Materiales de Educación Física para el aula de bilingüe

Physical Education materials for the bilingual classes

Cintia de Sáa Quintana

Máster universitario en Lengua Inglesa para el Aula Bilingüe de Educación Secundaria
Universidad de Oviedo

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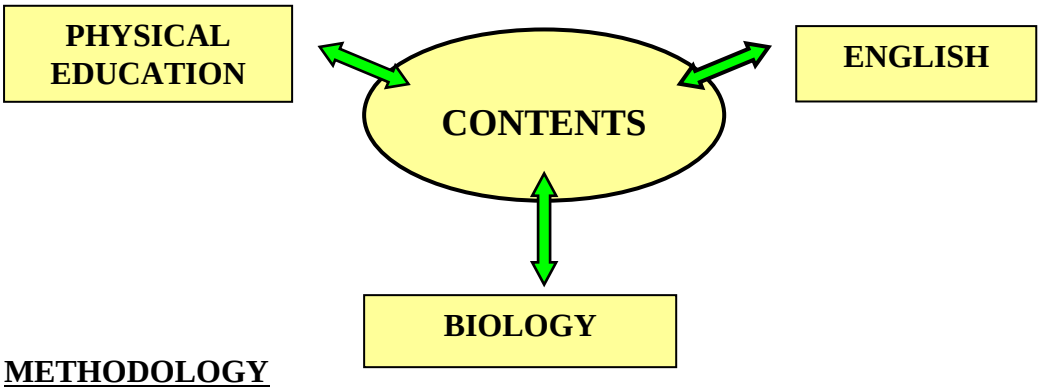
INTRODUCTION

The following materials have been designed for the third year of ESO. Students are fourteen and fifteen years old. The third and the fourth years of ESO are really relevant because students need to learn many contents to be ready to start the *Bachillerato* with success. In a bilingual section, these contents could be taught through two or more subjects at the same time. This will be the starting point of these materials, a cross curricular unit through Physical Education, Biology and English.

As a CLIL (Content and language Integrated Learning) teacher, it is necessary to use an active methodology. CLIL is an approach in which a foreign language is used as a tool in the learning of a non-language subject in which both language and the subject have a joint role (Coyle, D., Hood, P. y Marsh, D.(2010).

Three or four teachers will be involved at the same time: the Physical Education teacher, the Biology teacher, the English teacher and the language assistant (this could be optional if the school does not have one).



1) METHODOLOGY

The methodology is essential in a bilingual section, and coordination is the most important pillar. Teachers need to share ideas, to make decisions together and to find the best way for students to *learn by doing*.

A CLIL teacher should be more flexible and tolerant while explaining and repeating. CLIL texts should be more fluid and have more space for note taking.

Learners need to know a certain amount of the **Content obligatory language**, to be able to understand and to communicate (high and medium frequency words). Obligatory language is presented through visual organizers.

Communication skills in CLIL should not be abstract but should enable to develop learners' practical use of language through functions. Suggested activities are therefore brainstorming, open questions, peer discussions, role plays, debates, reports back. Before these tasks it is important to assign clear roles, timing, purposes, etc.

Teaching thinking skills is also essential. Today there is international recognition that education is more than just learning knowledge and thinking, it also involves learners' feelings, beliefs and the cultural environment of the classroom. Nevertheless, the importance of teaching thinking and creativity is an important element in modern education.

Benjamin Bloom was the first to develop a highly popularized hierarchy of six thinking skills placed on a continuum from lower to higher order skills: knowledge, comprehension, application, analysis, synthesis and evaluation. According to this system, *lower order* skills included recalling knowledge to identify, label, name or describe things. *Higher order* skills called on the application, analysis or synthesis of knowledge, needed when learners use new information or a concept in a new situation, break information or concepts into parts to understand it more fully, or put ideas together to form something new. Bloom's structure was a useful starting point and triggered many applications to school activities and curricula.

Bloom's revised taxonomy.

Higher order thinking skills	
Creating	making, designing, constructing, planning, producing, inventing,
Evaluating	checking, hypothesizing, experimenting, judging, testing, monitoring,
Analyzing	comparing, organizing, outlining, finding, structuring, integrating
Applying	implementing, carrying out, using
Understanding	comparing, explaining, classifying, exemplifying, summarizing
Remembering	recognizing, listing, describing, identifying, retrieving, naming, finding, defining
Lower order thinking skills	

In conclusion, with an active methodology students will be able to apply the contents in real situations. It means that they will learn by doing, so contents will not be taught isolated. This is the essence of CLIL.

Teacher should motivate their learners. So it is very important to:

- Find and collect relevant information
- Compare/contrast information
- Give reasons for opinions
- Make conclusions
- Ask relevant questions
- Anticipate consequences
- Generate ideas
- Apply imagination
- Think of alternative outcomes
- Judge the value of what they say, hear, write and do
- Make recommendations
- Develop evaluation criteria for judging the value of their own and other's work or ideas.

To accomplish these objectives, a good subject CLIL teacher should be able to teach their students by:

a) Activating their prior knowledge
b) Providing multimodal input for CLIL
c) Guiding understanding (scaffolding)
d) Encouraging speaking and writing
e) Assessing learning and giving feedback

(From Dale, L., van der Es, W. and Tanner, R., 2010)

2) LESSON PLAN:

During three weeks students of the third year would be learning the same contents through three different subjects. To be able to do it, teachers will follow a lesson plan. Using this timing, students will increase their knowledge because they will learn the theoretical contents and at the same time they will use them in real situations. That means that contents are connected and it is easier for students to understand and learn.

2.1. – KEY COMPETENCES

The key competence is the ability to integrate knowledge, skills and attitudes in a practical way to solve problems and react appropriately in a variety of contexts and situations.

- Competence in linguistic communication: in this unit they have to speak and take decisions, they need to work in groups and decide the order of the exercises…
- Mathematical competence: they need to work using percentages (50% of his maximum speed), numbers (15 sit ups, 30 seconds, 10 laps, maximum heart rate…)
- Competence in knowledge of and interaction with the physical world: they go outdoors to improve their skills, they need to interact with their mates, and they need to touch, to use materials, to learn the reasons…
- Competence of processing information and use of ICT: watching videos and preparing oral presentations for their classmates, surfing the Web…
- Competence in social skills and citizenship: working in groups, preparing a circuit, deciding different activities and games, respecting the rules…
- Cultural and artistic competence: learning different stereotypes, body's culture, etc.
- Learning to learn: how they can improve their skills, preparing their own training circuits, healthy habits, how to avoid injuries…
- Autonomy and personal initiative: different possibilities to get fit, healthy and fun activities.

