



Generalitat de Catalunya
Departament d'Ensenyament

HEALTH & GENS



Institut Tarragona
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Generació Plurilingüe (GEP)

Year 1
2018-2019

Plantilla creada pel grup de formadores del Programa GEP (Generació Plurilingüe) del Departament d'Ensenyament. Curs 2018-2019






GEP 1	Task 1 : Input & Cooperative /Collaborative learning in CLIL
Title of the lesson or topic	ALCOHOL EFFECTS
Course / year / age	2nd ESO. (optional subject) / 2018-2019 / 13-14 years old
Timing	2h
Collaboration with	
Short description of the session/s	<p>This is a session of an optative called HEALTH. In this subject we combine health sensibilisation and lab practices. We talk about prevent effects of alcohol, drugs, tobacco...</p> <p>The main goal of these first sessions is prevent students from alcohol effects.</p> <p>To start doing lab activities, they have to know how to work in a lab, (Activity 1 and 2). Activity 1 is about preparing a poster with lab rules. Activity 2 is about recognizing lab tools.</p> <p>After that, in Activity 3 they visualized two videos about alcohol affection. Then, after being talking about alcohol, we explain that they must never accept any type of drink without knowing the origin although it looks like a known drink, Activity 4. Finally, Activity 5, Contextualization, students prepare a situation not to accept an extrange drink or a drink you don't know what it contains...</p>
<i>The descriptions of the activities below should contain:</i>	



1. *type of input,*
2. *questions (explicit, implicit and referential) posed by the teacher to ensure the students' involvement*
3. *dynamic instructions with collaborative and cooperative activities,*
4. *materials used.*

S E S S I O N 1	Activity 1	<p>Introducing how to work in a lab.</p> <p>Inputs: Rules in the lab.</p> <p>Activity: Make groups of four giving different elements from periodic table. In this groups they must think the answer of these questions?</p> <p>Questions?</p> <ul style="list-style-type: none">- What are the most important rules in the lab?- Can I taste anything that is produce or use in the lab?- Have we got in the lab any dangerous materials?- How I would like to find the lab when I start the class? <p>- Activity: Create a poster in the same group with their own rules.</p> <ul style="list-style-type: none">● Follow directions exactly as they are given.● Wear safety goggles when they are needed.● Never taste in Science class.● Clean up all materials after use it. <p> TIME: 20 minutes</p>
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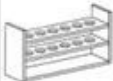








Activity 2


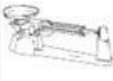


-Input: Recognize lab tools.

- **Activity: Organize the class in 4 groups giving them different pictures of lab tools.**
 Then, Give this peces to the students and complete this puzzle.

Tool	Picture	Use
Hot Plate		Used to heat glassware and it's contents
Medicine Dropper		Used to transfer exact amounts of liquids
Safety Goggles		Protects the eye to prevent chemicals or particles from striking the eye
Test Tube		Used to hold, mix, or heat small amounts of liquids

Tool	Picture	Use
Test Tube Holder		Used to handle hot test tubes
Test-Tube Rack		Keeps test tubes upright
Petri Dish		A shallow dish used to culture organisms
Microscope Slide		Holds objects to be examined under a microscope

Tool	Picture	Use
Microscope		Helps magnify the features of an object.
Metric Ruler		Measures the height, length, or width of an object. (cm & mm)
Graduated Cylinder		Measures the volume of liquid in mL
Beaker		Measures the volume of liquid in mL. It is good for stirring and mixing.


Tool	Picture	Use
Double Pan Balance		Measures the mass of an object in grams. It has a pan on each side of the balance.
Triple Beam Balance		Measures the mass of an object in grams. It has a pan on one side & 3 beams on the other side.
Spring Scale		Measures the amount of force needed to move an object. Force is measured in Newtons (N).
Thermometer		Measures temperature in Fahrenheit and Celsius.

Assessment Vocabulary activity: Using the presentations "Word Art".



Tell me as much as tools you know and we'll create a nice draw with word art.

