

HELP BEES IN SABADELL



Escola Roureda (Sabadell)
Irene Molina Molina
Esther Egea

Generació Plurilingüe (GEP)

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2018-2019



PROJECT PLANNING TEMPLATE for CLIL and Content-Rich Environments

Identification of the GEP project:

Title	HELP BEES IN SABADELL: How can we help bees to survive in Sabadell?
Authorship	Esther Egea and Irene Molina
School	Escola Roureda (Sabadell)
Students' CEFR Level (A1, A2...)	Beginners
Grade	6th level
Content area(s)	Science
Number of sessions (4, 6 or 9)	6
Teacher(s) involved	Esther Egea and Irene Molina
Key words	Bee, pollinator, pollination, honey, threats, danger, world, environment, save, help



1. OUR PROJECT

Introduction:

After reading some news in the newspaper about the Honeybees in danger in Catalonia, we decided to build a PBL project around the driving question How we can help bees in Vallès Occidental.

We want our pupils be aware of the importance of honeybees in our lives. The honeybees population decreased between 40% to 60% every year, and they are a very important part of our ecosystem. As pollinators, honeybees are a very important factor to get our food, because a 30% of our crops and a 90% of wild plants depend on them. Honeybees depend on plants as much as plants depends on bees, and without honeybees a 1/3 of our food disappears.

The fact is honey bees population is in a deep crisis for different reasons, that when it happens at the same time produces a decrease of honey bee population.

Driving question: How can we help bees to survive in Sabadell?

Final product: A t-shirt design with its writing and oral defense as a part of a campaign to help bees.

2. GOALS	2. HOW DO YOU KNOW STUDENTS ARE MAKING PROGRESS? <small>(assessment criteria)</small>
1.. Justify the essential role of bees in our world.	1.1 Pupils can explain orally why humans and animals rely on pollinators to produce plants and food.
2. Exemplify threats to honeybees in our neighbourhood.	2.2 Pupils can make a reasonable criticism to destructive industrial agriculture.
3. Create a campaign in defense of honeybees.	3.3 Pupils can persuade the audience to promote ecological farming.
4. Investigate and share tips to help bees in our district.	4.4 Different classmates groups can share practical solutions to help bees in our area.
5. Cooperate with the members of our group to achieve our goal.	5.5 Partners of the same group can contribute to get the final product.

3. CURRICULUM CONNECTIONS SPECIFIC COMPETENCES AND KEY CONTENTS

Subject-matter curriculum		Foreign language curriculum	
Specific Competences	Key Contents	Specific Competences	Key Contents
<p><u>Area of social and natural science</u></p> <p><u>Current world dimension</u></p> <ul style="list-style-type: none"> ❑ Competence 1: To regard questions about the environment, using strategies to search data and analyze the results to find answers. ❑ Competence 2: To understand the present from the analysis of changes and continuities over time to comprehend the society where we live ❑ Competence 4: To analyze social and natural features that compounds landscapes and 	<p><u>Area of social and natural science</u></p> <p><u>Current world dimension</u></p> <ul style="list-style-type: none"> ❑ Most popular social issues ❑ Biodiversity and sustainability ❑ Continuity and change ❑ Economy and sustainability ❑ Ecosystem and landscape ❑ Safe education 	<p><u>Area of foreign language (English)</u></p> <p><u>Oral communication dimension</u></p> <ul style="list-style-type: none"> ❑ Competence 1: To obtain basic information and understand simple or adapted oral texts, from the media and from school contexts. from the daily life, media and school contexts. ❑ Competence 2: To plan and produce brief and simple oral texts appropriated to the communicative situation. ❑ Competence 3: To interact orally according to the communicative situation and using basic conversational strategies. 	<p><u>Area of foreign language (English)</u></p> <p><u>Oral communication dimension</u></p> <ul style="list-style-type: none"> ❑ Textual typology ❑ Strategies for comprehension ❑ Strategies for expression: planning, production and revision ❑ Strategies for oral interaction ❑ Morphosyntactic elements: connectors ❑ Lexis: common and specific vocabulary ❑ Non-verbal elements of communication ❑ Oral fluency ❑ Management and communication of the information

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<p>ecosystems to value the acts that affect them.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Competence 5: To value relevant social problems by investigating reasons and consequences to contemplate future proposals of improving. 		<p><u>Reading comprehension dimension</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Competence 5: To use basic visual, discursive and linguistic features of a clearly structured text to understand it. <input type="checkbox"/> Competence 6: To use consulting tools to understand texts. <p><u>Written expression dimension</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Competence 7: To plan simple texts from the identification of the most relevant elements of the 	<ul style="list-style-type: none"> <input type="checkbox"/> Use of LKT (Learning and Knowledge technologies) <p><u>Reading comprehension dimension</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Textual typology <input type="checkbox"/> Strategies for comprehension <input type="checkbox"/> Reading out loud <input type="checkbox"/> Silent reading <input type="checkbox"/> Organization and discursive structure of a text <input type="checkbox"/> Morphosyntactic elements: connectors, punctuation. <input type="checkbox"/> Lexis: common and specific vocabulary <input type="checkbox"/> Searching strategies <input type="checkbox"/> Digital and papered sources of information <input type="checkbox"/> Strategies to understand and produce knowledge <input type="checkbox"/> Use of LKT (Learning and knowledge technologies) <p><u>Written expression dimension</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Textual typology <input type="checkbox"/> Strategies and resources for written expression: planning, production and revision
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		<p>communicative situation</p> <ul style="list-style-type: none"><input type="checkbox"/> Competence 8: To produce simple text appropriated to the communicative situation and with help of support media.<input type="checkbox"/> Competence 9: To revise a text to improve it according to the communicative situation with the help of specific supports. <p><u>Plurilingual and intercultural dimension</u></p> <ul style="list-style-type: none"><input type="checkbox"/> Competence 12: To use plurilingual strategies for communication	<ul style="list-style-type: none"><input type="checkbox"/> Specific strategies for the production and revision of texts in a foreign language<input type="checkbox"/> Organization and discursive structure of a text: appropriateness, coherence and cohesion<input type="checkbox"/> Morphosyntactic elements: connectors, punctuation<input type="checkbox"/> Textual structure<input type="checkbox"/> Lexis: basic and specific vocabulary<input type="checkbox"/> Spelling of known and frequently used words<input type="checkbox"/> Linguistic and orthographic correction<input type="checkbox"/> Use of LKT (Learning and knowledge technologies) <p><u>Plurilingual and intercultural dimension</u></p> <ul style="list-style-type: none"><input type="checkbox"/> Lexis: basic and specific vocabulary<input type="checkbox"/> Non-verbal elements<input type="checkbox"/> Strategies for phonetic, graphic and lexical comparison
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4. 21st CENTURY COMPETENCES

Collaboration	x	Information, media and technology	x
Communication	x	Leadership & Responsibility	x
Critical Thinking and Problem Solving	x	Initiative & Self-direction	x
Creativity & Innovation	x	Social & Cross-cultural	x
Others:			

5. KEY COMPETENCES

Communicative, linguistic and audiovisual competence	x	Digital competence	x
Mathematical competence	x	Social and civic competence	x
Interaction with the physical world competence	x	Learning to learn competence	x

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Cultural & artistic competence	x	Personal initiative and entrepreneurship competence	x
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6. CONTENT (Knowledge and Skills)

CONTENT-RELATED KNOWLEDGE	CONTENT-RELATED SKILLS
Life cycle of a bee	1. Analyzing the essential role of pollinators
Bee's kingdom	2. Establishing relationships between bees and the growth of plants
Pollination	3. Describing the decline and disappearance of bees due to different threats
Threats to bees	4. Searching solutions to help bees
Vital protection of bees	5. Cooperating in our group, giving them our best skills

7. REFERENCES

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8. COMMENTS (optional)

Groups composed by four members are already done to work on the following sessions.

9. ACKNOWLEDGEMENTS (optional)








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Skills: R: reading , S: speaking, L: listening, W: writing, I: Interaction

Interaction: T-S: teacher-student, S-S: student-student, SG: small groups, WG: whole group, S-Expert, S-World

Assessment: PA: Peer assessment, SA: Self-assessment, TA: Teacher assessment, AT: Assessment tools

Session	Activities	Timing 	Skills 	Interaction 	ICT 	Assessment 
1	Why is a honeycomb an exquisite product?	15'	Speaking Interaction	Teacher-student Student-teacher Whole group		
	Reading news: <i>Bzzzzzzzzz: the catalan honeybee in danger</i>	30'	Reading Interaction	Student-student Small groups		
	Can you tick the correct answer?	30'	Speaking Interaction	Small-groups Student-teacher		Assessment tool (questionnaire) Teacher assessment (formative assessment)
2	Why Greenpeace send us an advertisement alert to save bees?	30'	Speaking Reading Interaction	Teacher-student Student-teacher Whole group	Video	

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	Green facts or red threats?	30'	Speaking Reading Interaction	Student-student Student-teacher Small groups		Assessment tool (raise your green/red pen) Teacher assessment (formative assessment)
3	What do you know about honeybees?	15'	Speaking Writing	Teacher-student Student-student Small group		
	What do you want to know about honeybees?	35'	Speaking Reading Writing	Student-student Student-teacher Small group Whole group		
4	<i>Bee Quizlet</i>	1h	Reading Writing	Individual	Quizlet	Assessment tool (Quizlet) Self assessment Teacher assessment (summative assessment)
	Do you have a <i>Bee memory</i> ?	30'	Speaking Interaction	Student-student Small group		Assessment tool (rubrics) Peer- assessment (formative assessment)
5	Taking action! (I)	1h30'	Speaking Reading Writing Interaction	Teacher-student Student-student Student-teacher Small group		Assessment tool (final product and rubrics) Teacher assessment (summative assessment)
6	Taking action! (II)	1h30'	Speaking	Teacher-student		Assessment tool (final product)

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			Reading Writing Interaction	Student-student Student-teacher Small group		Peer-assessment (rubrics) Teacher assessment (summative assessment)
	Spreading our message			Student- world		

11. SESSION PLANNING






SESSION 1: Why a honeycomb is an exquisite product?

Objectives of the session:

- To identify a honeycomb as a common product in a supermarket
- To reason why a honeycomb has an expensive cost for a middle-class person
- To wonder about the value of money of this product
- To read a piece of news about the dangers to bees and causes of the Catalan honeybees' disappearance
- To master specific information from the piece of news
- To share with classmates the information from their area of expertise
- To sequence logically all the facts from this text
- To demonstrate the understanding of key words and the general idea of the text
- To induce reasons for the expensive price of a honeycomb
- To deduce causes for the elevated cost of the honeycomb
- To work cooperatively to get a common result

Content-obligatory language for the session: bees, danger, flowers, pollinator, pollination, food production, monoculture farming, nutrition, climate change, pesticides, insecticides, decrease, increase, honey, honeycomb, environment, (to) die, worried, harmful, beekeeper, expensive, diseases.

