?

Strength is the ability to overcome a resistance using our muscle contraction (when we are doing strength exercises our muscles are in tension).

2.- Types of strength:

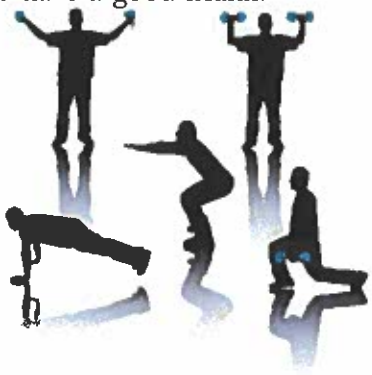
- Maximum strength: it is the ability to overcome a maximum load (is the maximum force that a muscle group can apply). In these kind of exercises muscles are in their highest tension. People such as weightlifters, who work out with heavy weights, need to improve their maximum strength.

It is not recommended to work maximum strength before the age of 18, because loads so big make it difficult for bone growth and increase the risk of injuries.

- Explosive strength (or power strength): it is the ability to overcome loads at maximum speed. We must work this type of strength without any load (using only our own body, as it happens in jumps, push ups, squats or sit ups) or with medium or small loads (such as medicine balls).

Some examples of explosive strength exercises are: javelin throw, long jump, high jump.

- Endurance strength: it is the ability to perform a strength exercise for a long time. This is the kind of strength work we must do if what we want is to have a good health. Some endurance strength exercises are: sit-ups, squats, push-ups…



3.- Benefits:

- To maintain a good posture.
- To increase the muscle tone.
- To improve blood circulation.
- To reduce body fat.
- To strengthen bones.

4.- How do we improve our strength? (to have a good standard of health)

- Working our endurance strength.
- Working with large muscle groups.
- Working mainly with our own body as a load.
- Working all our body parts.

5.- Strength and flexibility:

We should work out both. We all need a combination of flexibility and strength. Flexibility allows us to use our strength through a full range of movement. Strength is needed to stabilize joints and avoid injuries.

6.- Strength training systems:

- Bodyweight: work with your own body weight (sit ups, push ups, squats...).




- Weightlifting: using weights or loads in training. We must work with light weight, avoiding the big loads, and we have to perform the exercises with a speed of fast execution (it is advisable to work between 40-70% of our maximum capacity), being able to perform each exercise for a long time.

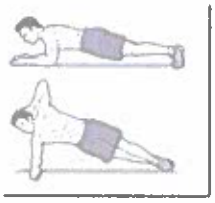
- Throws: using light loads, such as medicinal balls.



- Jumps: to improve strength and power (explosive strength) of legs.



- Isometrics: muscle contraction with no movement.



Did you know...?

When a person is forced to remain immobile for a long period, unused muscles and bones become atrophied, as they no longer perform their functions. The same thing happens with astronauts, their muscles and bones greatly resent the absence of gravity.

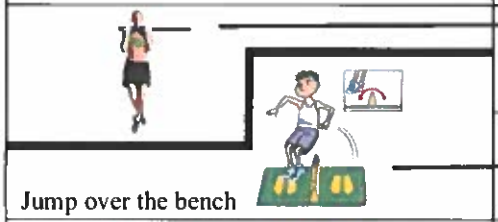
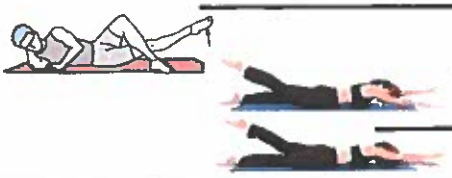
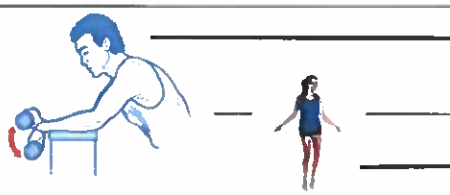
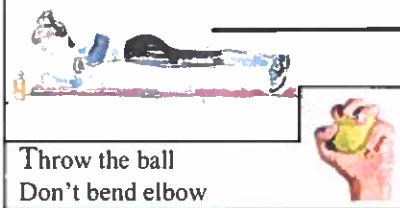
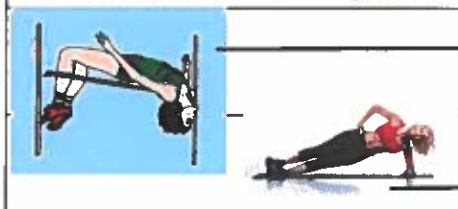
Astronaut muscles lose volume, strength and motor efficiency, particularly those of the legs, back and glutes. This deterioration is more noticeable during the first month of flight, but continues as long as the astronaut is subjected to weightlessness.

As far as bones are concerned, in space a significant loss of calcium occurs, which is eliminated through the urine and feces, making bones less dense and more fragile, similar to what happens in the osteoporosis. Once on Earth, astronauts regain strength from their muscles and bones, but the process may take several months.


Healthy bone Osteoporosis

Strength assesment

Name: _____ Mark:

EXERCISE	SUBCOMPONENT OF STRENGTH	MUSCLE WORKED	TRAINING SYSTEM
 Jump over the bench			
			
			
			
 Throw the ball Don't bend elbow			
			
			
			

1.- What is flexibility?

Flexibility is the ability to perform movements with significant extent. It helps us to reduce the risk of injuries by increasing the range of movement in a joint.

2.- Types of flexibility:

- Joint mobility: it is the ability to move our joints through their full range of movement.
- Elasticity of the tissues (muscles, tendons, ligaments): elasticity is the property that enables a muscle to return to its original shape after it has been stretched.

3.- Benefits:

- To avoid muscle and joint stiffness.
- To compensate bad postures (body attitudes).
- To delay muscle fatigue in an effort and improve recovery after exercise.
- Movements are more fluent and effective.
- To delay problems with joint diseases (osteoarthritis ...).

4.- How do we improve our flexibility?

- We can improve it by stretching our muscles and tendons and by extending our ligaments and supporting tissues all beyond their normal range of movement.
- We should only overload our muscles whilst we feel comfortable.
- The effects of flexibility exercises are very specific. We can, for example, be very flexible in our shoulders and yet show little flexibility in our lower limbs.
- Flexibility exercises, or stretching, should be part of training programmes.
- A person's flexibility does not depend on their shape.

5.- Flexibility and strength

We should work out both. We all need a combination of flexibility and strength. Flexibility allows us to use our strength through a full range of movement. Strength is needed to stabilise joints and avoid injuries.

After performing strength exercises it is necessary to do some flexibility exercises with the muscles that have been training.

6.- Physiological and environmental factors on which flexibility depends

- **Age**: we lose flexibility from birth and throughout our lives. Training stops this loss, and helps to improve flexibility. Flexibility should be developed at all ages.
- **Gender**: Women are generally more flexible than men, especially in the hips.
- **Warm up**: after warming up, a muscle is able to stretch much more than before doing it. The risk of injury decreases.
- **The temperature and time of day**: If it's cold, we will need much more time to warm up before working on our flexibility. In the morning the joints are more ossified, and the muscles are more rigid, making it more difficult to stretch them.




8.- How do we improve our flexibility?

Recommended daily: stretching each muscle 3 – 5 times, and for 20 – 30".

9.- Flexibility training systems

There are four main types of stretching which can be used to improve flexibility:

- Static: we use our own strength. A stretch is held in a challenging but comfortable position for a period of time (usually between 10 to 30 seconds). This is the most common form of stretching found in general fitness and is considered safe and effective for improving overall flexibility. However, many experts consider static stretching much less beneficial than dynamic stretching for improving range of motion for functional movement, including sports and activities for daily living.

- Dynamic: we move rhythmically and under control to extend the stretch. The stretch is performed by moving through a challenging but comfortable range of motion repeatedly. It helps us to improving a functional range of motion and mobility in sports and activities for daily living. Dynamic stretching has to be smooth and controlled.

- Active: we move rhythmically and under control to stretch the muscle or move the joints (we use our own strength). We have to relax the muscle we are going to stretch.

- Passive: a partner (or another type of outside assistance) applies external force over our body. This assistance could be your body weight, a strap, leverage, gravity, another person, or a stretching device. With passive stretching, you relax the muscle you're trying to stretch and rely on the external force to hold you in place. You don't usually have to work very hard to do a passive stretch, but there is always the risk that the external force will be stronger than you are flexible, which could cause injury.

Hamstrings (examples)




Active and static	Passive and static	Active and dynamic	Passive and dynamic

Flexibility assessment I

Name and surname: _____ *Group:*

Flexibility assessment II

Name: _____ Group: _____

Explain or draw an exercise for each frame in blank.

MUSCLE ELASTICITY EXERCISES	QUADRICEPS	HAMSTRINGS	GASTROC-NEMIUS	ADUCTORS	GLUTEALS
ACTIVE AND STATIC					
PASSIVE AND STATIC					
ACTIVE AND DYNAMIC					
PASSIVE AND DYNAMIC					

JOINT MOBILITY EXERCISES	SHOULDERS	WRIST	NECK
ACTIVE AND DYNAMIC			
	HIP	ANKLE	SPINAL COLUMN

IX Physical condition *Speed*

Speed is the ability to perform an action as soon as possible. (It is the ability to move all or part of the body as quickly as possible). Speed does not just mean running, but it is present in many sporting movements.

1.- Types of speed:

Reaction speed: is the ability to respond to a stimulus in the shortest possible time. This stimulus can be tactile, visual or auditory.

Movement speed: is the ability to perform a skill or carry out a movement (like a smash in badminton, a baseball strike or a hit in fencing).

Displacement speed: is the ability to go from one place to another in the shortest possible time (we can improve this kind of speed by running, swimming, skiing…).

2.- How do we improve our speed?

We cannot increase the percentage of fast-fibres in our bodies, but we can improve our speed in sport in other ways, such as:

- Increasing strength through a programme of weight training and plyometrics. Stronger muscles will give more power and therefore more speed.
- Improving reaction time.
- Improving our agility: our ability to change speed and direction when moving quickly.
- Improving the ability to deal with lactic acid.
- Improving skill in our sport. For example, a more efficient swimming stroke will create less water resistance and lower our swim time.

3.- Speed training:

- To reduce the risk of injuries, speed training should take place after the warm up, and the rest of the session should be low intensity.
- We must be rested to train speed: during the week, speed training should be after a resting period (or low intensity training).
- Ensuring that the training distance is appropriate to the specific sport or activity.
- Exercises are performed at the maximum intensity.
- Rest between series is necessary: rest periods require about 1-3 minutes in between sets.

