# Training in Reading Strategy Instruction (RSI) by Using the Content and Language Integrated Learning (CLIL) approach

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**Abstract**

This action research consists of articulating the RSI scanning, visualization, and prior knowledge as part of reading skill along with the CLIL approach with the aim to help third graders in the understanding of Science contents in EFL as target language. This is a qualitative study in which participants are trained in the RSI mentioned before, following a scaffolding and assessment process during the implementation of three lesson plans. Therefore, making a reflection of how each RSI supports the development of lower - order thinking skills such as, remembering, understanding and applying, as well as higher - order thinking skills such as, analyzing, and evaluating which are fundamental in the development of the CLIL approach.

Key words: CLIL, Prior knowledge, Scanning, Visualization, Reading skill, EFL.

## Contextualization

To begin with, I'm going to describe the context in which this investigation will take place. This research is going to be carried out at school Nuevo San Luis Gonzaga, located in Suba, Bogotá, Which is non-bilingual private institution. As a researcher teacher, I will make an intervention in a third graders classroom, made up by 3 girls and 11 boys whose ages fluctuate between 7 and 8 years old. This group of learners study in a face- to -face modality and have been assigned in their schedule: 6 hours of English, 2 hours of Math and two hours of Science classes in English language, per week.

On the other hand, I revised some resources, such as the textbook and the platform *Go*

*International 3,* assigned for the English class, as well as the institution Curriculum, and I realized that the eight units planned are focused on a variety of instructions contained in their topics, which are learnt in transversal way through different areas, such as Science, Technology, Art, etc, that is to say, that the book is designed according to the CLIL approach. Additionally, this group of students learn Math and Science in English language, which do not have an approach, techniques or methodology defined for their execution. Hence, the teacher that imparts these two subjects, is free to choose any methodology. Furthermore, every Tuesday they do a test based on reading comprehension, which name is *"Martes de Prueba"* and for the first term students obtained a very low level in English, the average score was 40 out of 100.

After analyzing and reflecting on my own teaching practices, and how the students have been learning English as a foreign language, I focused my attention, specifically in the Science class, due to I noticed certain shortcomings in the learning processes from this subject, in terms of understanding the contents. Thus, I designed a lesson plan with a variety of activities related to the topic the *five senses* and I observed that this group of learners presented difficulties when reading, understanding instructions, answering questions based on the observation of images, and completing information on their own.

According to the mentioned above, I considered developing, Reading Strategy Instruction (RSI) as part of reading skill in this study by using the CLIL approach, in an EFL group of third graders, which could be a good option to achieve a better understanding of Science contents. In this regard, Ghafoori et al (2016), Movahedi & Talebi (2018) and Pani (2004) cited by Qian et al (2023), mention that, "RSI can enhance students' interest and confidence in reading texts and increase the frequency of use of reading strategies" (p. 1). Besides, Wu et al (2021), affirm that

"researchers have found that reading strategy instruction could develop students' motivation to read" (p. 2178). From my point of view, I think that it is because RSI offers a range of strategies such as, scanning, skimming, previewing, summarizing, asking questions, making predictions, visualizing, text location, glossary, note taking, graphic organizers, prior knowledge, among others, which can be combined and applied according to the students' needs and purposes. In the current research, I chose the following strategies with the aim to improve the reading comprehension for Science contents: scanning, visualizing, and prior knowledge, which will be explained in detail below.

Additionally, I have thought in the CLIL approach due I had the opportunity to learn about this in one of the courses offered by Universidad Santo Tomas for this career of bachelor's degree in English as a Foreign Language. So that, I think, it is an alternative that can benefit learners to comprehend much better the Science contents, due to the CLIL approach is designed for teaching and learning different subjects using a target language. In this sense, Hemmi and Banegas (2021), describe CLIL as "flexible and adaptable, and could potentially make learning and teaching more effective even in resource poor areas" (p. 2). In conclusion, I hope to cooperate in the best way, carrying out the development of these both components, RSI and the CLIL approach, favoring the learning processes, in relation to Science contents, for the group of students mentioned at the top of this section. Consequently, the development of this investigation likely contributes to enrich the school Nuevo San Luis Gonzaga Curriculum.

## Research Statement

The present study emerged at the beginning of this year because of experiences lived as a pre-service teacher when I was assigned to teach Science in English language at school Nuevo

San Luis Gonzaga to third graders. So, I started finding information about how the institution guides the processes to impart this subject. First of all, I read the content of the subject plan (*plan de área*) for Science, that contains a set of topics according to the textbook of Science in Spanish language that students handle. Then, I revised a textbook suggested to teach Science, called *Let's learn Science 3,* which can be only used as a teacher's guide. It was found the textbooks mentioned before did not coincide with most of the themes proposed in the subject plan. So, it is necessary to think about other resources that permitted the learning of science contents, such as workshops, lesson plans designed by the teacher, videos, etc.

Bearing in mind, that the school allows me to be autonomous in the teaching processes for Science subject, in February of this year, I designed a lesson plan based on the CLIL approach. Cross (2015) cited by Hemmi and Banegas (2021), affirms that "CLIL is a pedagogical approach with a strong focus on integration as a teaching tool" (p.153). Moreover, it is relevant to grasps a large amount of information for this study, such as how to assess the processes of learning presented by the learners, what the rol of teacher is, all about the interaction between teacher – students and students – students, which skills are the most appropriate to address in this group of students according to their level of knowledge and understanding in Science contents, needs and desires. Navés et al (2002) and Westhoff (2007) cited by Hemmi and Banegas (2021), mention some strategies to help students in the comprehension of content knowledge "For example, strategies for scaffolding can include clarity and structure of lessons, explicit correction, repetition, using visual aids and connecting to students' prior knowledge" (p. 159).

A second component selected for this paper is RSI, which from my point of view, aligns well with the CLIL approach mentioned. For instance, Gómez et al (2020), state that "For efficient knowledge acquisition and transfer of ideas, CLIL learners need to be provided with strategies to acquire meaningful learning in an organized manner to avoid learning acquisition through memorization" (p. 2007). Wu et al (2021), affirm that "reading strategy instruction can be an effective approach to help struggling readers to improve their reading performance" (p. 1175). Further on, a chart is presented to show the relationship between RSI and the CLIL approach (see chart 1). Therefore, in this study I will apply three reading strategies such as scanning, visualizing, and prior knowledge as part of reading skill, all these taking into account the age, level of English of the learners, needs, and the structure that involves the processes before, during and after reading in function to comprehend Science contents in an easier way. In this regard, Wu et al (2021), argue that "Reading strategies provide pathway for readers to reach text comprehension" (p. 2176). Effective reading strategies, such as reciprocal teaching and the integration of cognitive and metacognitive strategies, have been utilized to improve students' reading comprehension. For instance, as part of these strategies correspond; the integration of questioning, summarizing and clarifying, as well as, goal setting, activating prior knowledge and vocabulary recognition.

As a consequence, in the current research is expected to develop some reading strategies through RSI such as: scanning text to quickly locate specific information, identifying the main idea or key points of texts, searching and selecting appropriate sources and information for comprehension, summarizing texts in students' own words, and making predictions based on personal experiences, and background knowledge, with the purpose of facilitating the

understanding of instructions, answering questions based on the observation of images and completing information on their own through the reading of Science contents.

On the other hand, it is worthy to clarify that, in this research study, CLIL and RSI are articulated because both aim to integrate content and language learning through cognitive development practices, they are determined by instruction and social processes of collaboration, communication, and interaction between a pre-service teacher and students, students and a preservice teacher, as well as students – students in a real context, that correspond to a third graders classroom. In accordance with Marsh et al (2005) as it is cited in Reynolds and Teng (2019, p.
79), "reading comprehension is essential in the CLIL approach because it facilitates access to content and language".

**Research Question**

What is the result of training in RSI by using the CLIL approach in an EFL group of third graders at school Nuevo San Luis Gonzaga in Bogotá, Colombia?

**General Objective**

To know what is the result of training in RSI by using the CLIL approach in an EFL group of third graders.

**Specific Objectives**

To find reading strategy instruction activities that contribute to a better understanding of Science contents in English.

To implement lesson plans based on the CLIL approach and RSI.

To verify the understanding gained in Science contents through a rubric as assessment of each lesson plan.

## Theoretical Framework

According to the research statement, question and objectives formulated in this study and regarding to the learning processes of Science contents given for a group of 14 third graders at school Nuevo San Luis Gonzaga, this research will be mainly focused on searching information about two constructs, the CLIL approach and RSI scanning, visualization, and prior knowledge as part of the reading skill.

### Content and Language Integrated Learning

CLIL as an approach, has been implemented since the mid – 1990s in different educational contexts around the world, supporting multilingual education and the need for integrating content and language learning in bilingual settings through the teaching of one or more school subjects, taking into account an additional language such as a foreign language. On top of that, the foundation of CLIL is underpinning by different theories such as, Vygotsky's sociocultural theory that promotes the interaction and collaboration among teachers and students, development of thinking skills which contribute in cognitive processes allowing learners remembering, understanding, applying, analyzing, evaluating and creating (Hemmi and Banegas, 2021, p.p. 1-3).

Likewise, Hemmi and Banegas (2021), state that "cognitive development and critical thinking skills are at the heart of learning in CLIL" (p. 3). Hence, in order to learn contents is

very essential the development of a cyclical process between LOTS lower – order thinking skills such as remembering, understanding, and applying; and HOTS higher – order thinking skills such as analyzing, evaluating and creating, with the purpose of strengthening the knowledge and thinking skills through CLIL procedures.

On the other hand, the CLIL approach takes into account the development of content, communication, cognition and culture, which are named as 4Cs. According to Coyle et al (2010) cited by Hammi and Banegas (2021) "are helpful in understanding how CLIL can be conceptualized from a broader perspective". This means, that the learning of content requests of thinking, processing information, and processing understanding of themes acquired through communication tasks carried out into the classroom, which is considered the setting of culture, formed by a community of learners and where students could learn globally.

So, the CLIL approach is considered as a good option for the development of this research because is flexible and versatile in its execution, provides learners the possibility to express their thoughts, feelings and ideas using their mother tongue and EFL, which could offer confidence and motivation, as well as a positive attitude in the development of activities that lead to understand content and language in Science classes. González (1989) cited by Gómez et al (2020) argues that "the correlations between English and Spanish reading skills are proved to be stronger than the correlations between reading and oral communicative skills in English" (p. 2007)

## Reading Skill

Reading is one of the most important language skills and receptive skill that contributes to understand grammatical structures, identify how the letters are joined together to form words, increase vocabulary and figure out a written text. Hedgcock & Ferris (2009) as is cited in Al-Shdeifat and Al-Jamal (2023) indicate that "reading is a challenging linguistic, social, and cognitive process that involves the reader, the author, the text, the context, and the purpose" (p.367).

Continuing with the purpose of this research, is worthy specifying that reading skill is chosen because this contains a variety of strategies that could help to mitigate the students' needs, that have been evidenced from the beginning of this study, such as difficulties when reading, understanding instructions, answering questions based on the observation of images, and completing information on their own. On the other hand, because as it is mentioned at the bottom of the Research Statement, reading comprehension is crucial in the implementation of the CLIL approach, which make likely easier the access to content and language in the design and application of the Science lessons. Krashen (2004) cited by Reynolds and Teng (2019), argues that reading "is beneficial for second or foreign language acquisition as it can be a major source of comprehensible input, especially in a context where the language is not commonly used outside of the classroom" (p.195).

### *Reading Strategy Instruction*

Consequently, as expressed before, this study aims to achieve in third graders at school Nuevo San Luis Gonzaga, an effective understanding of science texts in EFL, following the

structure of the CLIL approach and involving the learners in the practice and training of reading strategies such us scanning, visualizing, and prior knowledge; all these through three stages, before reading, during reading and after reading. Therefore, each strategy will be explained as follows to have an idea of what would be expected in this classroom context according to the students' needs. Yan and Cai (2022) affirm that "Reading strategy instruction has been reported to be effective in improving students' reading literacy".

**Scanning**. Yusuf et al (2017) cited by Shen et al (2019, p. 324), state that "Scanning is one of the pre-reading strategies that require readers to look at specific keywords through text".

**Visualizing.** In respect to visualization, Tomlinson (1997, p.1) cited by Al-Shedeifat and Al-Jamal (2023) defines visualization as "the process of perceiving images in minds" (p. 368). It refers to create mental images and pictures in the head using the imagination, taking into account experiences lived and how all the five senses perceive everything by reading a text. It also allows readers imagine what is happening, what they are observing, asking questions and remembering details within a text. Likewise, Mills (2009) cited by Al-Shdeifat and Al-Jamal (2023) affirms that, "students will struggle to understand new information if they are unable to mentally picture what they hear, read, smell, or touch" (p. 369).

**Prior Knowledge**. In regard to this reading strategy instruction, some positive concepts are taken into consideration from the opinion of different authors:

> First, prior knowledge can positively affect learning outcomes by guiding learners' attention. Second, it facilitates the interpretation and encoding of new information, as in text comprehension. Third, it allows for the bundling of new information into chunks that can be efficiently memorized, processed, and retrieved. Fourth, prior knowledge about the effectiveness and efficiency of problem-solving

> strategies facilitates exploration, goal-directed behavior, and the construction of more advanced new strategies. Finally, prior knowledge helps learners evaluate the credibility of sources and the plausibility of new information. (Simonsmeier et al, 2022, p. 32)

**Chart 1**

### *Relationship between RSI and the CLIL approach*

The relationship within RSI and the CLIL approach is based on the fact that both constructs are focused on the development of cognitive skills, they also promote the communication and interaction between participants. Additionally, when students carry out the development of different tasks by using RSI and CLIL, they are likely able to describe, explain, compare, discuss, predict, classify, contrast, identify, assess, etc, which is essential in the understanding of Science contents in EFL.

| **RSI** | **CLIL** |
| --- | --- |
| **Scanning**<br>It consists of having a question in mind to find the answer quickly by paying attention to a piece of information instead of reading all the text.<br>**Visualizing**<br>The visualization strategy is the process of sketching out and visualize predictions, retaining information, and imagining through the mind's eye. For instance, the pathway of this strategy explains how an illustration, words, a piece of text, verbal and symbolic modes of expression are fixed in our minds to be probably recalled later and applied as an aid for reading comprehension, demonstrating a better understanding. Additionally, when questions and ideas arise because of the visualization of materials presented in a class (videos, diagrams, charts, images, etc), likely this strategy facilitates that learners feel more included in learning processes | Attard-Montalto and Walter (2021) provide the following information:<br>CLIL requires emphasis on all types of communication (linguistic, visual, and kinaesthetic).<br><br>CLIL suggests to follow a regular daily routine, for remembering information and for carrying out instructions.<br><br>Graphic Organizers and other clear visuals for information processing and recording are utilized to make additional language processing easier for learners.<br><br>Learners can build their content knowledge through the development of tasks around what they already know.<br><br>Questions focus on real, specific and concrete answers such as, "when", "where", "which", "how many", and "who" help |

| | |
|---|---|
| stimulating their motivation and creativity in the development of diverse academic tasks as well as the development of communication by having opportunities for expressing their background knowledge.<br><br>**Prior Knowledge**<br>This knowledge is activated previously as a preparation of the brain, where the functions could be formulating hypotheses, analyzing the structure of a problem or a concept, and questioning about what can be found in a reading text or a content. For example, focusing attention on titles, headings, pictures, etc. Also, the prior knowledge is given when students demonstrate what they already know about a topic, based on their experiences or a formative assessment; probably with the purpose of improving the connection between people, places, events and ideas in a text, as well as organize new information. | students to develop the thinking skills of recalling, repeating and listing, and understanding of new information that can be explained and applied in a different situation. That is to say, that questions allow learners to improve LOTS and HOTS.<br><br>The questions ask by teachers about a particular text through the scaffolding of reading skill, may guide learners to clear understanding.<br><br>Tools like tables and grids, flow charts and mind maps enable data processing and develop thinking skills such as comparing and contrasting, sequencing, recognising relationships and classifying. |

This chart explains how RSI and the CLIL approach are articulated.