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	<p>ACTIVITIES</p> <p><i>include : Name and description; Assessment tool (if any); Material (including language support)</i></p>					
<p>1.1</p>	<p>Why is a honeycomb an expensive product?</p> <p>The starting point of this project is a honeycomb and its price; why is it an expensive product? Teachers bring a real raw honeycomb, previously bought in a supermarket, with the price tag (we know it is available in Carrefour, there is an example in attachment 1). We start a brief brainstorming by asking students some referential questions:</p> <p>(Referential question) <i>"Do you know what is this?"</i> (Referential question) <i>"Have you ever tasted this product?"</i> (Referential question) <i>"Where do you think it comes from?"</i> (Referential question) <i>"How much do you think it is?"</i></p> <p>It is important to use the body language and mime to help students the understanding of these questions. Afterwards, we point to the real price to finally ask:</p> <p>(Explicit question) <i>"Is the honeycomb cheap or expensive?" (expensive)</i> (Referential question) <i>"Why is it so costly?"</i></p> <p>Teachers must encourage all learners to participate in class. They should guide to the answers but not waiting for explicit responses, we want to know the previous knowledge of our students.</p>	<p>15'</p>	<p>S, I</p>	<p>T-S S-T WG</p>		
<p>1.2</p>	<p>Reading news: <i>Bzzzzzzzzz: the catalan honey bee in danger</i></p>	<p>30'</p>		<p>S-S SG</p>		

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	<p>In groups of four, pupils read a piece of news in catalan about the current dangers to honeybees and their disappearance (attachment 2). The text is divided in four parts: each member of the group becomes an expert and reads a part of the information (attachment 3). After 10 minutes, members come back with their group to share and explain the information they have read (2-3 minutes each; they have the reading support in case they need it).</p> <p>Later on, students decide how to put in order the four parts. They must interact in English, using the language support (attachment 4). Teachers check the answers and give them an approval card with the title of the piece of news (attachment 5).</p>		R,I			
1.3	<p>Can you tick the correct answer?</p> <p>The last activity is part of the formative assessment. All groups will be given a list of 14 questions with two options to choose; only one is correct (attachment 6). Teachers hang on the board some key words and pictures as language support (attachment 7). To correct the answers, teachers say:</p> <p>(Explicit question) <i>"Now, raise your hand for the correct option, ok?" "And the correct option is...a/b!"</i></p> <p>Positive reinforcement is always necessary: <i>"Well done!" "Are you sure?" "Try again!" "That's a good point!"</i></p> <p>To end up the session, everyone can see, smell , touch and taste a honeycomb and appreciate this delicious and exquisite food!</p>	30'	S, I	SG S-T		AT TA

SESSION 2: Bees die, humans die

Objectives of the session:

- To listen actively the information of a video about the essential role of bees in our world
- To associate key written words with important facts in the video
- To react toward an advertisement alert that is worldwide spread
- To understand the need of the human actions to save bees and our own life
- To explain the role of a honeybee in the world
- To list main threats to bees
- To distinguish between helpful and harmful issues to honeybees
- To become aware of keeping bees safe in our environment
- To contemplate possible solutions to save bees

Content-obligatory language for the session: bee life, bees, honey bee, colonies, queen bee, drone bees, worker bees, male, female, hives, beekeeper, pollen, nectar, honey, pollinate, threats, food stop existing, decrease in productivity, humans, die, annual loss, Colony Collapse Disorder (CCD), invasion of dangerous foes, parasite, viruses, fungi, insecticides, neonicotinoids, chemicals, toxins, contaminated water, convulsions, paralysis, death, crop monocultures, poor nutrition, human activities, pesticides.

Activities

include : Name and description; Assessment tool (if any); Material (including language support)



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1.1	<p>Why Greenpeace send us an advertisement alert to save bees?</p> <p>Teachers project a video that compiles three videos about the bee's life (facts), their threats and an advertisement alert by Greenpeace to save them (attachment 8). In this video some key words (attachment 9) are introduced to make the comprehension easier, they work as language support.</p> <p>Afterwards, we stop the video and ask them different questions:</p> <p>(Referential question): <i>"Did you like the video?"</i></p> <p>(Explicit question): <i>"How many videos did you see?" (three)</i></p> <p>(Explicit question): <i>"What does video number 1 and 2 talk about?" (bee's life and threats to bees)</i></p> <p>(Explicit question): <i>"Which words do you remember from these videos?" (bees, honey bee, queen bee, drone bees, worker bees...)</i></p> <p>(Explicit question): <i>"What does video number 3 talk about?" (an advertisement to save bees)</i></p> <p>(Explicit question): <i>"Which words do you remember from this video?" (Colony Collapse Disorder, parasites, fungi, insecticides, pesticides, poor nutrition...)</i></p> <p>(Implicit question): <i>"Why is Greenpeace sending this message?" (because bees are in danger and we can help them)</i></p> <p>(Implicit question): <i>"Do you remember the peace of news from the last session? What does it have to do with this video?" (dangers to bees and the need to save them)</i></p> <p>(Referential question): <i>"How can we help bees?" (different ideas)</i></p> <p>The video is played again. In this second time, students pay attention to key words that last few seconds. They will need them for some reason...</p>	30'	S,R, I	T-S S-T WG		
1.2	<p>Green facts or red threats?</p> <p>The reason to remember these words is the classification game they will play. In groups of four, students are given two cards corresponding to the two first titles from the compilation of videos: <i>Bee life</i> (in</p>	30'	S,R, I	S-S T-S SG		AT TA

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green) and *Threats to bees* (in red). They should categorise some words that appeared in the video in one of these two options ([attachment 9](#)). They can use the language support for the interaction, which is quite similar from session 1 ([attachment 10](#)).

To correct the activity and as a part of the formative assessment, teachers say the words aloud and students raise a green or a red pen according to their answers (green for the first category *Bee life*, red for the second one *Threats to bees*).

As usual, positive reinforcement must be used by teachers: "Very good!" "Check your answer" "Think it twice" "Great!".








SESSION 3: How much do we know about bees?

Objectives of the session:

- To question ourselves how much we know about bees
- To be curious about the bees' kingdom
- To discern between different aspects of a bee's life (anatomy, diversity, food, threats, roles...)
- To point the parts of a bee body
- To list threats to honeybees
- To recognize what a bee eats
- To differentiate different places for bees to live
- To identify different types of bees and their main roles
- To establish relationships between bees and the environment
- To state possible solutions to save bees
- To work cooperatively in small and large groups

Content-obligatory language for the session: Bee body, thorax, compound eye, stinger, exoskeleton, antenna, mandible, tongue, wings, legs, head, bee bread, bee wax, royal jelly, honey, pollination, flower, plant, feed, pollen, nectar grains, bee garden, harmful pesticides, hive, beekeeper, campaign, actions, help, threatens, pollution, Asian bee hornet, climate change, bee diseases, Colony Collapse Disorder (CCD), buzz, apiculture, smoke, beekeeper suit, insect, herbivorous, cell hive, hive comb, fertilized eggs, bee life cycle, female, male, colony, queen, drones, worker bees, food, food storage, temperature

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	<p>Activities</p> <p><i>include : Name and description; Assessment tool (if any); Material (including language support)</i></p>					
1.1	<p>What do you know about honeybees?</p> <p>Groups will be given a part of a mind map to complete (attachment 11). This map includes many aspects of the bee's life: their anatomy, food, species, role in pollination, threats, solutions to save them...Considering that there are six groups, each one is responsible of one category, and they should write as much words as they know.</p> <p>We can ask pupils: (Referential question) <i>How much do you know about bees? Do you think you know lots of things?</i> (Implicit question) <i>Can you tell us all the parts of the body of a bee?</i> (Implicit question) <i>What do bees eat?</i> (Implicit question) <i>How many types of bees do exist?</i> (Implicit question) <i>What kind of insect is a bee?</i></p> <p>By this way, teachers get an idea about the pupils' knowledge and pupils get an idea about their own knowledge. It is important to note that it will not be totally empty, there will be some important words to guide them. (The proposal for groups 4,5 and 6 are a little more complex, maybe for those students who are faster)</p>	15'	S, W	T-S S-S SG		
1.2	<p>What do you want to know about honeybees?</p> <p>While they try to complete the map, teachers hang on the walls the language support. These words are also the answers that all the groups need to complete their work (attachment 12). As they will be mixed,</p>	45'	S,R, W	S-S S-T SG		

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<p>they have to discriminate between different topics and choose the terms that fit in their gaps. As usual, pupils will have the language support to interact (attachment 13).</p> <p>While students are working, teachers must be a “busy bee”, observing, guiding, and giving support especially to those who have more difficulties. We can point at the place where the answer is and use corrective and positive feedback talk: <i>“That’s great!”</i>, <i>“Be careful!”</i>, <i>“Think it twice”</i>, <i>“Is it difficult?”</i>, <i>“Do you understand?”</i>, <i>“Excellent!”</i>, <i>“Go on!”</i>...</p> <p>To finish, teachers will project on the whiteboard a video with the correct answers (it is a visual representation of the construction of the real mindmap, attachment 12). All groups must check their words. We will print the large map to hang it on class as a mural make visual all the parts to everyone.</p>			WG		
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SESSION 4: Bee games

Objectives of the session:

- To reinforce and consolidate the knowledge about the bees' kingdom learnt in the previous sessions
- To associate words with their picture and description
- To describe a picture according to its definition
- To find the correct word to different definitions and pictures
- To differentiate between different significands and signifiacands
- To test the acquired knowledge through online games created with Quizlet
- To learn in a funny and significant way
- To self-assess one's own learning process
- To peer-assess a mate's learning process

Content-obligatory language for the session: Honey bee, apiculture, beebread, beehive, beekeeper, beeswax, buzz, bees colony, queen bees, drone bees, worker bees, flowers, pollinators, pollination, cocoon, beebread, cell hive, egg, larva, nectar, pollen grains, royal jelly, guard bees, hive, hive comb, pollution, toxic pesticides, Asian bee hornet, honey, climate change, bee diseases, Colony Collapse Disorder (CCD), beekeeper suit, smoke, antenna, compound eye, exoskeleton, head, legs, mandible, tongue, stinger, thorax, wings, flower, petals

Activities

include : Name and description; Assessment tool (if any); Material (including language support)



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1.1	<p>Bee Quizlet</p> <p>Individually, students play a <i>Quizlet</i> unit on a computer (attachment 14). This is an original set of seven online games about all the concepts worked on the previous sessions. Oral, reading and writing skills are required to play. For each game, pupils get an instant result, so they can observe their own weaknesses and their strengths. <i>Quizlet</i> also generates a document with the results from all the activities, and this will be used by teachers to note the first summative assessment.</p> <p>As the punctuation is individual, we send the link to <i>Quizlet</i> via Google classroom; all learners have a Google account with a corporate email of the school. It is very important reminding them to start the activity with their accounts, otherwise we can not get the results.</p> <p>Again, while students are playing <i>Quizlet</i>, teachers must be a “busy bee”, observing, guiding, and giving support especially to those who have more difficulties. We should make sure that children with special needs understand the instructions, we can adapt the level of the activities or sitting down in pairs to help one each other.</p> <p>As always, we encourage students by using positive words: “That’s great!”, “Be careful!”, “Think it twice”, “Is it difficult?”, “Do you understand?”, “Excellent!”, “Go on!”...</p> <p>After analyzing the results, teachers send an email to each student with a feedback comment of the general view, a recommendation of revision, a mention to good or bad results and how to improve, giving support and always keeping positive.</p>	45’	S,R, W	I	Quiz let	AT SA TA
1.2	<p>Do you have a <i>Bee memory</i>?</p> <p>Afterwards, in groups of four, learners play a memory game where they match words, pictures and definitions. The cards include the same content from <i>Quizlet</i>, in fact, they are generated by this program (attachment 15). In a rotative way, let’s see who wins first...the winner is the person who has more correct answers! Teachers hang on the board some language support to respect everyone’s turn (attachment 16) and this will be very important because pupils will assess one each other (peer-assessment) with a rubric that they will complete and give to their mate (attachment 17).</p>	45’	S, I	S-S SG		AT PA

SESSION 5: HOW CAN YOU HELP BEES? (I)

Objectives of the session:

- To start a campaign to save bees in the area of Vallès Occidental
- To set up a campaign draft which is the design of a t-shirt
- To create a logo and a slogan with the aim to help bees
- To write a brief text as a draft that summarizes the purpose of the campaign
- To work cooperatively using the established roles in the group

Content-obligatory language for the session: all the previous language from sessions 1 to 4

Activities

include : Name and description; Assessment tool (if any); Material (including language support)



Taking action! (I)

1.1 To start the session, we ask some questions to our students:

(Implicit question) *Do you remember why bees are disappearing?*

1h
30min

S,L,
W,I

T-S
S-S
S-T
SG

AT
TA

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(Explicit question) *Which are the reasons of disappearance?*

(Explicit question) *Why is so important to keep them alive?*

(Explicit question) *What can we do to save them?*

(Implicit question) *Do you think that we can do something to help them in our city?*

(Referential question) *Would you like to be part of a campaign to help bees?*

It is time to create the final product, which is the design of a t-shirt as part of a campaign to save bees in our city. Each group will design a t-shirt with a logo, a slogan, and a brief written and oral presentation. The idea is sharing the concern over honey bees population.