Speed assessment

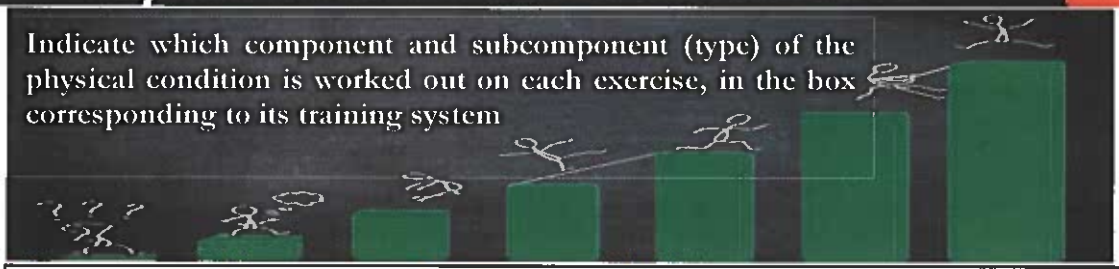
Inside each box, you have to write or explain…

An exercise in which you have to use only your reaction speed	An exercise in which you have to use only your movement speed
An exercise in which you have to use only your displacement speed	An exercise in which you have to use both your reaction speed and your displacement speed.
An exercise in which you have to use both your reaction speed and your movement speed.	An exercise in which you have to use both your movement speed and your displacement speed.
A sport in which you need all types of speed (and explain when)	A sport in which speed is not necessary at all (and explain why)

	STAMINA		STRENGTH		
What is it?					
Subcomponents	Aerobic	Anaerobic	Maximum	Explosive	Endurance
What is it?					
Name 2 sports in which it is really important					
Name 2 situations in your daily life in which it is needed					
	FLEXIBILITY		SPEED		
What is it?					
Subcomponents	Muscle elasticity	Join mobility	Reaction	Movement	Displacement
What is it?					
Name 2 sports in which it is really important					
Name 2 situations in your daily life in which it is needed					

Physical condition review assessment

Physical condition review assessment II



Indicate which component and subcomponent (type) of the physical condition is worked out on each exercise, in the box corresponding to its training system

Exercises

1. Run 5' at 150 bpm.
2. Circumduction of different joints.
3. 10 squats.
4. 10 sit – ups.
5. Abdominals: planck.
6. 10 push – ups.
7. To carry piggy back.
8. Race and exercises.
9. Play the game known as "calientamanos".
10. Running slowly, and then fast, and then slowly, and so on...
11. Stretch your muscles by your own.
12. Open your legs; try to touch the floor with your hands going up and down.
13. Jumping 30 times on your toes.
14. Pass the ball to your partner (50 times).
15. Throw the ball as far as possible.
16. Jumping test (one jump as far as possible).
17. Run as fast as possible 30 meters.
18. Run as fast as possible 40 meters (10 times; start to run when your heart rate is fewer than 130 bpm).
19. Stretched your muscles being helped by a partner.
20. Walk for four hours.

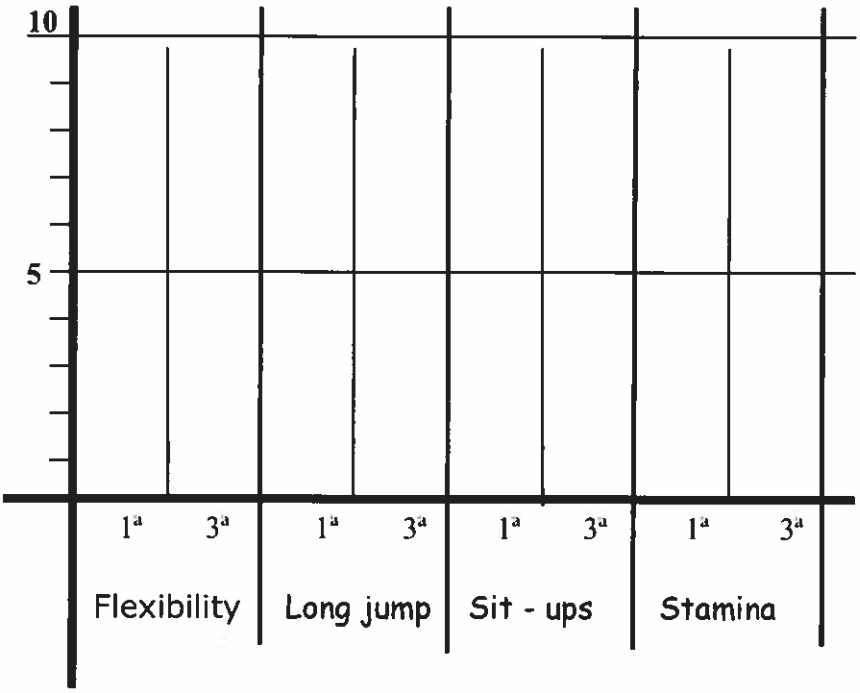
COMPONENT	SUBCOMPONENT	TRAINING SYSTEMS		Number of the exercise
STAMINA	Aerobic	Continuous systems	Continuous race	
			Fartlek	
			Complete training	
	Anaerobic	Fractional systems	Interval training	
			Training repetitions	
STRENGTH	Maximum strength	Bodyweight		
		Overweight		
		Jumps		
		Throws		
		Isometrics		
	Explosive strength	Bodyweight		
		Overweight		
		Jumps		
		Throws		
		Isometrics		
	Endurance strength	Bodyweight		
		Overweight		
		Jumps		
		Throws		
		Isometrics		
SPEED	Reaction speed			
	Movement speed			
	Displacement speed			
FLEXI-BILITY	Joint mobility	Active		
		Passive		
		Static		
		Dynamic		
	Muscle elasticity	Active		
		Passive		
		Static		
		Dynamic		

X Physical condition tests

NAME AND SURNAME:

COURSE AND GROUP:

MARK



1st TERM

Sit-ups		Long jump		Flexibility		Stamina	
result	mark	result	mark	result	mark	result	mark

3rd TERM

Sit-ups		Long jump		Flexibility		Stamina	
result	mark	result	mark	result	mark	result	mark

XI First aid

1.- Review:

It is the assistance given to any person suffering a sudden illness or injury, with care provided to preserve life, prevent the condition from worsening, and/or promote recovery.

2.- Steps in an emergency:

- To protect
- To alert
- To help

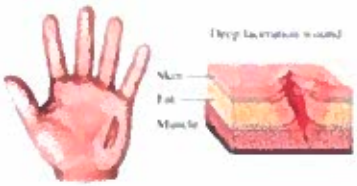
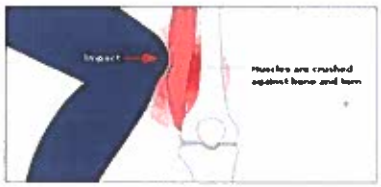
We have to protect both the victim and ourselves by making sure that a similar accident doesn't happen again.

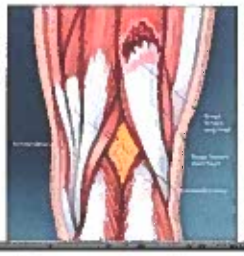
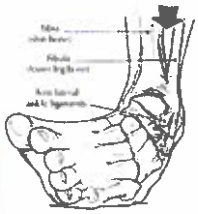
To give the person the attention they need. We need to know what the person needs, and how to do it properly. Otherwise, we need to look for help.

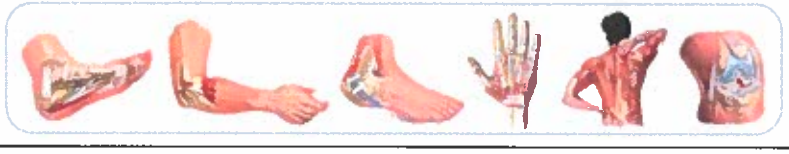
Call 1 – 1 – 2 (in all European Union countries; in United Kingdom, call 999). We have to give the following information:

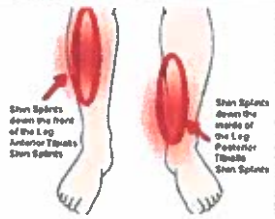
- Our name and our telephone number.
- What has happened.
- Where it happened.
- What state the injured person is in:
  - Are they conscious or unconscious?
  - Are they breathing?
  - Is the heart beating?
  - What is their body temperature?
  - Besides, we must report any unusual things we can see (maybe they are bleeding, or have a broken bone...).

SOME INJURIES

Injury	Symptoms	Action
Wound An injury to living tissue caused by a cut, blow, or other impact, typically one in which the skin is cut or broken.	• Pain • Hemorrhage • Possible infection/inflammation • Skin irritation 	• Clean the wound with soap and water • Disinfect with an antiseptic (peroxide or mercromina) • Cover the wound with gauze 
Contusion (bruise) Because of a hit, a region of injured tissue or skin in which blood capillaries have been ruptured; a bruise.	• Severe pain • Inflammation and bruises 	• Remove clothes if pressing on the injury • Applying ice (no more than 20' three or four times daily the first three days) 

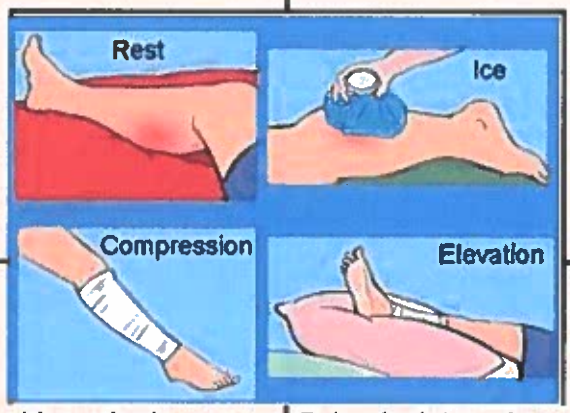
Cramp A painful, involuntary contraction of a muscle typically caused by fatigue or strain	• The muscle contracts involuntarily, causing severe pain in the affected area 	• Suspend physical activity you are doing • Massage the muscle until it relaxes • After relaxing the muscle, do some static stretching 
Strain **(or pulled muscle – colloquially-)** Injury in which muscle fibers tear as a result of overstretching.	• Violent feeling on a muscle. • Pain in the area, which increases when contracting the muscle. • Inability to move it • Inflammation of the area 	• Rest • Apply ice for no more than 20 minutes (don't apply ice directly to the skin) • Use a compressive bandage 
Sprain The result of the twisting or loosening of a joint.	• Pain in the ligaments of the affected area • Inability to move the joint • Inflamma-tion  	• Applying ice (15 – 20') • Apply an anti-inflammatory • Rest • Compressive bandage 
Sunstroke / heatstroke	• High body temperature (between 39 and 41°) • Dizziness, confusion, disorientation • Excessive sweating • Redness and dry skin • Accelerated pulse • Headache • Unconsciousness	• Put the person in a cool, shaded place. • Have the person lie down and elevate their feet • Apply cold water to the joints. • Upon reaching 38 degrees, stop applying cold • Keep an eye on the tempe-rature and, if it goes up, apply cold again 
• **Tendonitis** Inflammation of the tendon caused by repetitive use or contusion	• Severe pain when using the tendon	• Apply ice after activity • Apply an anti-inflammatory • Rest • Compression bandage • Contrast baths (hot-cold every 5 ') when the area is not used



Periostitis Inflammation of the periosteum (membrane that covers the bone).	• Pain in the area of the tibia, both touch and movement. • Inability to run or jump from pain	• Apply ice in batches of no more than 20 ' • Massages with ice for 3-5 days • Prevent it, running on soft surfaces 
Luxation The bone is out of its place.	• Severe pain that will increase when you move the area • Deformity in the dislocated area • Inability to move • Swelling and inflammation	• Immobilization of the joint • The zone needs absolute rest. • Transfer to a medical facility to reattach the joint in place. 
Bone fracture The bone is broken.	• Extremity or articulation out of place or deformed • Limited movement or inability to move the limb • Swelling and bleeding • Intense pain • Numbness and tingling • Breaking of the skin with the possibility of the bone coming out 	• Do not move the victim unless the bone is immobilized. Keep calm. • Position then horizontally to prevent fainting • Call 112 • Inspect other possible injuries and if there is blood circulation above and below the break (pressure method and color change) • Cover the fracture with clean and dry cloth • If the bleeding continues and is excessive, apply pressure to the area. • Do not do turnstiles except in case of possible death • Ice can be applied to decrease pain

RICE: this is a treatment that we must follow for most soft-tissue injuries. "R" for rest, "I" for Ice, "C" for Compression and "E" for Elevation.