## Research Design Methodology

This part of the paper comprises definitions and explanations about qualitative approach, action research, participatory observation and (survey) questionnaire as collection methods, in addition to the field notes, ethical guidelines and keeping records as collection instruments. In the opinion of Sileyew (2019), “Research methodology is the path through which researchers need to conduce their research” (p. 27).

## Qualitative Approach

Due to this research project was based on finding results about training in RSI by using the CLIL approach, in an EFL classroom, for a group of 14 learners at the private school Nuevo San Luis Gonzaga, it was pertinent to think that qualitative approach was what best aims to understand this phenomenon, discover meanings, and generate hypothesis through valuable descriptions of feelings, thoughts and, third – grade learners' behavior. On the other hand, this qualitative approach allowed me as a pre-service teacher to draw conclusion, analyze and gave my own points of view according to the results of a questionnaire (survey), observations in respect to the application of each lesson plan, how was the interaction between participants, field notes, keeping records, and permanent assessment, which is essential in the articulation of both RSI and the CLIL approach. According to Lo and Leung (2022), "CLIL teachers need to be aware of different assessment formats and employ different tools to better diagnose students' learning progress in both content and language dimensions". (p. 3822). Therefore, the development of all this process was in order to provide an answer to the research statement, proposed question and objectives for this current research. According to Kuen et al (2019) "for qualitative and ethnographic studies, the core ideas and arguments come from the daily cumulative experiences and the interactions with previous literature and theories" (p. 30).

## Action Research

Bearing in mind the research at the LLEI, the present study corresponds to an "Action Research" following the research field 1, which refers to the teaching and learning of English as a Foreign Language. Also, the research macro project 1, that consists of innovative practices in

English teaching and learning processes guided by a pre-service teacher, as well as the research subproject 1, which describes pedagogical innovations in EFL learning and teaching contexts.

On the other hand, the definition of action research can be synthesized into four key characteristics:

> (1) it is a systematic inquiry into one's teaching practice so that it is empirical; (2) it is based on actions taking place the teachers' own classroom, therefore it is context specific and participatory; (3) it could be conducted alone or in collaboration with colleagues; (4) it is participatory and is aimed at empowering the practitioner first and then others to increase their effectiveness, so that it is and aiming for change and improvement. (Pardede, 2019, p. 137).

Additionally, Hunziker & Blankenagel (2021), point out that "Action research projects follow a cyclical design, starting with diagnosis, then action planning, intervention, evaluation and finally refection. The completion of one step leads sequentially to the next, thus helping to ensure that an action research project is rigorously conducted" (p. 119).

Following by the previous literature, it is important to recognize that having the access to this local and natural context of third graders classroom, my role has been assuming possible challenges in both, as a subject teacher as well as a language teacher and taking action on the improvement of learning processes corresponding to the understanding of Science contents, maintaining always reflective thoughts and a collaborative attitude in the quest of results by articulating the CLIL approach and RSI in an EFL. HAMDOUD (2020), argues that action

research is “to create an inquiry stance toward teaching where questioning one’s own practice becomes part of the work and of the teaching culture” (p. 636). In this sense, I established five stages for the execution of the current action research.

Stage 1. Ask for consent to the head teacher or principal with the purpose to inform and carry out the interventions into the third graders classroom context (See Appendix A). Plessis-Schneider (2022), affirms that “procedural ethics ensures transparency and accountability in the research design, fieldwork analysis, and writing up the findings” (p. 145).

Stage 2. With the purpose of determining the needs and lacks presented in learning processes from Science contents, I did a diagnosis exercise (See Appendix B). Across interacting with this group of learners, I observed, gathered the information through a recording, which was subsequently listened to be analyzed qualitatively.

Stage 3. In order to make a survey about the components CLIL and RSI, I designed a questionnaire that contained ten items, it in function to know what third graders have likely employed or developed implicitly through their experiences for understanding science texts (See Appendix C). The items in this questionnaire were presented in Spanish language for a better understanding and using the Likert scale (1= almost never, 2= sometimes, 3= often, 4= almost always). With regard to the Likert scale, some concepts are taken into consideration from the opinion of different authors:

> The Likert scale is one of the most widely adopted psychometric tools in social and applied sciences. Moreover, it is simple, pragmatic and versatile. It is a set of statements offered for a real or hypothetical situation under study, where participants are asked to

> show their level of agreement; these stem-statements are called "Likert items" which are oriented towards a given construct that is a "response format". Response formats are put into three main categories: the agreement (agree – disagree); evaluation (good – bad) and frequency (rarely – always) dimensions. (Alabi and Jelili, 2022, p. 1338)

Stage 4. This part describes, how as a pre-service teacher planned, designed and conducted 3 lesson plans, taking into account the format implemented by Attard-Montalto & Walter (2021), (See Appendix D). In this sense, with the purpose to articulate the CLIL approach with RSI prior knowledge, scanning and visualizing, in EFL as the target language for this present paper. On top of that, each cycle process was assessed through a rubric providing feedback. In this respect, Stevens & Levi (2023) define rubrics as "valuable pedagogical tools because they make us more aware of our individual teaching styles and methods, allow us to impart more clearly our intentions and expectations, and provide timely, informative feedback to our students" (See Appendix E).

Stage 5. The qualitative data analysis or reflection in the current research project, was carried out through the implementation of a relationship matrix between the RSI scanning, visualizing, prior knowledge, content, language and interaction as categorizations and the methodological triangulation of data collection methods and data collection instruments; all of which occurred simultaneously in order to make comparisons of outcomes and ground the theory in the data. Denzin (1978) and Patton (1999) as is cited in Lemon and Hayes (2020), argue that "triangulation of data sources calls for the inclusion of individual with varying backgrounds, diverse groups of participants, or documents in the study" (p. 606). (See Appendix E).

## Data Collection Instruments

This research is conducted either through implementation of participatory observation and questionnaire (survey) as collection methods, beside ethical guidelines, field notes and keeping records, as collection instruments; taking into account that these aim to the discipline of research methodology based on words that emerge across descriptions and interaction between participants, as well as actions addressed to answer the research question. Coughlan & Coughlan (2002) and Thiollent (2009) as is cited in Hunziker & Blankenagel (2021), state that "Collected data is provided to all taking part in the action research project to validate the data" (p. 120).

### *Ethical Guidelines*

Vanderstaay (2005) cited by Golam and Kusacabe (2020, p. 3), emphasizes the importance of "ensuring the protection of the anonymity of the participants as a principle of ethics". Therefore, in the development of this research all of the names of the students were replaced by pseudonyms such as, Mapa, Esbe, Gabe, to protect their identities. Likewise, before starting the intervention into the classroom was necessary to obtain a consent by the head teacher or director of the school Nuevo San Luis Gonzaga, as another principle of ethics, avoiding always any kind of risk by applying the lesson plans, questionnaire, observing, taking field notes through recordings, etc; and where as a pre-service teacher I have been part of the process in the development of this present research, in the interest of providing a result for the question: What is the result of training in RSI by using the CLIL approach in an EFL group of third graders at

school Nuevo San Luis Gonzaga in Bogotá, Colombia?. And additionally, fulfill the proposed objectives.

### *Participatory Observation*

Golam and Kusakabe (2020), state that participatory observation is "key to ethnographic research" (p. 4). In this regard, the participatory observation refers to enter into a social group with the aim to interact with people or stay immerse during a period of investigation, developing activities to be analyzed and discovering difficulties and issues to be studied, as well as finding answers to questions, collecting information and describing certain human behaviors. Is in this sense, that participatory observation was suitable in this study because allowed me to make interventions in the third graders' classroom at school Nuevo San Luis Gonzaga, with the purpose to reflect on my own teaching practice evidencing advantages and disadvantages in learning processes of science contents as part of a collaborative action research, keep records, revise materials, and take notes of everyday situations for analyzing how through the development of lesson plans based on the CLIL approach and RSI scanning, visualizing, and prior knowledge, this group of learners might understand in a better way instructions, questions based on the observation of images, and be able to read and complete information on their own, specifically for science contents in EFL.

### *Questionnaire*

Sileyew (2019), states that "The main tool for gaining primary information in the practical research is questionnaires, due to the fact that the researcher can decide on the sample and the types of questions to be asked" (p. 32). As was mentioned before, in this study was

applied a questionnaire based on EFL reading strategies and aspects of the CLIL approach in function to know what third graders have likely employed or developed implicitly through their experiences for understanding science texts.

### *Field Notes*

The field notes were acquired through the process of participatory observation as well as the recordings taken in each intervention of the EFL classroom, for analyzing the interaction between peers and pre-service teacher with students. Additionally, to register what happened during the time where third graders at school Nuevo San Luis Gonzaga were trained in RSI prior knowledge, scanning and visualizing by using the CLIL approach.

#### *Keeping Records*

According to Plessis-Schneider (2022) keeping records correspond to "descriptions of the data collection tool, piloting, adaptation and implementation in the research schools" (p. 150). In this sense, all the documents and materials such as, questionnaire (survey), audio recordings, field notes, lesson plans, written documents (diagrams, workshops, tests) and rubrics were collected and analyzed to enhance the depth of the findings.

Therefore, after collection of all data, the dataset gathered the following: the questionnaire (survey) results acquired from thirteen third graders out of fourteen in order to collect information about possible RSI applied on their own, in an implicit way through their experiences for understanding science texts. This questionnaire (survey) can be found in

Appendix C. On the other hand, three lesson plans were conducted throughout four interventions using an observational rubric to examine each one about its articulation of the CLIL approach

and RSI prior knowledge, visualization and scanning. The design of each lesson plan can be found in Appendix D, and the design of the observational rubric in Appendix E; along with two self-assessment rubrics. On top of that, to show the number of students, pairs or groups that achieved the aims of each class, is presented in bar charts the results, which are distributed in a rating scale of excellent, good and not satisfactory; and two bar charts that show the results of each self-assessment, but with a rating scale of yes, no, partially according to the items. Additionally, transcriptions, audio recordings, video recordings and photos were collected with the purpose to analyze the interaction within learners as well as their performance in content and language. All of these can be found in Appendix F. It is worth clarifying that all mentioned before was also kept in a Drive.

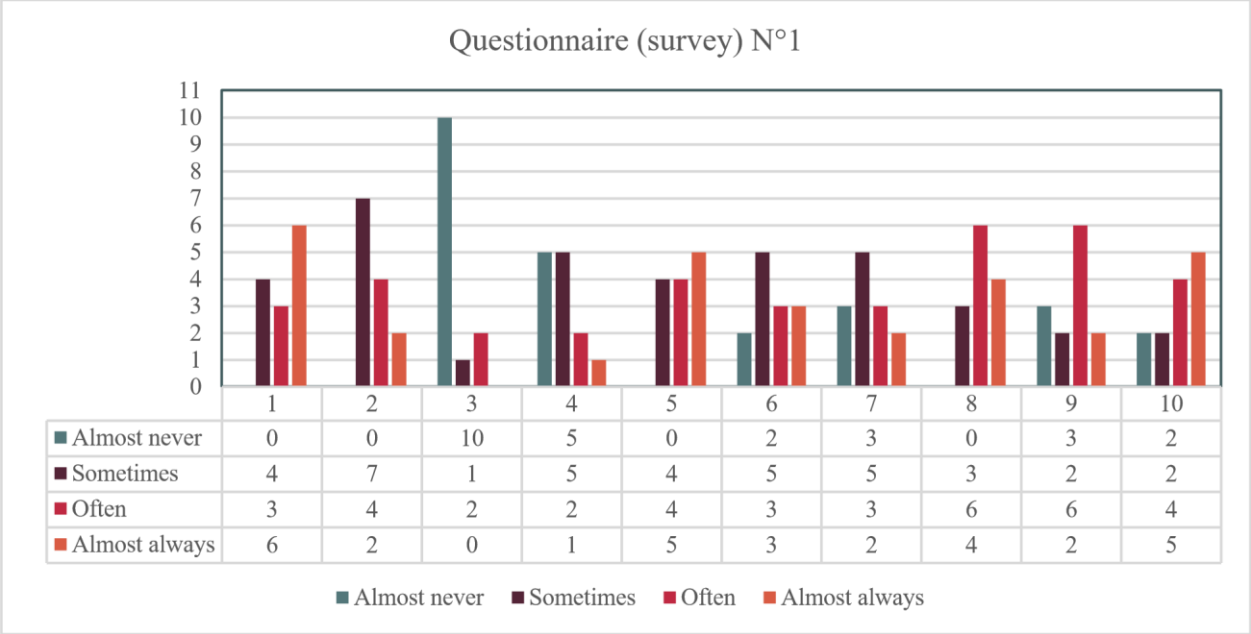
## Data Analysis

### Diagnosis Test

As a first step, with the Science diagnosis exercise was possible to determine the difficulties when third graders reading, understanding instructions, answering questions based on the observation of images, and completing information on their own. Therefore, it was necessary to think about some RSI that could mitigate these shortcomings. So, in this way, prior knowledge, visualization and scanning were considered suitable, taking into account the age, English level and knowledge of this group of learners. Likewise, an appropriate approach that could be

articulated with the RSI mentioned before. In this sense, was thought the CLIL because of its flexibility and versatility.

**Questionnaire (Survey)**




| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Almost never | 0 | 0 | 10 | 5 | 0 | 2 | 3 | 0 | 3 | 2 |
| Sometimes | 4 | 7 | 1 | 5 | 4 | 5 | 5 | 3 | 2 | 2 |
| Often | 3 | 4 | 2 | 2 | 4 | 3 | 3 | 6 | 6 | 4 |
| Almost always | 6 | 2 | 0 | 1 | 5 | 3 | 2 | 4 | 2 | 5 |

Own elaboration

**Figure 1. Questionnaire (survey) Results**

Consequently, a questionnaire (survey) was applied to thirteen third graders out of fourteen. The finding shows that most students enjoy reading texts presented in science class and how these have contributed in the improvement of their English level thanks to the vocabulary and knowledge acquired. Even though some of them sometimes do not understand the concepts and are not interested in translating at home science texts into spanish language with the purpose to know what these consist of. Besides, this exercise reveals that students prefer the pair and

group work which likely contributes to the execution of the CLIL approach, since this requires interaction, collaboration among people and communication, and even more when something new is going to be in learning process, such as for example, the RSI prior knowledge, visualization and scanning.

Furthermore, the survey demonstrates that also most third graders recall a certain extent of information about what they learn in Science class at the moment to present an evaluation and how images, illustrations or graphics help them to understand the topics of this subject. However, it is essential to continue with the development of lessons plans in order to analyze in depth the results described in these two paragraphs due to the findings could vary.

