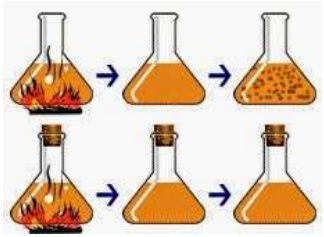
Generalitat de Catalunya
Departament d'Educació



SCIENTIFIC METHOD
LIFE GENERATION
& THE 5 KINGDOMS

INSTITUT VICENÇ PLANTADA
Anna Girbau Lloveras

Generació Plurilingüe (GEP)
Year 1
2018-2019

GEP 1		Task 1 : Input & Cooperative /Collaborative learning in CLIL
Title of the lesson or topic		Biogenesis & Spontaneous Generation. The Scientific method.
Course / year / age		1st ESO (12 years old)
Timing		2 sessions of 1 hour
Short description of the session/s		Students will get introduced to the Scientific Method and two controversial visions of Life Generation (Biogenesis & Spontaneous Generation). During these 2 sessions they will learn about this, trough different activities with different inputs.
SESSION 1	**Activity 1** **Diagram and Think-pair share activity about *Life Generation***	Inputs: Visual and written inputs (diagram and questionnaire) Questions: Implicit (question 1 and 2), referential (question 3) Instructions: • In pairs, students will be given a diagram about *Life Generation*. They have to analyze the diagram, try to explain it to each other (it can be in Catalan), and answer 3 questions briefly. Collaborative activity. (5 minuts) • 2 groups will join to pool the answers and the explanation of the diagram. Collaborative activity. (3 minuts) Materials: ❖ Groups of students arranged by teacher (for activity 1 and 5) ❖ *Life Generation* diagram. https://drive.google.com/file/d/1PXW3xXfVfRQySdXiXXSymp1EZDikbWPU/view?usp=sharing ❖ Questionnaire ○ What are we going to study? ○ How many theories do exist? ○ Which theory do you think is true?

	Activity 2 **Biogenesis and Spontaneous Generation Powtoon and Dictogloss**	Inputs: Spoken, Audio-visual, Practical-hands on. Questions: Implicit and Referential Instructions: • Students (in groups of 4) will be given some pieces of Life Generation history. • Teacher will read an explanation text about *Biogenesis and Spontaneous Generation*. Meanwhile, students have to order the pieces according to the teacher's reading (one for each group). Collaborative activity. • The Powtoon called *Biogenesis and Spontaneous Generation* (with the reading of the same explanation text) will be projected in class twice. Students have to correct their pieces distribution on the time-line. Collaborative activity. • Finally they have to stick their photocopied pieces at their photocopied sheet. Individual activity. • Sweets for the ones who did it correctly, that means everybody (fingers crossed) Materials: ❖ Explanation text about *Biogenesis and Spontaneous Generation* https://drive.google.com/file/d/1GoNrpVfb4n-BdqteNRDkcjVFt8k9Mn2A/view?usp=sharing ❖ *Biogenesis and Spontaneous Generation* Powtoon. https://www.powtoon.com/c/c34eV9AWXCD/1/m ❖ Pieces of *Biogenesis and Spontaneous Generation* activity (game) https://drive.google.com/file/d/16gxhGphCyo5ewvfbHbV49AtE1cF_ulRg/view?usp=sharing ❖ Pieces of *Biogenesis and Spontaneous Generation*, and the sheet (student sheet) ○ Student's sheet: https://drive.google.com/file/d/1NqahAELbDRPShf4AW8vjOfwt0uMgFtHn/view?usp=sharing ○ Solution: https://drive.google.com/file/d/1gwtM63wtePj9RZwaRT2BpnEXfvr9zrPa/view?usp=sharing ❖ Sweets
	Activity 3 **True or false activity. Exit ticket activity.**	Inputs: Spoken Questions: Referential Instructions: • Teacher will read some words or sentences related to *Life Generation Theories*. As Spontaneous Generation is a refused theory and Biogenesis is the current theory, students have to show a green card if the words or sentences are related to *Biogenesis* and a red card if they are related to *Spontaneous Generation*. Individual activity. • If some words are written on the blackboard, the teacher can point at them in order to make the activity easier.

<table>
<tr><td></td><td></td><td>Materials:
❖ List of words and sentences related with Life Generation Theories.
<table><tr><td>Biogenesis</td><td>Green</td></tr><tr><td>Aristotle</td><td>Red</td></tr><tr><td>Francesco Redi experiment (flies on the egg)</td><td>Green</td></tr><tr><td>Van Helmont experiment (mouse generation)</td><td>Red</td></tr></table><table><tr><td>Spontaneous Generation</td><td>Red</td></tr><tr><td>Louis Pasteur Experiment</td><td>Green</td></tr><tr><td>A crocodile from a dead tree</td><td>Red</td></tr><tr><td>Water and fire originate life</td><td>Red</td></tr></table>❖ Green and red cards.</td></tr>
<tr><td rowspan="2">SESSION 2</td><td>Activity 4

Refreshing activity. Biogenesis & Spontaneous Generation Kahoot</td><td>Inputs: Visual, Written
Questions: Implicit
Instructions:
• Students will answer a Kahoot questionnaire individually.
Materials:
❖ Kahoot
❖ PC for students without a personal device
❖ Wifi password</td></tr>
<tr><td>Activity 5

The Scientific Method. Steps & cooperative poster</td><td>Inputs: Written
Questions: Referential
Instructions:
• Students of each group will have a different rol:
○ Rol 1. Material coordinator
○ Rol 2. Secretary
○ Rol 3. Writer and artist
○ Rol 4. Writer and artist</td></tr>
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Cooperative activity:

<table>
<tr><th>Step</th><th>Task</th><th>Student in charge</th></tr>
<tr><td>1st step</td><td>Pick up materials</td><td>Student 1.</td></tr>
<tr><td>2nd step</td><td>Order pieces and discussion.
All students have to agree on the answer.</td><td>All students.</td></tr>
<tr><td>3rd step</td><td>Complete the answer sheet</td><td>Student 2.</td></tr>
<tr><td>4th step</td><td>Prepare the answer to explain it in front of the class.
We think that the order of the Scientific Method Steps is …</td><td>Volunteer</td></tr>
<tr><td>5th step</td><td>In big group, they will check the answer</td><td>All students.</td></tr>
<tr><td>6th step</td><td>Pick up materials for poster creation</td><td>Student 1.</td></tr>
<tr><td>7th step</td><td>Create the poster. Each group, one step.
It will include: step number, definition, draw o decoration</td><td>Student 3 and 4.</td></tr>
<tr><td>8th step</td><td>Stick the poster in the big poster of the Scientific Method</td><td>Student 1 and 2.</td></tr>
</table>
Materials:

Groups of students arranged by teacher (for activity 1 and 5)
Scientific method steps pieces. Answer sheet.
https://drive.google.com/file/d/1fcPHoCdX1VjKbGyaNSWy7QinP3QrT1Cf/view?usp=sharing
Materials for poster creation: Colour sheets, sign makers, big poster, Scientific Method title, sticker.