REST Reduces internal bleeding, and prevents further injury. Rest for the first two or three days. Then reintroduce movement gradually (we should try to avoid losing muscle strength).	ICE Reduces blood flow, pain and swelling. Put an ice pack on the injury for 10 – 15' every two – three hours. Don't apply ice directly to your skin.
COMPRESSION Reduces internal bleeding and swelling. Compress the injury with an elastic bandage, without stopping blood flow.	ELEVATION Reduces internal bleeding and swelling. Raise the injury above the level of the heart and keep it supported.

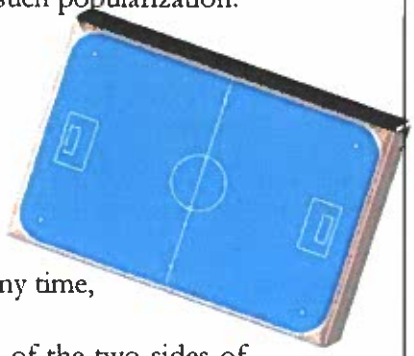


XII Floorball

1.- A bit of history:

Almost all sports that use a stick are known as hockey, differing from each other mainly by the surface on which they are played (on grass, ice or roller hockey -Track duration). Floorball originated in the US in the 50s, but its development and popularization occurred in Sweden in the late 60s, mainly through schools. The impossibility of being outdoors in Sweden in the winter months, combined with the materials that both the stick and the balls were made from (plastic, cheaper and less dangerous than those required for other types of hockey), favored such popularization.

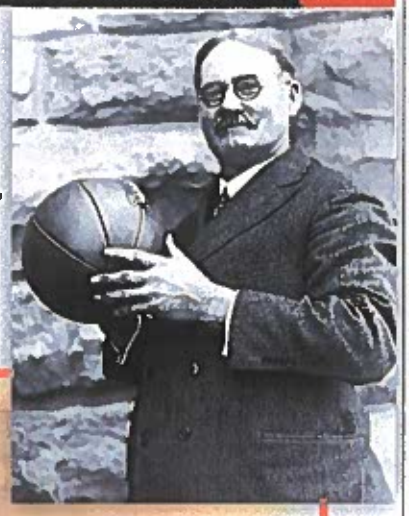
2.- Basic floorball rules:



- Playing court: the court should be 20 m x 40 m, with rounded corners. The goal area measuring 4 m x 5 m (no player, except the goalkeeper, can stay inside it).
- Duration of the game: three intervals of twenty minutes each.
- Number of players: six per team. Substitutions can be made at any time, without any limit.
- Use of stick: it is used to hit the ball; you can hit it with either of the two sides of the stick. The stick cannot be raised above knee height (to avoid possible accidents).
- What is allowed: using the stick to play the ball; stopping the ball with the foot; taking the ball from the opponent; running with the ball, passing the ball or shooting the ball to the goal.
- What is forbidden: passing the ball with the foot; using any part of the body to hit the ball (except the foot, to stop it); staying inside the small goal area; pushing opponents; hitting the opponent, or hitting their stick; moving the goal during play; throwing the stick; arguing with the referee.
- Goal: a goal is scored when the ball crosses the goal line. No goal is acceptable if an attacking player has moved the goal from its position and the ball enters it. But if the one who has moved the goal is a defending player, and the ball enters and crosses the goal line, the goal is accepted.
- Foul: happens when any player does something which is forbidden. The ball is played again from the place where the foul took place, and you are not allowed to shoot the ball directly to the goal. The other players have to stay three meters away from the ball.
- Penalty: when a foul prevents the scoring of a goal, the player who takes the penalty begins with the ball from the center point of the field. The goalkeeper is on the goal line at the start of a penalty. (The rest of the players must be outside the pitch). If the goalkeeper commits any offense during the penalty shot, the attacker will be given a new one. The player taking the penalty shot may touch the ball an unlimited number of times, but the ball must be moving forward throughout the penalty. When the goalkeeper touches the ball, the player who shot it can't touch it again.

XIII Basketball

1.- A bit of History:



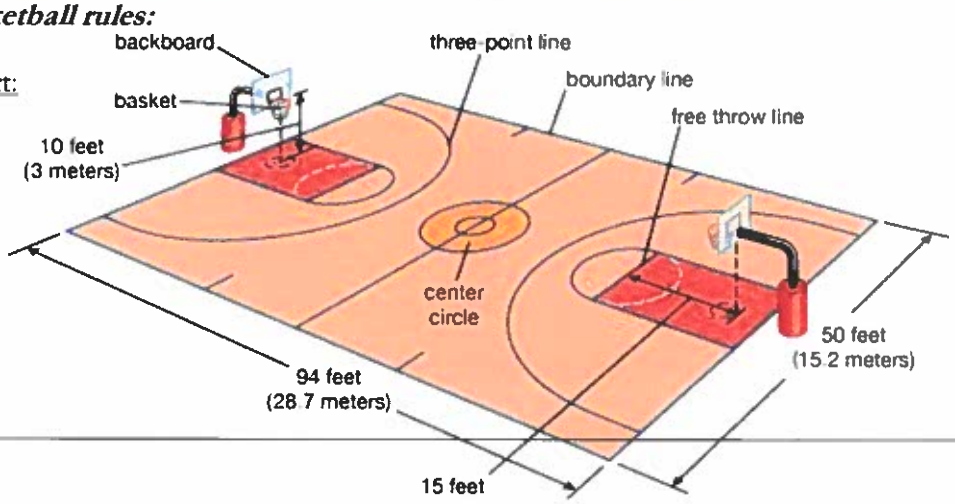
Basketball, or something similar, was invented in 1891 by a Canadian physical education teacher who worked at the YMCA (an association sprawled over all USA). His name is James Naismith. A rainy day, when they could not go outside because of the bad weather, he decided to hang two baskets of peaches at the ends of the gym and form two teams that should pass the ball trying to get it into the basket (which, by the way, had to be picked up every time someone got a basket, which was called "goal").

ORIGINAL RULES (1892)

1. The ball may be thrown in any direction with one or both hands.
2. The ball may be batted in any direction with one or both hands.
3. A player cannot run with the ball. The player must throw it from the spot on which he catches it, allowance to be made for a man who catches the ball when running at a good speed if he tries to stop.
4. The ball must be held in or between the hands; the arms or body must not be used for holding it.
5. No shouldering, holding, striking, pushing, or tripping in any way of an opponent. The first infringement of this rule by any person shall count as a foul; the second shall disqualify him until the next basket is made or, if there was evident intent to injure the person, for the whole of the game. No substitution shall be allowed.
6. A foul is striking at the ball with the fist, violation of rules three and four and such described in rule five.
7. If either side makes three consecutive fouls, a goal is counted for the opponents (consecutive means without the opponents in the mean time making a foul).
8. A goal shall be made when the ball is thrown or batted from the grounds into the basket and stays there (without falling), providing those defending the goal do not touch or disturb the goal. If the ball rests on the edges, and the opponent moves the basket, it shall count as a goal.
9. When the ball goes out of bounds, it shall be thrown into the field of play and played by the first person touching it. In case of dispute the umpire shall throw it straight into the field. The thrower-in is allowed five seconds. If he holds it longer, it shall go to the opponent. If any side persists in delaying the game, the umpire shall call a foul on that side.
10. The umpire shall be the judge of the men and shall note the fouls and notify the referee when three consecutive fouls have been made. He shall have power to disqualify people according to Rule 5.
11. The referee shall be judge of the ball and shall decide when the ball is in play, in bounds, to which side it belongs, and shall keep the time. He shall decide when a goal has been made and keep account of the baskets, with any other duties that are usually performed by a scorekeeper.
12. The time shall be two fifteen-minute halves, with five minutes rest between.
13. The side making the most points in that time is declared the winner.

2.- Basic basketball rules:

Basketball court:



TIME: the match is divided into four periods of ten minutes each (12' in the NBA). If the match ends with both teams tied, an extra five minutes is played. When a team has the ball their players have 24 " to throw in the basket: if they do not do it they lose possession of the ball.

TECHNIQUE: ideal model to imitate; Effective gestures proper to the sport (different types of bouncing, throw, pass, pivot ...).

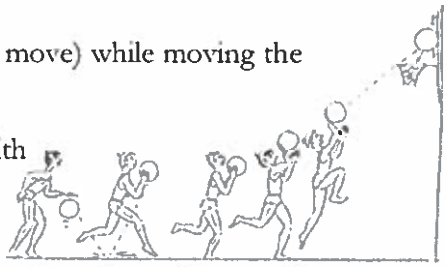
REGULATION: rules that set the necessary requirements for the development of the game.

Objective: to get as many points as possible (they are obtained every time a basket is made, which happens when the ball enters the hoop defended by the rival team). You get one point when you get a basket by throwing from the personal line after a foul; Two points when the ball is thrown, from within the line of 6'75 m; And three points when the shot is made from beyond the line located 6'75 m from the basket (6'60 on the side).

Players: five per team (there is no limit to the number of changes a team can do). If a player commits five fouls, then they are eliminated (six fouls in the NBA).

Ways to play the ball: a player can move with the ball by dribbling, bouncing the ball continuously with one hand. It is the only way to take steps with the ball: it can only be played with one hand (never with both hands at the same time, nor with the height of the bounce higher than that of the player's shoulder). If a player receives the ball, bounces it and picks it up, then he can't bounce it again: in possession of the ball, without throwing it to basket or dribbling, a player can only pass, pivot or do a lay-up.

To pivot: the act of keeping one foot in place (it is not allowed to move) while moving the other (when the player has the ball).



Lay-up: it happens when after bouncing the ball a player takes it with both hands, takes two steps and jumps, laying the ball up near the basket, and using one hand to throw it into the basket

Behavior with the opposite: a player can block the opposite player with their trunk/ backside, without moving their feet of the ground; It is permitted to remove the ball with your hand without touching the other player, who can't be pushed, or grabbed, beaten, etc.

Jump ball: at the start of the game, there is a jump between two players that are placed inside the center circle. The referee throws the ball into the air and they try to reach it to pass it on to their teammates.

Half court violation: when a team advances with the ball to the opposing field, it is no longer allowed to be passed it back to the court itself.

Out of bounds: it happens when the ball bounces out of the court (never when it is still on the air, even though it could be outside of the court limits), when there is a fault (and there are no free throws) or when the player in possession of the ball puts their foot on any line that limits the court.

Spanish Basketball Federation: www.feb.es
Basketball Federation of Madrid: www.fbm.es

Basketball assessment

Say, for each sentence, whether they are true or false (whatever your answer is, explain why):

a) We can use our left hand or our right hand to bounce the ball.

b) In Europe, a basketball match usually lasts 40 minutes.

c) If the ball is outside of the limits of the court, then it is always out of bounds.

d) After five minutes from the start of the match, the result could be 1 – 0.

e) There is no situation in which if a player is in their own court their teammates can pass that player the ball.

f) A basketball match could last one hour.

g) When they have the ball, a player is allowed to do three steps without bouncing it.

h) There is no situation in which catching the ball with both hands at the same time is allowed.

i) According to the rules, a team could do more than forty changes in the same match.

j) It is possible to do a lay-up from a teams own court.

k) At the beginning of the match a coin must be thrown to decide which team has possession of the ball.

l) One player can be bouncing the ball for 27 seconds in a row.

m) Depending on what part of the court a player throws the ball from, to the basket, that player can get either two or three points.

n) Without losing the ball, a player can bounce the ball and catch it again as many times as they wish.

o) Basketball has been played in three different centuries.

p) A one-point throw is only possible after a fault.

q) In some situations, according to the rules, if the ball is inside the court in possession of a player, the referee could decide that it is out, and give possession of the ball to the other team.

r) A player can run and, at the same time, block an opposing player with their trunk.

s) In the NBA, when a player commits five fouls they are always eliminated.

t) If a player bounces the ball higher than their own shoulders, then it is foul.