Students must write a draft and plan these two things at the same time, and the information they have to include is:

On the t-shirt: logo and slogan

On the written and oral presentation:

- The name of the group
- An introduction explaining the purpose of the campaign
- The concern over the disappearance of bees in the world, including our city
- Tips, recommendations or list of solutions to save bees

To do that, they can take a look at the language support [\(attachment 18\)](#) or recap all the materials from the previous sessions. Groups will be given the rubrics [\(attachment 19\)](#) to know what the teachers will assess in the summative assessment, and they will use it as well as a peer-assessment support.

Students who finish the plan, can start developing their idea. Teachers must give support, help, recommend and advise all creators to get an original product that catches everyone's eyes!

SESSION 6: HOW CAN YOU HELP BEES? (II)

Objectives of the session:

- To develop the draft of the campaign
- To represent the logo and slogan on a white t-shirt
- To elaborate the writing that presents the campaign to save bees with a digital tool (word document)
- To present orally the whole campaign on a video
- To share the final product with the public audience
- To co-assess the function of the group

Content-obligatory language for the session: all the previous language from sessions 1 to 4

Activities

include : Name and description; Assessment tool (if any); Material (including language support)



1.1

Taking action! (I)

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	In the last session, it is time to improve all the details and finish the final product. All groups will need a white T-shirt (6 in total) and a computer to write the explanation of the campaign on a word document. As we mentioned, this will count on their final summative assessment.			S-T SG	doc ume nt	PA TA
1.2	<p>Spreading our message</p> <p>To conclude the project, students will share their final products on the website of the school, with a video of the oral presentation and a picture of the written text, as well as another picture of the T-shirt design. Also, we invite parents and other classmates from other levels to see our project.</p> <p>To end up, students will complete a self-assessment to wonder if they learnt something new and meaningful during and after this project (attachment 20)</p>	-	S,L, W,I	S-W		

ATTACHMENTS

[Attachments for session 1](#)

Attachment 1: Example of a picture of a honeycomb and its price



[Come back to session 1](#)

Capture of a Youtube video, *Raw honeycomb (extremely sticky eating sounds)* by Wang (2018). Available on

<https://www.youtube.com/watch?v=o2OQBywbAbg>



Attachment 2: Piece of news in the correct order (adaptation from the original, Bzzzzzzzz: l'abella catalana, en perill by Garfella (2018))

[Come back to session 1](#)

Bzzzzzzzz: L'abella catalana, en perill

Inspiradores d'art des de la prehistòria, aquests insectes estan sent atacats pel canvi climàtic

CARLOS GARFELLA

Barcelona 7 MAR 2018 - 23:07 CET

La mitologia egípcia les considerava éssers sagrats, nascuts de les llàgrimes de Ra, el déu del sol. Creadors de l'apicultura, els egipcis van ser els primers de col·locar les abelles en els ruscs per aprendre a manejar-les i produir la mel. Cinc mil anys després, una falsa frase atribuïda a Albert Einstein triomfa a les xarxes socials: "Si les abelles desapareguessin de la faç de la Terra, als humans només els quedarien quatre anys de vida" (...).

L'abella està en crisi, i l'impacte va més enllà d'una baixada significativa en la producció de mel. Samuel Ramal, un apicultor de 43 anys de Polinyà, resumeix la situació en una simple frase: "Les abelles són com el marcapassos del medi ambient. Quan elles estan malament, tota la resta va decaient a poc a poc. Els humans també", explica. "Els apicultors catalans estan patint, i això és molt perillós per a la floració, l'agricultura i la salut de tots", afegeix.



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Fa deu anys que Ramal va patir un accident que el va deixar incapacitat per treballar com a fuster. Set operacions, el peu destrossat, els ànims per terra... fins que van arribar les abelles. "Vaig provar un tractament d'acupuntura amb elles i vaig millorar moltíssim. Per això dic que d'elles s'aprofita més que del porc: des de l'agulló fins a l'aire que desprenen. A mi em van canviar la vida, per això ara me les estimo tant", diu.

Ramal també és el secretari de l'associació d'apicultors de la província de Barcelona, que aglutina al voltant d'un miler de socis que exploten uns set mil ruscs. "Tinc col·legues que estan pensant a deixar-ho. Arribarà un moment que ens costarà trobar mel. Pot sonar estrany, però ja es parla de crear robots-abelles que pol·linitzin per elles. El que no és un futurible, sinó una realitat, és la pol·linització a mà, a la Xina ja ho fan", explica. (...)

Després de mitja dècada dedicat plenament a l'apicultura, Ramal ha observat com les abelles ara s'alimenten pitjor i, per tant, moren abans. "Els més veterans m'expliquen que abans solament havies d'anar a visitar-les sis vegades a l'any. Ara cal estar-ne pendent tot el temps, entre altres coses perquè no les ataquin espècies invasores com la vespa asiàtica", diu. "Per saber com d'importants són per al medi ambient, solament has de preguntar-l'hi al propietari de l'hort del costat. Està encantat de tenir-me com a veí". Segons Greenpeace, de la pol·linització de les abelles depenen ni més ni menys que el 70% dels cultius per al consum humà.

"És important que la gent es conscienciï que les abelles no solament produeixen mel i cera, sinó que l'agricultura depèn d'elles", explica Antonio Gómez Pajuelo, biòleg i consultor apícola. (...). "La seva activitat és bàsica per al manteniment de l'ecosistema, i els estudis científics coincideixen que la població de les abelles ha caigut entre un 40% i 60%", diu Gómez Pajuelo.

Rafel Muria és el president de Mel Muria, una empresa apícola fundada el 1810. Des del seu despatx del Perelló (al delta de l'Ebre), el conegut com "el poble de la mel" (amb només 2.900 habitants representa entorn del 25% de



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producció de la mel catalana) observa els núvols de tempesta que aguaiten els seus eixams. "Si aquest fred durés dues setmanes més, les abelles rebentarien. Fa dos dies estàvem a 18 graus i demà pot ser que nevi. Aquests canvis tan pronunciats són catastròfics per a elles. Aquest any ha plogut molt poc. I el pitjor és que el canvi climàtic ja no té solució, s'hauria d'haver reaccionat molt abans. Ara només ens queda intentar, de la millor manera possible, esmorteir l'impacte", explica resigat. "El que acabarà passant és que la mel s'acabarà convertint en una producte de luxe", explica Muria. Més dades avalen la seva tesi: en els últims anys, el consum de mel a Catalunya ha disminuït un 12% i el preu del litre mitjà s'ha elevat 80 cèntims (6,41 euros), segons dades de l'Institut d'Estadística de Catalunya (Idescat). (...).

Èxode a la ciutat

*La sequera també és un dels motius pels quals a la primavera les abelles fan el seu particular èxode rural. Davant la falta d'aigua al camp, els insectes cerquen subsistir a la ciutat, on hi ha parcs, fonts d'aigua i flors a les terrasses. Però el temor que sempre les envolta acaba per desterrar-les. La legislació no hi ajuda: a Espanya un decret del 2002 prohibeix que els assentaments apícoles es puguin col·locar a menys de 400 metres dels centres urbans i els nuclis de població. (...) "Fonamentalment es deu a una raó: la nostra abella (*Apis mellifera iberica*) és més agressiva. D'aquí que hi hagi més retinències a tenir una legislació més permissiva", explica Gómez Pajuelo. (...).*

El nombre d'abelles no només cau, sinó que les que hi ha ara produeixen menys mel que les seves predecessores. Segons els experts, això es deu a una alimentació menys variada a causa dels monocultius. És un cercle viciós de difícil solució fins i tot a llarg termini: hi ha menys flors perquè no hi ha tantes abelles, i hi ha menys abelles perquè hi ha menys flors. Muria ho exemplifica així: "El que abans produïa amb un eixam ara ho haig de fer amb dos. Això es tradueix en més personal i més gasolina per fer la transhumància. Al final veus que has produït la mateixa mel que altres anys amb el doble de despeses".



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Una nova intrusa

*Al problema del canvi climàtic i els insecticides cal sumar una nova intrusa: la vespa asiàtica (*Vespa velutina*), que va entrar a Catalunya el 2007 per França, on va arribar després de colar-se en un vaixell de mercaderies provinent de la Xina. Encara que és inofensiva per a l'ésser humà, la vespa asiàtica s'ha convertit en un autèntic maldecap per als apicultors. S'alimenta d'abelles de la mel i un sol niu pot acabar amb totes les bèsties d'una petita producció.(...)*

Llorenç apunta especialment als insecticides com a problema fonamental de l'increment de la mortalitat de pol·linitzadors. "Cada cert temps es retiren del mercat alguns productes. Però sembla que no n'aprenem. En treuen de nous, però són igual de perillosos o més. A l'abella se li pot aplicar la dita: 'Entre tots la van matar i ella sola es va morir'", diu.

Ramal, per la seva banda, advoca directament per prohibir-ne l'ús: "Quan una abella s'alimenta d'una flor amb insecticides, després infecta tot el rusc. Cal acabar amb tot això. Ens estem matant a nosaltres mateixos", explica mentre treu un rusc delicadament, apartant les abelles una a una, sense guants, per mostrar la mel que ja es comença a fer. "A les abelles les hem de tractar bé, com si fossin persones. I si piquen, no passa res. Fins i tot el seu verí ens pot curar".

El canvi climàtic, els insecticides i les espècies invasores s'han acarnissat durant els últims anys amb un insecte que, segons la Comissió Europea, contribueix anualment amb 22.000 milions d'euros a l'agricultura continental. Espanya és



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el país amb més ruscs per a la producció de mel d'Europa, al voltant de dos milions i mig. A Catalunya, n'hi ha més de 115.000, segons dades del Departament d'Agricultura. En cada rusc viuen de mitjana entre 40.000 i 60.000 exemplars.

Attachment 3: News to put in order (expert groups). Original creation.

[Come back to session 1](#)

STUDENT 3

La mitologia egípcia les considerava éssers sagrats, nascuts de les llàgrimes de Ra, el déu del sol. Creadors de l'apicultura, els egipcis van ser els primers de col·locar les abelles en els ruscs per aprendre a manejar-les i produir la mel. Cinc mil anys després, una falsa frase atribuïda a Albert Einstein triomfa a les xarxes socials: "Si les abelles desapareguessin de la faç de la Terra, als humans només els quedarien quatre anys de vida" (...).

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STUDENT 4

Després de mitja dècada dedicat plenament a l'apicultura, Ramal ha observat com les abelles ara s'alimenten pitjor i, per tant, moren abans. "Els més veterans m'expliquen que abans solament havies d'anar a visitar-les sis vegades a l'any. Ara cal estar-ne pendent tot el temps, entre altres coses perquè no les ataquin espècies invasores com la vespa asiàtica", diu. "Per saber com d'importants són per al medi ambient, solament has de preguntar-l'hi al propietari de l'hort del costat. Està encantat de tenir-me com a veí". Segons Greenpeace, de la pol·linització de les abelles depenen ni més ni menys que el 70% dels cultius per al consum humà.

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Attachment 4: Language support for interaction (to put the piece of news in order). Original creation.

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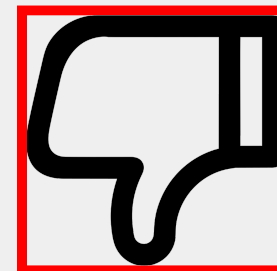
LET'S TAKE A DECISION TOGETHER



<https://commons.wikimedia.org/wiki/File:Pictogram-voting-question.svg>



https://www.flaticon.es/icono-gratis/pulgar-arriba_66845



https://www.flaticon.es/icono-gratis/pulgar-arriba_66845

DO YOU AGREE?