</td>
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<tr>
<td></td>
<td>Activity 6

Wrap up activity. Cards table of Scientific Method and Experiments.</td>
<td>
Inputs: Visual and Written
Questions: Referential
Instructions:

Dancing groups formation (3 students per group)
Students will be given an empty chart with some cards to complete the chart.
In groups, they have to discuss the order of the cards. Self-correction.

Materials:

Music
Chart and cards.
Self-correction sheet.
https://drive.google.com/file/d/1ezCcPb9BRkpcTy3kT1YOJguxwz9F0uiM/view?usp=sharing

</td>
</tr>
</table>

In terms of academic content, what are the students learning and what are they learning to do?	✓ Life generation theories: Biogenesis and Spontaneous Generation ✓ Experiments to demonstrate or refuse the theories ✓ Scientific Method Steps
In terms of language, what are the students practicing or learning to do?	○ English listening ○ Vocabulary ○ Sentences in the past tense
In what way is this lesson plan a good example of what we learnt in the GEP course session?	➢ Different activities (from or adapted from the course) ➢ Different inputs ➢ Different kind of questions ➢ For different intelligences ➢ Listening and a little speaking in English ➢ Group work (collaborative and cooperative)
Other important information	Students will also improve: ▪ Extract information from a diagram ▪ Order information in a chart
ANNEXES (materials, handout, pictures… if not possible to include in the activity section.)	**FIRST SESSION** **Activity 1. Diagram and Think-pair share activity about *Life Generation.*** Materials: ❖ Groups of students arranged by teacher (for activity 1 and 5) ❖ *Life Generation* diagram and questionnaire https://drive.google.com/file/d/1PXW3xXfVfRQySdXiXXSymp1EZDikbWPU/view?usp=sharing

Activity 2. Biogenesis and Spontaneous Generation Powtoon and Dictogloss. Materials:

- Explanation text about *Biogenesis and Spontaneous Generation* https://drive.google.com/file/d/1GoNrpVfb4n-BdqteNRDkcjVFt8k9Mn2A/view?usp=sharing
- *Biogenesis and Spontaneous Generation* Powtoon. https://www.powtoon.com/c/c34eV9AWXCD/1/m
- Pieces of *Biogenesis and Spontaneous Generation* activity (game) https://drive.google.com/file/d/16gxhGphCyo5ewvfbHbV49AtE1cF_ulRg/view?usp=sharing
- Pieces of *Biogenesis and Spontaneous Generation*, and the sheet (student sheet)
  - Student's sheet: https://drive.google.com/file/d/1NqahAELbDRPShf4AW8vjOfwt0uMgFtHn/view?usp=sharing
  - Solution: https://drive.google.com/file/d/1gwtM63wtePj9RZwaRT2BpnEXfvr9zrPa/view?usp=sharing
- Sweets

Activity 3. True or false activity. Exit ticket activity. Materials:

- List of words and sentences related with *Life Generation Theories*.

Biogenesis	Green
Aristotle	Red
Francesco Redi experiment (flies on the egg)	Green
Van Helmont experiment (mouse generation)	Red

Spontaneous Generation	Red
Louis Pasteur Experiment	Green
A crocodile from a dead tree	Red
Water and fire originate life	Red

- Green and red cards.

SECOND SESSION

Activity 4. Refreshing activity. *Biogenesis & Spontaneous Generation* Kahoot. Materials

- Kahoot
- PC for students without a personal device
- Wifi password

Activity 5. The Scientific Method. Steps & cooperative poster. Materials

- Groups of students arranged by teacher (for activity 1 and 5)
- Scientific method steps pieces. Answer sheet.
  https://drive.google.com/file/d/1fcPHoCdX1VjKbGyaNSWy7QinP3QrT1Cf/view?usp=sharing
- Materials for poster creation: Colour sheets, sign makers, big poster, Scientific Method title, sticker.

Activity 6. Wrap up activity. Cards table of Scientific Method and Experiments. Materials

- Music
- Chart and cards.
- Self-correction sheet.
  https://drive.google.com/file/d/1ezCcPb9BRkpcTy3kT1YOJguxwz9F0uiM/view?usp=sharing

Self assessment Checklist

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 (all of them)
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
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**.	NO (not to promote collaborative learning)

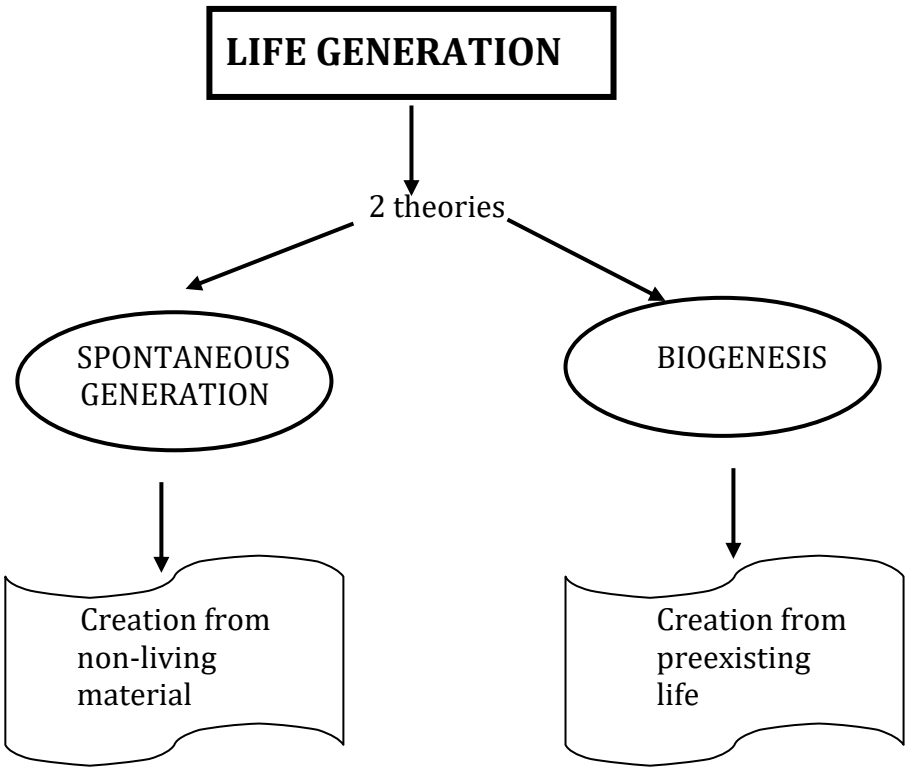
ANNEXES

Activity 1. Diagram and Think-pair share activity about *Life Generation.*

- *Life Generation* diagram and questionnaire

ACTIVITY 1

1. Observe this diagram and analyze the diagram. Try to explain it to your partner.



2. Answer these questions with your partner.

- What are we going to study?
- How many theories do exist?
- Which theory do you think is true?

Activity 2. Biogenesis and Spontaneous Generation Powtoon and Dictogloss.

- Explanation text about *Biogenesis and Spontaneous Generation*

BIOGENESIS & SPONTANEOUS GENERATION

How life is created?

How can worms appear in meat? Where do they come from?

There were different ideas in the past.

In Ancient Greece

- People thought that lifes originated from water mixed with fire.
- There was a philosopher called Aristotle, who explained that a crocodile could appear from a dead three on a lake.
- They thought it was *Spontaneous Generation*.