2.2. – OBJECTIVES

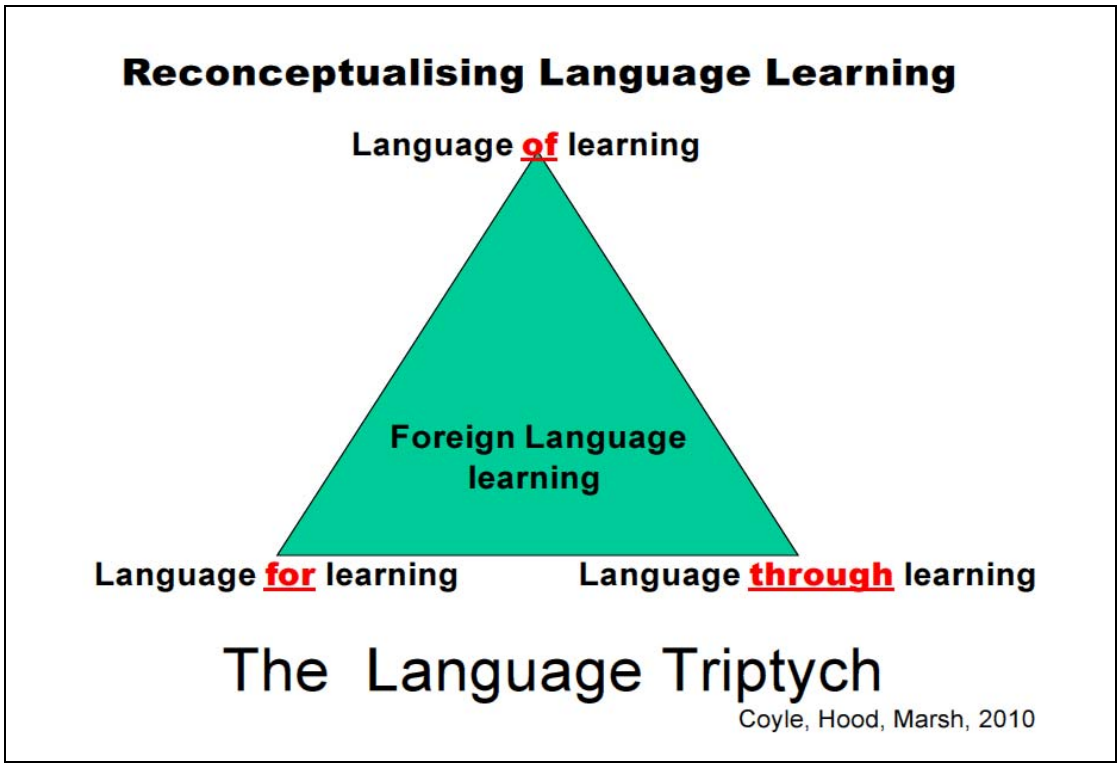
- To be able to identify, classify and label the muscles of our body.
- To understand the functions of the different systems of our bodies.
- To learn and recognise the different parts of the circulatory and respiratory systems.
- To learn and classify the effects of physical activities on our circulatory and respiratory systems.
- To prepare a specific warm up understanding its effects and using it as the right way to avoid injuries.
- To define and use different methods to improve the different skills: strength, speed, endurance, flexibility and flexibility.
- To be able to identify the effects of the exercise.
- To be able to explain, describe and analyse different processes.
- To use key vocabulary related to the contents taught in class.
- To apply the theoretical contents to the real life. To give examples.

2.3. - LINGUISTIC OBJECTIVES (4CS IN CLIL)

Content, communication, cognition and culture (Coyle, 1999). These are interrelated components of CLIL. Culture is also linked to citizenship and community.

In the 4Cs Framework *communication* involves CLIL teachers and learners in using and developing:

- Language *of* learning,
- Language *for* learning and
- Language *through* learning.



In this unit, these could be examples for:

- Language of learning (the *what*, content): human systems, skills, muscles, training methods.
- Language for learning (*how* to): observing a process, identifying the effect.
- Language through learning (the *why*): effects and reasons.

And examples applying ***the 4Cs***:

Content: in the next part of the unit contents are written following the Spanish Educational Law. CLIL teachers need to identify similar contents in different subjects to be able to teach using an active methodology. Examples will be shown later.

Communication: this will be basic during the unit. Not only between students and the teacher. Students will need to communicate with other mates, and teachers will need to coordinate with other teachers.

Cognition: what the students will learn during his unit, but not only the contents. They need to analyse, classify, identify, and find solutions. And these are complex processes. Learning by doing is the essence.

Culture: if students understand the positive effects of physical activities they will be able to have a healthy lifestyle. This will be the main point for this unit.

2.4.- CONTENTS *(DECRETO 74/ 2007 DE 14 DE JUNIO)*:

Physical Education:

- General and specific warm up. Effects. Instructions for its design. To prepare and practise warm ups and cool downs after analysing the following activity.
- Relationship between the skills related to health and the adaptation of the human systems.
- The improvement of the skills related to health: cardiovascular endurance, flexibility, muscular endurance, and speed by using training methods and systems after studying the physical fitness.
- To recognize the positive effect that the physical activities have on the human systems.

Biology:

- Anatomy and physiology of the respiratory system. Hygiene and cares.
- Anatomy and physiology of the circulatory system. Heart and blood vessels. Styles of life for a cardiovascular health.
- Skeletal and muscular systems.

2.5. - ACTIVITIES:

The following activities are not covering the contents of the whole unit, they are real examples for different sessions to be applied in the three subjects involved in the lesson plan. Each activity has a brief introduction (teacher notes) explaining the specific aim and the steps students have to follow to complete it.

WARMING-UP ACTIVITY: WORD SEARCH ABOUT MUSCLES (PE / BIOLOGY / ENGLISH) (Modified from www.tes.co.uk)

Teacher notes: This is a warming-up activity. Students work alone for 4-5 minutes to try to find the given words in the word soup. They check their answers in pairs and the teacher checks with the whole group. The teacher makes the students some questions about the meaning of each word and tests if they know how to pronounce them. The activity may take between 15-20 minutes.