I AGREE / I AGREE WITH...

I DISAGREE / I DISAGREE WITH...

I DON'T AGREE / I DON'T AGREE WITH...



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ARE YOU SURE?	I'M SURE	I'M NOT SURE
DO YOU THINK IS NUMBER 1/2/3/4? DO YOU THINK IS THE FIRST/SECOND/THIRD/FOURTH?	I THINK THIS IS NUMBER 1/2/3/4 I THINK THIS IS THE FIRST/SECOND/THIRD/FOURTH	I THINK THIS ISN'T NUMBER 1/2/3/4 I THINK THIS ISN'T THE FIRST/SECOND/THIRD/FOURTH
ARE WE DONE?	WE ARE DONE!	WE AREN'T DONE!

Attachment 5: Title of the piece of news (approval card). Original creation based on the piece of news Bzzzzzzzz: l'abella catalana, en perill, by Garfella(2018).

[Come back to session 1](#)

Bzzzzzzzz: L'abella catalana, en perill

Inspiradores d'art des de la prehistòria, aquests insectes estan sent atacats pel canvi climàtic

CARLOS GARFELLA

Barcelona 7 MAR 2018 - 23:07 CET



Generació Plurilingüe (GEP) – 2018-2021

Attachment 6: Questionnaire (formative assessment). Original creation.

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CAN YOU TICK THE CORRECT ANSWER?

1.

- a- **Bees** are in **danger**.
- b- **Bees** are not in **danger**.

2.

- a- Bees need **flowers** and flowers need bees.
- b- Bees need **flowers** but flowers don't need bees.

3.

- a- Bees are not **pollinators**.
- b- Bees are **pollinators**.

4.

- a- **Pollination** is necessary for **food production**.
- b- **Pollination** is not necessary for **food production**.

5.

- a- **Monoculture farming** doesn't harm bees.
- b- **Monoculture farming** harm bees.

6.

- a- Bees die, humans die.
- b- Bees die, humans don't die

7.

- a- The **nutrition** of bees is good.

8.

- a- Bees suffer from many **diseases**.



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b- The **nutrition** of bees is not good.

9.

a- The **climate change** is bad for bees.

b- The **climate change** is good for bees.

11.

a- There is a **decrease** in the **honey** production.

b- There is an **increase** in the **honey** production.

13.

a- Honey is **expensive** because bees are increasing.

b- Honey is **expensive** because bees are decreasing.

b- Bees don't suffer from many **diseases**.

10.

a- The use of **pesticides** and **insecticides** is a danger to bees.

b- The use of **pesticides** and **insecticides** is not a danger to bees.

12.

a- Catalan **beekeepers** are worried about the **environment**.

b- Catalan **beekeepers** are not worried about the **environment**.

14.

a- **Honeycombs** are expensive because bees are increasing.

b- **Honeycombs** are expensive because bees are decreasing.

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Attachment 7: Language support for the questionnaire. Original creation.

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BEEES



<https://www.flickr.com/photos/krayker/4312985916>

DANGER



<https://it.depositphotos.com/68395721/stock-photo-danger-road-sign.html>

FLOWERS



https://es.m.wikipedia.org/wiki/Archivo:Flower_jtca001.jpg



POLLINATOR



https://bat-smg.wikipedia.org/wiki/Abroozdielis:Apis_mellifera_Western_honey_bee.jpg

FOOD PRODUCTION



<http://www.freestockphotos.biz/stockphoto/11689>

MONOCULTURE FARMING



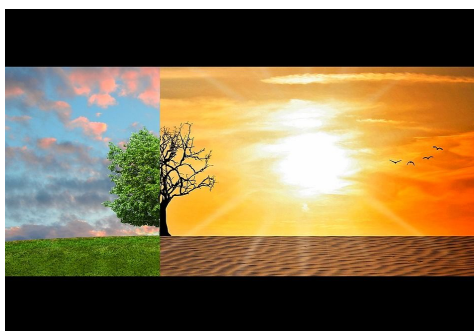
https://commons.wikimedia.org/wiki/File:Tractors_in_Potato_Field.jpg

NUTRITION



<https://pixabay.com/en/healthy-food-nutrition-healthy-food-1336513/>

CLIMATE CHANGE



<https://pixabay.com/en/climate-change-global-warming-2063240/>

PESTICIDES AND INSECTICIDES



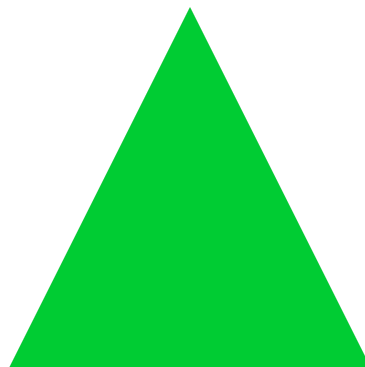
<https://www.flickr.com/photos/aquamech-utah/24443679794>

DECREASE



<https://commons.wikimedia.org/wiki/File:Decrease.svg>

INCREASE



[https://commons.wikimedia.org/wiki/File:Decrease_Positive.s
vg](https://commons.wikimedia.org/wiki/File:Decrease_Positive.svg)

HONEY



[https://pixabay.com/en/honey-yellow-beekeeper-nature-195
8464/](https://pixabay.com/en/honey-yellow-beekeeper-nature-1958464/)

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HONEYCOMB



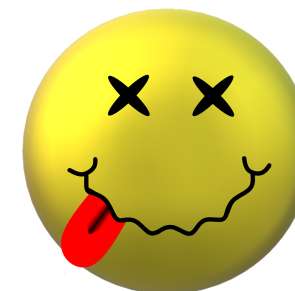
<https://www.maxpixel.net/Combs-Honey-Beekeeper-Bees-Honeycomb-Beekeeping-3568641>

ENVIRONMENT



<https://www.maxpixel.net/Environment-Bright-Clouds-Conifers-Daylight-1867871>

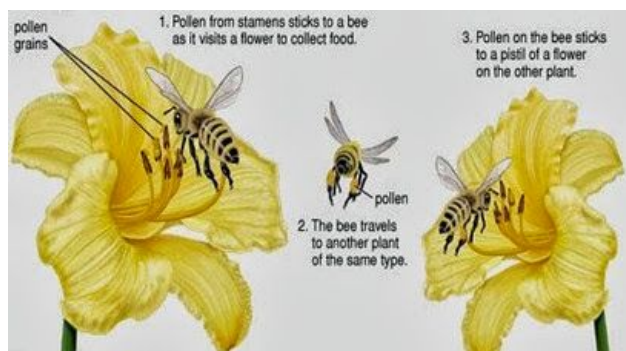
DIE



<https://pixabay.com/en/samuel-smiley-smiley-dead-died-3886945/>



POLLINATION



https://commons.wikimedia.org/wiki/File:Cross_pollination.jpg

HARMFUL



https://en.wikipedia.org/wiki/File:Hazard_X.svg

BEEKEEPER



<https://www.maxpixel.net/Beehive-Bee-Beekeeper-Frame-Honeycomb-Beekeeping-682944>

Generació Plurilingüe (GEP) – 2018-2021

EXPENSIVE



<https://www.maxpixel.net/Euro-Savings-Money-Expensive-Coins-Bank-Note-Save-2991387>

DISEASES



<https://pixabay.com/en/catch-a-cold-ill-fever-cold-flu-3893262/>

WORRIED



https://commons.wikimedia.org/wiki/File:Smiley_green_alien_worried.svg

Generació Plurilingüe (GEP) – 2018-2021

Attachments for session 2

Attachment 8: *Bee* video with language support. Original creation based on three videos included in the *References*.

[Come back to session 2](#)



Image capture from the video.

Video → https://drive.google.com/file/d/1L_iYRtWXTY5Au2UeZHSaEGkfaQcl-DwA/view?usp=sharing

Attachment 9: Language support and classification game for *Bee* video. Original creation.

[Come back to session 2](#)

BEE LIFE

Bees

Honey bee



Colonies

Queen Bee

Drone bees = Male

Worker bees = Female

Hives

Beekeeper

Pollen and Nectar

Honey

Pollinate



THREATS TO HONEY BEES

Food stop existing

Decrease in productivity

Bees die, humans die

Annual loss

Colony Collapse Disorder(CCD)

Invasion of dangerous foes

Parasites

Viruses and fungi



Insecticides

Neonicotinoids

Chemicals

Toxines

Contaminated water

Convulsions, paralysis and death

Forget to navigate the world

Get lost and die alone separated from their hives

Lose its ability to sustain itself



Crop monocultures

Poor nutrition

Human activities

Pesticides

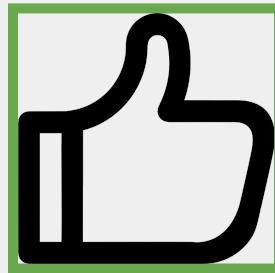
Attachment 10: Language support for interaction (classification game). Original creation.

[Come back to session 2](#)

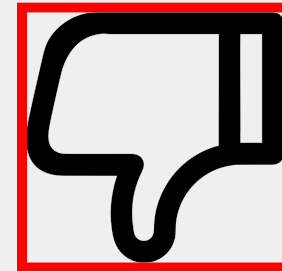
LET'S TAKE A DECISION TOGETHER



<https://commons.wikimedia.org/wiki/File:Pictogram-voting-question.svg>



https://www.flaticon.es/icono-gratis/pulgar-arriba_66945



https://www.flaticon.es/icono-gratis/pulgar-arriba_66845



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DO YOU AGREE?	I AGREE / I AGREE WITH...	I DISAGREE / I DISAGREE WITH... I DON'T AGREE / I DON'T AGREE WITH...
ARE YOU SURE?	I'M SURE	I'M NOT SURE
IS THIS WORD IN CATEGORY 1 OR 2?	THIS WORD IS IN CATEGORY 1/2	THIS WORD ISN'T IN CATEGORY 1 / 2 THIS WORD IS IN THE OTHER CATEGORY
DO YOU REMEMBER THIS WORD?	I REMEMBER THIS WORD IN CATEGORY 1/2	I DON'T REMEMBER THIS WORD
ARE WE DONE?	WE ARE DONE!	WE AREN'T DONE!

Generació Plurilingüe (GEP) – 2018-2021

Attachments for session 3

Attachment 11 : mind map. Original creation.