**Lesson Plan 1 - Description Rubric**

<table>
<tr><th colspan="3">Lesson plan 1 – Description rubric</th></tr>
<tr><td colspan="3">Institution: Colegio Nuevo San Luis Gonzaga.<br><br>Pre - service teacher: Claudia Liliana Blanco Villarreal<br><br>Subject: Science Date: August 3rd, 4th and 10th – 2023<br><br>Topic: Parts of the plant Grade: third</td></tr>
<tr><td colspan="3">Content aim: Learners will be able to identify the parts of the plant and recognize their functions.</td></tr>
<tr><td colspan="3">Language aim: Learners will be able to learn and apply the RSI prior knowledge, visualizing and scanning.</td></tr>
<tr><th>Category</th><th>Evaluation criteria</th><th>Observation</th></tr>
</table>

| | | |
|---|---|---|
| **Prior knowledge** | **Excellen**t: Extensively remember the parts of the plant through the RSI prior knowledge.<br>**Good**: Partially remember the parts of the plant through the RSI prior knowledge.<br>**Not satisfactory**: Minimally remember the parts of the plant through the RSI prior knowledge. | The parts of the plant were minimally recalled by all 4 groups. The parts of the plant remembered were fruit and flower. |
| **Visual Summary** | **Excellent**: Extensively developed a workshop related to a visual summary for finding the parts of the plant in a word search and match them with a picture, as well as match each part of the plant with its function. | As is shown below in figure 2, two pairs obtained an excellent result in the visual summary; and 4 pairs partially achieved the aim for this exercise. However, it is notorious that the prior knowledge exercise and the explanation given by the |
| | **Good**: Partially developed a workshop related to a visual summary for finding the parts of the plant in a word search and match them with a picture, as well as match each part of the plant with its function.<br>**Not satisfactory**: Minimally developed a workshop related to a visual summary for finding the parts of the plant in a word search and match them with a picture, as well as match each part of the plant with its function. | teacher about the topic the parts of the plant and their functions was key in the development of this second step.<br>On the other hand, we can see a variation regarding to the individual work related to this RSI visualization. (See figure 3, below). 3 students obtained an excellent result, 5 students partially achieved the objective for this exercise and in others 5 students the result was not satisfactory. In this sense, it could occur because the individual RSI visualization exercise contained images and more visual words describing the functions for each part of the plant. |

| | | |
|---|---|---|
| **Scanning** | **Excellent**: Extensively identify key pieces of information in a passage related to the parts of the plant and their functions to develop a RSI scanning exercise related to choose the correct answer for each statement, as well as complete a mind map.<br>**Good:** Partially identify key pieces of information in a passage related to the parts of the plant and their functions to develop a RSI scanning exercise related to choose the correct answer for each statement, as well as complete a mind map.<br>**Not satisfactory**: Minimally or did not identify key pieces of information in a passage related to the parts of the plant and their functions to develop a RSI scanning exercise related to choose the correct answer for each statement, as well as complete a mind map. | The first scanning exercise assigned as pair work shows that four groups partially identify key pieces of information for choosing a correct answer and two groups did not achieve the RSI scanning. (See figure 2).<br>In respect to the individual work, the RSI scanning was significantly improved by completing a mind map. 10 students obtained an excellent result, 1 partially and 2 of them did not achieve the RSI scanning. (See figure 3). |
| **Interaction** | Interaction and collaboration within teacher and learners. | As it is observed in the excerpt 1(see language category), the interaction was good in all three |
| | Interaction within peers.<br>Interaction within learners and the reading text. | aspects because the prior knowledge, group work, individual work, feedback and development of the task allowed in most learners the interaction in different way to achieve the understanding of the parts of the plant and their functions. |

| | | |
|---|---|---|
| **Content** | The content of the class was understood according to the development of RSI prior knowledge, visualization and scanning, as well as the development of LOTS and HOTS as important process for the CLIL approach. | Making a balance of the analysis mentioned before for RSI prior knowledge, visualization and scanning, it is possible to say that learners understood in large extent the content related to the parts of the plant and their functions. Additionally, the lesson plan activities allowed in most learners the cognitive process of remembering, understanding, applying, analyzing and evaluating. (Part of this can also be seen in appendix F, evidence 2). |
| **Language** | Only the target language was used.<br>Only the mother tongue was used.<br>Simultaneously was used the target language and mother tongue in the development of the lesson plan related to the parts of the plant and their functions. | **Excerpt 1.**<br>Through the dynamic Simon says, the teacher asked students to form groups of three students. However, it was possible to form 3 groups of 3 students in each one and a group of 4 students. (The attendance for this class was thirteen third graders out of fourteen).<br>Teacher: In a silent way, you're going to receive a card and you're going to complete a diagram according to the topic that is in the center of this.<br>Marrod: Profe, en inglés…¿no?<br>Teacher: as possible in English language.<br>Mapa: ¿Profe tiene que ser en inglés?<br>Teacher: as possible<br>Esbe: qué es rize…arroz…¿profe, se puede ver en el cuaderno?<br>Teacher: You're going to remember as possible. This is a prior knowledge for remembering. |

| | | |
|---|---|---|
| | | Marrod: profe nos sabemos las partes, pero no en inglés.<br>At the moment to participate in oral way, most part of the language was given in students´ mother tongue rather than target language.<br>Some students named words such as tall, paper, rise, for the topic the parts of the plant. However, the development of the workshops was in English language to put into practice the specific key vocabulary, verbs, adjectives and RSI prior knowledge, visualization and scanning exercises that involved the topic given. |

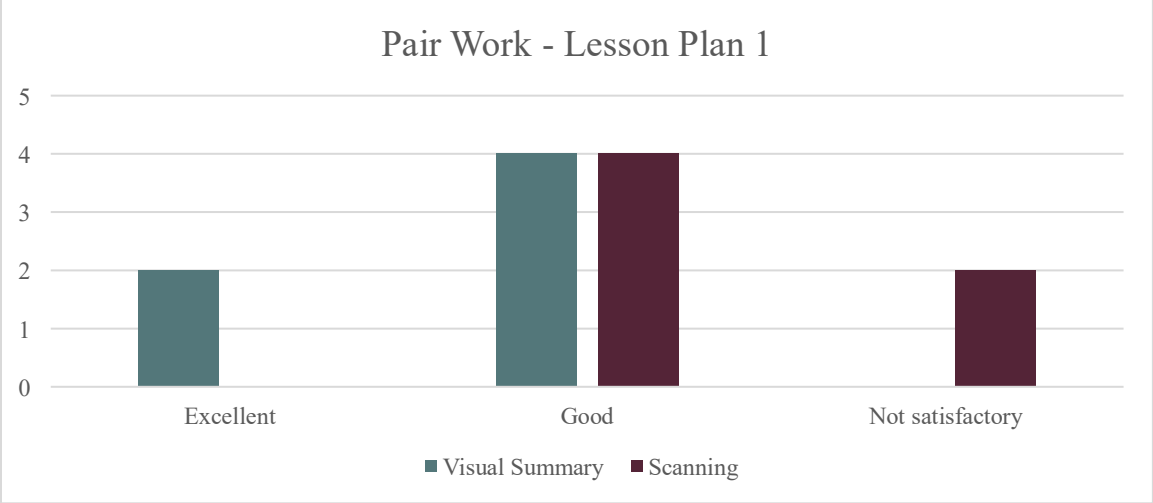



**Figure 2. RSI visualization and scanning – Pair work. Lesson plan 1.**

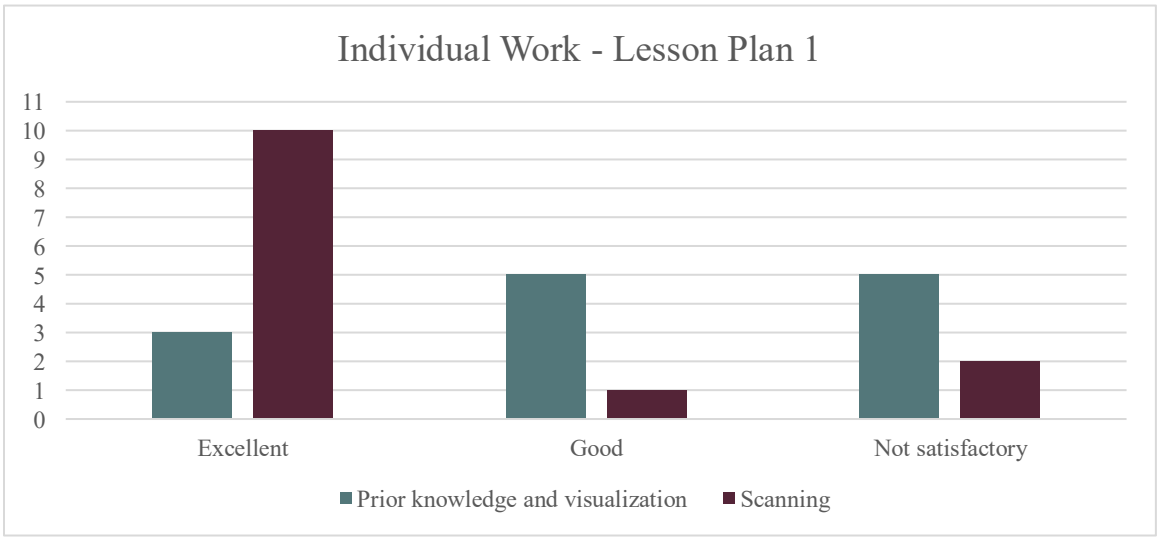



**Figure 3. RSI prior knowledge, visualization and scanning – individual work. Lesson plan 1.**

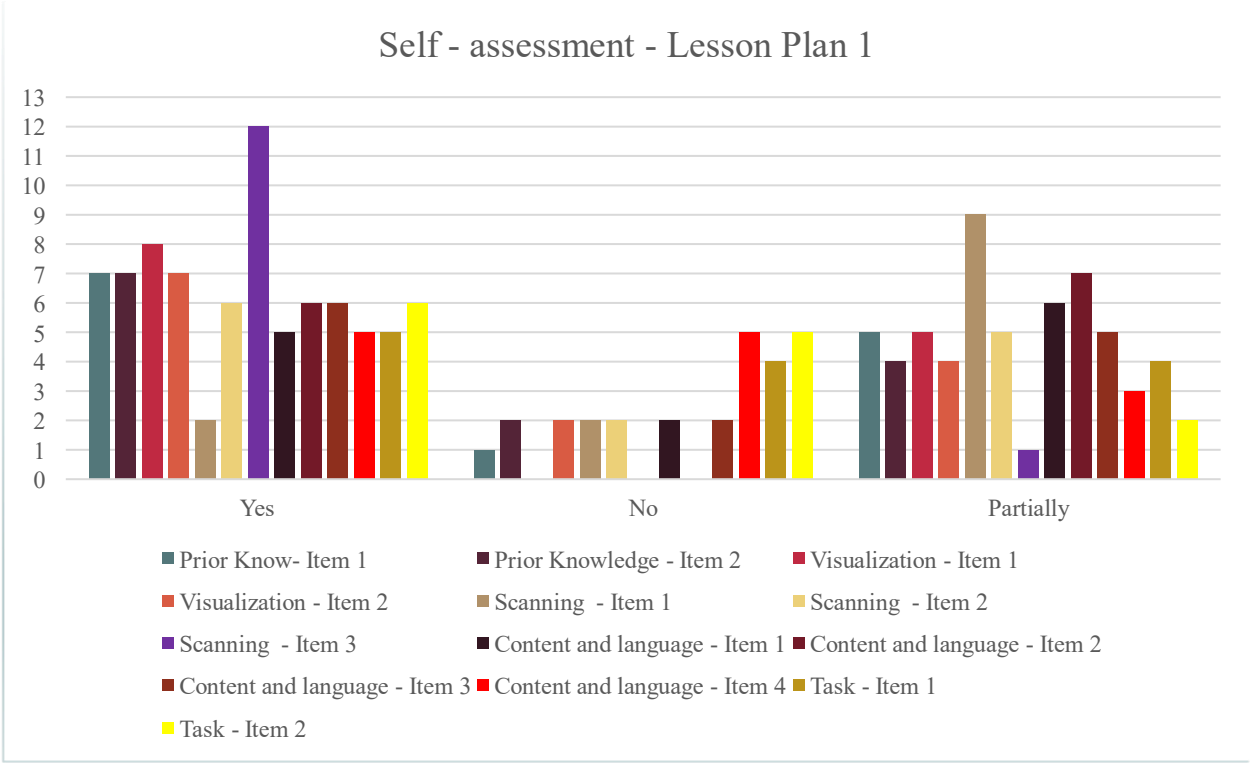


**Figure 4. Self-assessment rubric results**

This progress chart rubric was developed by thirteen third graders out of fourteen. The first RSI prior knowledge category shows that in some way they recall information about the parts of the plant and their functions; just 3 students revealed the contrary. Regarding to the visualization most learners affirmed create mental images about the topic and how illustrations and written words in different color help them in the understanding of the science content planned; although for two learners it did not occur. In the development of RSI scanning, most learners also stated reading the proposed text of the class in a partial way and paying attention to key words or specific information; whereas two students did not achieve this RSI. On the other hand, in content and language predominate the number of learners who participate in oral or written way with the purpose to demonstrate their knowledge about the parts of the plant and their functions, as well as read and analyze the instructions of the class; however, two students need to improve in this aspect. In respect to the language used during the science content learning, both are divided in similar parts, mother tongue and English as a foreign language, which is acceptable in the CLIL approach.

## Conclusions

In conclusion, I consider that the choice of articulating the RSI prior knowledge, visualization and scanning with the CLIL approach in the implementation of each lesson plan, contributed significantly in the understanding of Science contents. First of all, it is to be considered that the RSI prior knowledge was a good starting point since learners need a time to recall information about the topic of the class, it is essential to activate their background knowledge and prepare them before and during reading a text. Likewise, the RSI visualization

has an excellent acceptation by third graders because most of them recognize that this strategy facilitates the understanding of Science contents. For example, when the activity aims to find words in a word search, label a picture, match images with words, classify, etc. Therefore, it is worthy to emphasize that all RSI visualization activities obtained a good result in its execution, likely because students nowadays receive much more information through visual resources such as illustrative videos or colorful and animated pictures. Another possible reason is because through the CLIL approach learners gain confidence for expressing ideas, thoughts and feeling in both languages, the target language and mother tongue which could guarantees a better anchoring for the RSI developed in Science class.

On the other hand, the development of the RSI scanning is also a good option to take into account in the understanding of Science contents. However, not all kind of scanning activities are suitable for third graders, maybe because of their English level, age or knowledge level. For instance, the exercises that aim to answer questions or choose the answer for a question are complex for them, just few students identify key pieces of information in a Science text to develop the mentioned before. On top of that, if the content of the theme contains vocabulary that is not familiar or close for students, this RSI scanning does not work successfully. Perhaps, it requires much more time to be modeled and trained in class through the target language.

In addition to all the above, it is also to conclude, that the development of these three RSI prior knowledge, visualization and scanning work very well with the CLIL approach taking into consideration that learners could strengthen their capability to describe, explain, compare, discuss, predict, classify, illustrate, contrast, assess, etc. That is to say, they could develop in a better way the LOTS and HOTS, since these skills are fundamental in the understanding of

Science text. However, from my point of view, it is also necessary that exists constant feedback and assessment for achieving that students understand instructions, answer questions and complete information on their own through reading activities.