Through this activity the teacher can introduce concepts such as antagonistic muscles, and important ideas about the way muscles work pulling bones and making us move.

Students' activity:

ANTAGONISTIC	MUSCLES
PULL	LOCOMOTION
BICEPS	SHORTER
SKELETAL	CONTRACT
FORCE	STRAIGHTENS
JOINTS	TRICEPS
BENDS	RELAXES

Muscles and Movement

S T R A I G H T E N S Y R Z U
L C U V I B N C P E J H E F B
Q O O S E I O E X D U U T U R
Q F C N P N O A B K P C R F G
K N D O T E L X D I I F O X P
S S S R M E C D A T C O H H C
G T A G R O Y I S P S E S B K
I C D W B M T I R T K A P Z L
T Z Y S X L N I J T E K D S V
F B Q O M O P Y O E L C S U M
O H Q L G V L L U N E P Z U W
R T K A J O I N T S T I W W W
C O T Q M Q Y S R S A S N F Q
E N T N H H O B X D L Z X J W
A M O D V I K R B M N U Q F F

ACTIVITY 1: MATCHING ACTIVITY (PE)

Teacher notes: The teacher asks the students what all the words in the activity (biceps, quadriceps, etc.) have in common (all of them are muscles belonging to our extremities) and checks pronunciation. Students work alone for 4-5 minutes to try to figure out which term fits with each definition. Peer review and class review. The activity may take between 10-15 minutes.

Specific examples of antagonistic muscles are presented through this activity. At the end the teacher will ask some questions like: "Tell me the name of the muscle that extends the arm".

Students' activity:

Match the name of the muscle with the correct action:

BICEPS	To bend the arm
QUADRICEPS	To extend the leg
HAMSTRINGS	To bend the leg
CALF MUSCLE	Moves the leg towards the midline
TRICEPS	Plantar flexing the foot at the ankle joint and flexing the leg at the knee joint
ADDUCTOR	To extend the arm

ACTIVITY 2: WHAT HAPPENS AND WHY (PE)

Teacher notes: the teacher needs to apply the theoretical contents. The best way to do it is by testing the students after doing different types of warm ups. Students will discover that after doing a specific warm up their marks will be much better. They need to remember what happens to our muscles while practising an exercise, the best heart rate to test the endurance, etc.

Students' activity:

Today you are going to observe what happens when you test your flexibility after a general warm up and after a specific warm up. Compare the results with a classmate. Try to explain the reasons using the theoretical contents taught in class.

WARM UP (EXERCISES, SETS, TIME…)	Test 1: sit and reach	Test 2: flexibility test
GENERAL (description)	My mark was:	My mark was:
SPECIFIC (description)	My mark was:	My mark was:
When did you do your best mark? What could be the reasons for that? Try to use the key vocabulary and all the contents you have learnt. When you finish, compare your results with a classmate.		

ACTIVITY 3: LOOPING ACTIVITY. PHYSICAL EDUCATION/BIOLOGY.

Teacher notes: During a looping activity each student has a piece of paper. In its left part there is a name (usually a key word). And on the right part there is a definition. But those parts do not match with each other. Other student has the definition for that word. The teacher starts reading out one word. Then, the student that has the definition that matches has to read it loud and then read the word that he/she has on the left part of the paper.

Continuing with this activity, the teacher finishes with the definition he/she has on the left completing the looping. It is a very interesting activity to review vocabulary and to test if students understand the key vocabulary. Here is the activity and then the sheet with the answers:

Students' activity:

TYPE OF MUSCLES	How often you should exercise
TIDAL VOLUME	How hard you should exercise
TRANSPORT	How long you should exercise
ROTATION	What exercises you should use
VITAL CAPACITY	220-age
FREQUENCY OF ACTIVITY	65% of maximum heart rate
ANTAGONISTIC MUSCLES	80% of maximum heart rate
MUSCLE ATROPHY	Helps you breathing and circulation
TRAINING ZONE MINIMUM	Carry oxygenated blood away from the heart
TIME OF ACTIVITY	Moving things around the body in the bloodstream
AEROBIC TRAINING	The amount you breath in (or out) with each breath
INTENSITY OF ACTIVITY	Is the most air you could possibly breath in or out in one breath.
MAXIMUM HEART RATE	Voluntary, cardiac, involuntary.
TYPE OF ACTIVITY	If you do not use your muscles, they get smaller
AGONIST	Pairs of muscles that work against each other
TRAINING ZONE MAXIMUM	The muscle that is doing the work (contracting)
ADDUCTION	Moving towards an imaginary line
INTERVAL TRAINING	Moving away from an imaginary line
REPETITIONS	Turning a limb clockwise or anticlockwise
ABDUCTION	Number of times an activity is repeated
ARTERIES	Number of times an activity is taken in a training session.
SETS	Intermittent training with periods of high-intensity work interspersed with rest or very low-activity periods.

Sheet with the correct answers:

FREQUENCY OF ACTIVITY	How often you should exercise
INTENSITY OF ACTIVITY	How hard you should exercise
TIME OF ACTIVITY	How long you should exercise
TYPE OF ACTIVITY	What exercises you should use
MAXIMUM HEART RATE	220-age
TRAINING ZONE MINIMUM	65% of maximum heart rate
TRAINING ZONE MAXIMUM	80% of maximum heart rate
AEROBIOC TRAINING	Helps you breathing and circulation
ARTERIES	Carry oxygenated blood away from the heart
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TIDAL VOLUME	The amount you breath in (or out) with each breath
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INTERVAL TRAINING	Intermittent training with periods of high-intensity work interspersed with rest or very low-activity periods.

For this activity, it is possible to give more than one piece of paper to each student. And it could be used in the English classes. It could be done as a competitive game trying to complete the loop in the minimum amount of seconds.

ACTIVITY 4: HEART RATE (PE / BIOLOGY)

Teacher notes: the teacher needs to know if the students are learning the contents. This practice would be a good way to do it. If they are too exhausted they will not be able to do their best during a physical education test. But if their bodies are not ready, they will not be able to get a great mark. They have to learn to listen to their bodies.

Students' activity: Try to guess which activities will increase your heart rate the most and write them in order in the chart below.