XIV Badminton

1.- A bit of History:

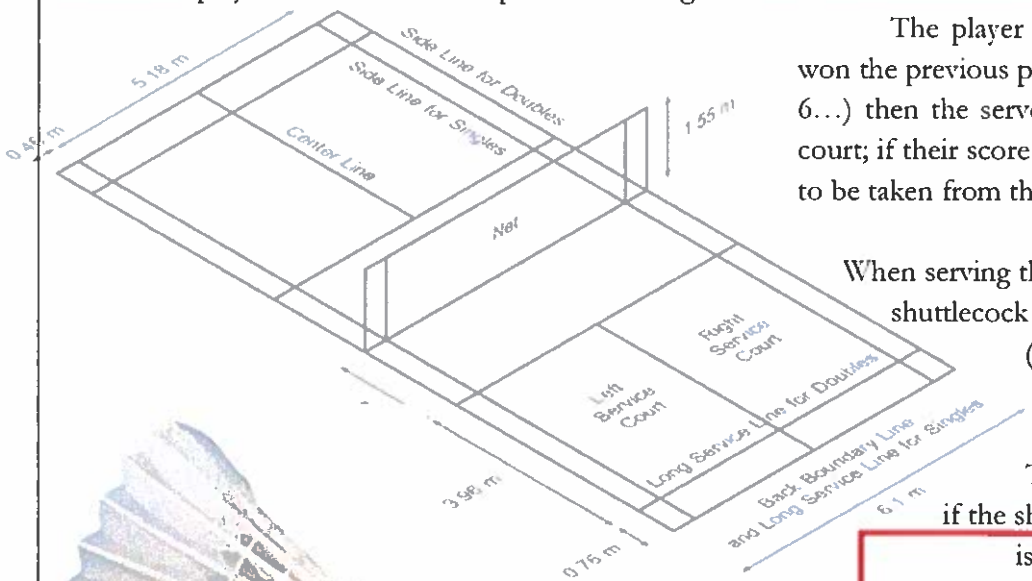
The origin of Badminton took place in the 18th century in India, where it was known as "Poona". This game came to Europe around 1873 thanks to some British officers who learned this sport there. The name of Badminton comes from the place where it was most practiced in those years, the "Badminton House", a country house located in Gloucestershire, England. Other important dates are as follows:

- 1877: first written rules of Badminton.
- 1893: creation of the Badminton Association of England.
- 1934: creation of the International Badminton Federation (IBF).
- 1949: first international competition.
- 1972: demonstration sport in the Munich Olympic Games.
- 1977: first official World Championship.
- 1986: creation of the Spanish Badminton Federation.
- 1992: official sport in the Barcelona Olympic Games.

2.- Basic Badminton rules:

The aim of Badminton is to pass the shuttlecock over the net by hitting it with the racket, so that it lands inside the opponent's half of the court. You can also gain a point if the opponent fails in this objective.

The match ends when a player wins two games. To win a game, a player has to score 21 points. Nevertheless, if the score is 20 – 20 the match has to continue until one player has two more points than the other. If this doesn't happen until 29 – 29, then the player who wins the 30th point wins the game.

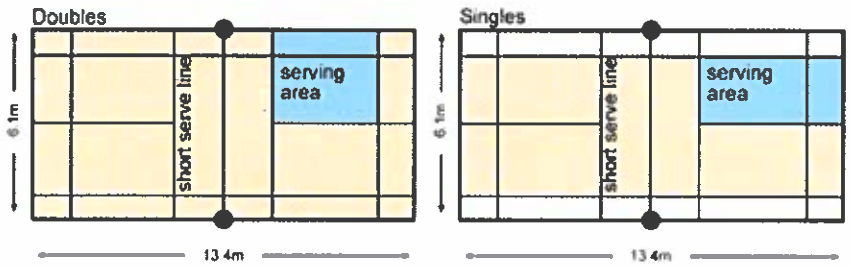


The player who serves is the player who won the previous point; if their score is even (2, 4, 6…) then the serve is from the right side of the court; if their score is odd (1, 3, 5…) the serve has to be taken from the left side of the court.

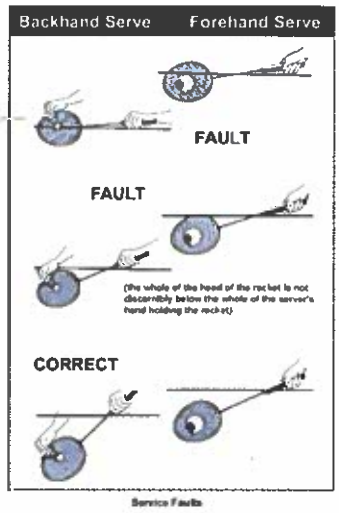
When serving there is no double fault, and the shuttlecock is not allowed to touch the net (if that happens, it is a point for the opposite player).

The line is part of the court so, if the shuttlecock falls onto the line, it is not out, it is inside the court).

There are official competitions for singles and doubles (both for men and women), and mixed doubles (there is a man and a woman on each team). You can see in this drawing how the court is set up in a singles and doubles match; notice the different serving areas.



In the serve, the hand which holds the racket has to be above the head of the racket

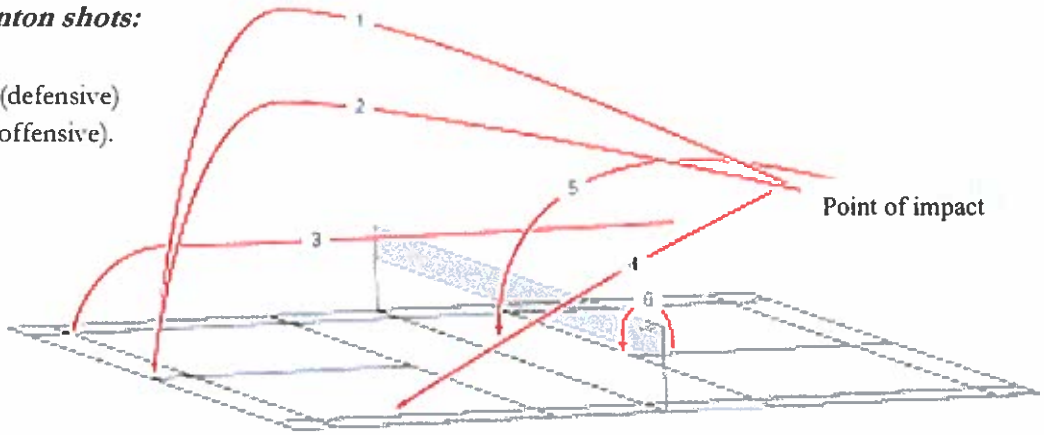


3.- How to hold the badminton racket:

Fingers surrounding the handle of the racket (little finger surrounds the end, and thumb is between the index finger and middle finger). The V between thumb and index finger is on the vertex of the racket

4.- Main Badminton shots:

1. High clear (defensive)
2. Fast clear (offensive).
3. Drive
4. Smash
5. Drop
6. Net drop



Spanish Badminton Federation

Web site: www.badminton.es

Avda de Filipinas 26. 28003. Madrid. Telephone number: 91 542 83 84.

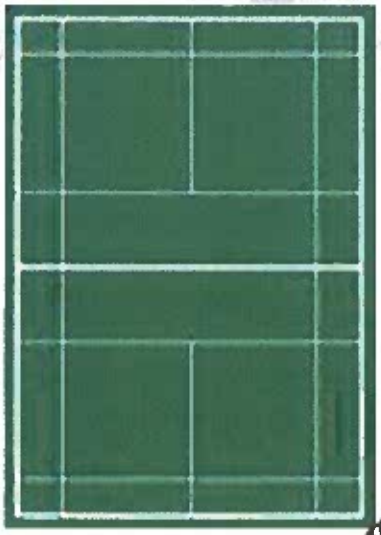
Madrid Badminton Federation

Web site: www.fembad.com

Avda de Salas de los Infantes 1. 28034. Madrid. Telephone number: 91 358 22 20

Badminton assessment

1. Say whether the following sentences are true or false (if they are false, explain why; if they are true, explain how):
   - All the games finish when a player gets 21 points.
   - A player can do a smash at any time of the game.
   - There could be, between both players, up to 59 points in one single game.
   - It would be weird, but it is possible that one player does not touch the shuttlecock in one game.
   - If the shuttlecock touches the net during the serve, and then falls into the opposite court, then the serve must be repeated.
   - If the shuttlecock falls in the side line of one side of the court, then it is a point for the player of the opposite side.
   - The serving area always has the same measurements.
   - The time limit for a badminton match is two hours.
2. Why do we say that badminton is an asymmetrical sport? What type of exercises should we do to avoid it?
3. Write what subcomponents of physical condition we need in a badminton match (and write an example for each one):
4. Draw how the serving area would be for you if you were going to serve in a singles match when the score is 2 -1.
5. Draw how the serving area would be for you if you were going to serve in a doubles match (when the score is 1 -2).
6. What happens when a player hits a shuttlecock which was going to be clearly out of the court?



Name and surname: Course and group:

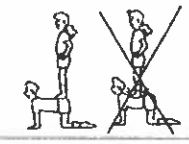
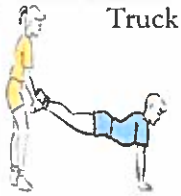
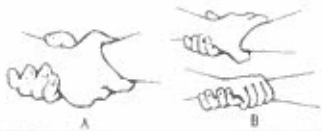
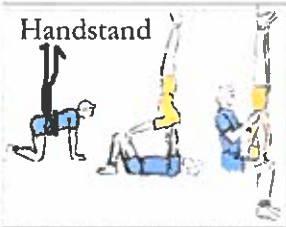
XV Acrogym

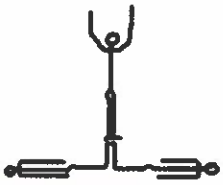
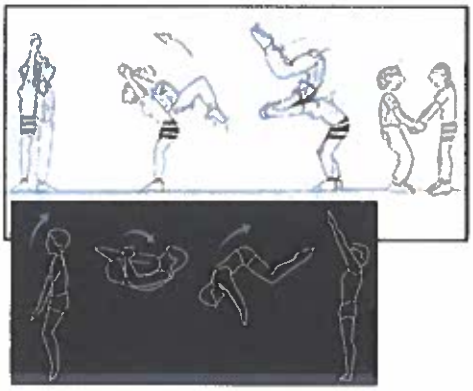
1.- Acrogym:

It is a combination of gymnastics and dancing. Working in groups, while dancing, they have to do several different acrogym figures. (Sadly, we don't have enough space or mats to create a choreography).

2.- Roles:

- Base: they support the weight of the agile.
- Agile: they climb on top of the base, maintaining a static posture (usually).
- Assistant: they help both the base and the agile to do the figure or pyramid; also, they prevent falls.
- Observer: observes the work of the others, provides tips for improving the pyramid.