The *Spontaneous Generation* theory says that:

- Life can appear from anywhere
- Living organisms appear from non-living matter (for example fire or a dead tree)

In the XVII century:

- There was a scientist called Van Helmont that did an experiment to demonstrate Spontaneous generation. He mixed a dirty towel with cereals inside a pan. After 21 days mice would appear spontaneously. He tried it and it happened. It was *Spontaneous generation*.
- But in that century some people started thinking if this theory was true or false.
- Some years later, there was a scientist called Francesco Redi. He did an experiment to reject the *Spontaneous Generation* Theory. Why can worms appear in meat? Warms appear because flies put eggs before.

Was it *Spontaneous Generation*? Or was it *Biogenesis*?

Biogenesis is a theory that says that:

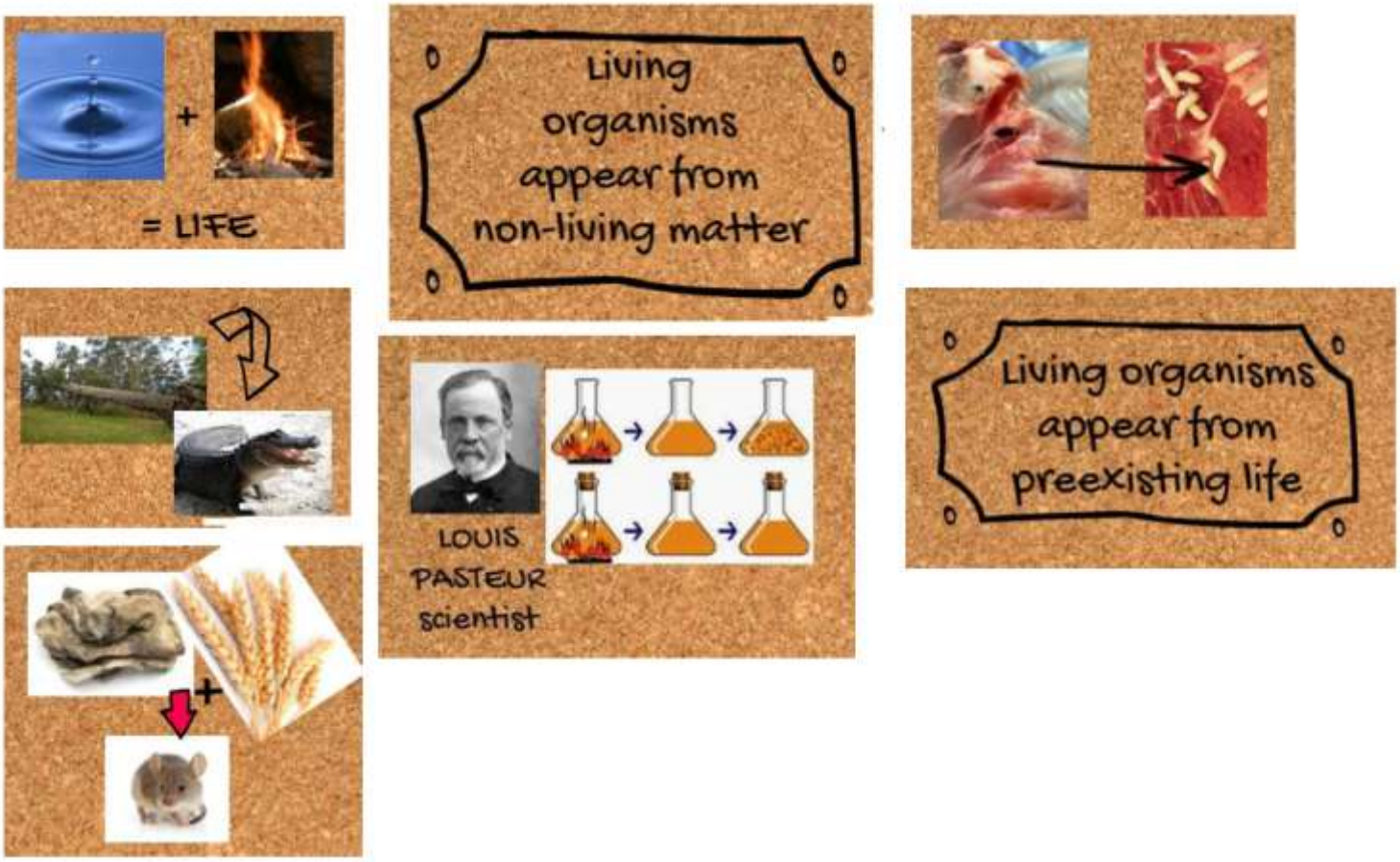
- Life appears from life.
- Living organisms appear from preexisting life.

But people in the XVII century thought that biogenesis was a crazy idea.

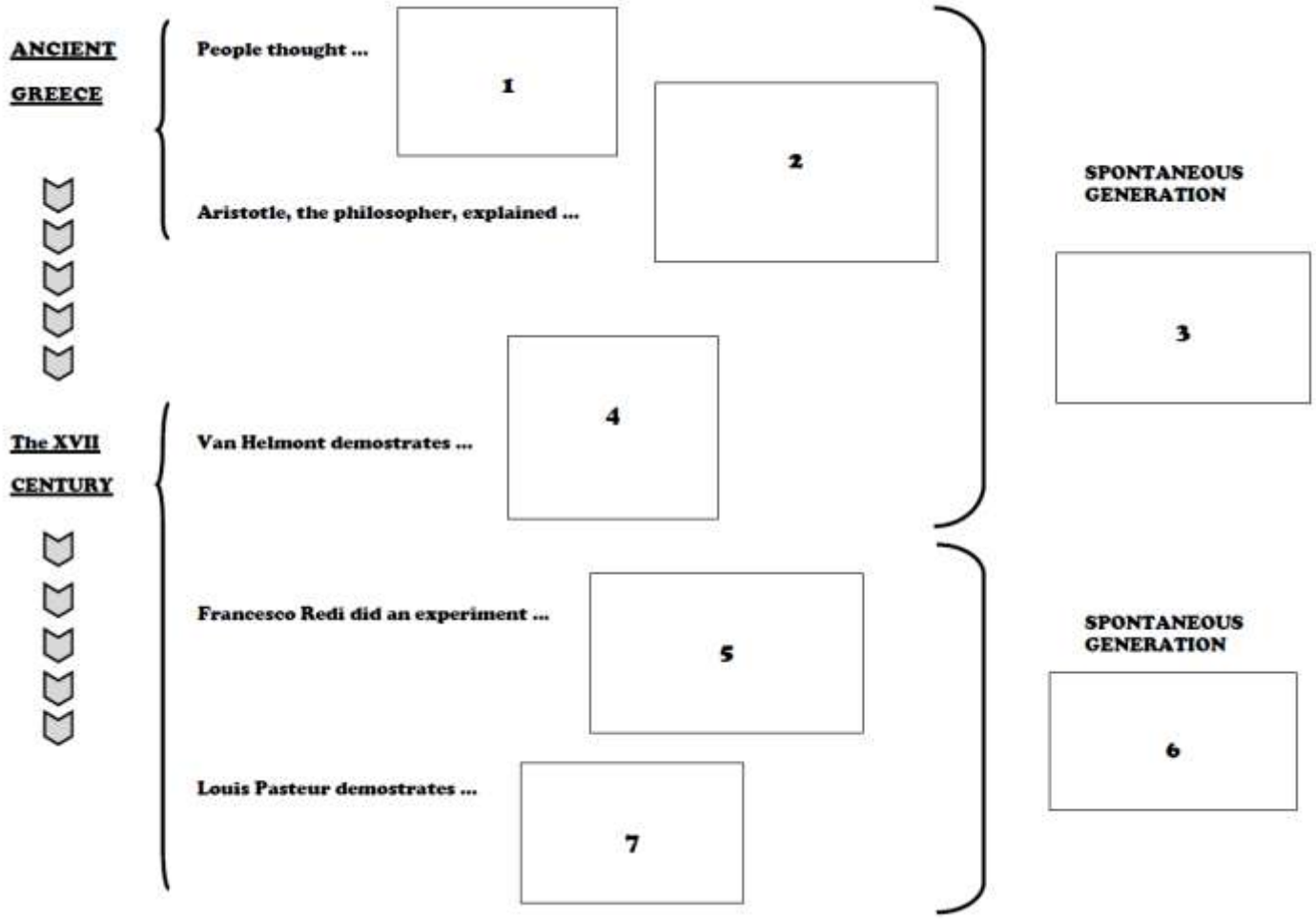
Finally, in the XIX century, a scientist called Louis Pasteur did an experiment and demonstrated that life only appears where there is life.