Finally, it is valid to highlight the opportunity that I have had to make decisions, discuss, gather and analyze data in qualitative form, as well as proposing solutions through new ideas from the theory and practice that could contribute in this social issue, generating a feasible meaningful change in the school Nuevo San Luis Gonzaga Curriculum, specifically for Science subject.

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## Appendix A. Consent

UNIVERSIDAD SANTO TOMAS
PRIMER CLAUSTRO UNIVERSITARIO DE COLOMBIA
VIGILADA MINEDUCACIÓN - SNIES: 1701

ACREDITACIÓN INSTITUCIONAL DE ALTA CALIDAD MULTICAMPUS

Bogotá, 01 de Febrero de 2022

Rector
**José Did Cruz Guarín**
COLEGIO NUEVO SAN LUIS GONZAGA
Ciudad

Cordial saludo

La Universidad Santo Tomás a través del Programa de la **Licenciatura en Lenguas Extranjeras Inglés** presenta a la docente en formación Claudia Liliana Blanco Villareal CC 23637696, quien actualmente se encuentra desarrollando su proyecto de investigación.

Este es un espacio académico dispuesto dentro del plan de estudios con el propósito de garantizar al docente en formación inicial que pueda comprender y apropiar las dinámicas del aula y su contexto, reconocer las diferencias y modalidades de formación de niños, niñas, adolescentes, jóvenes y adultos, y asociarla con la disciplina que se enseña y con las situaciones, eventos o fenómenos que esta disciplina conlleva (Resolución 2041 MEN – febrero 03 de 2016, art. 2, 3.2).

Por lo tanto, amablemente solicitamos el apoyo de la institución para permitirle el desarrollo de dinámicas de observación, revisión, análisis y recolección de información de los participantes y la implementación de actividades durante sus clases.

Estamos seguros de poder realizar un trabajo en equipo que beneficie a ambas partes y agradecemos la colaboración que nos pueda brindar en la formación inicial de docentes.

Cordialmente,

Feb. 7-2023

**DEISY LORENA MORALES CORTES**
Docente
Licenciatura en Lenguas Extranjeras Inglés
UNIVERSIDAD SANTO TOMAS



## Appendix B. Diagnosis Test

### DIAGNOSIS TEST

**Institution:** Colegio Nuevo San Luis Gonzaga

**Student's name:** _____

**Subject:** Science **Pre- service Teachers:** Claudia Liliana Blanco Villarreal

**Topic:** The senses **Grade:** 3°

**1. Look at the picture and answer the questions.**

How many senses do we have?

How can you see?, hear?, touch?, smell? and taste?.

**Look at the picture. Read and match.**


3. **Game to practice the five senses.**


Example: Team A - Student 1: I can smell with my tongue!

Team B - Student 1: No, you can't.

.4. **Read the sentences and choose the correct answer.**

I'm happy when I **hear** – **taste** my dog.

I'm happy when I **hear** – **see** the sun.

I´m happy when I **taste** – **touch** my teddy bear.

I'm happy when I **taste – hear** ice cream.

I'm happy when I **hear – smell** pizza.

**2. Take into account the sentences above to write 3 more examples on your own.**

_____

_____

_____

## Appendix C. Questionnaire

### CUESTIONARIO N° 1: ESTUDIANTES GRADO TERCERO - COLEGIO NUEVO SAN LUIS GONZAGA

El siguiente cuestionario se realiza únicamente con fines de orden académico. Pretende conocer la opinión de los estudiantes sobre algunos aspectos relacionados con los procesos de aprendizaje de BIOLOGY.

Lea cada uno de los ítems y evalúelos escribiendo el símbolo ✓, según sea su opinión para cada uno de ellos.

Para evaluarlos, por favor utilice la siguiente escala.

| | |
|---|---|
| **1.** Casi nunca | **3.** Con frecuencia |
| **2.** A veces | **4.** Casi siempre |

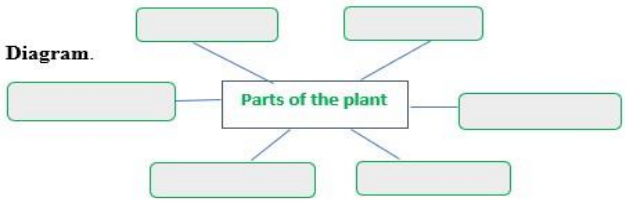
| **Ítems** | | **1.Casi nunca** | **2. A veces** | **3.Con frecuencia** | **4.Casi siempre** |
|---|---|---|---|---|---|
| 1. | Disfruto la lectura de los textos presentados en la clase de Biology. | | | | |
| 2. | Leo y entiendo en gran medida los conceptos de Biology. | | | | |
| 3. | Traduzco en casa los textos de Biology al lenguaje español | | | | |
| | con el fin de entender su contenido. | | | | |
| 4. | Prefiero el trabajo individual al trabajo en grupo. | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 5. | Considero que mi nivel de inglés se ha fortalecido gracias al vocabulario y conocimientos adquiridos en la clase de Biology. | | | | |
| 6. | Cuando presento las evaluaciones recuerdo con facilidad lo que me enseñan en la clase de Biology. | | | | |
| 7. | Expreso lo que entiendo sobre los contenidos de Biology con mis compañeros o profesora. | | | | |
| 8. | Considero que las imágenes, ilustraciones o graficas me ayudan a entender los temas de Biology. | | | | |
| 9. | Leo rápidamente los contenidos o conceptos de Biology para contestar las preguntas que hace mi profesora. | | | | |
| 10. | Uso el conocimiento que ya tengo sobre algún tema para asociarlo o relacionarlo con un nuevo aprendizaje. | | | | |

**Appendix D. Lesson plans and workshops**

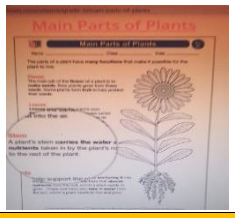
| **LESSON PLAN - 1**<br><br>**Subject:** Science **Teacher:** Claudia Liliana Blanco Villarreal<br><br>**Topic:** Parts of the plant. **Grade:** Third **Students' age:** 7 – 8 years | |
|---|---|
| **Content Aim** | The learners will be able to identify the parts of the plant and recognise their functions. |
| **Language Aim** | Learners will be able to learn and apply the RSI prior knowledge, scanning and visualizing. |
| **Outcome** | By the end of the lesson learners will be able to identify the parts of the plant and recognise their functions through the practice of RSI prior knowledge, scanning and visualizing. |
| **Communication - Language** | **Verbs**: to be, to have, to take in, to hold, to carry, to hold up, to make.<br>**Adjectives**: beautiful<br>**Specific key vocabulary:** root, stem, leaf, fruits, seeds, flower, branch, air, water and sunlight.<br>**Simple Present**<br>**Additional language for group/class work:**<br>Understanding instructions. |
| **Approx. time overall** | 80 minutes |

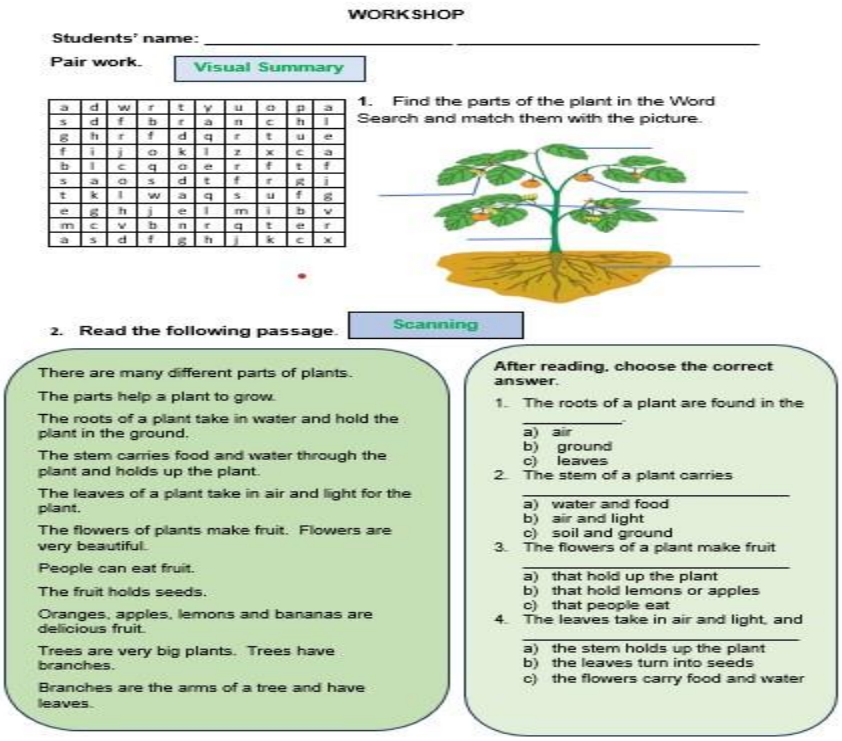
| **Plan** | **Short Description** | **Resources** |
|---|---|---|
| **Stage 1**<br><br>**BEFORE**<br>Activating Knowledge | **Before reading.**<br>Warm-up activity to activate prior knowledge: Third graders will make four teams for participating in a contest. Each team will receive a copy of a diagram to write as many parts of the plant as they can to complete it. Will win the team that obtain the largest number of words. | Activity 1 |
| **Stage 2**<br><br>**DURING**<br>Activities to guide understanding | **During reading.**<br>The teacher uses slides to explain each part of the plant with its function. Then learners will have a workshop with a visual summary to recall information. After that, they'll have a short reading passage that covers the proposed topic for | Activity 2 |

| | | |
|---|---|---|
| | this class. So, in this part they will develop a scanning exercise. | |
| **Stage 3 Post**<br><br>**TASK**: What students can create or do with the information given. | **After reading**.<br>In the classroom every one of the students choose at random one part of the plant for making a poster in a creative way at home. They will present and explain to the class the task.<br>Additionally, they will have a complementary reading (Link – Activity 3). | https://newpathworksheets.com/science/grade-3/main-parts-ofplants |
| **Stage 4 / Evaluation** | • Post-task work on language and content, based on the knowledge from the first three activities.<br>• The learners do individual work which consists of a test. | |
| **Before reading** | | |
| **Procedure** | Warm-up activity to activate prior knowledge: Third graders will make four teams for participating in a contest. The learners are given an introduction to the parts of the plant watching a diagram to write as many words as they can to complete it. Will win the team that obtain the largest number of words related to the parts of the plant. | |
| **Approx. time** | 10 minutes | |
| **Learning outcome** | Learners are able to:<br>• Identify parts of the plant | |
| **Indicators** | Learners:<br>• Interact with peers<br>• use information to share ideas<br>• activate prior knowledge | |
| **Materials** |  | |
| **During reading** | | |

| | |
|---|---|
| **Procedure** | The learners will learn that each part of the plant has its own function.<br>THE PARTS OF A PLANT - SLIDES.pdf |

| | |
|---|---|
| | **Pair work**<br>Students will find the parts of the plant in a **word search** and match them with a picture. Then, they will read a short passage to develop a scanning exercise. |
| **Approx. time** | 30 minutes |
| **Learning outcome** | Learners are able to:<br>• understand the function of each part of the plant<br>• recall information through a visual summary<br>• look for specific information |
| **Indicators** | Learners:<br>• interact with peers<br>• ask questions<br>• use information to share ideas |
| **Materials** | THE PARTS OF A PLANT - SLIDES.pdf<br>**Workshop** (Word presentation) |
| **After reading** | |
| **Procedure** | Regarding to the topic the parts of the plant, learners will make the presentation of a poster using a visual aid and a short text. |
| **Approx. time** | 20 minutes |
| **Learning outcome** | Learners are able to:<br>• identify the parts of the plant<br>• explain the function of each part of the plant |
| **Indicators** | Learners:<br>• interact with peers<br>• ask questions<br>• use information to share ideas |

| | |
|---|---|
| **Materials** | **Sample of the task.**<br>  <br> |
| | **Complementary reading**<br>https://newpathworksheets.com/science/grade-3/main-parts-of-plants<br>  <br> |
| **Activity 4 / Evaluation** | |
| **Procedure** | 1- Post-task work on language and content, based on the knowledge from the first three activities.<br>2- The learners do individual work which consists of a test. |
| **Approx. time** | 20 minutes. |

| | |
|---|---|
| **Materials** |  |

WORKSHOP

Students' name: _____

Pair work. **Visual Summary**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| a | d | w | r | t | y | u | o | p | a |
| s | d | f | b | r | a | n | c | h | l |
| g | h | r | f | d | q | r | t | u | e |
| f | i | j | o | k | l | z | x | c | a |
| b | l | c | q | o | e | r | f | t | f |
| s | a | o | s | d | t | f | r | g | j |
| t | k | l | w | a | q | s | u | f | g |
| e | g | h | j | e | l | m | i | b | v |
| m | c | v | b | n | r | q | t | e | r |
| a | s | d | f | g | h | j | k | c | x |

1. Find the parts of the plant in the Word Search and match them with the picture.

2. Read the following passage. **Scanning**

There are many different parts of plants.

The parts help a plant to grow.

The roots of a plant take in water and hold the plant in the ground.

The stem carries food and water through the plant and holds up the plant.

The leaves of a plant take in air and light for the plant.

The flowers of plants make fruit. Flowers are very beautiful.

People can eat fruit.

The fruit holds seeds.

Oranges, apples, lemons and bananas are delicious fruit.

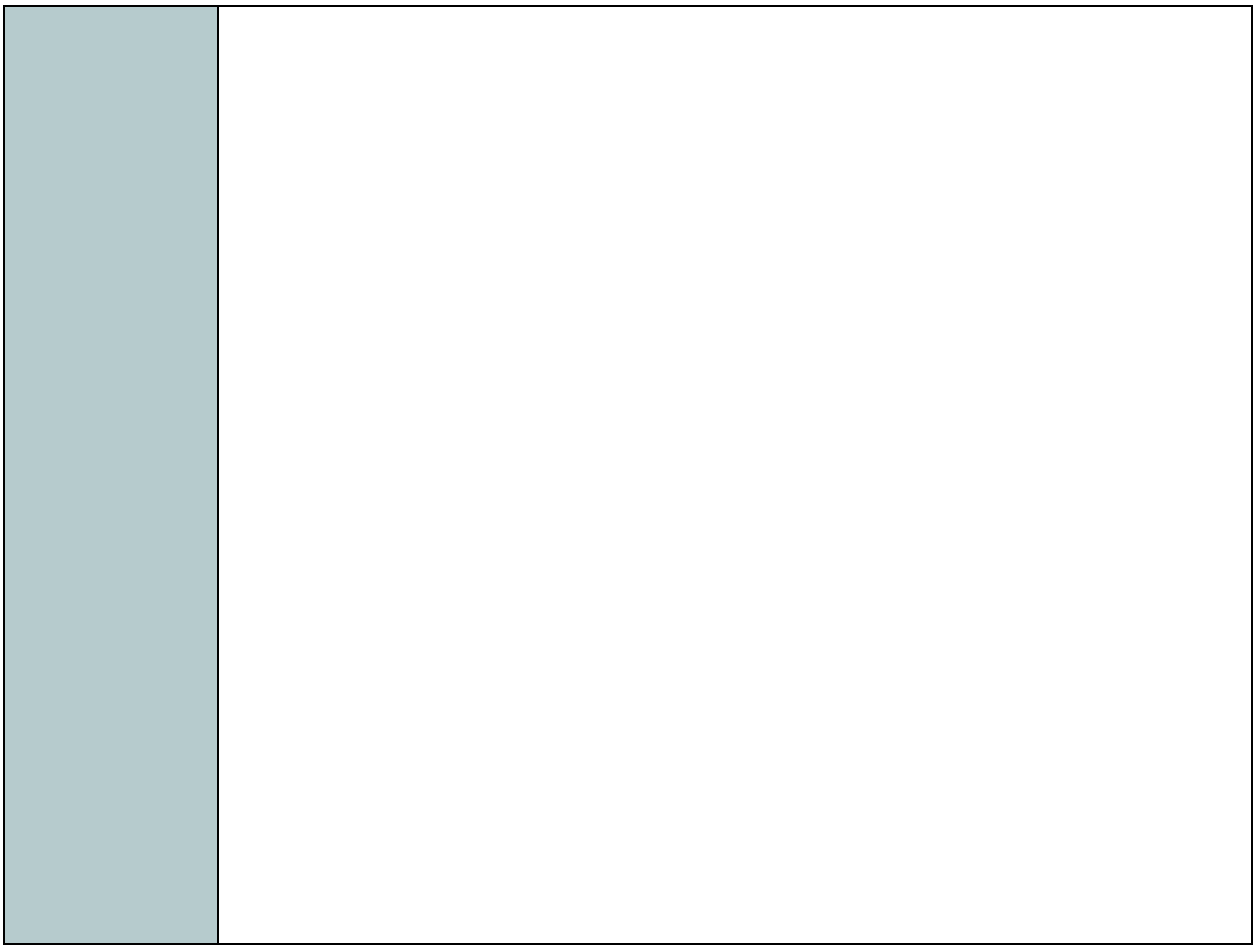
Trees are very big plants. Trees have branches.