BASIC POSITION	DESCRIPTION	WHERE TO SUPPORT
On all fours 	Hands and knees on the floor; hands under shoulders, and knees under hips in order to provide a firm basis. The back has to be straight. Don't bend your elbows.	We can only put our weight over our partner's hips or shoulders. To avoid injuries we should never put weight on their back. 
Truck 	Keep your abs and gluteal contracted. Shoulders should be above hands. The body has to be completely straight. Don't bend your elbows.	Over our partner's shoulders. If we are going to raise someone in a truck, never bend your back: keep it straight and bend your knees, take the truck by their feet and stand up.
Support on thighs 	Both grab each other wrists. The "agile" has their body straight, the same as their arms, and feet over partner's thighs. The "base" can bend their elbows if needed (they are in charge of controlling the balance of the figure), and should keep their knees bended about 90°.	Feet of the "agile" close to the knees of the "base". Important: take care of hand grip. 
Support on hips  a b	The "base" always has their knees bent, thighs almost parallel to the floor, and back straight. a) Both bases hold one agile's leg by pressing against the leg with their shoulder and their forearm. b) The "agile" has their knees bent and resting on the back of the "base", and the rest of their body straight.	Feet on hips, never on thighs. In the final position, the hands of the "agile" are not on the body of the "base".
Handstand 	The body of the agile must be straight, with both abdominals and gluteal contracted (the whole body, from ankles to shoulders, is in line). Do not bend your knees.	Depending on the exercise, shoulders must be firmly supported over thighs or hands of their partner. The assistant in these exercises is very important.

Support on tibias  Support on feet  Support on feet 	In these exercises the bases must remain absolutely static, with the feet or legs intertwined and together with each other. The base must put their feet on their partner's hips, and straight their own knees. The agile must have their all body straighten (both abdominal and gluteal are contracted).	The support should be made in the center of the surface offered by the bases. We must have the help of another person, to avoid falls.
Somersaults backwars (in the air). Here are only some examples.  	There are many different ways to do the somersaults backwards: from on all fours, from a plinth, from the thighs of two people, from the arms of a bunch of people… We must be very careful and use helpers: there must be an assistant on each side of the agile. Each assistant grasps the shirt and pants of the agile with one hand; with the other hand, they place it near the neck (between the neck and the shoulder) with the thumb in front (towards the breast of the agile) and the rest of the fingers behind (towards the back of the agile).	
Pyramids	Combination of the positions. A group of people, usually placed on at least two levels, in order to create a common figure. A pyramid is considered successful when we can maintain a stable position (safe and sound) for at least three seconds.	

3.- Prevention and safety:

- Everybody must know perfectly how an exercise must be done before putting it into practice.
- Stop exercising and start the exercise again whenever the support is not correct, or there is a risk of falling. Maintain constant communication among all members of the group.
- Do not perform a more complicated exercise until the previous step is mastered.
- Changing from one position to another slowly, always controlling the movement. Prevent falls.
- Do not perform an exercise without assistance when it is needed.
- Do not perform any exercise if you are injured or in pain.
- Remove shoes every time a person is going to get on top of another.
- Avoid exercise if there is a possibility of collision with objects or people (place mats away from walls, banks or other peer groups).
- Take care where we put our weight on others.

Acrogym assessment

Each student must perform, at least:

(The rating of each figure is indicated in parentheses).

(If supporting points are removed, always safely, your final score increases).

- One position on all fours
- One truck
- One support on thighs
- One support on hips → (the role in these exercises could be the base or the agile)
- One of the following exercises:
  - Support on feet.
  - Support on tibia.
  - Support on shoulders.
- Handstand / Balance inverted over the body of another person.
- One somersault
- One pyramids.

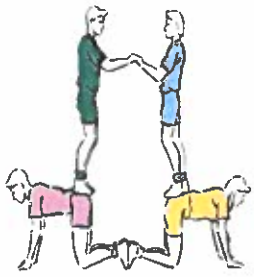
ALL IN FOURS


(5)


(5,25)

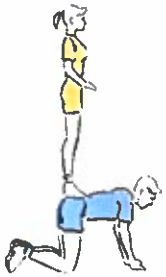

(5,5)


(6,5)


(6,5)


(6,5)


(6,75)

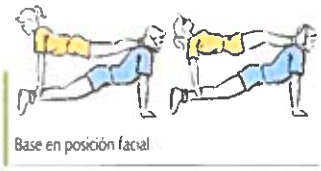

(7)


Pyramid

Three people: 5
Six people (3-2-1): 7,5
Nine people (4-3-2): 10

TRUCKS


(5)



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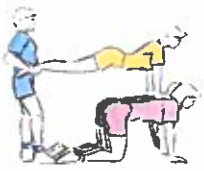

(5,5)


(6)

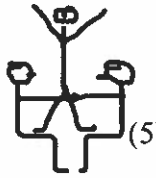

(7)


(8)


(9,5)


(10)


(10) (Square of trucks on the floor)

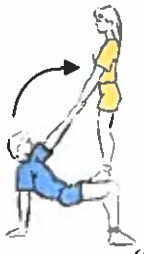


(5)

Four people (two agiles and two bases) (6)
Six people (three agiles and three bases) (7)

SUPPORT ON THIGHS

(5)



(9)

(8)*

(10)**

(9)

From

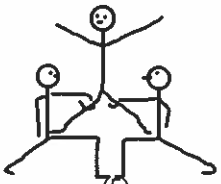
to

(10)

* Starting face to face, both standing

** Instead of removing a foot, a hand can be released: 9

SUPPORT ON HIPS



(5)

(6)

(6)

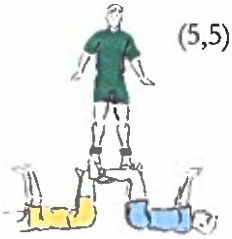
(7,5)

(10)

Support on hips: pyramid of four people (5,75)
Pyramid of eight people (8)

Pyramid of six people (6,5)
Pyramid of ten people (or more) (10)

SUPPORT ON TIBIAS, SUPPORT ON FEET, SUPPORT ON SHOULDERS



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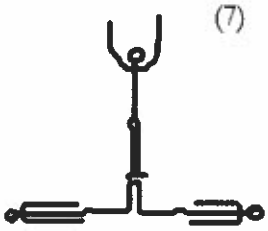


(7)

(10)

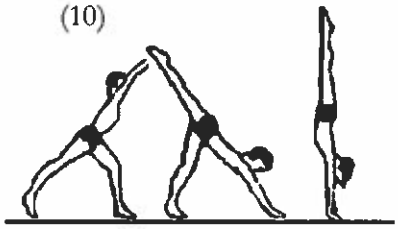
(Holding hands)

(10)

HANDSTAND / BALANCE INVERTED OVER THE BODY OF ANOTHER PERSON

Handstand from crouch position (5)

(10)



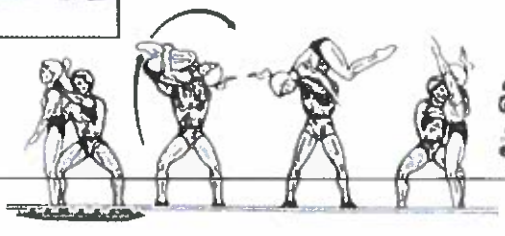
(7)

(10)

Sitting down on partner's knees (7)
Without sitting on the partner (10)

SOMERSAULTS

Somersault on the ground (6)
Somersault from plinth (9)
Somersault from all in fours (7)
Somersault from a group of people (10)
Somersault from fellow's back / from tights (8)



Dances as transmitters of stories or messages within each culture. Rhythm and coordination.

TSADIK KATAMAR **(The wise and the mad) (Israel)**

Round dance: boy - girl - etc. One hand gives, the other hand receives.

1st part: the wise (goes through life with walking straight, knowing where he steps and where he goes). This movement is repeated two times

4 steps walking to the right, starting with the right leg.

4 steps on the spor: start with right leg. Change the weight of the body from one leg to another.

The sage's movement is repeated 2 times.

2nd part: the madman (goes through life stumbling, turning, not knowing where they are going).

4 steps. 1: step to the right with the right leg. 2: left leg crosses ahead. 3: one step to the right with the right leg. 4: left leg crosses from behind.

Movement to the right, turning (nobody stays in place), turn in 4 steps (hands are not grabbed): right - left (at this moment everybody are with their back to the center of the circle) - right - left (looking at the center of the circle, the left leg is just crossed in front of the right leg).

4 steps: undo that "knot" and give 4 steps to the left starting with the right leg. Hands are grabbed again.

4 steps: similar to the final movement of the wise, swing (pass the weight of the body from one leg to another) on the site: 4 supports starting with the right leg.

SOULAM YA´AKOV (the Ladder of Jacob) (Israel)

Jacob is one of the patriarchs of Israel, he is mentioned in Genesis. In one of his dreams, Jacob contemplated a giant staircase that went from Earth to Heaven, through which angels went up and down. Different interpretations: permanent contact between God and the Earth or reminder of the existence of both heaven and hell.

1st movement (making a square). Three steps to the right: right - left (fast) - right (left foot rests in the air). 2 steps forward (left - right; right foot rests in the air). Three steps to the left: left-right-left (right foot rests in the air). Two steps back: right - left. This whole movement is repeated twice.

2nd movement. Right side step (with the right leg), touch the ground with the tip of the left foot (body weight in right leg).

Three steps: step back with the left foot, step back with the right foot, step forwards with left foot.

3 steps to the left (starting with the right leg, and exaggeratedly bending the right knee in steps 1 and 3).

Three steps to the right (exaggeratedly bending the left knee in step): left leg, right leg, and legs together. This whole movement is repeated twice.

TSIGANTSITSA (The little gypsy) (Slovenia)

Dance of animation. Two rows, one of boys, one of girls, face to face. Hands on shoulders (right front, left behind). 3 parts.

1) 4 moves: three steps forward (starting with right foot) and jump, three steps backwards (starting with left foot) and jump with feet together, yelling at the other group (hey!!!). That is done twice.

2) Two jumps on the spot on one leg; this is done 4 times: right leg (left leg in the air), left, right and left (right leg in the air, ready for the following steps).

3) Eight side steps to the right: right, left crosses front, right, left crosses from behind, right, left crosses front, right, left joins right leg. And return: left, right ahead, left, right behind, left, right ahead, left, and join.

MANA´AVOU (Israel)

Round dance, with chorus and four parts.

Chorus: Menusi looks for his brother, transformed into mountain.
In 4 times: right foot supports the tip forwards, right, backwards, and to the starting position. Same with left foot. In 4 strokes: step backwards with right foot; same with left foot; one step forward with right foot and backward swing (feet on site: change of weight from one to another); Swing forward and feet together. In the swing, the hands rise to the level of the shoulders. Same with left foot.

Parts: the search for the brother, by the four elements:

1) **Earth**: 2 steps to the left, flexing the right knee, 2 to the right, flexing the left knee; this is repeated 4 times.

2) **Water**: balance left / right (change of weight, feet on site); Step to the left with the right foot; 2 steps shoes right (starting with left foot).

3) **Air**: body swing (right - left) and step to the right (middle main) crossing the left ahead of the right.

4) **Fire**: same as the air but turning: swing right - left and full turn to the right in 4 steps. 4 laps, and then raising arms, right foot forward with heel on the ground and tip of the foot facing up.

PECHÉ IMPARDONABLE (Greece)

Two movements. Boy's steps and girl's steps. Hands on hips.

Steps of boys: three steps forward, almost jumping, supporting only the tip of the foot and starting with the left leg; then other three steps, same, but starting with the right leg. Everybody finish with their left leg in the air; four steps backwards, left-right-left and when supporting the fourth step the right foot, a quarter turn to the right.

Step of girls: same, but when going backwards in each step half turn to the left (round and a half).

LA NOVIA (Mexico)

Wedding dance. Couples.