In conclusion, *Spontaneous Generation* is a false theory. *Biogenesis* is a true theory.

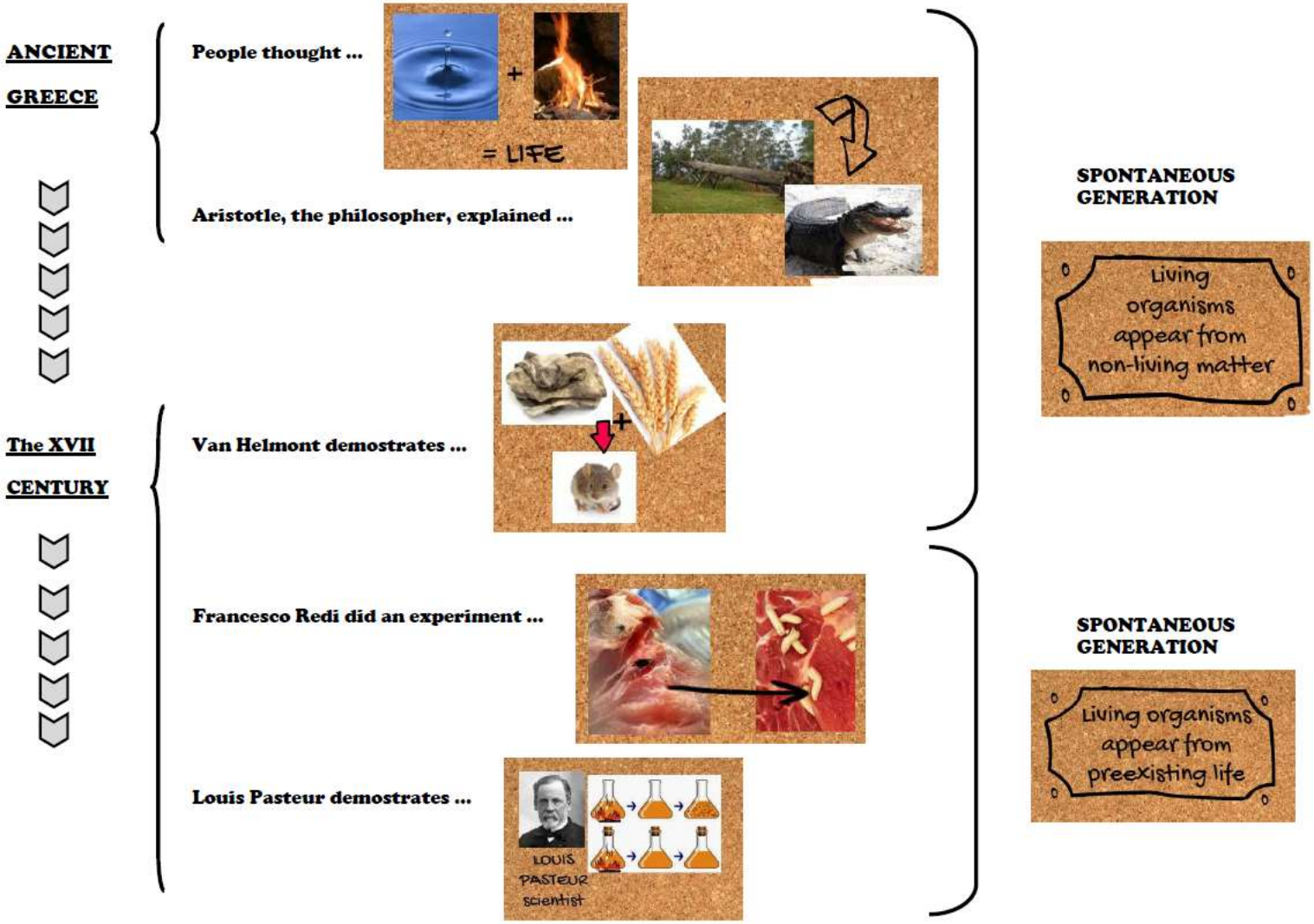
❖ Pieces of *Biogenesis and Spontaneous Generation* activity (game)



- Pieces of *Biogenesis and Spontaneous Generation*, and the sheet (student sheet)
  - Student's sheet:



- Solution:



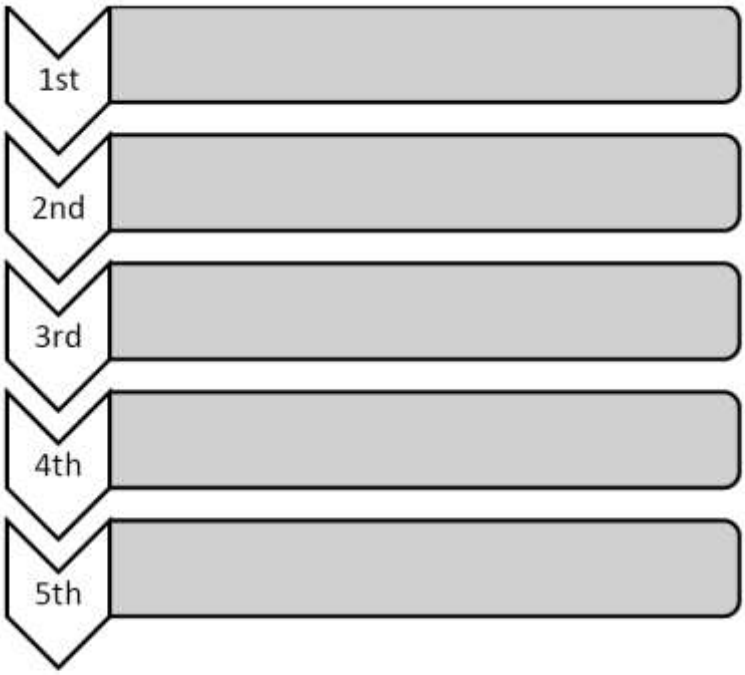
Activity 5. The Scientific Method. Steps & cooperative poster. Materials

- Scientific method steps pieces. Answer sheet.