- Doing twelve sit ups
- Running on the spot for 20 seconds
- Stretching your quadriceps for thirty seconds
- Jumping rope for 20 seconds
- Walking for 5 minutes
- Doing a sprint for 10 seconds

Now you are going to know the correct answer, take your pulse after doing each exercise and compare the results with your answers. Remember that it is necessary to rest for at least four minutes between exercises.

ORDER	ACTIVITY	HEART RATE (beats/minute)
1		
2		
3		
4		
5		
6		

Now, answer the following questions:

In which exercise did you breathe faster? Why do you think that happened? Use the key words learnt during this unit.

In which exercise did you feel exhausted? Why do you think that happened? Use the key words learnt during this unit.

Now, compare your answers with your partner and write a conclusion to this activity. Try to explain, with your own words, what happens to your body during one of the most exhausting activities.

ACTIVITY 5: MUSCLE GAME (PE / BIOLOGY / ENGLISH)

(Activity modified from www.tes.co.uk)

Teacher notes: The information sheets (labelled A - C) are put on the wall but the question sheets (labelled "student sheet") are in the centre of the room.

Before the lesson: photocopy pages A, B and C on to different colours of paper (allows for easier identification), preferably three copies, so there is less congestion. Stick the copies around the walls.

The pupils work in pairs. One student has a copy of the page "student sheet", and he/she has to sit in a central area and is not allowed to move. The other student is allowed to walk around (without the student sheet) in order to gather the information. The game will take 15 – 20 minutes, and the teacher swaps the sitter and the seeker about every 5 minutes. After the activity there is a class discussion.

During this activity students have to read. They need to understand and at the same time they have to share the information with other classmates. English is used during the whole activity, so they are using receptive and productive skills simultaneously. Motivation will be very important, and the teacher will check it during and after the exercise.

It is important to remind the students that one of them will be sitting down and the other will be able to move around. That kind of methodology is often used in CLIL classes. When students need to share information to complete an activity, they improve their skills and self-confidence. And at the same time they need to sum up the information. With this active methodology the student is the main character of the learning process.

Students' activity: Students need to complete the following worksheet:

STUDENT WORKSHEET – ACTIVITY 5

Use the information on the coloured sheets to answer the following questions:

a) How many muscles are present in a human body?

b) Name the three main types of muscles

c) What are voluntary muscles also called as?

d) Where do you find voluntary muscles?

e) What is the function of voluntary muscles?

f) Why are some muscles called voluntary muscles?

g) Where do you find the involuntary muscles?

h) Why are some muscles called involuntary muscles?

i) What kind of muscle is your heart made of?

j) Name the two factors that can affect your heart beat

k) Label the biceps and triceps

l) How are muscles connected to bones?

m) What does your biceps muscle do when you lift up the bag?

n) What does your triceps muscle do when you lift up the bag?

Now extend your hand

o) What does your triceps muscle do?

p) What does your biceps muscle do?

q) How do your biceps and triceps work in pair?

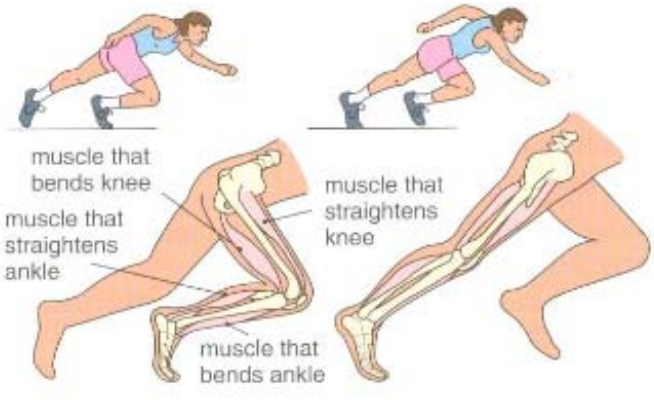
r) Name the organ that coordinates the movement of muscles in your body

Observe the picture of the athlete to answer the below questions:

s) Label the following muscles: thigh, hamstring, calf, shin

t) Identify the two muscles that bend and straighten the knee joint

u) Name the two muscles that bend and straighten the ankle joint



A (Activity 5)

There are more than six hundred muscles in a human body.

The main types of muscles are skeletal muscles, cardiac muscles and smooth muscles.

Skeletal muscles are also called as voluntary muscles because these muscle actions can be controlled by your will.

Smooth muscles are known as involuntary muscles.

The skeletal muscles are attached to bones by tendons and they bring about movements at joints.

Skeletal muscles are powerful and can contract quickly but soon get tired.

The involuntary muscles cannot be controlled by your will and they work on their own.

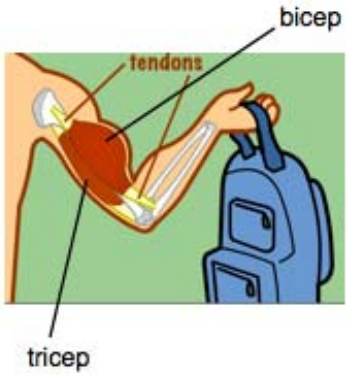
The smooth muscles move food down the gut, blood along the blood vessels and urine down the ureters.

The smooth muscles do contract but slowly.

The cardiac muscles are found only in the heart. It is very powerful and it never gets tired.

The cardiac muscles do contract on their own but the nerves and hormones can change the contraction to make the heart beat faster or slower.

B (Activity 5)

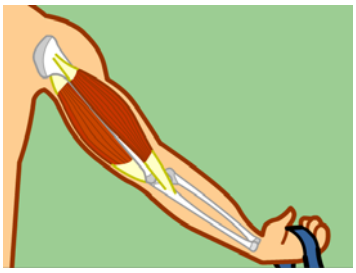


Muscles are connected to bones strongly by tendons.

When you bend your hand biceps contracts and gets shorter, while the triceps relaxes.

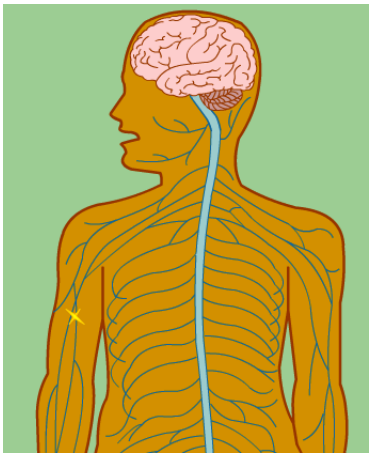
On the other hand when you extend your hand the biceps relaxes and the triceps contracts.