Come back to session 3

Link →

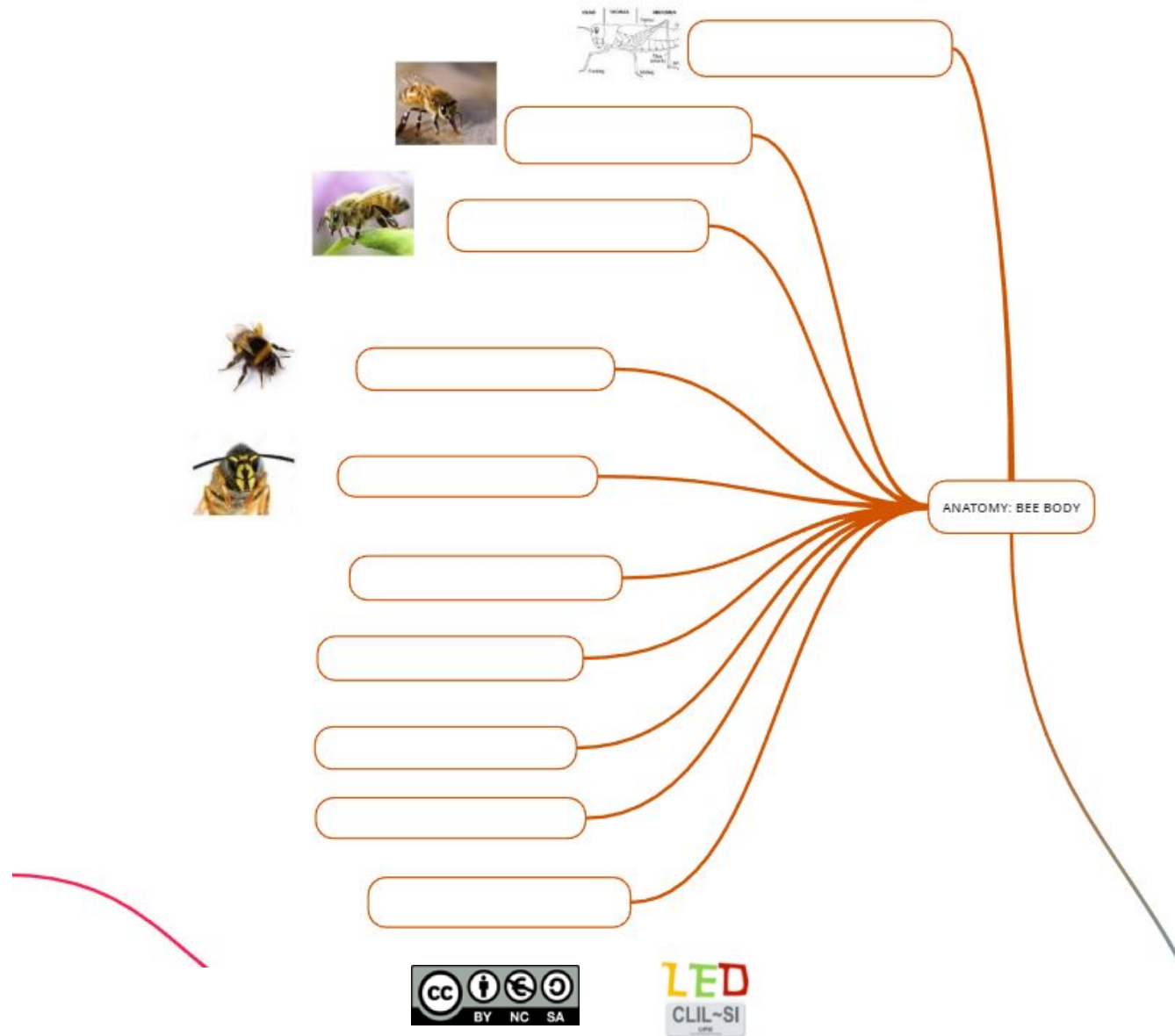
https://www.goconqr.com/es/p/16363377?id=16363377&locale=es&utm_campaign=Auto+Gen+emails&utm_medium=Email&utm_source=SendGrid