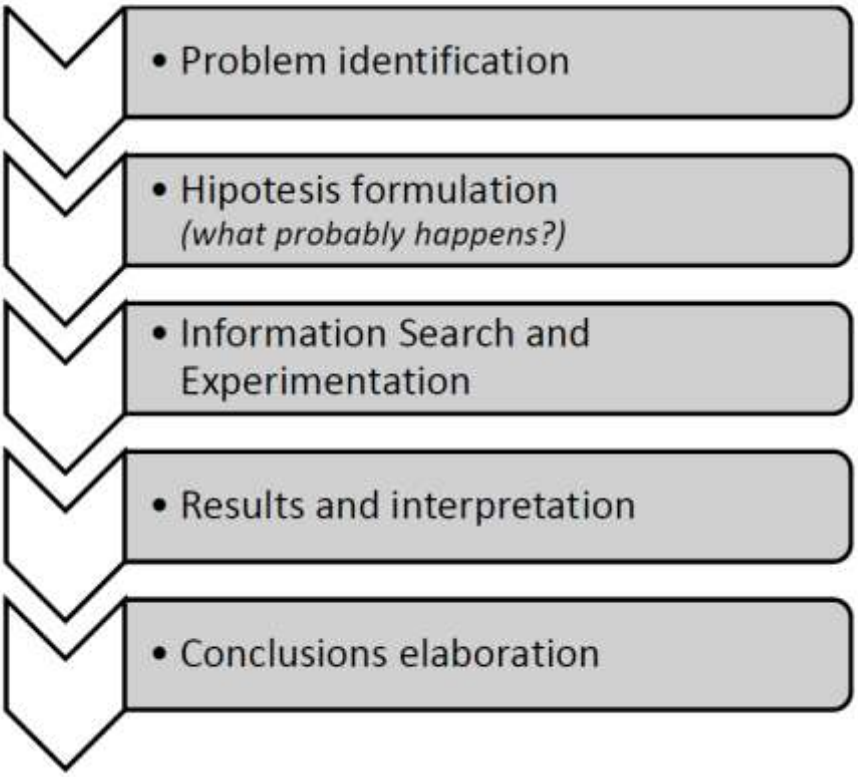
GROUP SHEET

THE SCIENTIFIC METHOD.

Step	Task	Student in charge
1st step	Pick up materials (sheet + pieces)	Student 1.
2nd step	Order pieces and discussion. All students have to agree on the answer.	All students.
3rd step	Complete the answer sheet below	Student 2.
4th step	Prepare the answer to explain it in front of the class. *We think that the order of the Scientific Method Steps is ...*	Volunteer
5th step	In big group, they will check the answer	All students.
6th step	Pick up materials for poster creation	Student 1.
7th step	Create the poster. Each group, one step. It will include: step number, definition, draw o decoration	Student 3 and 4.
8th step	Stick the poster in the big poster of the Scientific Method	Student 1 and 2.



MATERIAL


• Problem identification
• Hipotesis formulation
(what probably happens?)
• Information Search and Experimentation
• Results and interpretation
• Conclusions elaboration

<u>Activity 6.</u> Wrap up activity. Cards table of Scientific Method and Experiments. Materials

SCIENTIFIC METHOD & Redi's and Pasteur's EXPERIMENT

	Step	Redi's Experiment	Pasteur's Experiment
1	**Problem Identification**	Are organisms created by Spontaneous Generation?	Are organisms created by Spontaneous Generation?
2	**Hipotesis Formulation**	Organisms are not created by Sponteneous Generation	Organisms are not created by Sponteneous Generation
3	**Information Search and Experimentation**	Two pieces of meat inside two recipients. One recipient opened, the other closed, during some days.	Broth (infusion) in two different recipients. Boil the broth to kill living beings. Close one recipient opening. Open the other recipient opening.
4	**Results and interpretation**	Inside the open recipient there are fly larves. In the closed recipient there aren't any.	Inside the closed recipient, the broth remains without bacteria. In the opened recipient, bacteria are growing.
5	**Conclusions elaboration**	If flies don't reach the meat, they cannot lay eggs and no larves will appear. It's necessary for flies to reach the meat for larves appearance. It means Spontaneous Generation is not valid.	If bacteria cannot reach the broth, nothing appears inside the recipient. It means Spontaneous Generation is not true.

SCIENTIFIC METHOD & Redi's and Pasteur's EXPERIMENT

	Step	Redi's Experiment	Pasteur's Experiment
1	Problem Identification		
2	Hipotesis Formulation		
3	Information Search and Experimentation		
4	Results and interpretation		
5	Conclusions elaboration		

Are organisms created by Spontaneous Generation?	Are organisms created by Spontaneous Generation?
Organisms are not created by Sponteneous Generation	Organisms are not created by Sponteneous Generation
Two pieces of meat inside two recipients. One recipient opened, the other closed, during some days.	Broth (infusion) in two different recipients. Boil the broth to kill living beings. Close one recipient opening. Open the other recipient opening.
Inside the open recipient there are fly larves. In the closed recipient there aren't any.	Inside the closed recipient, the broth remains without bacteria. In the opened recipient, bacteria are growing.
If flies don't reach the meat, they cannot lay eggs and no larves will appear. It's necessary for flies to reach the meat for larves appearance. It means Spontaneous Generation is not valid.	If bacteria cannot reach the broth, nothing appears inside the recipient. It means Spontaneous Generation is not true.

GEP 1	Task 2: Reading, writing and Assessment in CLIL
Title of the lesson or topic	The 5 Kingdoms
Author	Anna Girbau Lloveras
Course / year / age	1st of ESO (12 years old). Biology & Geology
Number of sessions	2 sessions of 1 hour
Main objectives of the sessions	Contents: students will work on the 5 kingdoms, the characteristics of each group and some examples. At first, they are going to create a simple mind map together. After, they will worki cooperatively to discover the characteristics and to complete a chart. They will also classify some animals into vertebrates and invertebrates and they will create a mind map with the information provided. They will do their own assessment. Language: students will read some easy sentences in present simple (such as *They are prokaryotic beings*), write some words and explain the content to their colleges. They will have to use some vocabulary related to the contents (prokaryotic, eukaryotic, unicellular, multicellular, sexual reproduction, asexual reproduction, vertebrates, invertebrates, backbone,…) and some animal's vocabulary.
Short description of the sessions	During the first session, students will learn that living beings are classified into 5 kingdoms. The most common are Vegetals and Animals, but the others also exist and they are highly important. In cooperative groups, they will discover the characteristics of each kingdom and some images. The second session will focus on the Animal kingdom. They will become familiar with this kingdom and they will create a mind map with the information. Finally, there is going to be an assessment activity through a Plickers questionnaire.