Branches are the arms of a tree and have leaves.

**After reading, choose the correct answer.**

1. The roots of a plant are found in the _____.
   a) air
   b) ground
   c) leaves
2. The stem of a plant carries _____
   a) water and food
   b) air and light
   c) soil and ground
3. The flowers of a plant make fruit _____
   a) that hold up the plant
   b) that hold lemons or apples
   c) that people eat
4. The leaves take in air and light, and _____
   a) the stem holds up the plant
   b) the leaves turn into seeds
   c) the flowers carry food and water

**Workshop - Test and Self – assessment rubric**



**TEST – Nº 1**

**Subject:** Biology **Teacher:** Claudia Liliana Blanco Villarreal

**Topic:** Parts of the plant. **Grade:** Third **Students' name:** _____

| | |
|---|---|
| **Content Aim** | The learners will be able to identify the parts of the plant and describe their functions. |
| **Language Aim** | Learners will be able to learn and apply the RSI prior knowledge, scanning and visualizing. |
| **Outcome** | By the end of the lesson learners will be able to identify the parts of the plant and describe their functions through the practice of RSI prior knowledge, scanning and visualizing. |

**1- Match each part of the plant with its function.** (Prior knowledge and visualization)

It is a living thing that grows in the ground. It needs air, water and sunlight.

This part of the plant takes in water and hold the plant in the soil.

This part carries food and water through the plant. It holds up the plant.

This part of the plant takes in light and air. Leaves help the plant get food.

This part of the plan makes fruit and is very beautiful.

It is the part of the plant with seeds.

It is an arm like part of a tree.

**2- Read the following passage.** (Scanning)

There are many different parts of plants.

The parts help a plant to grow.

The **roots** of a plant take in water and hold the plant in the ground.

The **stem** carries food and water through the plant and holds up the plant.

The **leaves** of a plant take in air and light for the plant.

The **flowers** of plants make fruit. Flowers are very beautiful.

People can eat fruit.

The **fruit** holds seeds.

Oranges, apples, lemons and bananas are delicious fruit.

Trees are very big plants. Trees have branches.

Branches are the arms of a tree and have leaves

**2.1 After reading complete the following mind map.**

**The parts of a plant help it live and grow**

| | | | |
|---|---|---|---|
| The roots take in A. _____ and hold the plant in the B. _____ | The C. _____ carries food and water and holds up the plant. | The leaves take in D. _____ and light for the plant. | The E. _____ make fruit. The fruit holds F. _____ |

Retrieved from THE CLIL4U GUIDEBOOK, by Attard-Montalto, S. & Walter, L, 2021, Cofunded by the Erasmust Programme of the European Union.

| **LESSON PLAN - 2**<br><br>**Subject:** Science **Teacher:** Claudia Liliana Blanco Villarreal<br><br>**Topic:** Photosynthesis and its cycle **Grade:** Third **Students' age:** 7 – 8 years | | |
|---|---|---|
| **Content Aim** | The learners will be able to identify the process by which plants make their own food. | |
| **Language Aim** | Learners will be able to learn and apply the RSI prior knowledge, scanning and visualizing. | |
| **Outcome** | By the end of the lesson learners will be able to understand through the practice of RSI prior knowledge, scanning and visualizing the process by which plants make food. | |
| **Communication -Language** | **Verbs**: to be, to need, to make, to have, to take place, to contain, to take in, to trap, to give.<br>**Adjectives**: tiny, green<br>**Specific key vocabulary:** photosynthesis, food, sunlight, carbon dioxide, air, water, soil, leaves, stomata, chloroplasts, chlorophyll, glucose, oxygen and starch.<br>**Simple Present**<br>**Additional language for group/class work:**<br>Understanding instructions. | |
| **Approx. time overall** | **45** minutes | |
| **Plan** | **Short Description** | **Resources** |
| **Stage 1**<br><br>**BEFORE**<br>Activating Knowledge | **Before reading.**<br>Warm-up activity to activate prior knowledge: The teacher asks learners to look at a picture projected on the board (see in materials picture 1). She asks: What can you see? Then she asks them to read a question aloud. She elicits answers from various learners. | Activity 1 |
| **Stage 2**<br>**DURING**<br>Activities to guide understanding | **During reading.**<br>As a visualization strategy the teacher asks learners to watch an illustrative video that explains the photosynthesis and its cycle. After that, they'll do **group work** for answering some questions as scanning exercise.<br>Finally, learners will have a feedback time to check and correct the answers if necessary. | Activity 2<br>https://www.youtube.com/watch?v=yHVhM-pLRXk&t=1s |

| | | |
|---|---|---|
| **Stage 3**<br>**Post**<br><br>**TASK**:<br>What students can create or do with the information given. | **After reading**.<br>**Individual work.**<br>Regarding to the topic about photosynthesis and its cycle, learners will have a picture of a plant and label it using specific key vocabulary. The purpose is to represent the process by which plants make their own food.<br>After that, they'll read a short text about the topic photosynthesis for answering 3 questions. | |
| **Stage 4 / Evaluation** | • Workshops on language and content, based on the knowledge from all the activities developed during the class.<br>• Self-assessment rubric | |

| | |
|---|---|
| **Before reading** | |
| **Procedure** | Warm-up activity to activate prior knowledge:<br>The teacher asks learners to look at a picture projected on the board. She asks: What can you see? Then she asks them to read a question aloud. She elicits answers from various learners. |
| **Approx. time** | 10 minutes |
| **Learning outcome** | Learners are able to: •<br>Observe and predict. |
| **Indicators** | Learners:<br>• Interact with peers<br>• use information to share ideas<br>• answer a question to activate prior knowledge |
| **Materials** | **Picture 1.**<br>  |
| **During reading** | |
| **Procedure** | The learners will learn the process by which plants make food. **Group work** |

| | |
|---|---|
| | Students will receive a reading workshop for answering some questions as scanning exercise. Then, they'll have a feedback time to check and make corrections if necessary. |
| **Approx. time** | 15 minutes |
| **Learning outcome** | Learners are able to:<br>• recall information through a visual aid<br>• understand the photosynthesis and its cycle<br>• look for specific information |
| **Indicators** | Learners:<br>• interact with peers<br>• read and answer questions<br>• use information to share ideas |
| **Materials** | file:///C:/Users/USUARIO/Downloads/THE PARTS OF A PLANT - SLIDES.pdf https://www.youtube.com/watch?v=yHVhM-pLRXk&t=1s<br>**Workshop 1** (Word presentation) |
| **After reading** | |
| **Procedure** | The learners will do individual work on their own copy of workshop<br>Regarding to the topic about photosynthesis and its cycle, learners will have a picture of a plant and label it using specific key vocabulary. The purpose is to represent the process by which plants make food. After that, they'll read a short text about the topic photosynthesis for answering 3 questions. |
| **Approx. time** | 15 minutes |
| **Learning outcome** | Learners are able to:<br>• identify how plants make their own food. |
| **Indicators** | Learners:<br>• show understanding of the topic<br>• use specific vocabulary<br>• ask questions<br>• use information to share ideas |
| **Materials** | **Individual Workshop 2**. (Word presentation). |
| **Activity 4 / Evaluation** | |
| **Procedure** | 3- Workshops on language and content, based on the knowledge from all the activities developed during the class.<br>4- Self-assessment. |
| **Approx. time** | 5 minutes |

| **Materials** | **Workshops and Self – assessment rubric** |
|---|---|

WORKSHOP 1 – Lesson plan 2

Group work. Students' name: _____, _____and _____

1. Read the text. **Photosynthesis**

The process by which plants make food is called "photosynthesis". The word photosynthesis is made up of two words:

**"Photo" = light** **"synthesis" = putting together**

Plants need sunlight, carbon dioxide from air and water from soil to prepare their own food. Photosynthesis takes place in the leaves of a plant. Leaves have tiny pores called stomata through which carbon dioxide enters the plant.

Plant cells contain tiny structures called chloroplasts that contain chlorophyll to trap sunlight. Chlorophyll is the green pigment found in plants. Sunlight energy is then used to combine water and carbon dioxide from the air to produce sugar (glucose) and oxygen. Veins in the leaves are the small tubes that carry water to the leaf. Veins also transport food from the leaf to the stem and roots and carry the sugars the plant makes to all parts of the plant. These sugars give the sweet taste to fruits such as grapes, apples, and pears.

**Scanning exercise. Based on the text answer the following questions:**

1. What is photosynthesis? _____
2. What does the word photo mean? _____
3. What do plants need to prepare their own food? _____
4. Where does photosynthesis take place? _____
5. What is chlorophyll? _____

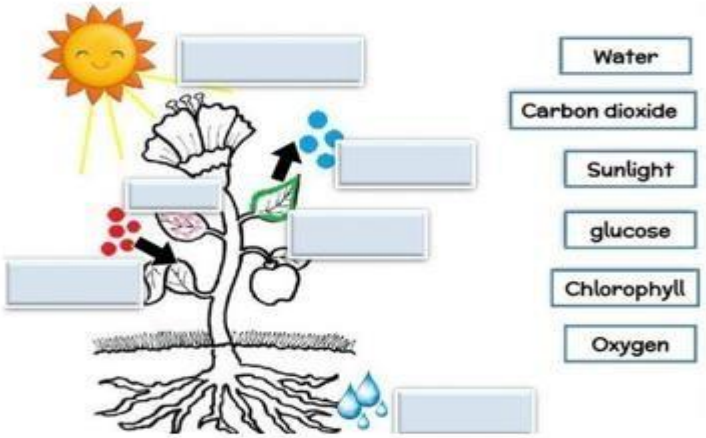
Workshop 2 – Lesson plan 2

Individual work. Student's name: _____Date: _____

| | |
|---|---|
| **Content Aim** | The learners will be able to identify the process by which plants make their own food. |
| **Language Aim** | Learners will be able to learn and apply the RSI prior knowledge, scanning and visualizing. |
| **Outcome** | By the end of the lesson learners will be able to understand through the practice of RSI prior knowledge, scanning and visualizing the process by which plants make food. |

**Prior knowledge and visualization.**

**Label the photosynthesis and its cycle in this picture.**



| | |
|---|---|
| | 2. Read the text. **Photosynthesis**<br><br>The process by which plants make food is called "photosynthesis". The word photosynthesis is made up of two words:<br><br>**"Photo" = light** **"synthesis" = putting together**<br><br>Plants need sunlight, carbon dioxide from air and water from soil to prepare their own food. Photosynthesis takes place in the leaves of a plant. Leaves have tiny pores called stomata through which carbon dioxide enters the plant.<br>Plant cells contain tiny structures called chloroplasts that contain chlorophyll to trap sunlight. Chlorophyll is the green pigment found in plants. Sunlight energy is then used to combine water and carbon dioxide from the air to produce sugar (glucose) and oxygen.<br>Veins in the leaves are the small tubes that carry water to the leaf. Veins also transport food from the leaf to the stem and roots and carry the sugars the plant makes to all parts of the plant. These sugars give the sweet taste to fruits such as grapes, apples, and pears.<br><br>**Scanning exercise. Based on the text answer the following questions:**<br>1- What does the word synthesis mean? _____<br>2- What does chlorophyll trap? _____<br>3- What does sugar or glucose give to fruits? _____ |

| **LESSON PLAN - 3** | |
|---|---|
| **Subject:** Science **Teacher:** Claudia Liliana Blanco Villarreal<br>**Topic:** Materials and their properties **Grade:** Third **Students' age:** 7 – 8 years | |
| **Content Aim** | The learners will be able to identify types of materials and their properties. |
| **Language Aim** | Learners will be able to learn and apply the RSI prior knowledge, scanning and visualizing. |
| **Outcome** | By the end of the lesson learners will be able to understand through the practice of RSI prior knowledge, scanning and visualizing the types of materials and their properties. |

| | |
|---|---|
| **Communication - Language** | **Verbs**: to be, to classify, to find, to come from.<br>**Adjectives**: flexible, resistant, transparent, hard, fragile, soft, etc.<br>**Specific key vocabulary:** materials, plastic, wood, metal, glass, rubber, cotton, leather, iron, paper, porcelain, natural, artificial (manmade).<br>**Simple Present**<br>**Additional language for group/class work:**<br>Understanding instructions. |
| **Approx. time overall** | 80 minutes |

| **Before reading** | | |
|---|---|---|
| **Plan** | **Short Description** | **Resources** |
| **Stage 1**<br><br>**BEFORE**<br>Activating Knowledge | **Before reading.**<br>Warm-up activity to activate prior knowledge:<br>In the classroom every one of the students will receive a different flashcard related to objects such as, a toothpaste, a perfume, a belt, a table, etc. The board will be divided in two parts. To the left side with the title **NATURAL MATERIALS** and to the right side with the title **ARTIFICIAL OR MAN-MADE MATERIALS.** Then, in silent way and order they decide the classification for each flashcard. Finally, the class check the exercise to correct if necessary. | Activity 1 |
| **Stage 2**<br><br>**DURING**<br>Activities to guide understanding | **During reading.**<br>**Individual work.**<br>The learners will have a workshop with a reading text related to types of materials and their properties. So, in this part they will develop a scanning exercise and a visualization exercise. Subsequently, they'll have feedback of the topic. | Activity 2 |
| **Stage 3**<br>**Post**<br><br>**TASK**:<br>What students can create or do with the information given. | **After reading**.<br>Group work.<br>The teacher gives to each group different materials such as, a cube of sugar, cotton, a spoon, a plastic bottle, etc. Using the materials, they'll make a poster related to the topic types of materials and their properties. (See the sample below). | Activity 3 |