Parts to complete in groups →



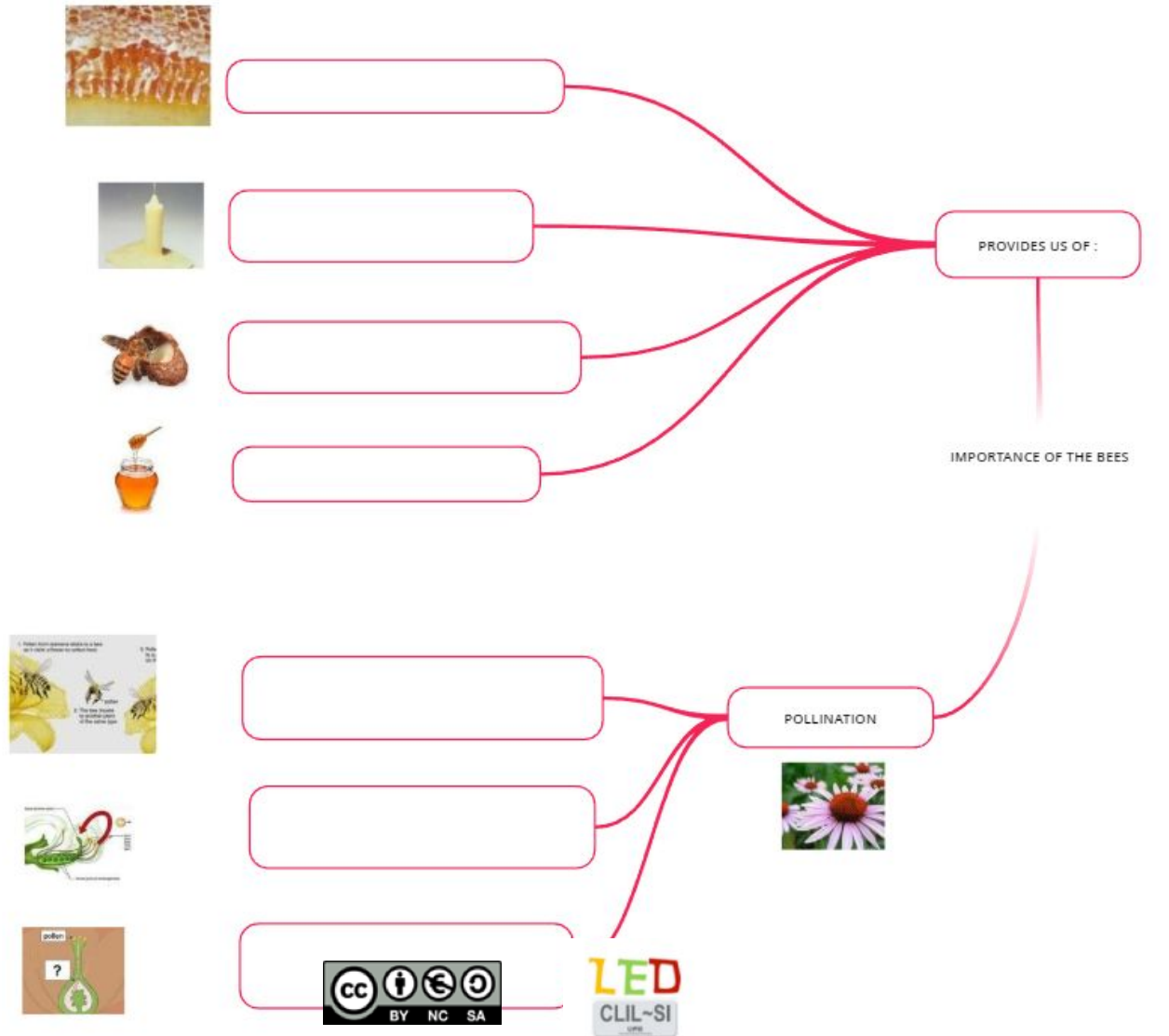
Generació Plurilingüe (GEP) – 2018-2021

Group 1



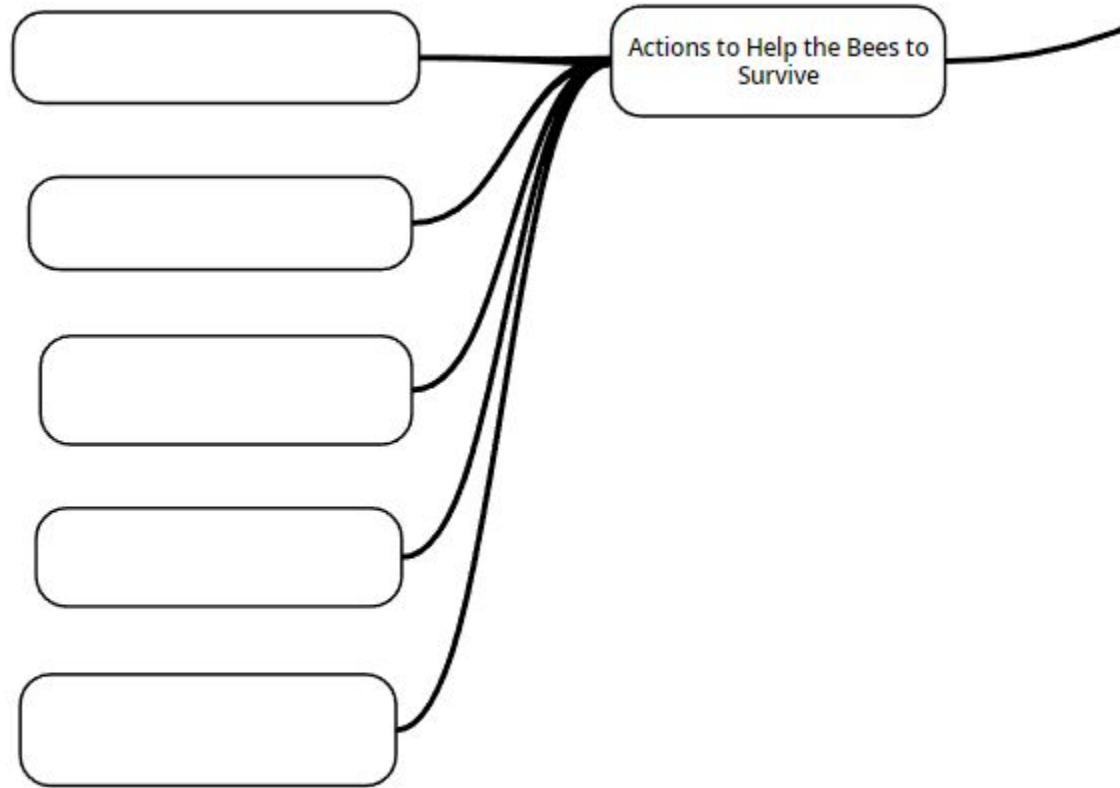
Generació Plurilingüe (GEP) – 2018-2021

Group 2



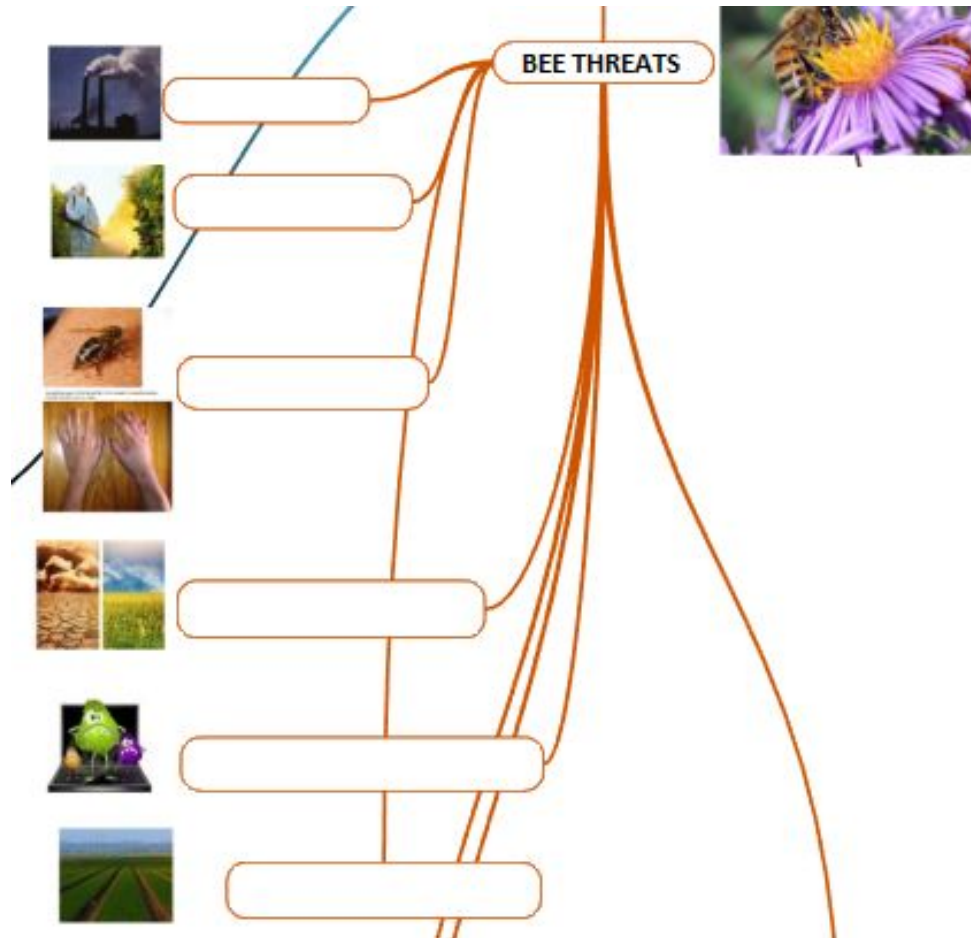
Generació Plurilingüe (GEP) – 2018-2021

Group 3



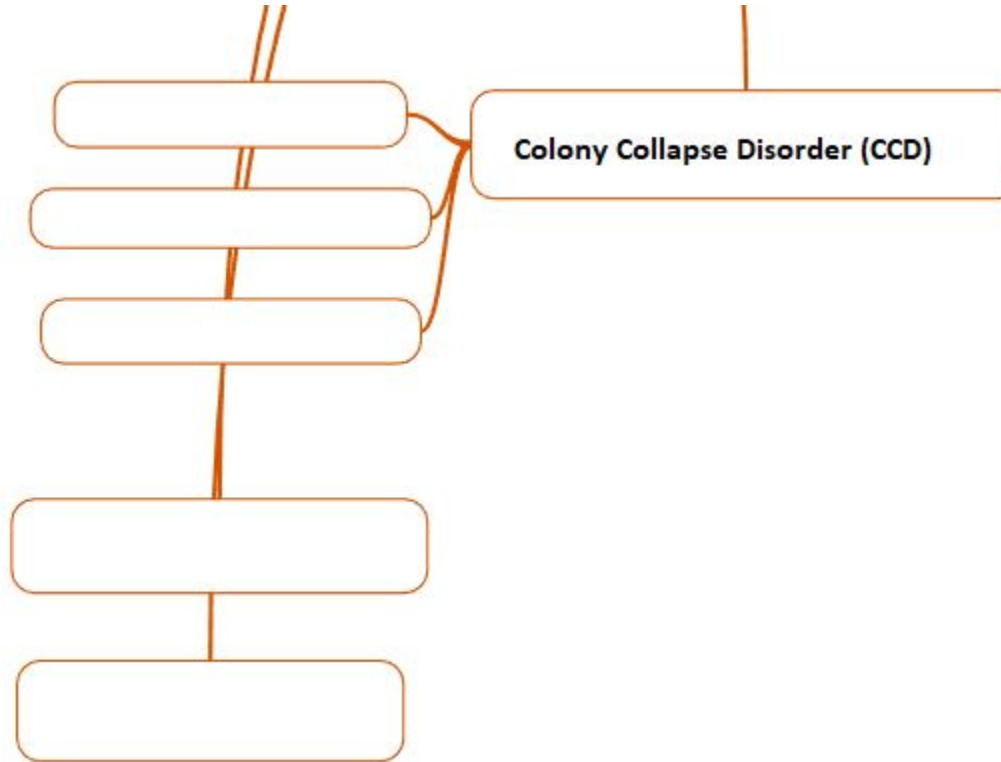
Generació Plurilingüe (GEP) – 2018-2021

Group 4



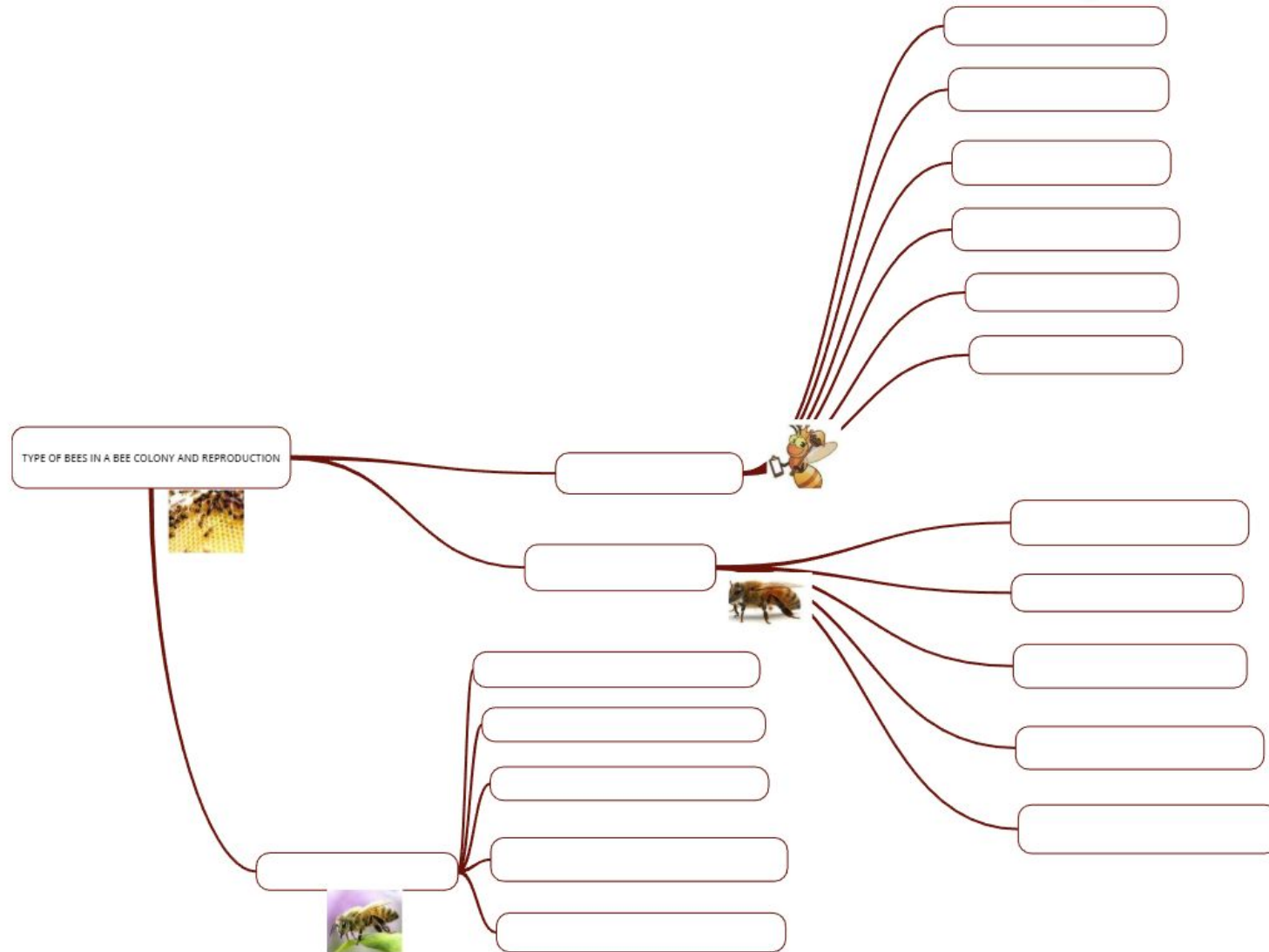
Generació Plurilingüe (GEP) – 2018-2021

Group 4



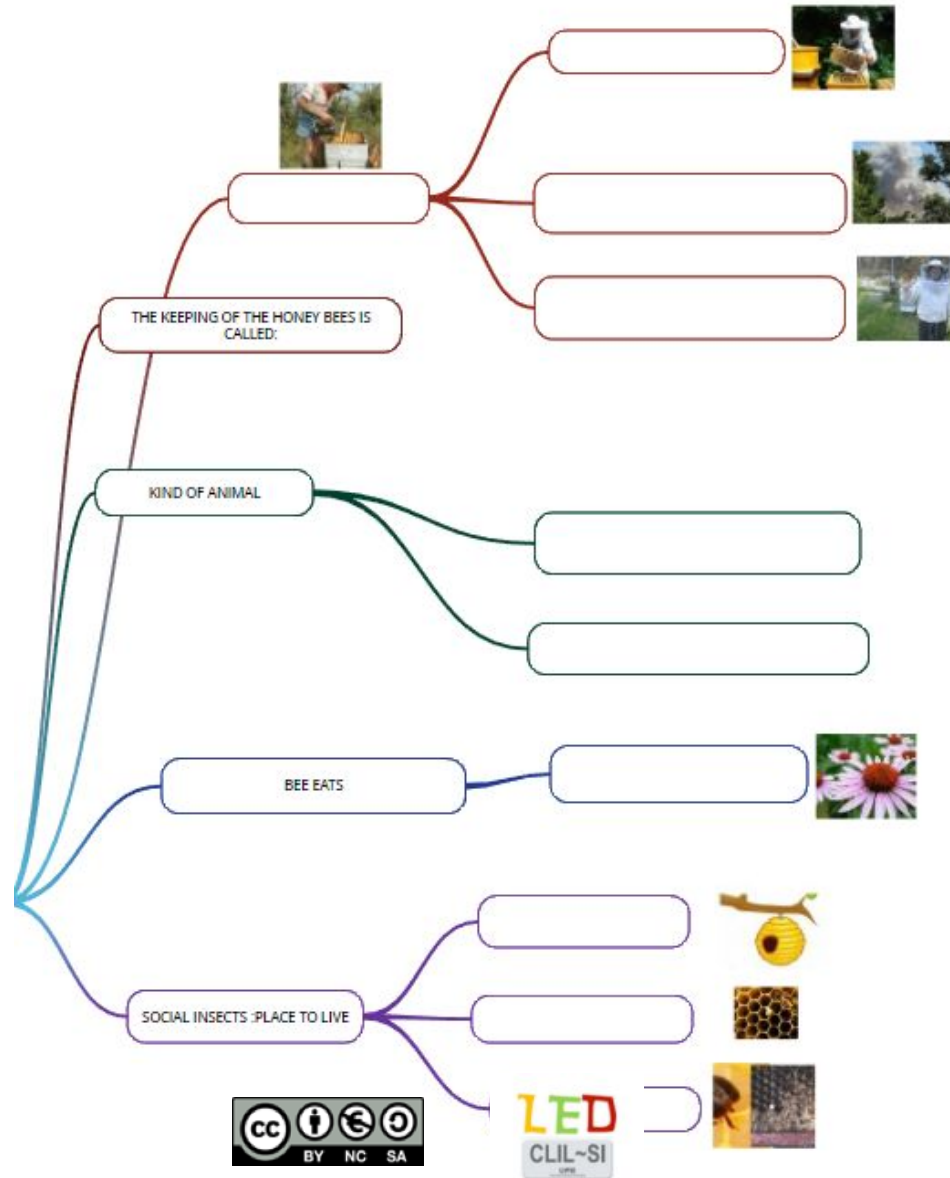
Generació Plurilingüe (GEP) – 2018-2021

Group 5



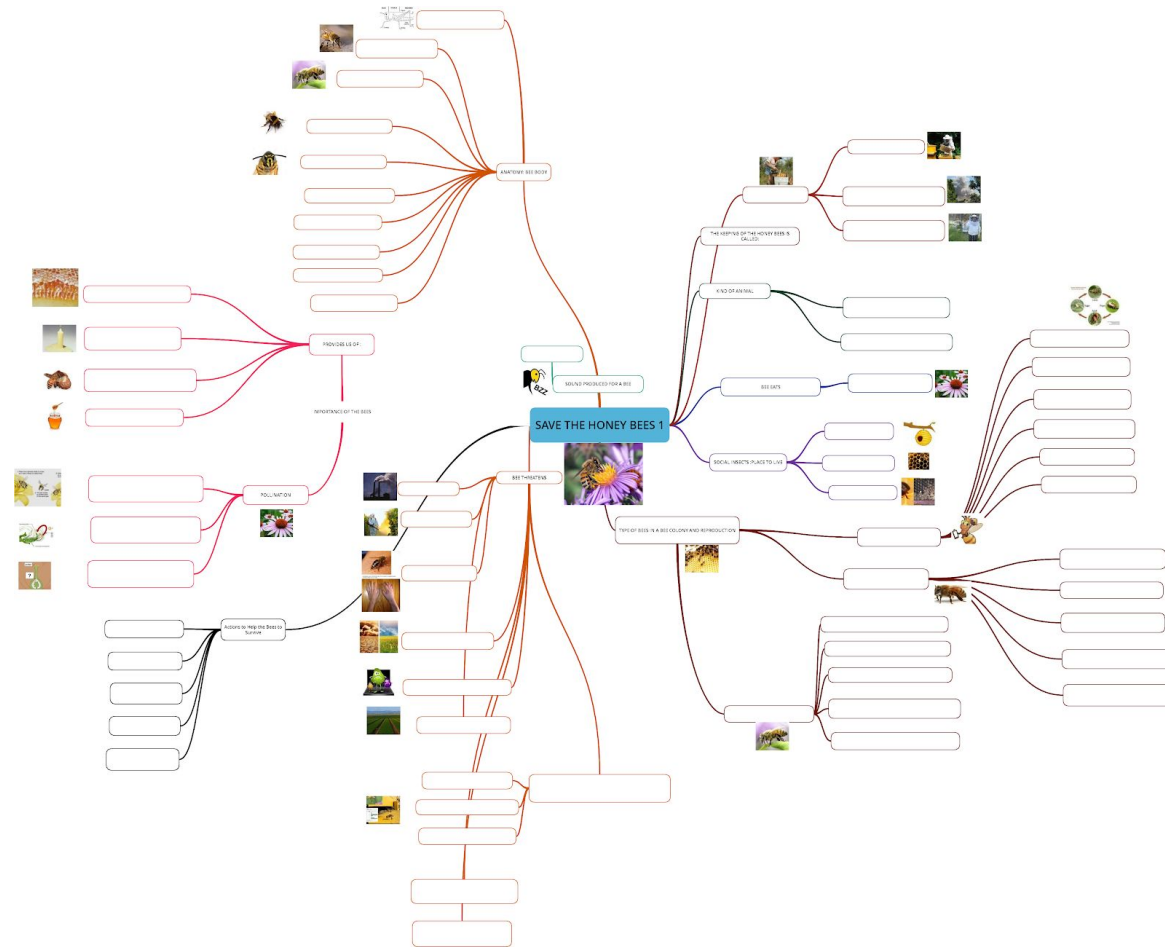
Generació Plurilingüe (GEP) – 2018-2021

Group 6



Generació Plurilingüe (GEP) – 2018-2021

Whole mind map



https://www.goconqr.com/es/p/16363377?id=16363377&locale=es&utm_campaign=Auto+Gen+emails&utm_medium=Email&utm_source=Se
[ndGrid](#)



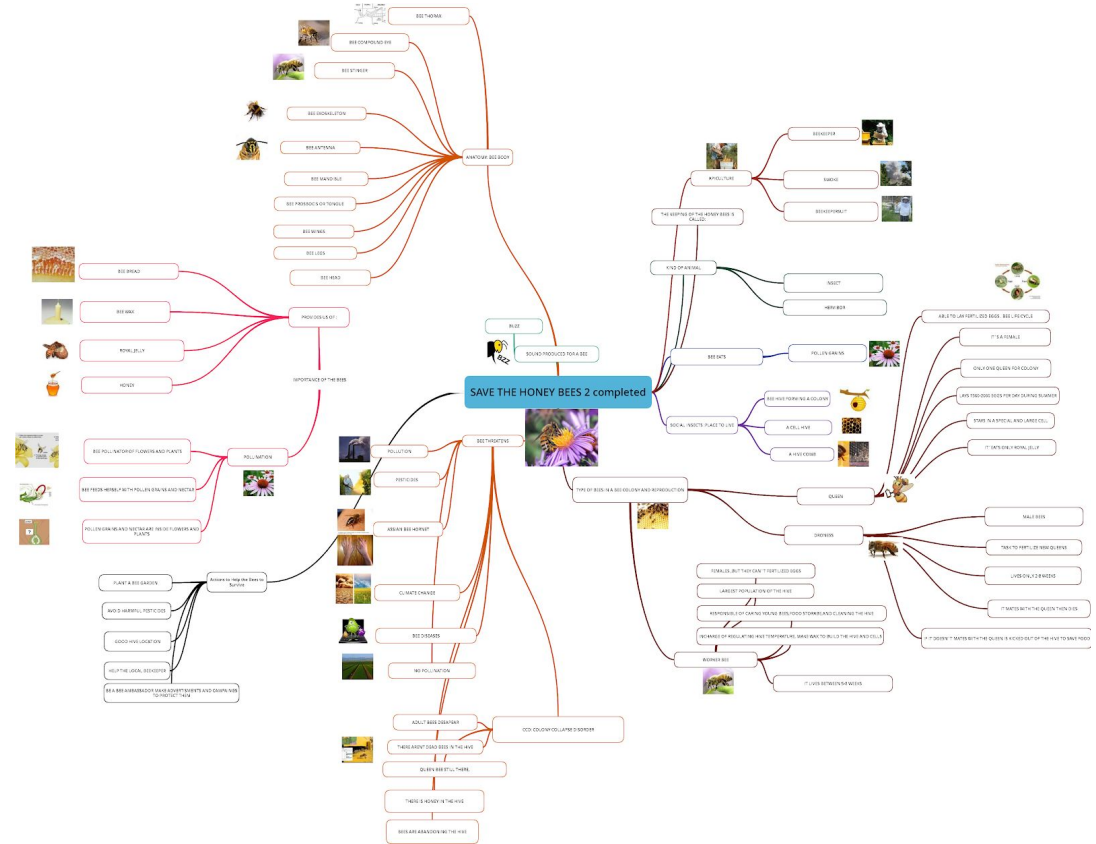
Generació Plurilingüe (GEP) – 2018-2021

Attachment 12 : mind map with words to complete. Original creation.

[Come back to session 3](#)

Link →

https://www.goconqr.com/es/p/16379615?id=16379615&locale=es&utm_campaign=Auto+Gen+emails&utm_medium=Email&utm_source=SendGrid



Attachment 13: Language support for interaction (mind map)

[Come back to session 3](#)

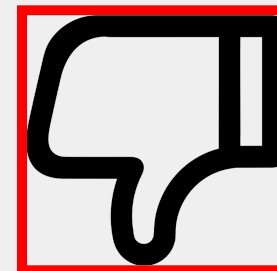
LET'S TAKE A DECISION TOGETHER



<https://commons.wikimedia.org/wiki/File:Pictogram-voting-question.svg>



https://www.flaticon.es/icono-gratis/pulgar-arriba_66845



https://www.flaticon.es/icono-gratis/pulgar-arriba_66845

DO YOU AGREE?

I AGREE / I AGREE WITH...

I DISAGREE / I DISAGREE WITH...

I DON'T AGREE / I DON'T AGREE WITH...

ARE YOU SURE?

I'M SURE

I'M NOT SURE

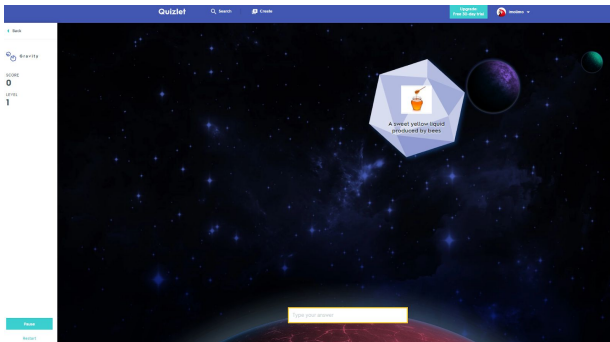


Generació Plurilingüe (GEP) – 2018-2021

<p>IS THIS WORD IN OUR PART OF THE MIND MAP?</p> <p>IS THIS WORD CORRECT?</p>	<p>THIS WORD IS IN OUR PART OF THE MIND MAP</p> <p>THIS WORD IS CORRECT</p>	<p>THIS WORD ISN'T IN OUR PART OF THE MIND MAP</p> <p>THIS WORD ISN'T CORRECT</p>
<p>ARE WE DONE?</p>	<p>WE ARE DONE!</p>	<p>WE AREN'T DONE!</p>

Attachments for session 4

Attachment 14: Link to *Quizlet*. Original creation.



[Come back to session 4](#)

Image capture from *Quizlet*.

Link → <https://quizlet.com/347601034/honey-bees-flash-cards/>



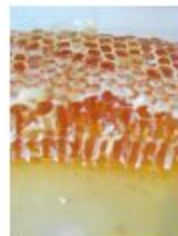
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Attachment 15: cards to play memory game, generated by *Quizlet*



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BEEBREAD



bitter yellowish-brown pollen stored up in
honeycomb cells

BEEBREAD

Mixture of nectar and pollen.

BEE COMPOUND EYE



The bee has got an eye made up of thousands of tiny
lenses, that allow a honey bee to see ultraviolet light,

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BEE DISEASES



An abnormal state in which the Bee body is not functioning normally.

BEE EXOSKELETON