Muscles like biceps and triceps work in pairs. When one contracts the other relaxes. Thus they form an antagonistic pair of muscles.



Nerves carry impulses from brain to the muscles in your arm.

They tell the biceps and triceps to contract and relax.



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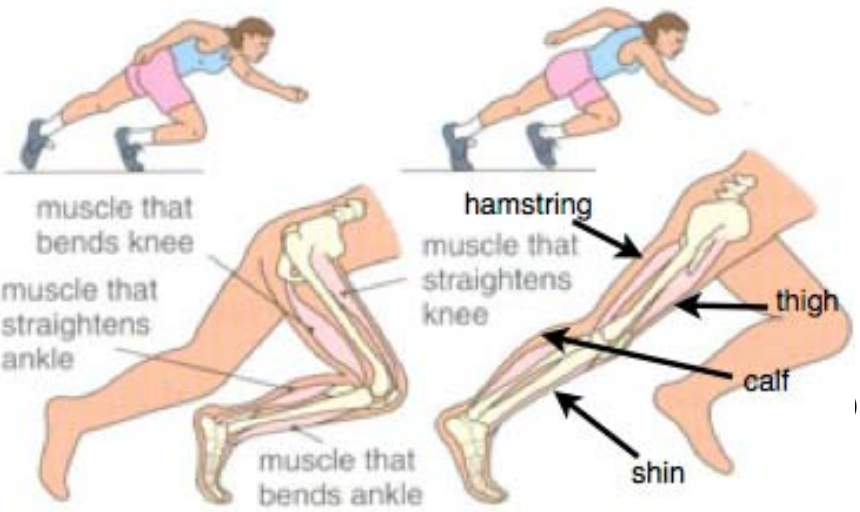


(Activity

The thigh and hamstring muscles bend and straighten the knee joint.

The calf and shin muscles bend and straighten the ankle joint.

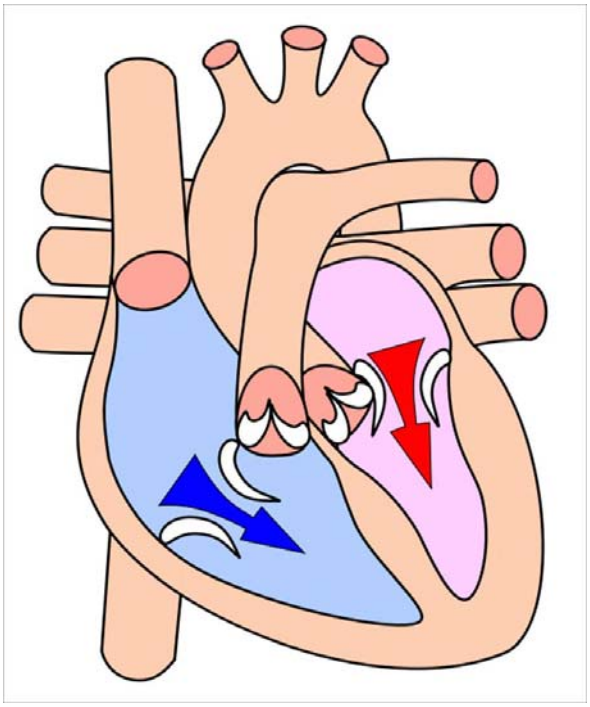
ACTIVITY 6: HEART STRUCTURE (BIOLOGY)

(Activity modified from www.tes.co.uk)

Teacher notes: The aim of this activity is to review the heart's anatomy, as well as its basic physiology, and the way it contracts to pump blood throughout the body. The activities are very visual, and the students have to label the different parts of the heart and to focus on the drawings to try to understand the heart movements.

Students' activity:

a) Label the diagram of the heart



b) What tissue is the heart made of?

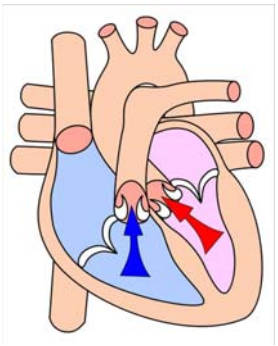
c) What makes this tissue unique compared to other tissues?

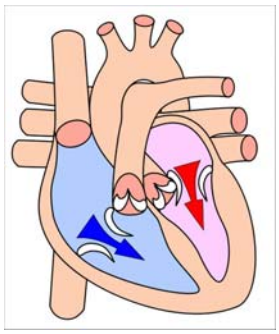
How your heart works:

d) Explain what causes the "lub-dub" sound of a heart beat:

The cardiac cycle

e) Identify the stages (diastole or atrial systole or ventricular systole) in the cardiac cycle and label the valves (state whether they are open or closed)





f) Define the terms below:

Diastole:

Atrial systole:

Ventricular systole:

g) Complete the table below by writing open or closed for each valve at each stage of the cardiac cycle:

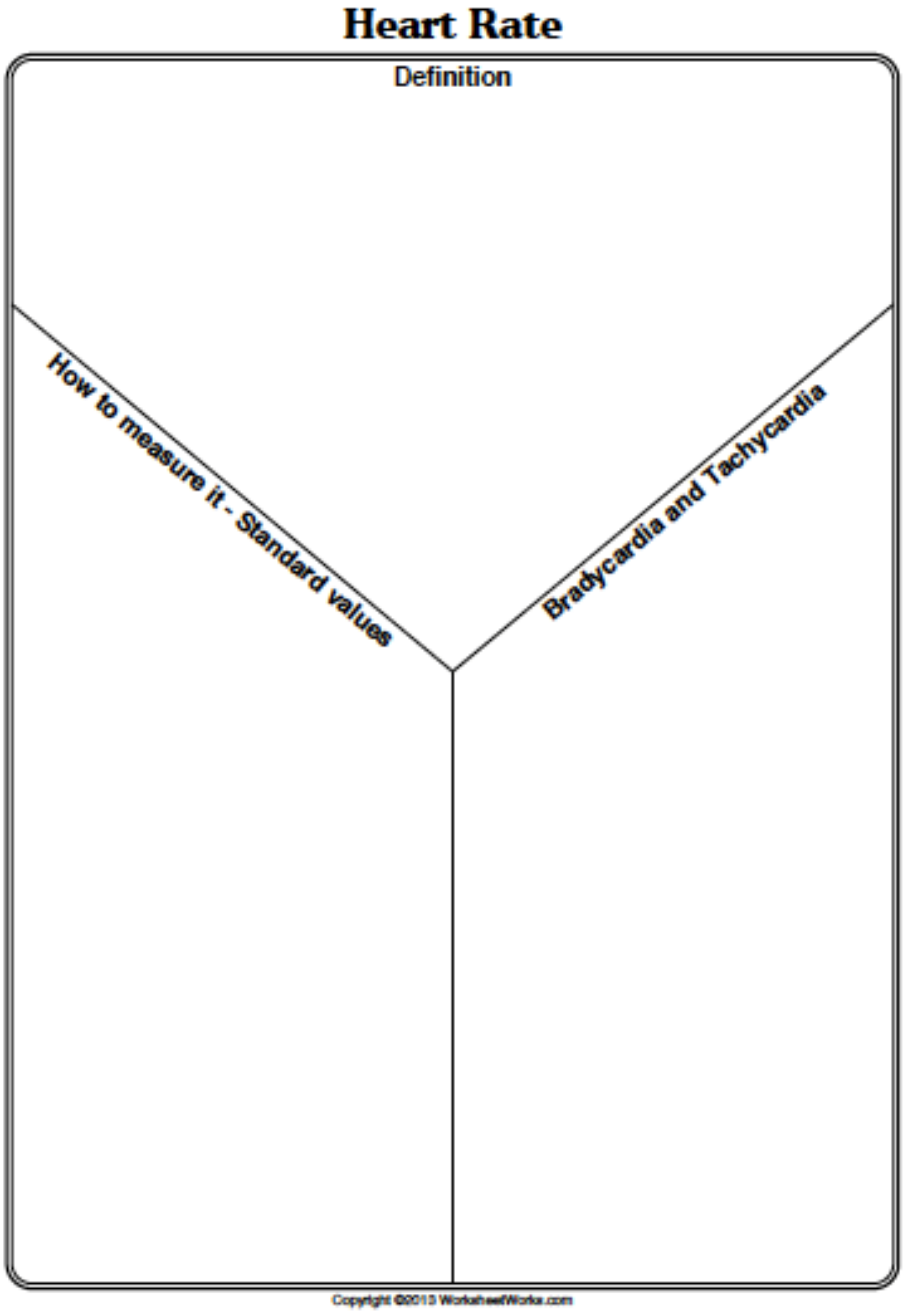
Stage of cardiac cycle	**Atrio-ventricular valves**	**Semi-lunar valves**
Diastole		
Atrial systole		
Ventricular systole		

h) Explain why heart rate increases during physical exercise:

ACTIVITY 7: REVIEWING THE HEART RATE (PE / BIOLOGY)

Teacher notes: Graphic organizers are aids such as diagrams and charts, which are used to help learners remember new information by making thinking visual. They involve writing down or drawing ideas and making connections. This one is to summarize the main information about what the heart rate is.

Students' activity: Complete the following graphic organizer:



TEST. PHYSICAL EDUCATION/BIOLOGY

Teacher notes: Students will surf these webpages:

- http://www.teachpe.com/gcse_anatomy/muscles.php
- http://www.bbc.co.uk/schools/gcsebitesize/pe/appliedanatomy/3_anatomy_muscles_rev1.shtml

Later they have to answer the following questions. It is very important to use short videos. These examples are very clear and they sum up the contents taught in Physical Education and Biology. These questions could be used in the real tests.

Students' activity: Select the correct options to complete the following sentences.

1. Cardiac muscle is:
   - found everywhere
   - located in the abdomen
   - unique to the heart
2. Muscle fibres which use oxygen well are called:
   - slow twitch
   - fast twitch
   - full twitch
3. Muscle contractions which cause movement are:
   - isometric
   - isotonic
   - isothematic
4. Chest muscles used in the tennis forehand are the:
   - pectorals
   - trapezius
   - latissimus dorsi
5. There is no movement from contraction which is:
   - isotonic
   - isokinetic
   - isometric
6. A pair of muscles working together would be biceps and:
   - triceps
   - hamstrings
   - abdominals
7. For eccentric contraction the muscle lengthens as the:
   - fibres relax
   - fibres do not change
   - fibres contract
8. Growth of muscles is called:
   - hypermorphy
   - hypersophy
   - hypertrophy
9. Good muscle tone reduces the risk of:
   - depression
   - injury
   - illness