 **TIME: 20 minutes**



	Activity 3	<p>Watch these video: How Alcohol Affects Your Developing Brain</p> <p>https://www.youtube.com/watch?v=-6g5oy7bRnA</p> <p>https://www.youtube.com/watch?v=1bhO9BUHeLE</p> <p>In pairs answer make 3 questions from the video to the rest of the class.</p> <p> TIME: 20 minutes</p>
	Activity 4	<p>- PRACTICE: It looks water... is it water? Input: Identify the difference between two similar liquids. Stand up everybody and joint according the season they were born.</p> <p>MATERIAL: Beaker, graduated cylinder, plastic tray, two plastic glass.</p> <p>REAGENT: Water, hydrogen peroxide,potassium iodide, food coloring, dish soap.</p> <p>PROCEDURE: 1rt. Fill glass (A) with water. Aprox 30 ml. 2nd.Fill glass (A) with hydrogen peroxide. Aprox 30 ml. 3rd. Add two drops of food coloring in each glass. 4th. Add two drops of dish soap in each glass and mix softly. 5th. Add the salt to both glasses.</p> <p>RESULTS: They must write the results in this grid</p>



		<table border="1"><thead><tr><th>ACTIONS</th><th>GLAS (1)</th><th>GLAS(2)</th></tr></thead><tbody><tr><td>COLORING</td><td></td><td></td></tr><tr><td>SOAP</td><td></td><td></td></tr><tr><td>SALT</td><td></td><td></td></tr></tbody></table>	ACTIONS	GLAS (1)	GLAS(2)	COLORING			SOAP			SALT		
		ACTIONS	GLAS (1)	GLAS(2)										
		COLORING												
		SOAP												
		SALT												
<p>To do this experiment, each student has a own responsibility.</p> <ul style="list-style-type: none">• Student 1 prepare all the material they need• Student 2 do the experiment.• Student 3 writes the results on the grid• Student 4 Take pictures for the final report.														
<p> TIME: 40 minutes</p>														
Activity 5	<p>Contextualization: Divide the class in 4 groups according the different levels of abilities. Prepare a dialog with different situation where someone offers you an exrange drink or a drink you don't know what it contains... Recording this video and show to the rest of the class.</p> <p> TIME: 20 minutes</p>													



In terms of academic content, what are the students learning and what are they learning to do?	Students are learning how to work in a lab, all the rules they must follow, and how to work in a lab in a safety way. Students are learning all the vocabulary from the lab. materials. Students are learning chemistry reactions.
In terms of language, what are the students practicing or learning to do?	Students are learning new vocabulary.They are learning how to make an explanation with different steps. Students are learning how to work following the scientific method, making first an hypothesis and analysing the results.
In what way is this lesson plan a good example of what we learnt in the GEP course session?	This lesson plan is a good example of what we do in GEP because the students learn how to work in a cooperative and collaborative way. And english is the language they use and practice.
Other important information	
ANNEXES (materials, handout, pictures... if not possible to include in the activity section.)	file:///C:/Users/asus/Desktop/pen/ALCOHOL/standards-alignment-lessons.pdf



Task 1 : Input & Cooperative /Collaborative learning in CLIL	YES/NO
1. Students are presented with multimodal and varied input (spoken, written, visual, hands-on...)	yes
2. The input presented is used to help learners understand ideas and construct meaning	yes
3. The input is presented at the right cognitive level and the right language level , i.e. it is neither too challenging in terms of content nor too difficult in terms of language.	yes
4. Students are helped in some way to understand , i.e. input is made comprehensible	yes
5. Students are helped in some way to process the input presented, i.e. activities or questions make students think and construct meaning.	yes
6. The input and activities presented cater to multiple intelligences	yes
7. Students are presented with good questions (explicit, implicit and referential) that help them process input and that challenge them not only to understand, but to think, create...	yes
8. A variety of collaborative learning strategies are used throughout the session.	yes
9. At least one of the activities presented requires cooperation among students.	yes



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10. Students are explicitly taught how to work in groups (or pairs).	yes
11. Students are explicitly guided to succeed in group/pair work discussions and interactions . Clear support to guide their interactions is provided.	yes
12. At least one ICT tool is used to promote digital collaborative learning .	yes