Boys inside the circle. The boy offers his hands, palms up, at the level of the shoulders.	Girls on the outside of the circle, with their hands on the boy's hands.
From this position boys are going to do five lateral steps to the left, always looking into the eyes of their partner. 1. Big step to the left. 2. Step with right foot (which touches left foot). 3. Big step to the left. 4. Big step with right leg, and half turn (turning the back to their partner). 5.Finish the turn, step with left leg and return to the starting position, except for the hands: there are two claps at the level of the left shoulder facing their partner.	From this position boys are going to do five lateral steps to the right, always looking into the eyes of their partner. 1. Big step to the right. 2. Step with left foot (which touches right foot). 3. Big step to the right. 4. Big step with left leg, and half turn (turning the back to the couple). 5.Finish the turn, step with right leg and return to the starting position, except for the hands: there are two claps at the level of the right shoulder facing their partner.
Repeat all to the opposite side (starting to the right)	Repeat all to the opposite side (starting to the left).
8 steps: right hand on left shoulder blade of the girl, left arm almost extended and hand in contact with the girl's hand. A big step to the left, a short step to the right; This is repeated 7 times. On the eighth time, a long step, the girl passes forward turning under the arms of both, and in the short step the new partner is received.	8 steps: right arm almost extended, holding left hand of the boy. left hand on right shoulder blade of the boy. A big step to the right, a short step to the left. This is repeated 7 times. On the eighth time, in the long step the girl passes forward turning under the arms of both, and finds a new partner.

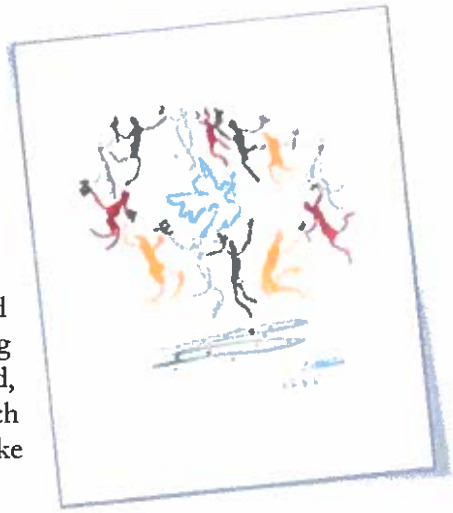
CLAP DANCE (Germany)

First part: boy - girl face to face (all forming a circle). Touch thighs with both hands, clap, hit right or left hand or both with my partner. Sequence: thighs - clap - right. Thighs - clap - left. Thighs - clap - right - left. Thighs - clap - both hands.

Second part: hands entwined with the partner, arms extended on both sides at shoulder height, movement to the center of the circle with 8 polka steps and 8 more steps going back. Raise the knee of the leg closest to the direction of movement.

Third part: Polka with the partner, both circling (in 8 times, and on the eighth the girl turns around, changes partner, and starts again).

THE TENNESSEE BIG WALK (United States)



3 parts. Boy and girl face to face, they give the right hand to each other. From this position, starting with the right leg three steps to the right and kick the air with left leg; three steps to the left and kick the air with right leg; three steps to the right and kick the air with left leg.

Without letting go, they begin to turn: three steps and the right knee rises; Three steps and extend laterally left leg and arm, three steps and raise right knee. They are released, each one takes three steps forward (turning their back to each other), clap thighs, clap hands and with their right hand take the right hand of the new partner.

A web site to visit:
http://danzasdelmundo.weebly.com/

XVII Orienteering

1.- ***Review:***

Orienteering is knowing where we are in relation to the four cardinal points: north, south, east and west.

We can use natural elements (sun, north star, snowdrifts, moss, felled tree rings, migrations of birds, nesting trees, moon…) and artificial elements (map, compass).

What is a map? A map is a scale representation of reality, which means that the distances on a map and distances in the real world are proportional.

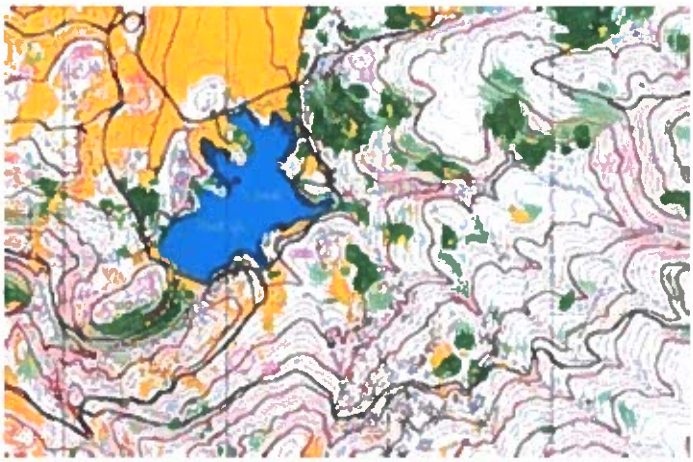
If a map has a scale of 1: 25000, it means that a unit of measurement on the map is equal to 25,000 of that same unit of measurement in reality. In this case, 1 cm on the map is equal to 25000 centimeters in reality.

Scale 1:25000 → 1 cm in the map = 25000 cm in reality = 2500 decimeters in reality = 250 meters in reality.
Scale 1:100000 → 1 cm in the map = 100000 cm in reality = 10000 decimeters in reality = 1000 meters in reality.

A map uses symbols, signs and drawings to express objects and elements that are in real world. If we don't know what these symbols mean, we need to look at the Map Key.

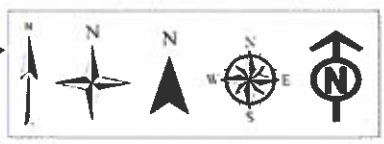
Map Key: explains the symbols, signs and drawings that we are going to find on the map. To help us, as a rule, every color has a different meaning:

- Green: vegetation
- Brown: mountains.
- Yellow: open ground with good visibility.
- Blue: water.
- Black: constructions made by humans (such as roads, buildings, train tracks…).
- Red: overprinted symbols of an orienteering courses (starting point, control points, control numbers, finishing point).



(The darker the colors are on the map, the higher the mountain, or the deeper the water, or the thicker the vegetation).

How to use a map? To use a map we need to know both where the real north is, and where the north is on our map. This one (the north on our map) is usually on the top of the page but, in case it isn't there, there is always a sign which shows us where it is. Here are some of these signs: →



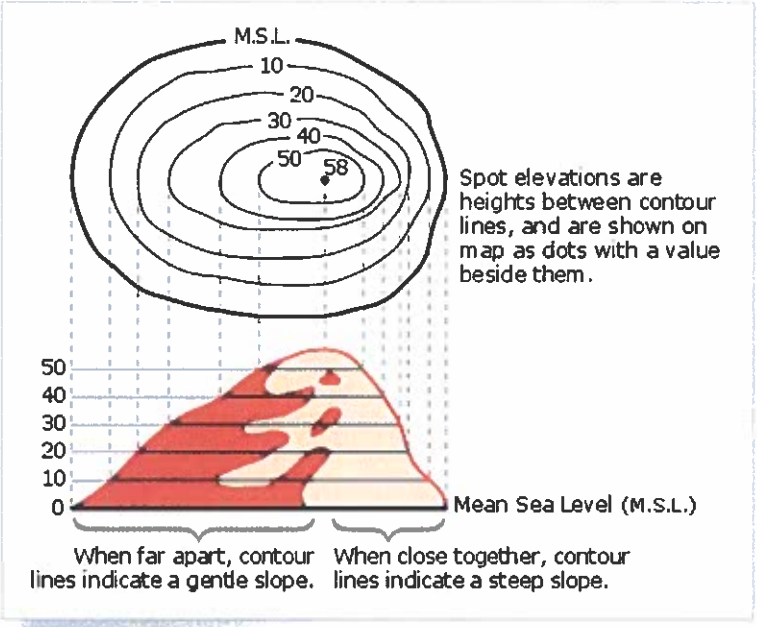
Therefore, when we know where both north in the real world and the north on the map are, what we have to do then is put both of them together (we should point the north on our map towards the real north).

2.- Contour lines:

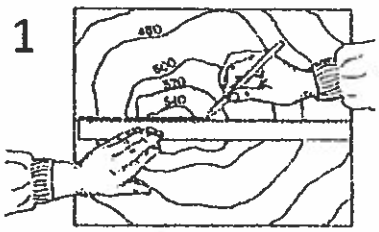
These are lines connecting points of the same height above sea level (altitude). The actual vertical distance between each line is usually 5 meters in the plans and maps of scale 1 / 15,000 (the most used in orientation) and 10 meters in the scale of 1 / 25,000.

The further away the contour lines are from each other, the flatter the terrain; the more together, the greater the slope.

To get an idea about how the terrain is (flat, downhill...) it is good to project the curves. It is made as follows:

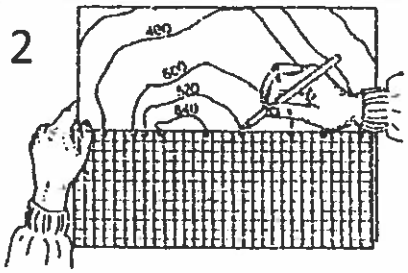


1



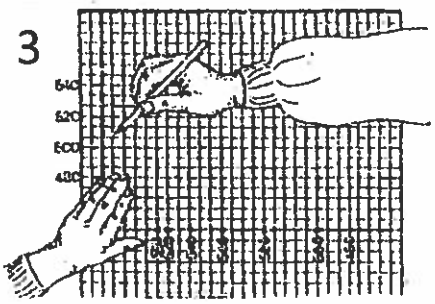
We draw a line on the map to find a particular profile

2



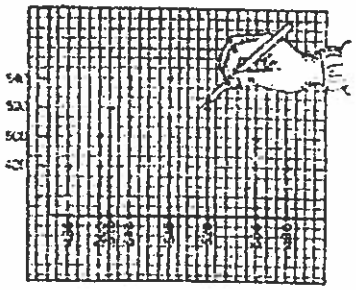
On graph paper, the same line is drawn, and the intersections of the line with the contour lines are marked. The height of each contour line is noted

3



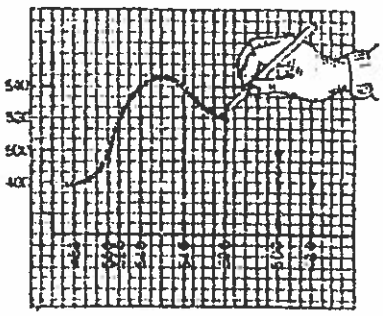
In a graph, in the perpendicular line the heights of the contour lines are recorded

4



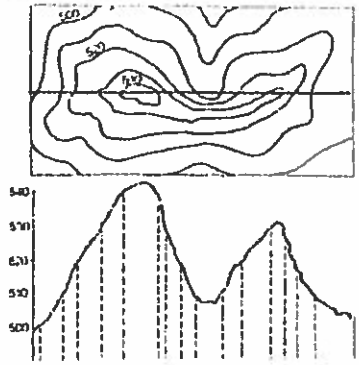
At each point of intersection (of lines whose heights are similar) a point is marked.