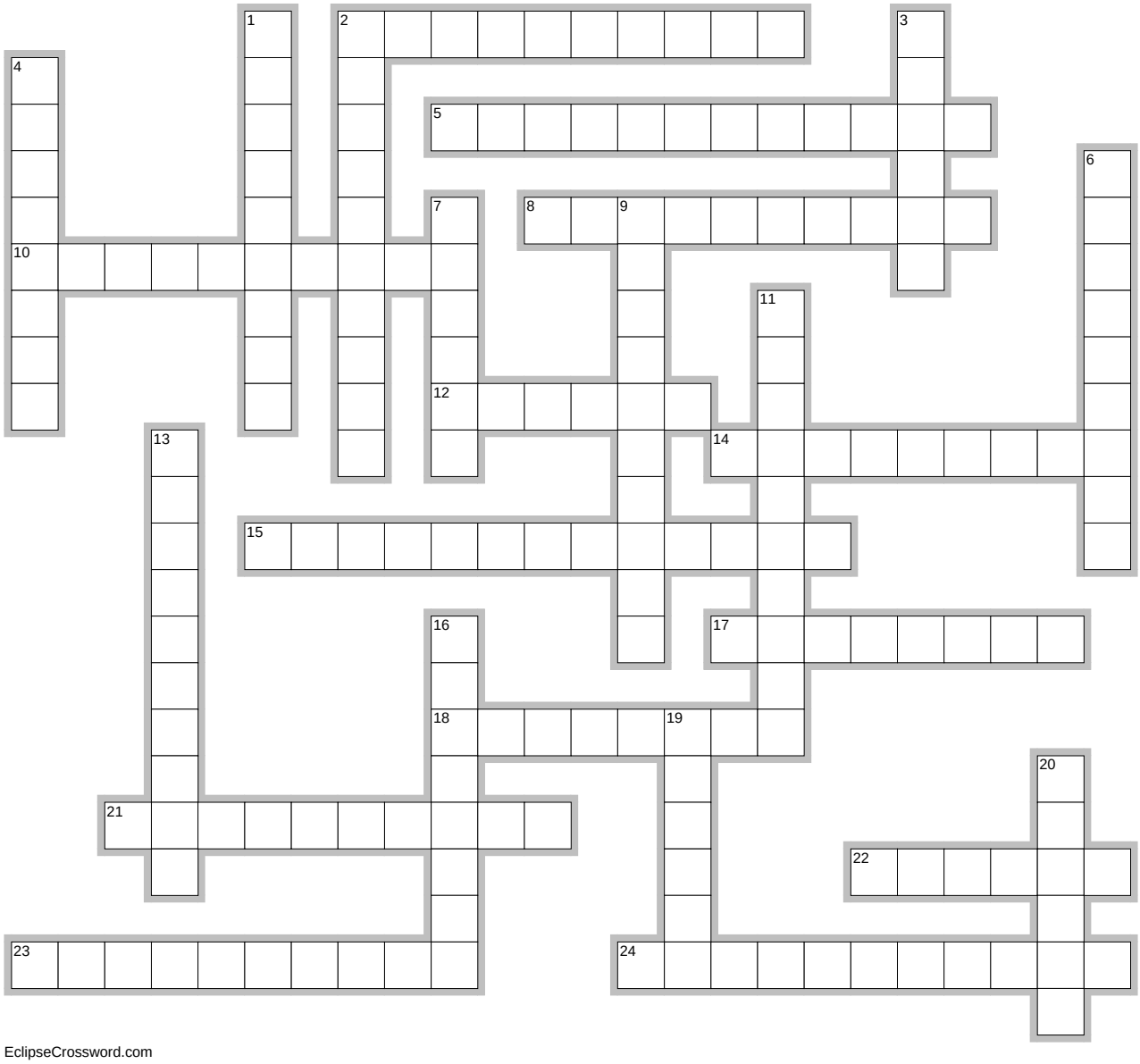
10. When muscles hypertrophy they gain greater:
    - mobility, flexibility and balance
    - coordination, reaction time & speed
    - size, strength and endurance
11. Cardiovascular system consists of the heart, blood and:
    - blood vessels
    - lungs
    - muscles
12. Oxygenation takes place in the:
    - lungs
    - heart
    - blood vessels
13. Stroke volume is the volume, per heart beat, of:
    - carbon dioxide removed
    - blood pumped
    - air breathed
14. Cardiac output is the amount of blood pumped by the heart:
    - in one beat
    - during exercise
    - in one minute
15. The three types of blood vesels are arteries, veins and:
    - neurones
    - alveoli
    - capillaries
16. The main work of the capillaries is:
    - gaseous exchange
    - pumping blood
    - equalising pressure
17. Blood consists of plasma, white and red cells and:
    - nitrogen
    - droplets
    - platelets
18. Haemoglobin is found in the:
    - platelets
    - red blood cells
    - white blood cells
19. The main work of red blood cells is to carry:
    - oxygen
    - carbon dioxide
    - water
20. Blood pressure is the force of blood:
    - against artery walls
    - in the heart
    - through the lungs

2.6. – TIMING / SCHEDULE:

Subject	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
Physical Education	Muscles (pairs of muscles, agonist and antagonist) Warm up Strength	Muscles (how to prepare a specific warm up) How to strengthen Your muscles: STRENGTH Hypertrophy Effects of the physical activities, training methods	Flexibility(training methods, effects) SPEED (types of fibres, Training methods)	Endurance (types and training methods) Effects	Endurance (types and training methods) Effects	Exam
Biology	Muscles (types, function)	Circulatory system Effects of the physical activities (heart, vessels, muscles)	Circulatory system Effects of the physical activities (heart, vessels, muscles)	Respiratory system Effects of the physical activities (heart, vessels, muscles)	Respiratory system Effects of the physical activities (heart, vessels, muscles)	Exam
English	Names of muscles Actions: to rotate, to stretch, to extend, to bend, to overstretch. Key vocabulary: fibres, adduction, adduction, heart rate, vessels, blood, hypertrophy …	Giving instructions Describing actions and positions Describing a process	Giving instructions Describing actions and positions Describing a process	Giving examples Describing a process Giving conclusions	Giving examples Describing a process Giving conclusions	Exam

2.7.- ACTIVITIES FOR THE LANGUAGE ASSISTANT:

ACTIVITY: CROSSWORD. CIRCULATORY SYSTEM.ENGLISH/LANGUAGE ASSISTANT



EclipseCrossword.com

DOWN

1. causes vasospasm
2. "bleeder's disease"
3. low red blood cell count
4. cancer of the blood
6. thrombocytes (common word)
7. clear, liquid portion of blood
9. cell that "eats" other cells
11. circulate in body and attach to foreign substances
13. the process where bleeding is stopped
16. cell surface markers
19. Movie: My ___ Valentine
20. organ that breaks down old, worn out blood

ACROSS

2. binds to oxygen
5. red blood cells
8. percentage of blood cells and plasma in sample
10. wbc that attacks parasites
12. where new blood cells are created
14. shape of a red blood cell
15. clumping of blood cells from an immune response
17. queen thought to be original carrier of hemophilia
18. abnormal blood clot
21. plasma protein that is converted to fibrin
22. disease that causes rbc's to be abnormally shaped: __ Cell Disease
23. white blood cells
24. wbc's that produce antibodies

2.8. - CROSS-CURRICULAR ACTIVITY (PHYSICAL EDUCATION, BIOLOGY; ENGLISH)

CLIL teachers should not work alone. The idea of this unit is to collaborate and cooperate using a common aim. In this unit, students will learn the importance of taking care of their bodies, and they will focus on our circulatory and respiratory systems. During the puberty students need to accept and implement healthy habits. It is a crucial stage of their lives and one important part of their futures depends on the decisions they make during the academic years.

As teachers, we certainly believe that we are responsible of one part of their decisions. Only if they understand how our bodies work, they will be able to take care of them. They need to learn and understand before making decisions. That is the main point of these lessons.