GEP 1	Task 2: Reading, writing and Assessment in CLIL
Title of the lesson or topic	GENETIC INHERITANCE
Author	Elena Palmero
Course / year / age	4rd of ESO
Number of sessions	Two
Collaboration with...	
Main objectives of the sessions	1- Understand genètic concepts: CHROMOSOMES - GEN- PHENOTYPE- GENOTYPE- DNA- ALLELES- HOMOZYGOT- HETEROZYGOT 2- Understand Mendel experiments and the three laws. Describe genealogical trees. 3- Name differences between DNA and RNA. 4-Learn The Central Dogma of Molecular Biology: DNA makes RNA makes proteins. Describe transcription and translation.

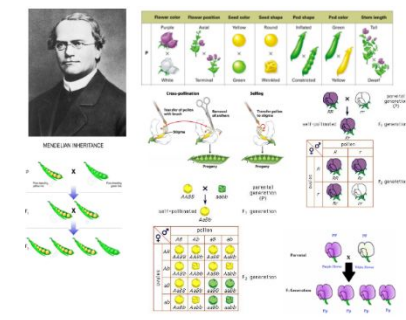
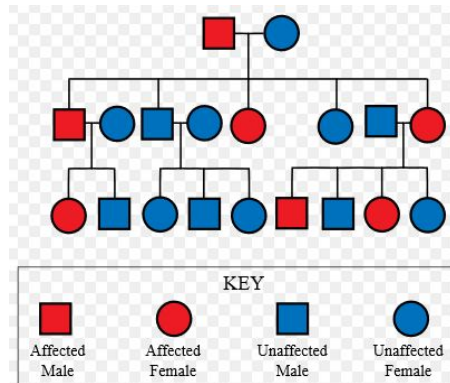


<p><i>Short description of the sessions</i></p>	<p>These are two sessions of Genetics. In the first one, we are going to see how characters pass through generations using Mendel Laws. And we're going to analyze different diseases.</p> <p>In the second session we are going to learn The Central Dogma of Molecular Biology, how DNA makes RNA and how RNA makes proteins. For this, we are going to watch a video, and play a game to create a doll with a specific characters.</p>
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<p><i>The descriptions of the activities below should contain:</i></p> <ol style="list-style-type: none"> 1. <i>collaborative and cooperative activities instructions (including the timing and the language support)</i> 2. <i>type of support,</i> 3. <i>readings and writings planned,</i> 4. <i>assessment tools</i> 5. <i>materials used</i> 		<p>Timing</p>	
<p>S E</p>	<p>Activity 1</p>	<ul style="list-style-type: none"> - Divide the class in 8 groups according the different colour of their hair. - Create a map mind about genetic inheritance concepts. 	<p>10 minutes</p>



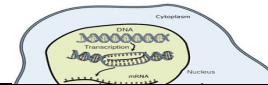


S S I O N		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>DNA</td> <td>ALLELES</td> <td>GENS</td> <td>HOMOZYGOUS</td> <td>RECESSIVE</td> <td>PHENOTYPE</td> </tr> <tr> <td>CHROMOSOMES</td> <td>GENOTYPE</td> <td>HAPLOID</td> <td>HETEROZYGOUS</td> <td>DIPLOID</td> <td>DOMINANT</td> </tr> </table> <p>- ASSESSMENT: Writing strategies: Write a short explanation about this.</p>	DNA	ALLELES	GENS	HOMOZYGOUS	RECESSIVE	PHENOTYPE	CHROMOSOMES	GENOTYPE	HAPLOID	HETEROZYGOUS	DIPLOID	DOMINANT	
	DNA	ALLELES	GENS	HOMOZYGOUS	RECESSIVE	PHENOTYPE									
	CHROMOSOMES	GENOTYPE	HAPLOID	HETEROZYGOUS	DIPLOID	DOMINANT									
<p>Activity 2</p> <p>- Generate a poster with printouts about Mendel's Law. In these pictures there are Mendel's experiments. Formulate the three laws through this pictures.</p> <p>- ASSESSMENT: Write the three Mendel's Laws. Compare what they have written with the original ones.</p>		<p>20 minutes</p>													
<p>Activity 3</p> <p>- Problem: Analyse a family tree and describe how characters pass to the following generation.</p> <p>MODEL: Huntington's disease is a dominant autosomal hereditary disease. The family tree corresponds to a family affected by the disease. Analyse and answer following questions.</p> <ul style="list-style-type: none"> - What are the possible genotypes of all the members? - What is the probability that a person n.10 will develop the disease? <p>- Decide what kind of inheritance is each tree.</p> <p>- ASSESSMENT: Create an inheritance problem and design its family tree in order to know if you have understood the genetics naming.</p>	 <p style="text-align: right;">the</p>	<p>20 minutes</p>													