| | | |
|---|---|---|
| **Stage 4 / Evaluation** | • Post-task work on language and content, based on the knowledge from the first three activities.<br>• Individual work. | Activity 4 / Evaluation |

| | |
|---|---|
| **Procedure** | Warm-up activity to activate prior knowledge:<br>In the classroom every one of the students will receive a different flashcard related to objects such as, a toothpaste, a perfume, a belt, a table, etc. The board will be divided in two parts. To the left side with the title **NATURAL MATERIALS** and to the right side with the title **ARTIFICIAL OR MAN-MADE MATERIALS.** Then, in silent way and order they decide the classification for each flashcard. Finally, the class check the exercise to correct if necessary. |
| **Approx. time** | 10 minutes |
| **Learning outcome** | Learners are able to:<br>• Identify types of materials |
| **Indicators** | Learners:<br>• Interact with peers<br>• use information to share ideas<br>• activate prior knowledge |
| **Materials** | Flashcards. |
| **During reading** | |
| **Procedure** | The learners will learn that there are two types of materials, natural and artificial or man-made materials.<br>The learners will identify properties of materials such as, flexible, hard, soft, transparent, etc.<br>Individual work.<br>The learners will have a workshop with a reading text related to types of materials and their properties. So, in this part they will develop a scanning exercise and a visualization exercise. Subsequently, they'll have feedback of the topic. |
| **Approx. time** | 30 minutes |
| **Learning outcome** | Learners are able to:<br>• understand the classification of materials and their properties<br>• recall information through a visual summary<br>• look for specific information |

| | |
|---|---|
| **Indicators** | Learners:<br>• interact with peers<br>• ask questions<br>• use information to share ideas |
| **Materials** | file:///C:/Users/USUARIO/Downloads/THE PARTS OF A PLANT - SLIDES.pdf **Workshop** (Word presentation) |
| **After reading** | |
| **Procedure** | Group work. |

| | |
|---|---|
| | Regarding to the topic the materials and their properties, learners will elaborate and make the presentation of a poster using visual aids and answering some questions. |
| **Approx. time** | 30 minutes |
| **Learning outcome** | Learners are able to:<br>• identify materials and their properties<br>• read and answer questions |
| **Indicators** | Learners:<br>• interact with peers<br>• ask questions<br>• use information to share ideas |
| **Materials** | **Sample of the poster**<br>  |
| **Activity 4 / Evaluation** | |
| **Procedure** | 5- Post-task work on language and content, based on the knowledge from the first three activities. |
| **Approx. time** | 10 minutes. |

| Materials | Workshop and Self – assessment rubric |
|---|---|

**Workshop 1 – Lesson plan 3**

**Individual work.** **Scanning exercise** Read the text and questions below. For each question, mark the correct letter **A**, **B**, **C** or **D**.

MATERIALS

Types of Materials

The objects around us are made of different materials: plastic, wood, metal, glass, rubber, etc. We can classify materials according to their origins and their properties. Materials are either natural or artificial depending on their origin. Depending on their properties, they can be flexible, resistant, transparent, hard, fragile, soft, etc.

**Natural Materials**

Natural materials are those we find in nature. They can be of vegetable, animal or mineral origin.

- **Vegetable** materials come from plants. Some examples are wood and cotton.
- **Animal** materials come from animals. Some examples are leather and silk.
- **Mineral** materials come from rocks and minerals. Some examples are marble and iron.

**Artificial or Man-Made Materials**

Artificial materials are made by people, using natural materials. Paper is an artificial material. It is usually made from wood.

People have invented many different materials. For example, porcelain was invented more than 1,300 years ago. Plastic was invented in 1862.

1. **Where do vegetable materials come from?**
   **A.** Plastic
   **B.** Plants
   **C.** Minerals
   **D.** Animals
2. **What types of materials are there?**
   **A.** Origins and properties
   **B.** Animal and mineral
   **C.** Natural and artificial
   **D.** Vegetable and natural
3. **What do <u>fragile</u> and <u>flexible</u> correspond to?**
   **A.** Properties of materials
   **B.** Origins of materials
   **C.** Natural materials
   **D.** Man-made materials

**Prior knowledge and Visualization**

**<u>Classify</u> the following materials. Write their <u>names</u> in the corresponding box.**

Porcelain

Wood

Iron

Paper

Leather

Plastic

| Natural Materials | Man-Made Materials |
|---|---|
| | |
| | |
| | |

**Appendix E. Sample of observational rubric.**

| **Lesson plan – Description rubric** | | |
|---|---|---|
| **Institution:** Colegio Nuevo San Luis Gonzaga.<br>**Pre - service teacher**: Claudia Liliana Blanco Villarreal<br>**Subject**: science **Date**:<br>**Topic:** **Grade**: third | | |
| **Content aim**: Learners will be able to identify the parts of the plant and recognize their functions. | | |
| **Language aim**: Learners will be able to learn and apply the RSI prior knowledge, visualizing and scanning. | | |
| **Category** | **Evaluation criteria** | **Observation** |
| **Prior knowledge** | Excellent:<br>Good:<br>Not satisfactory: | |
| **Visual Summary** | Excellent:<br>Good:<br>Not satisfactory: | |
| **Scanning** | Excellent:<br>Good:<br>Not satisfactory: | |
| **Interaction** | | |
| **Content** | | |
| **Language** | | |

| Lesson plan 1. | Progress chart |
|---|---|
| **Self- assessment**. Mark the boxes below to rate your progress. Use the following symbol and letters. ☑ = Yes X = No P = Partially | |
| **Prior knowledge** | ☒ Antes de comenzar a desarrollar las actividades sobre el tema de la fotosíntesis, recordé información que ya había adquirido.<br>☐ Me cuestioné e hice predicciones sobre el texto relacionados con la fotosíntesis y su ciclo. |
| **Visualization** | ☐ Cree imágenes mentales sobre el contenido de la fotosíntesis usando mi imaginación.<br>☑ Las imágenes, ilustraciones y palabras de diferente color dentro del texto me permitieron entender el contenido de la fotosíntesis y su ciclo. |
| **Scanning** | ☒ Leí rápidamente el texto de la fotosíntesis con el fin de responder las preguntas.<br>☑ Preste atención a palabras claves o información específica, sin necesidad de leer todo el texto sobre la fotosíntesis.<br>☒ No leí el texto sobre la fotosíntesis. |
| **Content and language** | ☐ Opine en clase en forma oral o escrita con el fin de demostrar lo que entendía sobre el tema de la fotosíntesis.<br>☐ Leí y analicé las **instrucciones** encaminadas al desarrollo de las actividades de clase.<br>☑ Use el lenguaje **inglés** para contestar preguntas y dar opiniones sobre el tema de la fotosíntesis.<br>☒ Use mi **lenguaje (español)** para contestar preguntas y dar opiniones sobre el tema de la fotosíntesis.<br>☑ Mantuve una actitud de colaboración en el desarrollo de las actividades en grupo. |
| **Task** | ☐ Me sentí motivado/a y puse en práctica mi creatividad en el desarrollo de las actividades asignadas durante la clase.<br>☑ Logre el desarrollo de las actividades individuales sin mayor dificultad. |

| **Lesson plan 2– Description rubric** |
|---|
| **Institution:** Colegio Nuevo San Luis Gonzaga. |

| | | |
|---|---|---|
| **Pre - service teacher**: Claudia Liliana Blanco Villarreal<br><br>**Subject**: Science **Date**: August 14th - 2023<br><br>**Topic:** Photosynthesis and its cycle **Grade**: third | | |
| **Content aim**: The learners will be able to identify the process by which plants make their own food. | | |
| **Language aim**: Learners will be able to learn and apply the RSI prior knowledge, scanning and visualizing. | | |
| **Category** | **Evaluation criteria** | **Observation** |

| | | |
|---|---|---|
| **Prior knowledge** | **Excellen**t: Extensively recall information about the process by which plants make their own food.<br>**Good**: Partially recall information about the process by which plants make their own food.<br>**Not satisfactory**: Minimally recall information about the process by which plants make their own food. | The first prior knowledge that consisted of reading the question: Do you know how plants make their own food? was partially achieved by third graders, specially two of them were able to answer it using the target language. Likewise, this RSI had a good result in individual work since most learners could label the photosynthesis and its cycle in a picture (see appendix F, figure 6 and evidences lesson plan 2). |
| **Visualization** | **Excellent**: Extensively understand an illustrative video related to the photosynthesis and its cycle, as well as label the process of this in a picture.<br>**Good**: Partially understand an illustrative video related to the photosynthesis and its cycle, as well as label the process of this in a picture.<br>**Not satisfactory**: Minimally understand an illustrative video related to the photosynthesis and its cycle, as well as label the process of this in a picture. | The RSI visualization activities for this topic seem to be suitable since learners were focused. Perhaps because nowadays most of them enjoy watching videos with colorful pictures. |
| **Scanning** | **Excellent**: Extensively identify key pieces of information in a reading text related to the | Unfortunately, the RSI scanning did not work when was developed in group, for the reason that they could |

| | | |
|---|---|---|
| | photosynthesis to develop a RSI scanning exercise that consists of answering questions.<br>**Good:** Partially identify key pieces of information in a reading text related to the photosynthesis to develop a RSI scanning exercise that consists of answering questions.<br><br>**Not satisfactory**: Minimally identify key pieces of information in a reading text related to the photosynthesis to develop a RSI scanning exercise that consists of answering questions. | not answer the questions, despite they made an effort for reading and understanding. Consequently, was necessary to do feedback with the aim of explaining what this reading strategy consists of. So, they read again and underlined the answers into the text. Was in this way, that the individual scanning exercise improved in five students (see appendix F. Feedback evidence and figure 5). |
| **Interaction** | Interaction and collaboration within teacher and learners.<br>Interaction within peers.<br>Interaction within learners and the reading text. | The interaction was good in all three aspects because the prior knowledge, group work, individual work and feedback allowed in most learners the interaction in different way to partially achieve the understanding of the topic photosynthesis and its cycle. |
| **Content** | The content of the class was understood according to the development of RSI prior knowledge, visualization and scanning, as well as the development of LOTS and HOTS as important process for the CLIL approach. | Making a balance of the analysis mentioned before for RSI prior knowledge, visualization and scanning, it is possible to say that learners had difficulties in the understanding of this science content, taking into account that the RSI scanning was focused on asking questions and answering them. In this sense, it seems to be really difficult for third graders since this topic could result more complex in vocabulary. In other cases, because of lack of vocabulary which was perceived in audio recordings or maybe they do not have still clear the simple present structure. |

| | | |
|---|---|---|
| **Language** | Only the target language was used.<br>Only the mother tongue was used.<br>Simultaneously was used the target language and mother tongue in the development of the lesson plan related to the parts of the plant and their functions. | At first, the question projected on the board to activate the RSI prior knowledge was difficult to understand because of the fact learners did not understand it. So, they tried for a while translate into Spanish language instead of answering. The words that did not allow the understanding were, "know" and "how", but these were clarified by the teacher.<br>**Excerpt 2.**<br>Dasan: ¿Sabes cómo las plantas hacen su comida?<br>Joem: The plants produce own food with the photosynthesis. Teacher: That's right! With the photosynthesis process.<br>Masil: The plants make your food with the photosynthesis.<br>Joem: The plants produce food with nutrients of soil and water. Juto: Las plantas nos ayudan a encontrar comida con ayuda de las raíces.<br>Iansa: Nooo, del fruto<br>Esbe: Las raíces ayudan a encontrar los nutrientes que hay en el suelo para que la planta se alimente. In contrast to the first lesson plan, in this class two student could answer the question in English Language. However, the most part of the language was given in students´ mother tongue rather than target language.<br>But, how occurred before with the lesson plan 1, the development of workshops was in English language to put into practice the specific key vocabulary, verbs, adjectives and RSI prior knowledge, visualization and scanning exercises that involved the topic given. |

<table>
<tr><th colspan="3">Lesson plan 3– Description rubric</th></tr>
<tr><td colspan="3">Institution: Colegio Nuevo San Luis Gonzaga.<br><br>Pre - service teacher: Claudia Liliana Blanco Villarreal<br><br>Subject: Science Date: August 17th - 2023<br><br>Topic: Materials and their properties Grade: third</td></tr>
<tr><td colspan="3">Content aim: The learners will be able to identify types of materials and their properties.</td></tr>
<tr><td colspan="3">Language aim: Learners will be able to learn and apply the RSI prior knowledge, scanning and visualizing.</td></tr>
<tr><th>Category</th><th>Evaluation criteria</th><th>Observation</th></tr>
<tr><td>Prior knowledge</td><td>Excellent: Extensively recall information to name natural and artificial materials through the RSI prior knowledge.<br>Good: Partially recall information to name natural and artificial materials through the RSI prior knowledge.<br>Not satisfactory: Minimally recall information to name natural and artificial materials through the RSI prior knowledge.</td><td>The prior knowledge was excellent in its execution because third graders were able to describe, explain, compare, discuss and predict information through the RSI visualization exercise using flashcards that contained different things made of different material. (See appendix F, excerpt evidence).</td></tr>
<tr><td>Visualization</td><td>Excellent: Extensively classify materials through the development of a workshop related to types of materials, as well as using flashcards.<br>Good: Partially classify materials through the development of a workshop related to types of materials, as well as using flashcards.<br><br>Not satisfactory: Minimally classify materials through the development of a workshop related</td><td>Learners classify in an extensive way natural and artificial materials. (See appendix F. Lesson plan evidences)</td></tr>
</table>

| | | |
|---|---|---|
| | to types of materials, as well as using flashcards. | |
| **Scanning** | **Excellent**: Extensively identify key pieces of information in a reading text related to the topic types of materials to develop a RSI scanning exercise that consists of choosing the correct answer for questions.<br>**Good:** Partially identify key pieces of information in a reading text related to the topic types of materials to develop a RSI scanning exercise that consists of choosing the correct answer for questions.<br><br>**Not satisfactory**: Minimally key pieces of information in a reading text related to the topic types of materials to develop a RSI scanning exercise that consists of choosing the correct answer for questions. . | This RSI scanning exercise once more confirms that third graders present difficulty in the understanding of questions. So, it was partially achieved by five students out of thirteen. |
| **Interaction** | Interaction and collaboration within teacher and learners.<br>Interaction within peers.<br>Interaction within learners and the reading text. | The interaction was meaningful in all three aspects because the prior knowledge, group work, individual work and feedback allowed in most learners the interaction in different way to achieve the understanding of this science content regarding to the types of materials. |
| **Content** | The content of the class was understood according to the development of RSI prior knowledge, visualization and scanning, as well as the development of LOTS and HOTS as important process for the CLIL approach. | Making a balance of the analysis mentioned before for RSI prior knowledge, visualization and scanning, it is possible to say that learners understood in large extent the content related to types of materials. Additionally, the lesson plan activities allowed in most learners the cognitive process of remembering, understanding, applying, analyzing and evaluating. |

| | | |
|---|---|---|
| | | (See appendix F. Lesson plan evidences). |
| **Language** | Only the target language was used.<br>Only the mother tongue was used.<br>Simultaneously was used the target language and mother tongue in the development of the lesson plan related to the parts of the plant and their functions. | In this lesson plan students used much more the target language than before, perhaps because the vocabulary of the content given is closer to the mother tongue. For example, in words such as materials, natural, artificial, plastic, metal, origin, transparent, fragile, animal, mineral, plants, etc. |

**Appendix F. Evidences**

## Evidence 1. Questionnaire

**CUESTIONARIO N° 1: ESTUDIANTES GRADO TERCERO. COLEGIO NUEVO SAN LUIS,GONZAGA**

El siguiente cuestionario se realiza únicamente con fines de orden académico. Pretende conocer la opinión de los estudiantes sobre algunos aspectos relacionados con los procesos de aprendizaje de BIOLOGY.