Teachers involved in this unit will tell their students to make up a cross curricular activity. The idea is to carry out an oral presentation. They will choose the respiratory o the circulatory system, and one or two skills (endurance, speed, flexibility, strength). They will prepare a training planning for six weeks explaining the changes the body undergoes. They will need to use the key vocabulary they have learnt: blood pressure, heart, pulse, veins, continuous training, Fartlek, pulse, muscles, pace, stretch, warm up, sit ups, long jumps, weights…

In support of their oral presentations students have to make a Power Point with images and notes in English.

The Physical Education teacher will help them with key vocabulary, training session examples, theoretical contents, exercises, healthy habits and physical fitness and skills, and solving doubts.

The Biology teacher will help them with key vocabulary, theoretical contents about both the circulatory and respiratory systems, giving examples and solving doubts.

The English teacher and the language assistant will help them with key vocabulary, language scaffolding, pronunciation, intonation and grammatical structures.

This final project will be presented using one or two sessions (it could be a PE, Biology or English class). Students will assess the rest of their classmates and they will also do a self-evaluation using specific worksheets.

Teachers will mark their students using specific rubrics. Each student will have three different marks in these three different subjects: Physical Education, Biology and English.

2.9.- EXTRA-CURRICULAR ACTIVITIES: A TOPIC LINKED TO THE HEALTH PROJECT AT SCHOOL

Students will present their final works during the School Health Project week. The best projects will be uploaded on the Bilingual Blog and they will be marked with an extra point that term.

They will prepare a poster with the best project trying to motivate other students. They will decorate the school. This point is very important. Teachers need to remember that students need motivation. And in secondary education pupils need to improve their self-confidence. Showing the results of hardworking could be a very nice way to do it.

At the same time, at this age adolescents do not listen to adults. They think that unhealthy habits are "cool" and they do not accept advises. But is the opposite if the advice comes from one peer. They really appreciate their friend's words. So, with a Health Project made by their schoolmates, information will be better accepted.

2.10. - MATERIALS. RESOURCES NEEDED.

http://www.bbc.co.uk/schools/gcsebitesize/pe/appliedanatomy/3_anatomy_muscles_rev1.shtml

http://www.bbc.co.uk/schools/gcsebitesize/pe/appliedanatomy/0_anatomy_circulatorysys_rev4.shtml

http://www.teachpe.com/anatomy/blood.php

http://www.bbc.co.uk/schools/gcsebitesize/pe/appliedanatomy/1_anatomy_respiratorysys_rev1.shtml

http://www.teachpe.com/anatomy/breathing.php

2.11. – ASSESSMENT

Assessment is crucial during a unit. Students need to understand what and why they study. During the learning process teachers assess students. There is another important dimension on top: the peer and the self-assessment. If students are able to evaluate and mark other students, they will understand this important process and they will be more independent (one of the aims in secondary education). This will enable them to be critical and become more mature. For the assessment teachers could use assessment rubrics. These sum up the most important parts of the unit and are a useful tool to mark other students and themselves. In the end, they will be able to compare their evaluation with the teacher's mark.

Students Assessment Rubric							
Student name:				**Assignment:** Project: "Health Project"			
In pencil circle the number that best shows how well you feel that you completed the task.	**Excellent**	**Good**	**Average**	**Needs Improvement**	**Unacceptable**	**Rate Yourself**	**Teacher's Rating**
1 – To know the name of different muscles and their action. Skills, definitions.	10 - 9	8 - 9	7- 8	5 - 6	Less than 5		
2 – To know the main characteristics of the cardio respiratory and circulatory systems	10 - 9	8 - 9	7- 8	5 - 6	Less than 5		
3 – To apply training methods to improve your skills	10 - 9	8 - 9	7- 8	5 - 6	Less than 5		
4 – **Effort**: time you spent	10 - 9	8 -9	7- 8	5 - 6	Less than 5		
5 – **Craftsmanship** – Original, clean & complete.	10 - 9	8 -9	7- 8	5 - 6	Less than 5		
(50 possible points)	**Grade:**					**Your Total**	Teacher Total

Teachers Assessment Rubric						
Student name:			**Assignment:** Project: "Health Project"			
The student is able …	**Excellent**	**Good**	**Average**	**Needs Improvement**	**Unacceptable**	**Teacher's Rating**
1 – To remember the name of different muscles and their actions	10 - 9	8 - 9	7- 8	5 - 6	Less than 5	
2 – To explain processes of the cardio respiratory and circulatory system	10 - 9	8 - 9	7- 8	5 - 6	Less than 5	
3 – To use key vocabulary	10 - 9	8 - 9	7- 8	5 - 6	Less than 5	
4 – To apply the knowledge to a real training programme	10 - 9	8 -9	7- 8	5 - 6	Less than 5	
5 – To give examples and conclusions	10 - 9	8 -9	7- 8	5 - 6	Less than 5	
(50 possible points)	**Grade:**					Teacher Total

3) TO SUM UP

Coordination between teachers is the key element in this unit. The Physical Education teacher could use these materials alone, but he or she would spend much time and it would be difficult for students to apply the theoretical contents in real examples. Students only have two hours a week of this subject.

In a bilingual section sharing ideas is easier because English is the principal tool of the learning process. Similar contents are taught in Biology at this level, so working common contents at the same time is highly recommendable. On the other hand, students and CLIL teachers need to deal with key vocabulary and grammatical structures. This will be another key point of this unit. During its development students need to deal with the use of different structures to describe a process; they need to learn how to make very specific descriptions; they need to learn how to explain an action, etc.

It is a great opportunity for the language teachers to use this unit. CLIL and English teachers will be able to share ideas, texts, videos and webpages in a very specific context. Students get exposed to a wide variety of contents through three different subjects. They are learning Biology and Physical Education by using a language: English.

Students will get familiar with the different parts of their bodies, their functions and the methods to improve their skills such as endurance, speed, flexibility and strength. They will not only learn theoretical contents but also will be able to understand the main reasons to adopt healthy habits. The easiest way to avoid common illnesses is recognising and identifying the causes. At the same time, they will learn how to make descriptions, how to explain a process, most suitable grammatical structures to be used, key vocabulary, etc.

4) REFERENCES

Books:

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