		Use the correct words to describe this illness. Create a list of tips to understand what kind of disease develops in this family.	
S E S S I O N 2	Activity 4	1- Divide the class in 8 groups according the different colour of their eyes. Reading strategies: Watch this video and take notes, then compare the notes with the rest of the group. https://www.youtube.com/watch?v=bKlpDtIdK8Q&t=54s	6 minutes
	Activity 5	2-Read these paragraphs and put in the correct order according with the previous video. <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>The genetic material is stored in the form of DNA in most organisms. In humans, the nucleus of each cell contains 3×10^9 base pairs of DNA distributed over 23 pairs of chromosomes, and each cell has two copies of the genetic material. This is known collectively as the human genome. The human genome contains around 30 000 genes, each of which codes for one protein.</p> </div> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>The Central Dogma of Molecular Biology states that DNA makes RNA makes proteins. The process by which DNA is copied to RNA is called transcription, and that by which RNA is used to produce proteins is called translation.</p> </div> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>Transcription is the process of making an RNA copy of a gene sequence. This copy, called a messenger RNA (mRNA) molecule, leaves the cell nucleus and enters the cytoplasm, where it directs the synthesis of the protein, which it encodes.</p> </div> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>Translation is the process of translating the sequence of a messenger RNA (mRNA) molecule to a sequence of amino acids during protein synthesis. The genetic code describes the relationship between the sequence of base pairs in a gene and the corresponding amino acid sequence that it encodes. In the cell cytoplasm, the ribosome reads the sequence of the mRNA in groups of three bases to assemble the protein.</p> </div> <p>3- Reading and writing:</p>	10 minutes





	<p>Put all this paragraphs beside the picture.</p>	
<p>Activity 6</p>	<p>Assessment activity: Competition to create a doll with defined characters.</p> <p>We organized the class in two groups. Each group has different sequence of DNA. Firstly they have to find the mRNA sequence. Secondly, using Genetic Code, they have to find the sequence of the proteins. Each protein means a phenotype character. They must find the correct character and create their doll.</p> <p>This activity has two possibilities. The first one consists in creating a doll with a plastic bottle, and the second one, using a drawing program in their mobiles as a TIC assessment activity.</p> <p>It wins the first group who has the doll correctly done. After that they must write a description of the doll.</p> <p>TIC ASSESSMENT ACTIVITY: To conclude this unit we'll do a contest about transcription and translation using quizlet.</p> <p>https://quizlet.com/99344368/transcription-and-translation-practice-flash-cards/</p>	<p>40 minutes</p>
<p>In terms of academic content, what are the students learning and</p>	<p>Students are learning genetic inheritance vocabulary.</p> <p>Students are learning how characters pass through generations and they are learning how to analyze a family tree.</p>	



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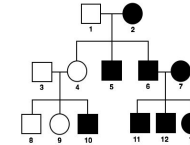
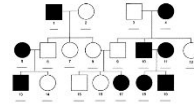
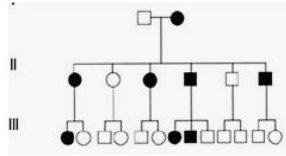
what are they learning to do?	Students are learning the Central Dogma of Molecular Biology and their reactions. They are also learning how our characters pass from DNA to proteins.	
In terms of language, what are the students practicing or learning to do?	Students are learning and reading new vocabulary. Students are learning how to make an hypothesis and analysing the results. Students are learning how to write or summarize a process and explain conclusions. They are learning how to make an explanation with different steps.	
In what way is this lesson plan a good example of what we learnt in the GEP course session?	This lesson plan is a good example of what we do in GEP because the students are practicing how to understand a text in a foreign language, reading and writing in a cooperative way. English is the language they use and practice.	
Other important information		
ANNEXES (materials, handout, pictures... if not possible to include in the	https://www.youtube.com/watch?v=bKlpDtJdK8Q&t=54s https://quizlet.com/99344368/transcription-and-translation-practice-flash-cards/ Handouts:	

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activity section.)