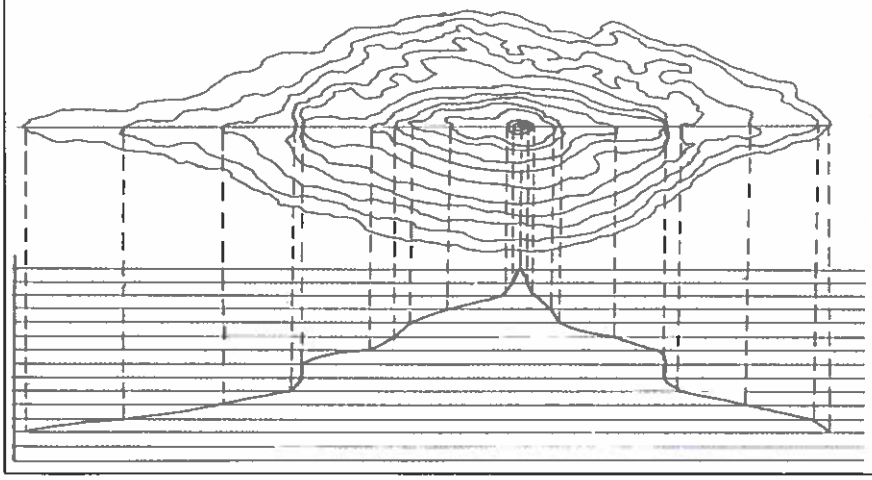
5



All points are connected with a line.

6



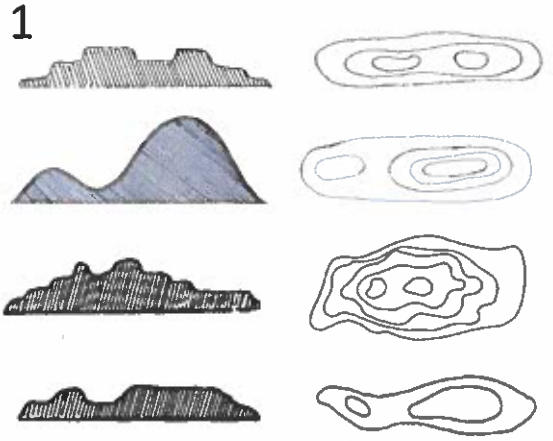


Orienteering assessment I

Name: _____

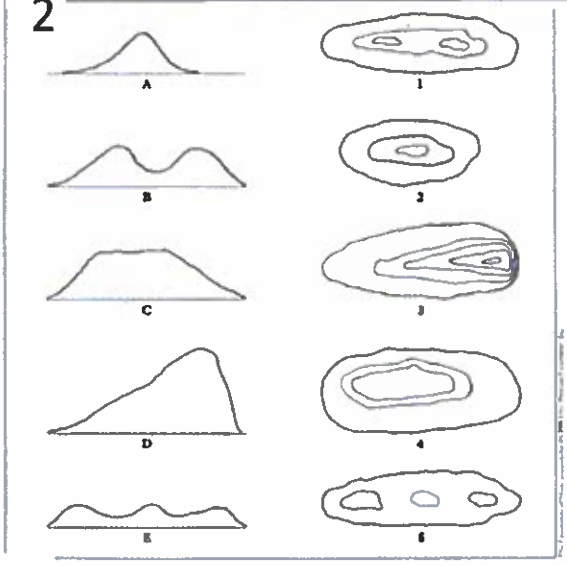
Match the contour patterns with the blocks:

1



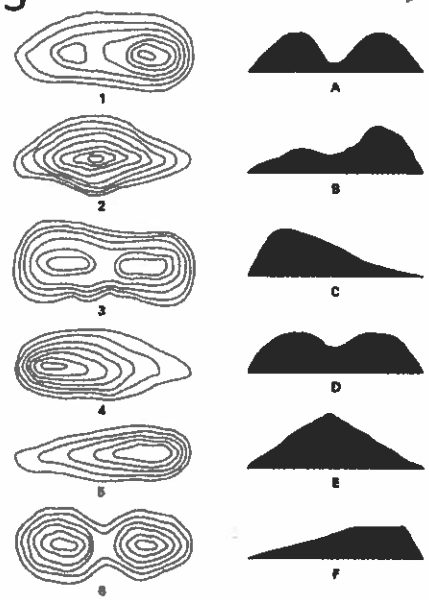
1___
2___
3___
4___

2



1___
2___
3___
4___
5___

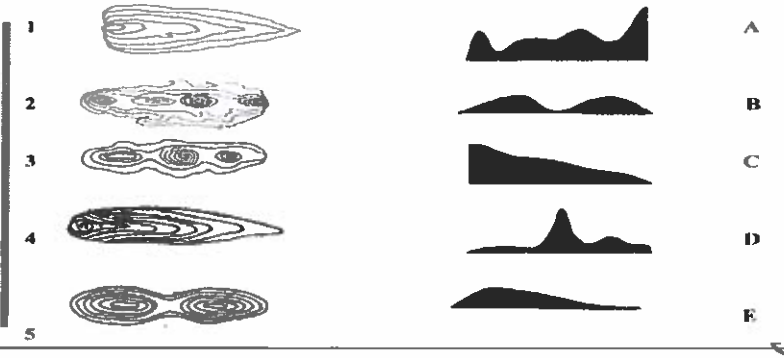
3



1___
2___
3___
4___
5___
6___

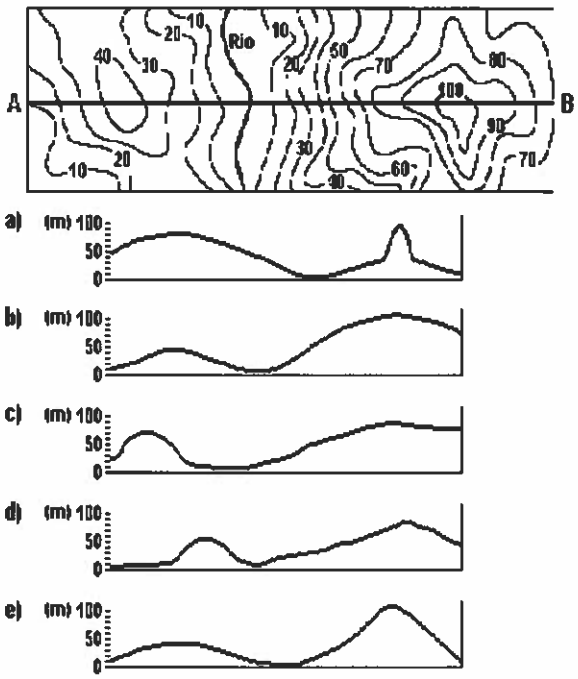
4

1___ 2___ 3___ 4___ 5___ 6___



5

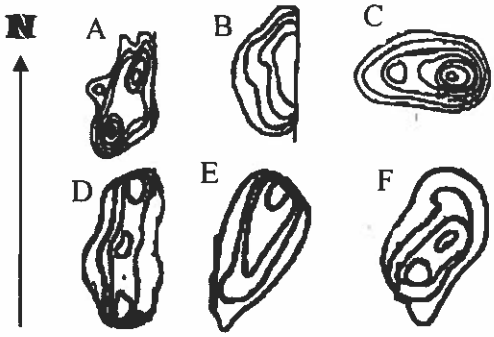
Indicates which of the following profiles corresponds to the map



6 *Relates each description to its corresponding contour lines:*

1 It is better to avoid ascending this hill from the east.
2 The north and south faces of this hill have a great slope.
3 The highest peak of the two is the eastern.
4 This hill has its biggest slope to the northeast.
5 Only the northeast face of this hill is not of considerable slope.
6 This hill has two peaks. The south is higher.

A ___
B ___
C ___
D ___
E ___
F ___



Orienteering assessment II

NAME AND SURNAME:_____ **GROUP:**____

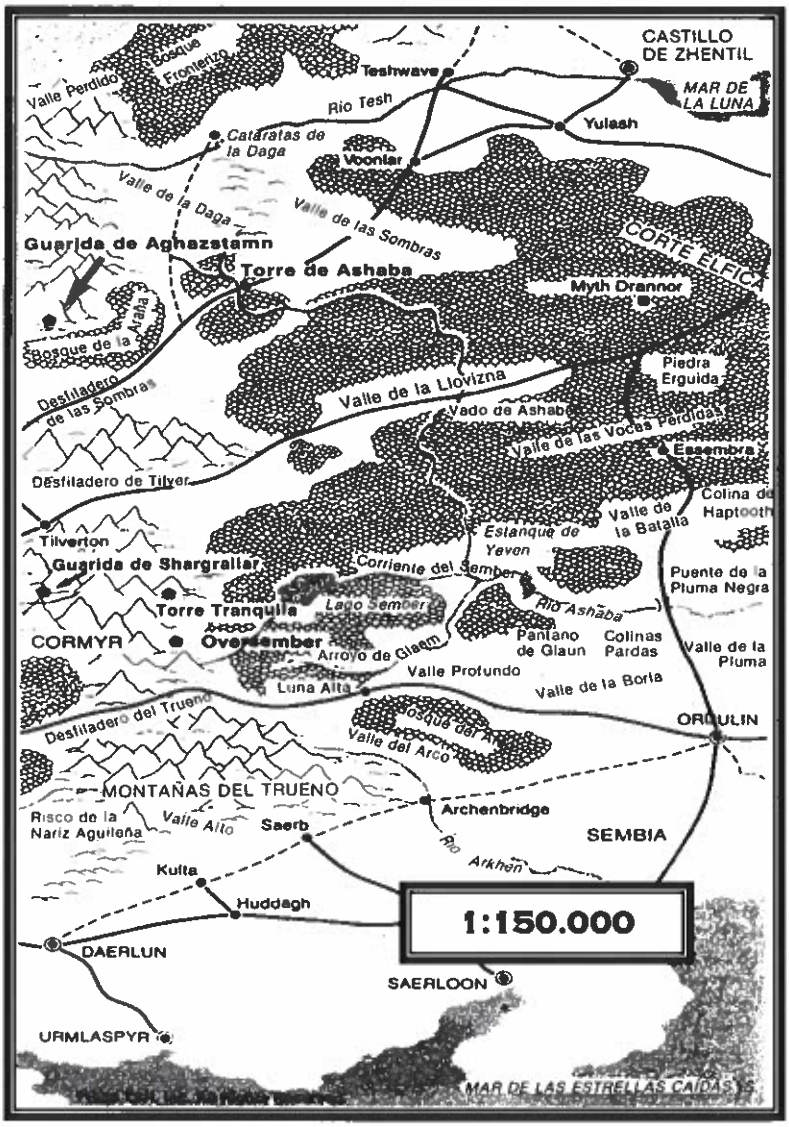
A.- Find the distances between:

4.1.- Zhentil Castle (to the Northeast) and Daerlun (to the Southwest) -in meters.-.

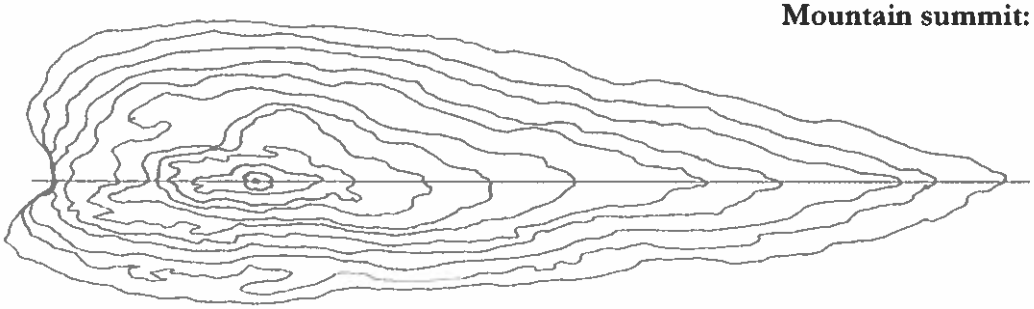
4.2.- Quiet Tower (to the West) and Myth Drannor (to the Northeast)–in Km-.