Lea cada uno de los ítems y evalúelos escribiendo el símbolo ✓ , según sea su opinión para cada uno de ellos.

Para evaluarlos, por favor utilice la siguiente escala.

| | |
|---|---|
| 1. Casi nunca | 3. Con frecuencia |
| 2. A veces | 4. Casi siempre |

| Ítems | | 1.Casi nunca | 2. A veces | 3.Con frecuencia | 4.Casi siempre |
|---|---|---|---|---|---|
| 1. | Disfruto la lectura de los textos presentados en la clase de Biology. | | ✓ | | |
| 2. | Leo y entiendo en gran medida los conceptos de Biology. | | | ✓ | |
| 3. | Traduzco en casa los textos de Biology al lenguaje español con el fin de entender su contenido. | ✓ | | | |
| 4. | Prefiero el trabajo individual al trabajo en grupo. | ✓ | | | |
| 5. | Considero que mi nivel de inglés se ha fortalecido gracias al vocabulario y conocimientos adquiridos en la clase de Biology. | | ✓ | | |
| 6. | Cuando presento las evaluaciones recuerdo con facilidad lo que me enseñan en la clase de Biology. | ✓ | | | |
| 7. | Expreso lo que entiendo sobre los contenidos de Biology con mis compañeros o profesora. | ✓ | | | |
| 8. | Considero que las imágenes, ilustraciones o graficas me ayudan a entender los temas de Biology. | | | ✓ | |
| 9. | Leo rápidamente los contenidos o conceptos de Biology para contestar las preguntas que hace mi profesora. | ✓ | | | |
| 10. | Uso el conocimiento que ya tengo sobre algún tema para asociarlo o relacionarlo con un nuevo aprendizaje. | | | | ✓ |

## Evidence 2. Lesson Plan 1.

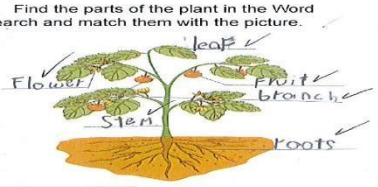
**WORKSHOP**

**Students' name:** David Santiago Juan José Tovar

**Pair work.** Visual Summary

| a | d | w | r | t | y | u | o | p | a |
|---|---|---|---|---|---|---|---|---|---|
| s | d | f | b | v | a | n | c | h | l |
| g | h | r | f | d | q | r | t | u | e |
| f | i | j | o | k | l | z | x | c | a |
| b | l | c | q | o | e | r | f | t | f |
| s | a | o | s | d | t | f | r | g | j |
| t | k | l | w | a | q | s | u | f | g |
| e | g | h | j | e | l | m | i | b | v |
| m | c | v | b | n | r | q | t | e | r |
| a | s | d | f | g | h | j | k | c | x |

1. Find the parts of the plant in the Word Search and match them with the picture.




2. **Read the following passage.** Scanning

There are many different parts of plants.

The parts help a plant to grow.

The roots of a plant take in water and hold the plant in the ground.

The stem carries food and water through the plant and holds up the plant.

The leaves of a plant take in air and light for the plant.

The flowers of plants make fruit. Flowers are very beautiful.

People can eat fruit.

The fruit holds seeds.

Oranges, apples, lemons and bananas are delicious fruit.

Trees are very big plants. Trees have branches.

Branches are the arms of a tree and have leaves.

**After reading, choose the correct answer.**

1. The roots of a plant are found in the _____.
   a) air
   b) ground
   c) leaves
2. The stem of a plant carries _____
   a) water and food
   b) air and light
   c) soil and ground
3. The flowers of a plant make fruit _____
   a) that hold up the plant
   b) that hold lemons or apples
   c) that people eat
4. The leaves take in air and light, and _____
   a) the stem holds up the plant
   b) the leaves turn into seeds
   c) the flowers carry food and water

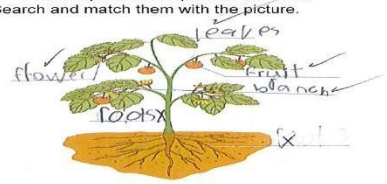
**WORKSHOP**

**Students' name:** Maria Camila Pinna Soler

**Pair work.** Visual Summary

| a | d | w | r | t | y | u | o | p | a |
|---|---|---|---|---|---|---|---|---|---|
| s | d | f | b | v | a | n | c | h | l |
| g | h | r | f | d | q | r | t | u | e |
| f | i | j | o | k | l | z | x | c | a |
| b | l | c | q | o | e | r | f | t | f |
| s | a | o | s | d | t | f | r | g | j |
| t | k | l | w | a | q | s | u | f | g |
| e | g | h | j | e | l | m | i | b | v |
| m | c | v | b | n | r | q | t | e | r |
| a | s | d | f | g | h | j | k | c | x |

1. Find the parts of the plant in the Word Search and match them with the picture.




2. **Read the following passage.** Scanning

There are many different parts of plants.

The parts help a plant to grow.

The roots of a plant take in water and hold the plant in the ground.

The stem carries food and water through the plant and holds up the plant.

The leaves of a plant take in air and light for the plant.

The flowers of plants make fruit. Flowers are very beautiful.

People can eat fruit.

The fruit holds seeds.

Oranges, apples, lemons and bananas are delicious fruit.

Trees are very big plants. Trees have branches.

Branches are the arms of a tree and have leaves.

**After reading, choose the correct answer.**

1. The roots of a plant are found in the ground
   a) air
   b) ground
   c) leaves
2. The stem of a plant carries Water and Food
   a) water and food
   b) air and light
   c) soil and ground
3. The flowers of a plant make fruit
   a) that hold up the plant
   b) that hold lemons or apples
   c) that people eat
4. The leaves take in air and light, and the stem holds up the plant
   a) the stem holds up the plant
   b) the leaves turn into seeds
   c) the flowers carry food and water

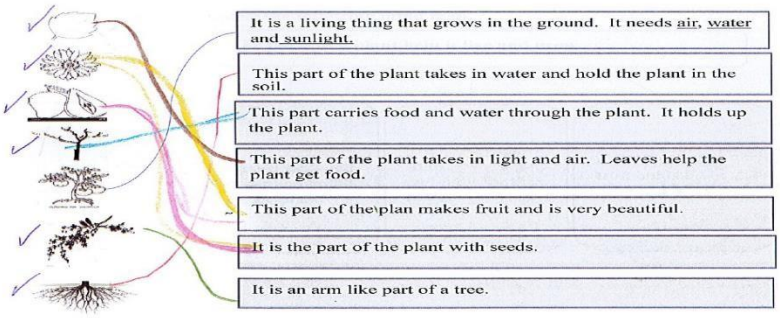
**TEST – N° 1**

**Subject:** Biology **Teacher:** Claudia Liliana Blanco Villarreal

**Topic:** Parts of the plant. **Grade:** Third **Students' name:** Mathias Silva

| | |
|---|---|
| **Content Aim** | The learners will be able to identify the parts of the plant and describe their functions. |
| **Language Aim** | Learners will be able to learn and apply the RSI prior knowledge, scanning and visualizing. |
| **Outcome** | By the end of the lesson learners will be able to identify the parts of the plant and describe their functions through the practice of RSI prior knowledge, scanning and visualizing. |

**1- Match each part of the plant with its function.** (Prior knowledge and visualization)



- It is a living thing that grows in the ground. It needs air, water and sunlight.
- This part of the plant takes in water and hold the plant in the soil.
- This part carries food and water through the plant. It holds up the plant.
- This part of the plant takes in light and air. Leaves help the plant get food.
- This part of the\plan makes fruit and is very beautiful.
- It is the part of the plant with seeds.
- It is an arm like part of a tree.

**2- Read the following passage.** (Scanning)

There are many different parts of plants.
The parts help a plant to grow.
The **roots** of a plant take in water and hold the plant in the ground.
The **stem** carries food and water through the plant and holds up the plant.
The **leaves** of a plant take in air and light for the plant.
The **flowers** of plants make fruit. Flowers are very beautiful.
People can eat fruit.
The **fruit** holds seeds.
Oranges, apples, lemons and bananas are delicious fruit.
Trees are very big plants. Trees have **branches**.
**Branches** are the arms of a tree and have **leaves**.

**2.1 After reading complete the following mind map.**

The parts of a plant help it live and grow

- The roots take in A. Water and hold the plant in the B. ground
- The C. stem carries food and water and holds up the plant.
- The leaves take in D. Air and light for the plant.
- The E. flowers make fruit. The fruit holds F. Seeds

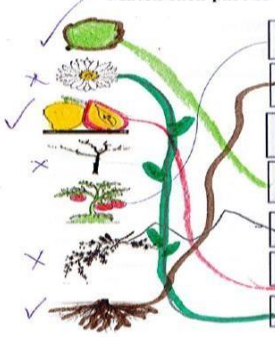
**TEST – Nº 1**

**Subject:** Biology **Teacher:** Claudia Liliana Blanco Villarreal

**Topic:** Parts of the plant. **Grade:** Third **Students' name:** Mariai Camila

| | |
|---|---|
| **Content Aim** | The learners will be able to identify the parts of the plant and describe their functions. |
| **Language Aim** | Learners will be able to learn and apply the RSI prior knowledge, scanning and visualizing. |
| **Outcome** | By the end of the lesson learners will be able to identify the parts of the plant and describe their functions through the practice of RSI prior knowledge, scanning and visualizing. |

**1- Match each part of the plant with its function.** (Prior knowledge and visualization)



- It is a living thing that grows in the ground. It needs air, water and sunlight.
- This part of the plant takes in water and hold the plant in the soil.
- This part carries food and water through the plant. It holds up the plant.
- This part of the plant takes in light and air. Leaves help the plant get food.
- This part of the plant makes fruit and is very beautiful.
- It is the part of the plant with seeds.
- It is an arm like part of a tree.

Mariai Camila

**2- Read the following passage.** (Scanning)

There are many different parts of plants.
The parts help a plant to grow.
The **roots** of a plant take in water and hold the plant in the ground.
The **stem** carries food and water through the plant and holds up the plant.
The **leaves** of a plant take in air and light for the plant.
The **flowers** of plants make fruit. Flowers are very beautiful.
People can eat fruit.
The **fruit** holds seeds.
Oranges, apples, lemons and bananas are delicious fruit.
Trees are very big plants. Trees have **branches**.
**Branches** are the arms of a tree and have **leaves**.

**2.1 After reading complete the following mind map.**

The parts of a plant help it live and grow

- The roots take in A. water and hold the plant in the B. take in water
- The C. Olpries carries food and water and holds up the plant.
- The leaves take in D. air and light for the plant.
- The E. make fruit. The fruit holds F.

**Evidence 3. Lesson Plan 2. RSI visualization exercise and interaction.**


**WORKSHOP 1 – Lesson plan 2**

**Group work.** **Students' name:** [illegible] and M. Cornilos

1. Read the text.

## Photosynthesis

The process by which plants make food is called "photosynthesis". The word photosynthesis is made up of two words:

**"Photo" = light** **"synthesis" = putting together**

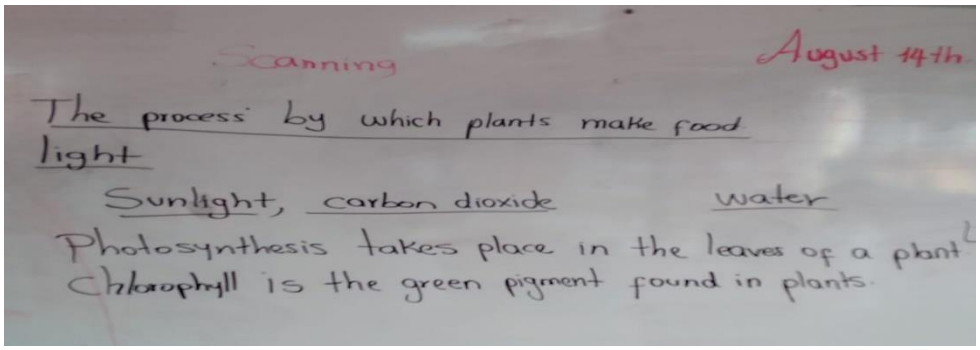
Plants need sunlight, carbon dioxide from air and water from soil to prepare their own food. Photosynthesis takes place in the leaves of a plant. Leaves have tiny pores called stomata through which carbon dioxide enters the plant.

Plant cells contain tiny structures called chloroplasts that contain chlorophyll to trap sunlight. Chlorophyll is the green pigment found in plants. Sunlight energy is then used to combine water and carbon dioxide from the air to produce sugar (glucose) and oxygen. Veins in the leaves are the small tubes that carry water to the leaf. Veins also transport food from the leaf to the stem and roots and carry the sugars the plant makes to all parts of the plant. These sugars give the sweet taste to fruits such as grapes, apples, and pears.

**Scanning exercise. Based on the text answer the following questions:**

1. What is photosynthesis? [illegible]
2. What does the word photo mean?
3. What do plants need to prepare their own food?
4. Where does photosynthesis take place?
5. What is chlorophyll?

**Feedback**



Workshop 2 – Lesson plan 2

Individual work. Student's name: Gloria Date: August 14

| | |
|---|---|
| **Content Aim** | The learners will be able to identify the process by which plants make their own food. |
| **Language Aim** | Learners will be able to learn and apply the RSI prior knowledge, scanning and visualizing. |
| **Outcome** | By the end of the lesson learners will be able to understand through the practice of RSI prior knowledge, scanning and visualizing the process by which plants make food. |

**Prior knowledge and visualization.**

**Label the photosynthesis and its cycle in this picture.**


Workshop 2 – Lesson plan 2

Individual work. Student's name: Esteban B.M Date: August 14th

| | |
|---|---|
| **Content Aim** | The learners will be able to identify the process by which plants make their own food. |
| **Language Aim** | Learners will be able to learn and apply the RSI prior knowledge, scanning and visualizing. |
| **Outcome** | By the end of the lesson learners will be able to understand through the practice of RSI prior knowledge, scanning and visualizing the process by which plants make food. |

**Prior knowledge and visualization.**

**Label the photosynthesis and its cycle in this picture.**

David August 14th

2. Read the text. **Photosynthesis**

The process by which plants make food is called "photosynthesis". The word photosynthesis is made up of two words:

**"Photo" = light** **"synthesis" = putting together**

Plants need sunlight, carbon dioxide from air and water from soil to prepare their own food. Photosynthesis takes place in the leaves of a plant. Leaves have tiny pores called stomata through which carbon dioxide enters the plant.

Plant cells contain tiny structures called chloroplasts that contain chlorophyll to trap sunlight. Chlorophyll is the green pigment found in plants. Sunlight energy is then used to combine water and carbon dioxide from the air to produce sugar (glucose) and oxygen.

Veins in the leaves are the small tubes that carry water to the leaf. Veins also transport food from the leaf to the stem and roots and carry the sugars the plant makes to all parts of the plant. These sugars give the sweet taste to fruits such as grapes, apples, and pears.