1st LAW: The Law of Dominance: In this law, each character is controlled by distinct units called factors, which occur in pairs. If the pairs are heterozygous, one will always dominate the other.

An organism with alternate forms of a gene will express the form that is dominant.

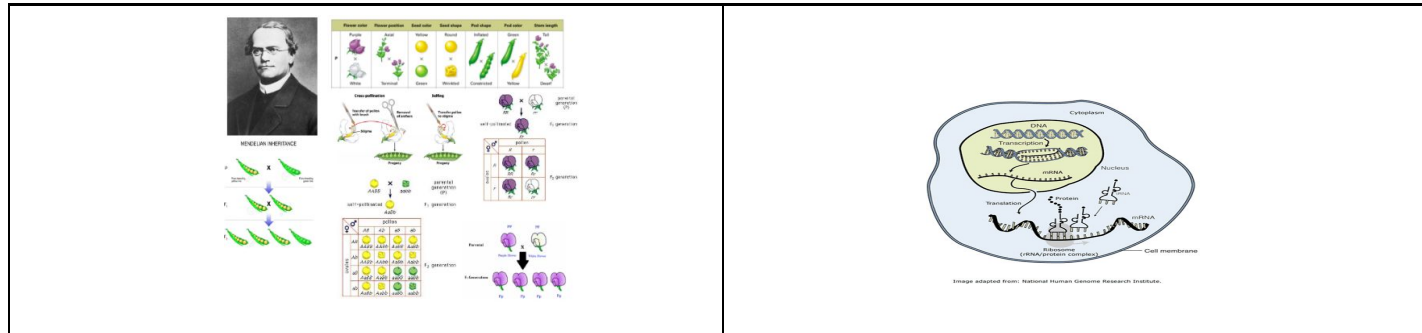
2nd LAW: Law of segregation is the second law of inheritance: This law states that the pair of alleles segregates from each other during meiosis (gamete formation) so that only one allele will be present in each gamete. The law of segregation is based on the fact that each gamete contains only one allele.

3rd LAW: The Law of Independent Assortment, law of recombination: Genes for different traits are sorted separately from one another so that the inheritance of one trait is not dependent on the inheritance of another.

- **Alleles or Variants:** Different forms (i.e. different DNA sequences) of the same gene or genetic locus. Often called A,B or A,a.
- **Diploid organisms:** Chromosomes come in pairs in (e.g. humans)
- **Genotype:** Pair of alleles at a locus (e.g. AA, Aa, aa)
- **Heterozygote:** genotype with different alleles on the two chromosomes (e.g. Aa)
- **Homozygote:** genotype with the same alleles (e.g AA, aa)



- **Phenotype:** An observable characteristic or trait
- **Diploid:** cells have **two** copies of each chromosome Haploid: cells have **only** one copy of each chromosome



Self assessment checklist

Task 2 : Reading, writing in CLIL and Assessment	YES/NO
1. Support is provided to help students read and understand texts.	YES





2. Before-, during- and after- reading activities are prepared.	YES
3. The materials use visuals to support comprehension.	YES
4. The writing process takes place in joint collaboration with the teacher (modelling)	YES
5. Support is provided to help students write (the students are provided with language patterns, language frames, vocabulary banks...)	YES
6. The teacher uses different strategies to help students throughout the process of reading and writing	YES
7. The teacher has previously predicted the language the students will need when carrying out the different tasks successfully and, therefore, is aware of the content-obligatory language .	YES
8. At least the teacher uses 1 type of assessment (self-assessment, teacher assessment or co- assessment)	YES
9. At least teacher used 1 type of designed assessment tool during the sessions (rubric, digital app, checklist, personal dossier...)	YES