4.3.- Saerloon (to the South) and Ashaba Tower(to the Northwest) –in cm-

(Join the points with straight lines and write the operations)



B.- Draw the profile of the contour lines. **Equidistance between contour lines: 10m**
Mountain summit: 150 m.



It all started in London, after winning two silver medals: "I want the gold in Rio".

Please take out your mobile phone. Look for the stopwatch. Ready? All right. Try starting and stopping it in the shortest possible time. Do it once. How long did it take you to stop it? 0.12? 0.15? 0.09? Try it a few more times if you would be so kind.

Without much margin of error we can say that, at best, you may have stopped the chronometer at 0.08, maybe 0.07. Well, do you know by how much Mireia Belmonte won the gold medal in the 200 meters butterfly at the Olympic Games in Rio de Janeiro in 2016? By 0.03. Not a little more nor a little less. It was only 0.03.

"Mireia Belmonte has nothing special. He has a 36 foot and a small hand. So why is it where it is? ". On August 4, 2012 Mireia's persistence through Whatsapp forces Fred Vergnoux (her coach) to have dinner with her, hand in hand, at the Olympic Village. "I do not know what we ate, but I do remember that Mireia, when we sat down, said to me: 'I want the gold in Rio.' Of course, I said ok, but she had just won two silver medals, and she should have to rest and then work and ... And nothing, she said to me again: 'I want gold in Rio'". That day he discovered that he had, in front of him, the first premise to make a champion. Desire and determination.

"To have a purpose, a goal. In an Olympic final, the eight swimmers are perfect, they all have a perfect technique, a perfect strategy, a perfect attack plan".

What makes the difference then? Mind, over matter". She had desire and determination. Then there would be 50 weeks of training a year, nine weeks sleeping in a hypoxic chamber, concentrations in South Africa and Sierra Nevada, monitoring all their series, weights, workloads, millimetric analysis of their blood parameters, The changes ... Everything after the desire.

Extract from *"Así se fraguó el éxito de Mireia Belmonte: cuatro años para tres centésimas"*, Published in El Mundo, June 23, 2017. Written by Eduardo J. Castelao

CRITERIOS DE CALIFICACIÓN DEL DEPARTAMENTO DE EDUCACIÓN FÍSICA

La calificación final será la media obtenida entre los siguientes apartados, según el porcentaje atribuido.

Evaluación de los aspectos cognitivos o conceptuales: 30%

* Pruebas teóricas (exámenes y controles). Para poder hacerse media con los restantes apartados, cada alumno ha de obtener al menos un 3,5 (si no es así, la evaluación estará suspensa al considerarse que el alumno no ha asimilado los conocimientos mínimos necesarios).

* Fichas y trabajos escritos.

Evaluación de los aspectos procedimentales: 40%

* Pruebas prácticas/ habilidades de cada Unidad Didáctica

En caso de NO realizar una prueba práctica y justificarla adecuadamente ésta se llevará a cabo con otro grupo, o bien se utilizará la hora del recreo previo acuerdo con el profesor/ a (es responsabilidad del alumno/ a la solicitud de una nueva fecha).

ALUMNOS LESIONADOS

En el caso de no poder realizar la clase o alguna prueba por prescripción médica, el profesor evaluará al alumno de todos los contenidos que estén en condiciones de realizar, con un nivel de exigencia adaptado a sus posibilidades, con ayuda del departamento de Orientación en caso necesario. En cualquier caso, los alumnos deberán: acudir a clase; realizar aquellas actividades prácticas que le sea posible realizar sin perjudicar su estado; tomar nota de los contenidos teóricos que se expongan; realizar el trabajo teórico que el profesor le solicite (tomar nota de la clase, lecturas, fichas, etc); asimismo, deben colaborar con la clase en los momentos en que se precise su ayuda (para la utilización del material, arbitraje, música, toma de tiempos, medidas, etc).

Evaluación del aspecto actitudinal: 30%

* Comportamiento, participación, interés, constancia y esfuerzo.

* Asistencia a cada sesión con la indumentaria deportiva adecuada (ropa y calzado). Cambiarse de camiseta y asearse al finalizar cada sesión.

RECUPERACIÓN DE EVALUACIONES PENDIENTES

Si se suspende alguna evaluación ésta podrá recuperarse de la siguiente forma mediante la repetición de las pruebas suspensas (caso de las pruebas prácticas o el examen escrito) o la mejora en su actitud, esfuerzo y trabajo (caso de la parte actitudinal).

RECUPERACIÓN DE MATERIAS PENDIENTES DE CURSOS ANTERIORES

Los alumnos que hallándose en 2º, 3º o 4º E.S.O. con la materia suspensa de uno o varios cursos precedentes aprueben el curso en el que se encuentran recuperarán asimismo el precedente y, por tanto, dejarán de tener la materia pendiente. Podrán asimismo recuperar dicho curso precedente si aprueban las dos primeras evaluaciones del curso en el que se hallen.

No obstante, los alumnos que tengan la materia pendiente (y no hayan aprobado las dos primeras evaluaciones del curso actual) tendrán la oportunidad de realizar un examen teórico en la última semana de abril o principios de mayo para superar los contenidos teóricos mínimos del curso anterior, siendo evaluada la parte de procedimientos con los resultados obtenidos en el curso donde se encuentre, pero baremados a niveles de exigencia del curso pendiente.

Finalmente, todos aquellos alumnos que no superen la materia por la vía ordinaria deberán presentarse a las pruebas de carácter extraordinario en el mes de junio.

PRUEBA EXTRAORDINARIA DE JUNIO

Los alumnos que no hayan aprobado la asignatura de Educación Física tras las tres evaluaciones ordinarias deberán realizar una prueba extraordinaria en junio. Ésta constará de un examen escrito (cuya nota mínima para hacer media con la prueba práctica habrá de ser de 5), la prueba de flexibilidad de flexión anterior de tronco y una prueba práctica de resistencia aeróbica de carrera continua durante un determinado tiempo previamente estipulado (y durante el cual no se permite la mera marcha: en el momento en el que el aluno deje de correr se dará por finalizada dicha prueba). Las calificaciones se obtendrán de acuerdo con los siguientes baremos:

PRUEBA DE RESISTENCIA

NOTA	Nacidos en 2006	2005	2004	2003	2002	2001
0	<5'	<5'	<10'	<10'	<15'	<20'
1	7'	8'	13'	14'	19'	24'
2	9'	11'	16'	18'	23'	28'
3	11'	14'	19'	22'	27'	32'
4	13'	17'	22'	26'	31'	36'
5	15'	20'	25'	30'	35'	40'
6	17'	22'	27'	34'	39'	44'
7	19'	24'	29'	38'	43'	48'
8	21'	26'	31'	42'	47'	52'
9	23'	28'	33'	46'	51'	56'
10	25'	30'	40'	50'	55'	1 h

PRUEBA DE FLEXIBILIDAD (hombres)

NOTA	Nacidos en 2006	2005	2004	2003	2002	2001
0	-12	-11	-10	-9	-8	-7
1	-10	-9	-8	-7	-6	-5
2	-8	-7	-6	-5	-4	-3
3	-6	-5	-4	-3	-2	-1
4	-4	-3	-2	-1	0	1
5	-2	-1	0	1	2	3
6	1	2	3	4	5	6
7	4	5	6	7	8	9
8	6	7	8	9	10	11
9	8	9	10	11	12	13
10	10	11	12	13	14	15

PRUEBA DE FLEXIBILIDAD (mujeres)

NOTA	Nacidos en 2006	2005	2004	2003	2002	2001
0	-8	-7	-6	-5	-4	-3
1	-6	-5	-4	-3	-2	-1
2	-4	-3	-2	-1	0	1
3	-2	-1	0	1	2	3
4	0	1	2	3	4	5
5	2	3	4	5	6	7
6	5	6	7	8	9	10
7	9	10	11	12	13	14
8	12	13	14	15	16	17
9	14	15	16	17	18	19
10	16	17	18	19	20	21

Recibí criterios de calificación del Dto. De Educación Física

Familia del alumno/a: Fdo:

FICHA MÉDICA

APELLIDOS_____**NOMBRE**_____**CURSO:**____

EN LA SIGUIENTE FICHA (DE CARÁCTER CONFIDENCIAL Y USO EXCLUSIVO POR EL *DEPARTAMENTO DE EDUCACIÓN FÍSICA*), DEBE SEÑALAR **SI O NO**. *SOLO SI LA RESPUESTA ES AFIRMATIVA, ROGAMOS CONTESTE A LAS PREGUNTAS.* ¡GRACIAS POR SU COLABORACIÓN!

1ª¿ PADECE SU HIJO/A ALGÚN TIPO DE ENFERMEDAD O PROBLEMA CARDIOVASCULAR? **SI NO**
EN CASO AFIRMATIVO, SEÑALE CUÁL Y DE QUÉ TIPO

2ª ¿ PRESENTA SU HIJO ALGÚN TIPO DE ALERGIA (DE PRIMAVERA U OTRO TIPO) ? **SI NO**
SEÑALE CUÁL

3ª¿PADECE SU HIJO/A ALGÚN TIPO DE ASMA O PROBLEMA RESPIRATORIO? **SI NO**
EN CASO AFIRMATIVO SEÑALE CUÁL Y DE QUÉ IMPORTANCIA

4ª ¿PADECE SU HIJO/A ALGÚN TIPO DE LESIÓN O ENFERMEDAD DEL APARATO LOCOMOTOR EN MÚSCULOS, HUESOS Y ARTICULACIONES **SI NO**
EN CASO AFIRMATIVO, SEÑALE CUÁL

5ª ¿PADECE SU HIJO/A ALGÚN TIPO DE DESVIACIÓN O PROBLEMA EN LA COLUMNA? **SI NO**
SEÑALE DE QUÉ TIPO Y GRADO:

POR ÚLTIMO **¿EXISTE EN LA ACTUALIDAD ALGÚN OTRO TIPO DE PROBLEMA DE SALUD QUE HAGA QUE SU HIJO/A DEBA ACCEDER A UNA ADAPTACIÓN CURRICULAR POR PARTE DEL DEPARTAMENTO DE EDUCACIÓN FÍSICA, PARA CURSAR LA ASIGNATURA DE EDUCACIÓN FÍSICA? SI NO**

EN CASO DE RESPUESTA AFIRMATIVA EN ALGUNA DE LAS CUESTIONES ENUMERADAS ANTERIORMENTE, Y CON EL OBJETO DE ACCEDER A UNA ADAPTACIÓN QUE PERMITA AL ALUMNO/A CURSAR LA ASIGNATURA EN LAS MEJORES CONDICIONES, DEBE PRESENTAR ANTE EL DEPARTAMENTO DE EDUCACIÓN FÍSICA ***UN CERTIFICADO MÉDICO OFICIAL*** *EN EL QUE CONSTE: -PATOLOGÍA Y/O ENFERMEDAD -CONTRAINDICACIONES HACIA EL EJERCICIO FÍSICO (QUE TIPO DE EJERCICIOS, DEPORTES Y A QUE INTENSIDAD PUEDE REALIZARLOS) - Y DURACIÓN (SI ES TRANSITORIA) DE LA PATOLOGÍA QUE PROVOCA LA ADAPTACIÓN CURRICULAR.*

OTRAS CONSIDERACIONES A EXPONER:

NOMBRE DEL PADRE/MADRE O TUTOR_____
DNI:_____

(EL ABAJO FIRMANTE CERTIFICA QUE TODOS LOS DATOS REFLEJADOS EN EL PRESENTE DOCUMENTO SON VERDADEROS) FIRMA (DEL PADRE/MADRE O TUTOR)

EN_____A _____DE_____DE _____