		The descriptions of the activities below should contain: 1. *collaborative and cooperative activities instructions (including the timing and the language support)* 2. *type of support,* 3. *readings and writings planned,* 4. *assessment tools* 5. *materials used*	Timing
SESSION 1	**Activity 1** **Living Beings classification.** **Pre-reading task. First mind map.**	Collaborative activity, carried out with all the class. <u>Instructions</u>: • The teacher will write this question on the blackboard: "How many living beings kingdoms do exist?". They have to guess that there are 5. If it's necessary, teacher will translate *living beings kingdoms*. • The teacher will write on the blackboard a simple mind map about living beings kingdoms, just with 5 arrows. It also can be created with a digital mind map creator such as Popplet (*popplet.com*). • The teacher will ask students to observe the image projected on the white board. Each student will receive a card with a name of a living being and they will have to stick it (with blue tack) next to the image. They will be some rules: only 4 students can be up at the same time and they have to do the activity in silence. Two students will keep a checking list, to be used if it's necessary. If they comply the rules they are going to receive sweets or biscuits. • After that, the teacher or a student will complete the mind map by writing the names on the blackboard or on the digital mind map with other students' collaboration. Each student will have to classify the living being that appeared on the card stuck. • They are supposed to name vegetal kingdom, animal kingdom and fungus kingdom beings. However, it is important to highlight to students that there are two other kingdoms with living beings that are also highly important. The Protista Kingdom (algae) and the Monera Kingdom (bacteria). • Students will copy the mind map on their notebook.	5 min (question) 5 min (stick names) 10 min (mind map) 10 min (copy mind map)

Type of support:

- Written question on the blackboard and a mind map with kingdoms and examples on the blackboard.
- Animals' name cards

Assessment tools: This activity will be assessed by the teacher through the student's participation. It's also going to be taken into consideration if students copied the mind map correctly.

Materials:

- Environment picture to observe and name living beings. https://drive.google.com/file/d/1T5N4yer3L-j8NeZDfh-ObXtvzpASWPvI/view?usp=sharing
- Projector, blackboard and computer
- Animal's name cards.
- List of living beings that appear on the picture.

VEGETAL KINGDOM		ANIMAL KINGDOM			
tree	arbre	bird	ocell	turtle	tortuga
bush	arbust	eagle	àguila	frog	granota
flower	flor	owl	mussol	snake	serp
cactus	cactus	wild boar	senglar	ant	formiga
grass	herba	deer	cèrvol	squirrel	esquirol
scrub	matoll	fox	guineu	rabbit	conill
		beetle	escarabat	butterfly	papallona
FUNGUS KINGDOM		lizard	llangardaix	badger	toixó
Mushroom	Bolet	bat	ratpenat	weasel	mustela

	Activity 2 **Kingdom characteristics.** **Reading and writing task. Jigsaw activity.**	Cooperative activity, carried out with expert groups (groups of 5) Instructions: • Students will group in 5 (arranged by teacher). Each member of the group has to choose a kingdom. • In groups of experts, they will read some information about the kingdom they have been assigned. They must take notes about the information provided. They can copy words, but not the full sentence. • (For students with more difficulties, their role will be to collect 5 different cards with the photos of living beings from the 5 kingdoms and give them to their group) • Afterwards, they will have to share the information acquired with the other students of the main group, and they will have to read different puzzle pieces with sentences about each kingdom (the same sentences one of the student had read before) and they will have to complete a chart with the sentences and the information provided. • If all students agree with the answers, they will receive the answer key to check them. Type of support: ○ Kingdom sheets with written information. Easy sentences and structures. ○ Kingdom photo sheets (visual input) ○ Chart to classify the sentences about different kingdom characteristics. Assessment tools: This activity will be assessed by them (autoevaluation) checking the answer chart. It's also going to be evaluated during the second session through the Plickers questionnaire. Materials: ❖ Groups of students arranged by the teacher: groups of 5 (+ 1 extra student for photos, if it's necessary) ❖ Kingdom sheet with written and visual information https://drive.google.com/file/d/1j4My5zrgN0zty9Ng5kRivMYL5azwsC5J/view?usp=sharing ❖ 5 kingdoms chart puzzle pieces https://drive.google.com/file/d/1NVEuHubt9Shk2eRPbtFOSddnZRbcCG1P/view?usp=sharing	5 min (Grouping and instructions) 5 min (take notes) 10 min (explain & complete chart) 5 min (checking)

		❖ 5 kingdoms chart answer key https://drive.google.com/file/d/1BJwJdRi3ZFLBNe6K0nYK5op63oitEs4M/view?usp=sharing	
SESSION 2	**Activity 3** **Vertebrates or invertebrates?** **Reading and writing activity. Second mind map.**	Collaborative activity, carried out in groups of 3 or 4. Instructions: • Dancing making group activity. Students have to dance until music stops. The teacher will say a number and students will have to group with other classmates to create groups of that number. There will be different rounds until the teacher says the number of students needed for this activity. • To link the activity with the previous session, each group will receive a 5 kingdom mind map without the names, and they will have to complete it together. It will include *vertebrate* and *invertebrate* labels. • Each group will be given an "Animal kingdom sheet" with written information about it. In addition, they will receive a DIN A-3 sheet and an envelope with some invertebrates' names and images. • Students must create a mind map, using the words (COL: content obligatory language) and images provided and the words and lines needed. • Teacher will look over the mind map and will point out the mistakes to correct them (until the final correct version is produced). Type of support: ○ Animal kingdom sheet with written information (quite structurated). It includes translations. ○ Words and images related to the Animal kingdom. Assessment tools: This activity will be assessed by the teacher at the end of the class. It's also going to be evaluated during the second sessions through the Plickers questionnaire.	5 min (dancing making group) 5 min (link activity with previous session) 5 min (Reading information) 20 min (mind map creation and revision)

		Materials: ❖ Energizing music. ❖ 5 kingdom simple mind map ❖ Colour DIN A-3 sheets, glue and markers. ❖ Animal kingdom sheet with written information. https://drive.google.com/file/d/1lX0Mt9FpkQ6vAZKP5yuprEQV_yUYod4H/view?usp=sharing ❖ Words and images related to the Animal kingdom to create the mind map. https://drive.google.com/file/d/10jw1jo7rbffW4RS2mfSI261Fta6KTHEW/view?usp=sharing	
	Activity 4 **Final assessment activity.** **Plickers questionaire**	Individual activity. Instructions: • Students will be assessed by a Plickers questionnaire. • The teacher's cellphone will be calibrated to detect the correct answer at the top of the card. • Students will be taught how to use the cards to answer: "You have to choose the correct answer. After that you have to put the letter of this answer at the top of the card. You have to raise your hand until I take a photo of your card. You will repeat the same for each question" • At the end, the teacher and students will obtain the results by the application. Type of support: ○ Questions include some visual inputs to facilitate the comprehension. Assessment tools: An assessment tool to evaluate the contents and the language of these activities. Materials: ❖ Teacher's cellphone ❖ Projector ❖ Student's cards (one for each student) ❖ Plickers questionnaire.	25 min (Plickers activity)