It is the external skeleton that supports and protects an animal's body.

BEE HEAD



is the forward body region of the honey bee's. It has got three sections that contains the compound eyes, simple eyes, antennae, mandibles, and proboscis.

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BEEHIVE



Something resembling a hive for bees.

Good beehive location:

- away from traffic, animals and humans
- good air circulation
- good water drainage (if poor water drainage it will be humid which promotes fungal diseases)
- proximity to flowering plants and water
- protection from direct winds
- entrance angled to the north

BEEKEEPER



A person who raises bees

BEEKEEPERSUIT



Many beekeepers will wear full body armor to protect themselves



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BEE LARVA



Hatched from the egg the queen bee lays, the larva will pupate and eventually turn into an adult insect.
Egg, Larvae, Pupae, Adult

BEE LEGS



A honey bee has three pairs of segmented legs used not only for walking but also to brush pollen out of the thousands of hairs that cover the body, and to store pollen.

BEE MANDIBLE



These jaw-like structures are used to chew honey and pollen, and to knead wax.

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BEE NECTAR



A sweet liquid secreted by flowers of various plants.

BEE PROBOSCIS OR TONGUE



It's a straw-like structure used for sucking nectar or honey.

A BEE QUEEN EGG



Laid by a queen bee, this is the first stage in the life of a honey bee.
A Queen lays 2500/day, and 20 million/life

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BEES COLONY



Honey bee colonies consist of a single queen, hundreds of male drones and female worker bees.

BEE STINGER



It's located only in female honey bees in chamber at the end of the abdomen, and is used to defend against intruders.

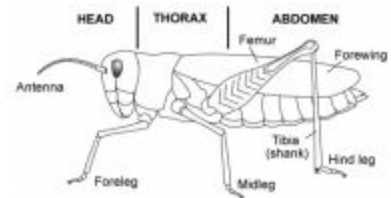
BEESWAX



Is a natural wax produced by honey bees. Beeswax used to make candles

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BEE THORAX



It's the middle section of the honey bee's three sections that contains the flight muscles, the wings and six legs.

BEE WINGS



The honey bee has two sets of flat, thin, membranous wings, strengthened by various veins. The fore wings are larger than the hind wings.

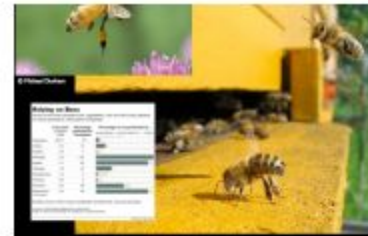
BUZZ



Continuous sound produced by the bee

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CCD: Colony Collapse Disorder



Rapid loss of adult population in a hive.

The symptoms of a Colony Collapse Disorder are:

1. Adult bees disappear, but no dead bees/bodies are found in or around the hive.
2. Queen bee still there
3. Honey in the hive

A CELL HIVE



A hexagonal chamber built of beeswax for brood rearing and storage of honey and pollen.

CLIMATE CHANGE



a change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.