**Scanning exercise. Based on the text answer the following questions:**

1- What does the word synthesis mean? putting together
2- What does chlorophyll trap? is the green pigment found in plants
3- What does sugar or glucose give to fruits? sweet taste to fruits

Martin Rodriguez

2. Read the text. **Photosynthesis**

The process by which plants make food is called "photosynthesis". The word photosynthesis is made up of two words:

**"Photo" = light** **"synthesis" = putting together**

Plants need sunlight, carbon dioxide from air and water from soil to prepare their own food. Photosynthesis takes place in the leaves of a plant. Leaves have tiny pores called stomata through which carbon dioxide enters the plant.

Plant cells contain tiny structures called chloroplasts that contain chlorophyll to trap sunlight. Chlorophyll is the green pigment found in plants. Sunlight energy is then used to combine water and carbon dioxide from the air to produce sugar (glucose) and oxygen.

Veins in the leaves are the small tubes that carry water to the leaf. Veins also transport food from the leaf to the stem and roots and carry the sugars the plant makes to all parts of the plant. These sugars give the sweet taste to fruits such as grapes, apples, and pears.

**Scanning exercise. Based on the text answer the following questions:**

1- What does the word synthesis mean? putting together
2- What does chlorophyll trap? sun light
3- What does sugar or glucose give to fruits? such as grapes, apples, and pear

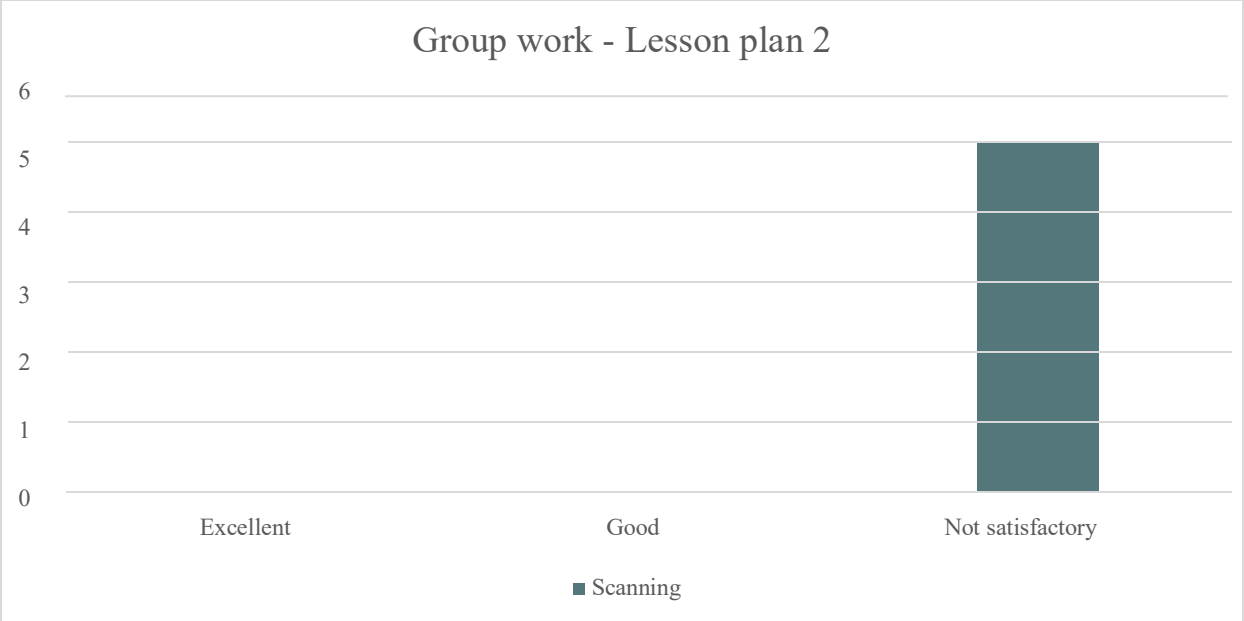



**Figure 5. Group work – Lesson plan 2.**

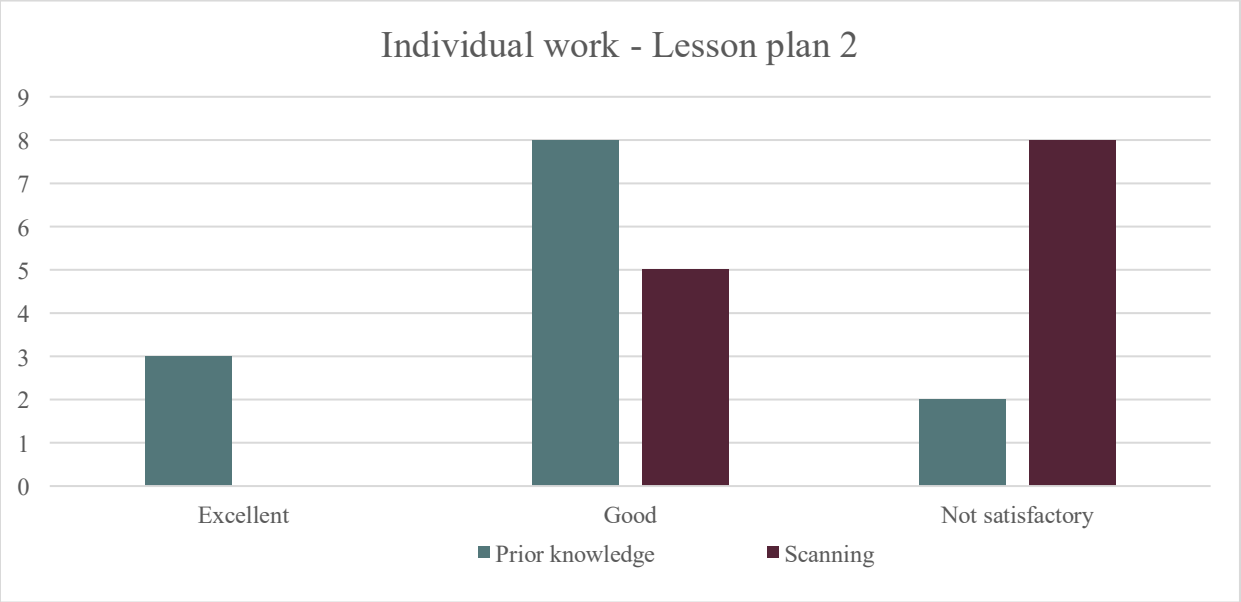



**Figure 6. Individual work – Lesson plan 2.**

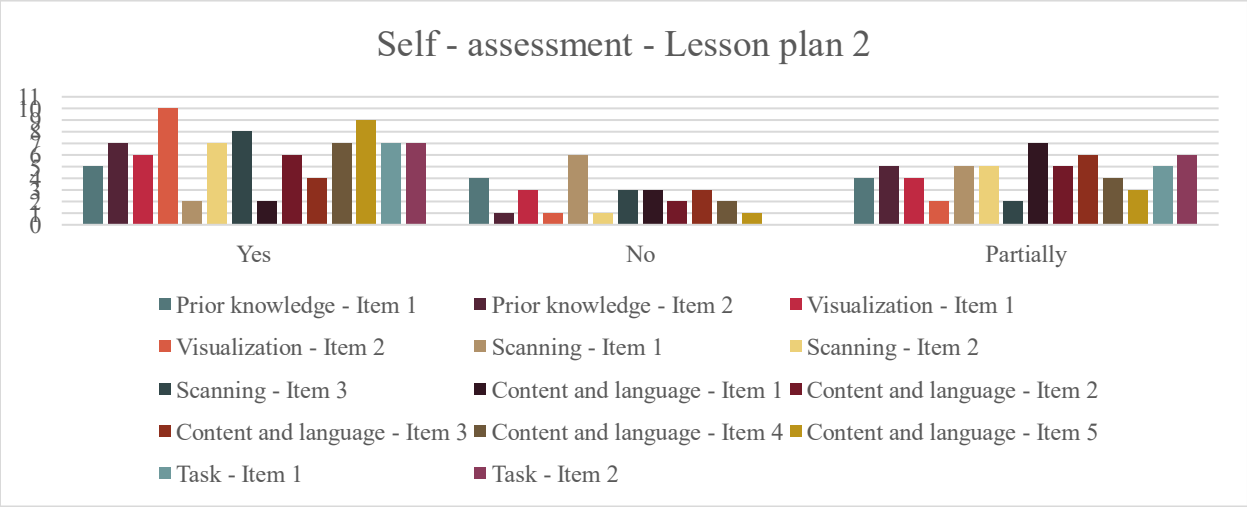



**Figure 7. Self – assessment Lesson Plan 2**

**Evidence 4. Lesson plan 3. RSI Prior Knowledge exercise**


| **Excerpt 3.** |
| --- |
| Every one of the learners received a flashcard related to one thing made of a specific material or different materials.<br>Teacher asked learners to follow the instruction of the class that consisted of looking at the picture of the flashcard and in order paste this on the board which was divided in two parts, |

one for natural materials and another for artificial or man – made materials. After that, the activity was checked by all together.

Teacher: think about it…What is the topic of the class?

Mapa: natural and artificial materials.

Teacher: Ok, very good!
Teacher: (points out and asks) Is this naturl or artificial?
Some students: natural.
Teacher: The flower?
Some students: the flower is natural material.
Teacher: (points out the class with lemonade)… Is this natural or artificial? Esbe: natural.
Mapa: artificial material.
Teacher: why do you think that, Mapa?
Juto: el agua es natural y el limón tambiés es natural.
Sachi: que siii, es natural creo que ese pitillo…
Jumar: profe, porque mira que el agua es natural, el limón también es natural y el pitillo también es de algo natural.
Teacher: so, what is artificial in this picture?
Some students: el vaso.
Teacher: this shares both, natural and artificial materials.
Teacher: (points out)…this picture?
Joem: natural and artificial material because it have…has madera.
Jumar: profe me voy a devolver al pincel porque creo que este es natural y artificial, porque los pelos son como de paja y el palo de madera pero ya procesada.
Sachi, Esbe and Juto discuss the color of the sheep wool, when it is natural or artificial according to the gray or blue color.
Esbe: la casa es artificial porque la madera ya esta muy procesada. Juto: algo totalmente natural es algo que no se ha procesado.
Teacher: ok.
Sachi: la casa es medio natural y medio artificial, porque ahí esta la casa, entonces tiene como piedras, madera , metal… Some students: disagree
Teacher: (explains in spanish language), Sachi esta analizando todos los materiales que tiene la casa, no los esta mirando directamente, pero esta imaginando que otros materiales hay al interior de esta.

**Workshop 1 – Lesson plan 3**

**Individual work.** **Scanning exercise** Read the text and questions below. For each question, mark the correct letter **A**, **B**, **C** or **D**.

MATERIALS

**Types of Materials**

The objects around us are made of different materials: plastic, wood, metal, glass, rubber, etc. We can classify materials according to their origins and their properties. Materials are either natural or artificial depending on their origin. Depending on their properties, they can be flexible, resistant, transparent, hard, fragile, soft, etc.

**Natural Materials**

Natural materials are those we find in nature. They can be of vegetable, animal or mineral origin.

- **Vegetable** materials come from plants. Some examples are wood and cotton.
- **Animal** materials come from animals. Some examples are leather and silk.
- **Mineral** materials come from rocks and minerals. Some examples are marble and iron.

**Artificial or Man-Made Materials**

Artificial materials are made by people, using natural materials. Paper is an artificial material. It is usually made from wood.

People have invented many different materials. For example, porcelain was invented more than 1,300 years ago. Plastic was invented in 1862.

1. **Where do vegetable materials come from?**
   **A.** Plastic
   **B.** Plants
   **C.** Minerals
   **D.** Animals
2. **What types of materials are there?**
   **A.** Origins and properties
   **B.** Animal and mineral
   **C.** Natural and artificial
   **D.** Vegetable and natural
3. **What do fragile and flexible correspond to?**
   **A.** Properties of materials
   **B.** Origins of materials
   **C.** Natural materials
   **D.** Man-made materials

**Prior knowledge and Visualization**

**Classify the following materials. Write their names in the corresponding box.**


| Natural Materials | Man-Made Materials |
|---|---|
| Wood | Iron |
| Paper | Plastic |
| Leather | Porcelain |

**Workshop 1 – Lesson plan 3**

**Individual work.** **Scanning exercise** Read the text and questions below. For each question, mark the correct letter **A**, **B**, **C** or **D**.

MATERIALS

**Types of Materials**

The objects around us are made of different materials: plastic, wood, metal, glass, rubber, etc. We can classify materials according to their origins and their properties. Materials are either natural or artificial depending on their origin. Depending on their properties, they can be flexible, resistant, transparent, hard, fragile, soft, etc.

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**Artificial or Man-Made Materials**

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   **D.** Animals
2. **What types of materials are there?**
   **A.** Origins and properties
   **B.** Animal and mineral
   **C.** Natural and artificial
   **D.** Vegetable and natural
3. **What do fragile and flexible correspond to?**
   **A.** Properties of materials
   **B.** Origins of materials
   **C.** Natural materials
   **D.** Man-made materials

**Prior knowledge and Visualization**

**Classify the following materials. Write their names in the corresponding box.**

Porcelain

Wood

Iron

Paper

Leather

Plastic

| Natural Materials | Man-Made Materials |
|---|---|
| iron | plastic |
| wood | porcelain |
| leather | paper |

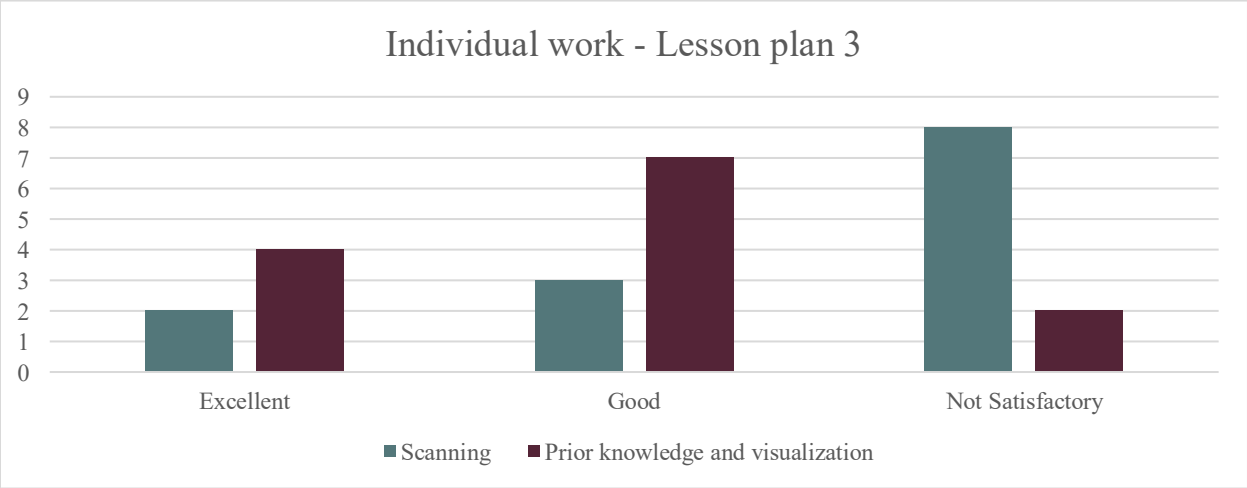


**Figure 8. Individual work – Lesson plan 3**