1. How many kingdoms do exist?					
2	4	5	6		
2. Which kingdom do Algae and Protozoa belong to?					
Monera	Protista	Fungi	Animal		
3. Yogurt is produced by …					
Bacteria	Mushrooms	Molds	Plants		
4. Which simple kingdom is formed by Prokaryota organisms?					
Monera	Fungi	Plants	Animal		
5. Which is the only kingdom with organisms that are always autotrophic?					
Protista	Fungi	Plants	Animal		
6. The invertebrates are…					
Animals with a backbone	Monera with a backbone	Animals without a backbone	Monera without a backbone		
7. This image is ….					
a flower	an alga	a mushroom	a bacterium		
8. This image is ….					
a flower	an alga	a mushroom	a bacterium		
9. Bread is produced by ….					
Bacteria	Yeasts	Invertebrates	Algae		
10. Humans belong to ….					
Monera	Fungi	Plants	Animal		
11. Arthropods are…					
Vertebrates		Invertebrates			
12. Reptils are ….					
Vertebrates		Invertebrates			
13. Mammals are ….					
Vertebrates		Invertebrates			
14. Mollusks are…					
Vertebrates		Invertebrates			

<table>
<tr><td></td><td>
<table>
<tr><td colspan="2">15. Birds are ….</td></tr>
<tr><td>Vertebrates</td><td>Invertebrates</td></tr>
<tr><td colspan="2">16. Humans are ….</td></tr>
<tr><td>Vertebrates</td><td>Invertebrates</td></tr>
</table>
</td><td></td></tr>
<tr><td>In terms of academic content, what are the students learning and what are they learning to do?</td><td>They are going to learn about the 5 kingdoms and their characteristics. They will also focus on Animal Kingdom classification and examples.</td><td></td></tr>
<tr><td>In terms of language, what are the students practicing or learning to do?</td><td>They are going read simple structures.
They will have to scaffold the information to create a mind map.
They will learn and use different animal names.</td><td></td></tr>
<tr><td>In what way is this lesson plan a good example of what we learnt in the GEP course session?</td><td>➢ Different activities (from or adapted from the course)
➢ Different inputs
➢ Readings and writings in English
➢ Group work (collaborative and cooperative)
➢ Different kinds of assessment</td><td></td></tr>
<tr><td>Other important information</td><td></td><td></td></tr>
</table>

ANNEXES (materials, handout, pictures… if not possible to include in the activity section.)	**Activity 1. Living Beings classification. Pre-reading task. First mind map.** ❖ Environment picture to observe and name living beings. https://drive.google.com/file/d/1T5N4yer3L-j8NeZDfh-ObXtvzpASWPvI/view?usp=sharing **Activity 2. Kingdom characteristics. Reading and writing task. Jigsaw activity.** ❖ Kingdom sheet with written and visual information https://drive.google.com/file/d/1j4My5zrgN0zty9Ng5kRivMYL5azwsC5J/view?usp=sharing ❖ 5 kingdoms chart puzzle pieces https://drive.google.com/file/d/1NVEuHubt9Shk2eRPbtFOSddnZRbcCG1P/view?usp=sharing ❖ 5 kingdoms chart answer key https://drive.google.com/file/d/1BJwJdRi3ZFLBNe6K0nYK5op63oitEs4M/view?usp=sharing **Activity 3. Vertebrates or invertebrates? Reading and writing activity. Second mind map.** ❖ Animal kingdom sheet with written information. https://drive.google.com/file/d/1lX0Mt9FpkQ6vAZKP5yuprEQV_yUYod4H/view?usp=sharing ❖ Words and images related to the Animal kingdom to create the mind map. https://drive.google.com/file/d/10jw1jo7rbffW4RS2mfSI261Fta6KTHEW/view?usp=sharing	

Generalitat de Catalunya
Departament d'Ensenyament

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

ANNEXES

Activity 1. Living Beings classification. Pre-reading task. First mind map.

- Environment picture to observe and name living beings.

http://seresvivosysurelacion.blogspot.com/

Activity 2. Kingdom characteristics. Reading and writing task. Jigsaw activity.

- Kingdom sheet with written and visual information

MONERA

They are prokaryotic unicellular organisms, with autotrophic or heterotrophic nutrition.

Their reproduction is asexual.

They are the most primitive beings and they live in all kind of environments*.

They are bacteria and cyanobacteria.

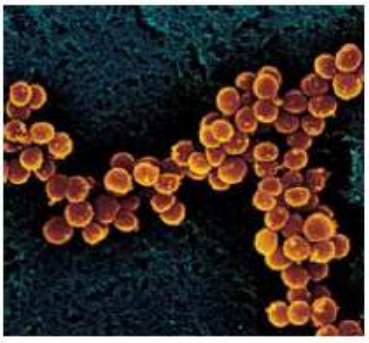
There are more forms of bacteria than any organism on Earth.

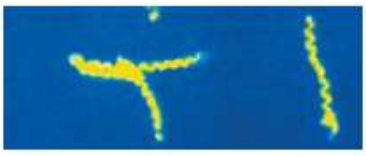
There are some harmful bacteria that can cause illness and disease and there are others that are important for us to survive (for example in our intestines). We also take advantage* of some bacteria, for example, to produce yogurt.

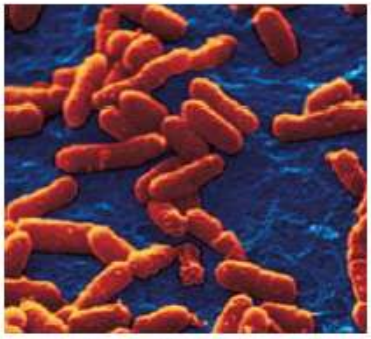
VOCABULARY

Environment: ambient
Take advantage: treure profit

MONERA







Images of bacteria (cocs, espirils i bacils).
1ESO BIOLOGIA I GEOLOGIA. Editorial Cruïlla.

PROTISTA

They are eukaryotic organisms that can be unicellular or multicellular (but without differentiated tissues*).

Some of them are autotrophic (they perform* photosynthesis) and some others have heterotrophic nutrition.

The vast majority* have asexual reproduction.

They are algae and protozoa. They are aquatic beings.

Paramecia and ameba are examples of protozoa.

Sometimes we eat algae.

VOCABULARY

Differentiated tissues: teixits diferenciats
Perform: realitzar
The vast majority: la gran majoria

PROTISTA

Images of ameba, green algae and paramecium.
1ESO BIOLOGIA I GEOLOGIA. Editorial Cruilla.

FUNGI

They are eukaryotic organisms that can be unicellular or multicellular (but without differentiated tissues*).

They have heterotrophic nutrition.

Their reproduction can be sexual or asexual, both of them are possible.

It includes yeasts*, molds* and fungi that reproduce through mushrooms' spores*. The vast majority* are decomposers.

Most of the cell is made of jelly*.

Some kinds of yeasts can be used to make bread or beer.

We eat some mushrooms but some others are dangerous.

VOCABULARY

Differentiated tissues: teixits diferenciats
Yeast: llevat
Molds: floridures
Mushroom: bolet
The vast majority: la gran majoria
Jelly: gelatina

FUNGI

Llevat de la cervesa (2.270 augments). Es reprodueix per gemmació.

Floridura d'una llimona. L'òrgan reproductor s'anomena *esporangi*.

Cep. L'òrgan reproductor s'anomena *bolet*.

Images of yeast, molds and fungi that reproduce through mushroom.
1ESO BIOLOGIA I GEOLOGIA. Editorial Cruïlla.

PLANT

They are eukaryotic multicellular organisms and they have differentiated tissues* and organs.