Generació Plurilingüe (GEP) – 2018-2021

CLIMATE CHANGE



a change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.

COCOON



The silk chamber a larva spins around itself just prior to the pupal stage of development

DRONES BEES



Drones, or male honey bees, have only one task:
-male
-to fertilize new queens.
-lives 2-8 weeks
-mates with queen, then dies
-in early fall, a drone who has not mated is kicked out of hive to save food resources for winter.

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FLOWER PETALS



The colorful, thin structures that surround the sexual parts of the flower and not only attract pollinators but also protect the pistil and stamen.

FLOWERS



Flowers also attract pollinators, where to look for nectar

GUARD BEES



The bees that guard the hive entrance.

Hive

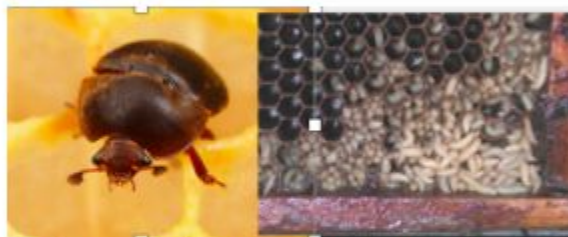
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HIVE



A bee's home.

A HIVE COMB



A structure made up of hexagonal wax cells.

HONEY



A sweet yellow liquid produced by bees

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HONEY BEE



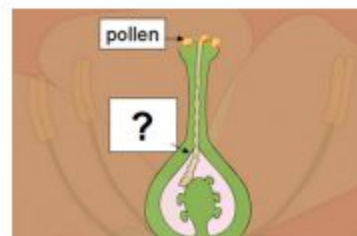
A honey-producing bee

NO POLLINATION



Without pollination, agriculture would not be sustainable

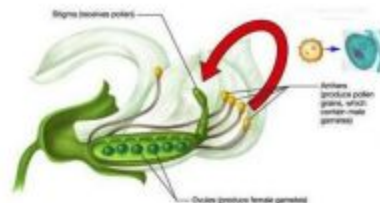
POLLEN GRAINS



the fine, powder-like material produced by the anthers of flowering plants

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POLLINATION



When bees travel from plant to plant collecting pollen and leaving some at each plant to fertilize the flowers

POLLINATORS



Honey bees are pollinators of flowers

POLLUTION



Release of harmful materials into the environment

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QUEEN BEES



- Queens are the only members of a colony:
- able to lay fertilized eggs
 - female
 - sole hive reproducer, only 1 queen per colony
 - lays about 1500-2000 eggs per day during summer
 - comes from a special, larger cell
 - queen is only fed "royal jelly"

ROYAL JELLY



A milky yellow syrup that is very high in protein, that young worker bees secrete from glands inside their heads and feed larvae

SMOKE



Calms the bees, use wood shavings, pine needles, and burlap for fuel

- smoke must be dense and cool.

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TOXIC PESTICIDES



Pesticides might be killing the bees

WORKERS BEES



Worker bees are entirely female, but they are unable to produce fertilized eggs

- female
- largest population of hive
- responsible for caring for young bees, food storage, and cleaning hive.
- caring for queen
- regulating hive temperature
- makes wax to build hive

Link →

<https://quizlet.com/pdfs?termsHash=4ef63f54cdd0176e96fc2a1a95a815f96setIds=3476010348lastModified=15445975998version=28qecookies=IjVDqWTYNpi2ATIHt9v-PVgPMAHMOHu4vPb9.NxtIJTb4R8XqIXAwK0yzHmY7j16x196SkckPyPEGhBDYzz42mbu96AEWLdNialpvfMGcvVVbai8sHGyYnUIJ->

Attachment 16: Language support for the memory game. Original creation.

[Come back to session 4](#)

ARE YOU READY?

IT'S MY TURN

IT'S YOUR TURN

THANK YOU

YOU'RE WELCOME

I'M SORRY

WELL DONE!

TRY AGAIN!

THIS IS NOT FAIR

CAN YOU HELP ME?

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Attachment 17: Rubric for peer-assessment. Original creation.

[Come back to session 4](#)

My friend's name:			
My friend...	ALWAYS	SOMETIMES	NEVER
...uses the language support			
...waits the turn			
...is respectful with the mates			
...says kind words			
...plays fair			
...gets help			
...remembers lots of things about bees			
Other comments:			

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Attachments for session 5 and 6

Attachment 18: Language support (final product). Original creation.

[Come back to session 5 and 6](#)

OUR T-SHIRT DESCRIPTION

This T-shirt is our final product in our PBL project:

How we can help the bees in Vallès Occidental?

We want to be Honey Bees Ambassadors.

[https://en.wikipedia.org/wiki/Drone_\(bee\)](https://en.wikipedia.org/wiki/Drone_(bee))

As you can see, it's a short sleeve t-shirt.

It's made with (cotton, polyester, silk) materials.

The t-shirt's background is white.

On the top right,
On the bottom right,
On the top left,
On the bottom left
In the middle of

} there is/there are.....

That wants to show,.....

That represents.....



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Attachment 19: rubrics of the final product. Original creation.

[Come back to session 5 and 6](#)

FINAL PROJECT RUBRIC:T-SHIRT DESIGN

GROUP'S NAME: _____







GROUP: MEMBERS: _____

	 1 NEEDS IMPROVEMENT	 2 SO,SO.....	 3 GREAT
CREATIVITY : THE DESIGN of the t-shirt EXPRESSES CAUSES AND SOLUTIONS TO SAVE THE BEES	THE PROJECT IS ORIGINAL, BUT IT DOESN'T EXPRESS THE IDEA CLEARLY. <input type="checkbox"/>	THE PROJECT IS VERY ORIGINAL AND EXPRESS THE IDEA QUITE CLEARLY. <input type="checkbox"/>	THE PROJECT IS VERY ORIGINAL AND EXPRESS THE IDEA CLEARLY <input type="checkbox"/>
DEVELOPING SKILLS:	PRODUCE A PRODUCT WITH POOR QUALITY <input type="checkbox"/>	PRODUCE A PRODUCT WITH QUALITY <input type="checkbox"/>	PRODUCE A HIGHT QUALITY AND CREATIVE WORK <input type="checkbox"/>
APPLICATION OF THE CONCEPTS AND VOCABULARY IN A WRITTING GUIDE, TO EXPLAIN THE T-SHIRT DESIGN, INCLUDING IDEAS ABOUT HOW TO SAVE THE BEES, AND THE IMPORTANCE OF THE BEES.	APPLY SOME OF THE SKILLS AND VOCABULARY EXPECTED FOR THE PROJECT. <input type="checkbox"/>	APPLY MOST OF THE CONCEPTS AND VOCABULRY STRESSED FOR THE PROJECT. <input type="checkbox"/>	APPLY ALL THE CONCEPTS AND VOCABULARY STRESSED FOR THE PROJECT. <input type="checkbox"/>
Use of the language content:	The group HAS DEEP DIFFICULTIES TO USE THE LANGUAGE CONTENT, AND THE VOCABULARY. <input type="checkbox"/>	THE GROUP IS ABLE TO USE THE LANGUAGE CONTENT AND THE VOCABULARY, BUT MAKING SOME MISTALES. <input type="checkbox"/>	THE GROUP IS ABLE TO USE THE LANGUAGE CONTENT WITH PROPER STRUCTURES. <input type="checkbox"/>
Iteration	THE GROUP MAKES ONE ITERATION ON THE DESIGN OF THE PROJECT, WITHOUT BEING A BIG IMPROVEMENT. <input type="checkbox"/>	THE GROUP MAKES ONE ITERATION ON THE DESIGN OF THE PROJEC BEING AN IMPROVEMENT OF THE DESIGN. <input type="checkbox"/>	THE GROUP COMPLETES THE PROJECT HAVING IMPROVED THE DESIGN SUCCESFULLY. <input type="checkbox"/>
PARTICIPATION	ALL THE MEMBERS SOMETIMES PARTICIPATE ACTIVELY AND SOMETIMES USES THEIR TIME WELL. <input type="checkbox"/>	ALL THE MEMBERS USUALLY PARTICIPATE ACTIVELY AND USUALLY USES THEIR TIME WELL. <input type="checkbox"/>	ALL THE MEMBERS ALWAYS PARTICIPATE ACTIVELY AND USES THEIR TIME WELL. <input type="checkbox"/>
USE OF MATERIALS	USE MATERIALS APPROPRIATELY,BUT NEEDED A LOT OF REMINDING. <input type="checkbox"/>	USE MATERIALS APPROPRIATELY,WITH LITTLE REMINDING. <input type="checkbox"/>	USE MATERIALS APPROPRIATELY,WITHOUT REMINDERS <input type="checkbox"/>
BEHAVIOR	ALWAYS FOLLOW THE CLASSROOM RULES AND NEVER CAUSE A CLASSROOM DISTURBANCE. 	USUALLY FOLLOW THE CLASSROOM RULES AND OCCASIONALLY CAUSE A CLASSROOM DISTURBANCE. 	FOLLOW SOME CLASSROOM RULES AND OCCASIONALLY CAUSE A CLASSROOM DISTUR <input type="checkbox"/>

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Attachment 20: self-assessment

[Come back to session 5 and 6](#)

SELF ASSESSMENT After doing your project, read and choose your answer.			
	ABSOLUTELY YES!   https://pixabay.com/en/yes-no-button-orange-green-icon-1713011/	SOME DOUBTS...   https://pixabay.com/en/doubt-mark-rustic-screen-issue-2137525/	NOT AT ALL   https://pixabay.com/en/yes-no-button-orange-green-icon-1713011/
CAN YOU...			
JUSTIFY THE ESSENTIAL ROLE OF BEES IN OUR WORLD?			
EXPLAIN CAUSES OF THE COLONY COLLAPSE DISORDER (CCD)?			

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EXEMPLIFY THREATS TO HONEYBEES IN OUR NEIGHBOURHOOD?			
DEMONSTRATE THAT I CAN DO SOMETHING TO HELP BEES?			
PERSUADE MY AUDIENCE (FRIENDS, PARENTS, TEACHERS) TO SAVE BEES?			
JUSTIFY THE ESSENTIAL ROLE OF BEES IN OUR WORLD?			
EXPLAIN CAUSES OF THE COLONY COLLAPSE DISORDER (CCD)?			
DO YOU LIKE...			
YOUR GROUP?			
YOUR LEVEL OF COOPERATION?			
YOUR ROLE?			
YOUR TASK?			

Generació Plurilingüe (GEP) – 2018-2021










YOUR FINAL PRODUCT?			
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Generació Plurilingüe 2

SELF-ASSESSMENT CHECKLIST

CLIL-PBL Project - Teaching materials	<input checked="" type="checkbox"/> <input type="checkbox"/>
The teaching materials are visually attractive and well-organized .	<input checked="" type="checkbox"/>
The teaching materials are self-explanatory and ready-to-use .	<input checked="" type="checkbox"/>
All activities and teaching materials are original and created by the course participant.	<input checked="" type="checkbox"/>
Any resource in any format (including videos, images, texts from the Internet), that is not original, is respectful of copyright and its sources are cited .	<input checked="" type="checkbox"/>
Students are presented with multimodal and varied input (spoken, written, visual, hands-on...).	<input checked="" type="checkbox"/>
Input is presented at the right cognitive level .	<input checked="" type="checkbox"/>

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Input is presented at the right language level .	
Students are helped in some way to understand and process the input presented .	
Visuals are used to support comprehension.	
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...	
There are opportunities for significant linguistic output (the students produce communicative “products”, speak, write, interact...).	
Support is provided to help students read, write, speak and interact.	
A variety of collaborative and cooperative learning strategies are used throughout the sessions.	
Activities facilitate inquiry and reflection and promote the role of the teacher as a facilitator/coach.	
Task instructions are short, concise, clear and comprehensible to the students. Activities are written using an appropriate level of language .	
The teaching materials are written in accurate English . There are no mistakes at all .	