They are autotrophic, that is they perform* photosynthesis to obtain food and energy.

They produce oxygen, which we need to breathe*.

Their reproduction can be sexual or asexual, both of them are possible.

Some examples are mosses*, ferns* or other plants such as pines, bushes* or plants with flowers.

The flower is the reproduction organ of some plants.

VOCABULARY

Differentiated tissues: teixits diferenciats
Perform: realitzar
Breathe: respirar
Mosses: molses
Ferns: falgueres
Bush: arbust

PLANT

El **pi pinyer** pertany al grup de les gimnospermes.

El **presseguer** pertany al grup de les angiospermes.

Images of a fern and a moss.
ca.wikipedia.org
Image of trees.
1ESO BIOLOGIA I GEOLOGIA. Editorial Cruïlla.

They are eukaryotic multicellular organisms and they have differentiated tissues* and organs.

They are heterotrophic beings.

Their reproduction is sexual in most cases.

Some of them don't have a backbone* and, if they have a skeleton, it isn't made of bones*. They are invertebrates.

The others have a backbone and an internal skeleton made of bones. They are vertebrates.

VOCABULARY

Differentiated tissues: teixits diferenciats
Backbone: columna vertebral
Bone: os

Image of animals (cow, shark, sponge and mosquito)
1ESO BIOLOGIA I GEOLOGIA. Editorial Cruïlla.

❖ 5 kingdoms chart puzzle pieces

- There are more forms of bacteria than any organism on Earth.
- There are some harmful bacteria that can cause illness and disease.
- There are some bacteria that are important for us to survive (for example, in our intestines).
- We also take advantage of some bacteria, for example, to produce yogurt.
- They are aquatic beings.
- Paramecia and ameba are examples of protozoa.
- Sometimes we eat algae.
- They usually are decomposers.
- Most of the cell is made of jelly.
- Some kinds of yeasts can be used to make bread or beer.
- We eat some mushrooms but some others are dangerous.
- They produce oxygen, which we need to breathe.
- Some examples are mosses, ferns or other plants such as pines, bushes or plants with flowers.
- The flower is the reproduction organ of some plants.
- Some of them don't have a backbone and, if they have a skeleton, it isn't made of bones. They are invertebrates.
- The others have a backbone and an internal skeleton made of bones. They are vertebrates.

Prokaryota	Unicellular	Autotrophic or Heterotrophic	Asexual	Bacteria Cyanobacteria
Eukaryota	Unicellular or Multicellular (without differentiated tissues)	Autotrophic or Heterotrophic	Asexual (majority)	Algae Protozoa
Eukaryota	Unicellular or Multicellular (without differentiated tissues)	Heterotrophic	Asexual or Sexual	Yeasts Molds Mushrooms
Eukaryota	Multicellular (with differentiated tissues and organs)	Autotrophic	Asexual or Sexual	Mosses Ferns Other plants (trees, flowers, bushes,...)
Eukaryota	Multicellular (with differentiated tissues and organs)	Heterotrophic	Sexual (majority)	Invertebrates Vertebrates

❖ 5 kingdoms chart answer key

KINGDOM	PROKARYOTA or EUKARYOTA	UNICELLULAR or MULTICELLULAR	AUTOTROPHIC or HETEROTROPHIC	ASEXUAL REPRODUCTION or SEXUAL	GROUPS OF ORGANISMS	OTHER CHARACTERISTICS
MONERA	Prokaryota	Unicelular	Autotrophic or Heterotrophic	Asexual	Bacteria Cyanobacteria	There are more forms of bacteria than any organism on Earth. There are some harmful bacteria that can cause illness and disease. There are some bacteria that are important for us to survive (for example, in our intestines). We also take advantage of some bacteria, for example, to produce yogurt.
PROTISTA	Eukaryota	Unicelular or Multicelular (without differentiated tissues)	Autotrophic or Heterotrophic	Asexual (majority)	Algae Protozoa	They are aquatic beings. Paramecia and ameba are examples of protozoa. Sometimes we eat algae.
FUNGI	Eukaryota	Unicelular or Multicelular (without differentiated tissues)	Heterotrophic	Asexual or Sexual	Yeasts Molds Mushrooms	They usually are decomposers. Most of the cell is made of jelly. Some kinds of yeasts can be used to make bread or beer. We eat some mushrooms but some others are dangerous.
PLANTS	Eukaryota	Multicelular (with differentiated tissues and organs)	Autotrophic	Asexual or Sexual	Mosses Ferns Other plants (trees, flowers, bushes,...)	They produce oxygen, which we need to breathe. Some examples are mosses, ferns or other plants such as pines, bushes or plants with flowers. The flower is the reproduction organ of some plants.
ANIMALS	Eukaryota	Multicelular (with differentiated tissues and organs)	Heterotrophic	Sexual (majority)	Invertebrates Vertebrates	Some of them don't have a backbone and, if they have a skeleton, it isn't made of bones. They are invertebrates. The others have a backbone and an internal skeleton made of bones. They are vertebrates.

Activity 3. Vertebrates or invertebrates? Reading and writing activity. Second mind map.

- Animal kingdom sheet with written information.

The Animal Kingdom

They are eukaryotic multicellular and heterotrophic organisms and they have differentiated tissues and organs. Their reproduction is sexual in most cases.

There are two groups:

- INVERTEBRATES

  They don't have a backbone and, if they have a skeleton, it isn't made of bones.

  There are five groups of invertebrates:

  - Sponges *(Esponja)*
  - Jellyfish *(Medusa)*
  - Mollusks *(Mol·luscs)*
    - Gastropods (snails) *(Gasteròpodes-cargols)*
    - Bivalves (mussels) *(Bivalves-musclos)*
    - Cephalopods (squid) *(Cefalòpodes-calamar)*
  - Arthropods *(Artròpodes)*
    - Arachnids (spiders) *(Aràcnids-aranya)*
    - Crustaceans (crabs) *(Crustacis-cranc)*
    - Myriapods (centipedes) *(Miriàpodes-centpeus)*
    - Insects (flies) *(Insectes-mosques)*
  - Echinoderms (starfish) *(Equinoderms-estrella de mar)*

- VERTEBRATES

  They have a backbone and an internal skeleton made of bones.

  - FISH *(Peixos)*
  - AMPHIBIANS *(Amfibis)*
  - REPTILES *(Rèptils)*
  - BIRDS *(Ocells)*
  - MAMMALS *(Mamífers)*

❖ Words and images related to the Animal kingdom to create the mind map.

THE ANIMAL KINGDOM	They have a backbone and an internal skeleton made of bones	VERTEBRATES	FISH
INVERTEBRATES	ECHINODERMS	BIRDS	Insects
Gastropods	Bivalves	MOLLUSKS	REPTILES
They don't have a backbone	MAMMALS	ARTHROPODS	Crustaceans
SPONGES	Differentiated tissues and organs	Myriapods	AMPHIBIANS
Multicellular	Arachnids	Eukaryotic	Sexual Reproduction
Heterotrophic	JELLYFISH	Cephalopods	
















Generalitat de Catalunya
Departament d'Ensenyament

Template adapted from CLIL-SI 2015.
More information at: http://grupsderecerca.uab.cat/clilsi/

Llengua i Educació
LANGUAGE AND EDUCATION

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