FACULTAD DE EDUCACIÓN DE PALENCIA
UNIVERSIDAD DE VALLADOLID

LINKING *CLIL* & *STEAM* EDUCATION IN BILINGUAL SCHOOLS, ONE STEP FORWARD.

CONECTAR *AICLE* Y EDUCACIÓN *STEAM* EN CENTROS BILINGÜES, UN PASO ADELANTE

TRABAJO FIN DE GRADO
EN EDUCACIÓN PRIMARIA
MENCIÓN LENGUA EXTRANJERA: INGLÉS

AUTOR/A: Nuria de la Rocha Labajo

TUTOR/A: María del Carmen Alario Trigueros

Palencia, 18 de junio de 2021

UVa PALENCIA

ABSTRACT

We live in an increasingly global society in which the influence of new technologies is becoming more and more significant. For this reason, there is a need to provide the new generations with the tools, skills, and knowledge to be able to manage in it. As a result of this, there is an opportunity to investigate more about these factors and how influence them in bilingual learning since it is one of the key aspects of this globalization process.

This is the main goal of this research proposal, to investigate ICT in relation to bilingualism. All this, following a STEAM education, since this interdisciplinarity will help to achieve a less compartmentalized and meaningful learning. For this purpose, the proposal has been conducted in a public school with students in the 2nd Year of Primary Education in which they had to create their own "musical plant". In this way, and with the help of Makey boards, the students learned Science through the development of their own musical creation.

KEY WORDS: Bilingualism, communicative competence, digital competence, ICTs, STEAM education, CLIL, experiential and collaborative learning, communicative approach of the language.

RESUMEN

Vivimos en una sociedad cada vez más globalizada en la que la influencia de las Nuevas Tecnologías es cada vez más notoria. Por ese motivo, se presenta la necesidad de dotar a las nuevas generaciones de herramientas, habilidades y conocimientos para que sepan desenvolverse en ella. A raíz de esto, se presenta la oportunidad de investigar más sobre estos factores y cómo influyen en el aprendizaje bilingüe, ya que es uno de los aspectos claves de este proceso de globalización.

Este es el principal objetivo de investigación de esta propuesta, investigar sobre las TICs en relación con el bilingüismo. Todo ello, siguiendo una educación STEAM, ya que esa interdisciplinariedad ayudará a conseguir un aprendizaje menos compartimentado, así como significativo. Para ello, se ha realizado la propuesta en un colegio público con alumnado de 2º de Educación Primaria, en el que ellos y ellas tenían que crear su propia "planta musical".

De este modo, y con la ayuda de unas placas Makey, el alumnado aprendía *Science* mediante el desarrollo de su propia creación musical.

PALABRAS CLAVE: Bilingüismo, competencia comunicativa, competencia digital, TICs, educación STEAM, AICLE, aprendizaje experiencial y colaborativo, enfoque comunicativo de la lengua.

INDEX

1. INTRODUCTION

This document contains the research conducted during the internship period in a Public Primary School. This research has been done as a development of the Final Degree Dissertation with the aim of investigating the concepts related to ICT, bilingualism, CLIL and STEAM education. In this way, I implemented the knowledge achieved during these years of study, especially what I have seen during the last two years of my degree while studying the speciality to become an English as a Foreign Language Teacher.

In this document the general outlines of the research, including a development of them, can be found. Each of the sections refers to the key points of the research development.

Regarding the objectives, a series of aspects to consider are determined, as well as the main and specific objectives of the proposal. This is closely related to the justification of the proposal, reviewing, and analysing these aspects and their implications.

As for the design of the proposal, the information necessary for its implementation in the classroom is detailed, as well as the evaluation tools used, and the methodology followed to achieve the objectives. All of this is based on a theoretical framework in which the theories and approaches on which this proposal has been based to develop it are explained.

There is also a chapter of results, which narrates what happened during the implementation of the Unit and the results obtained from the evaluation of the students to observe the evolution, the achievement of the objectives and the scope of the proposal.

Finally, in the section of conclusions we can find the analysis and reflection of these results. Furthermore, the possible changes that could be made to the Didactic Unit as well as the future lines of work related to the research are referred to.

The last chapters correspond to the annexes and bibliographical references. In these annexes can be found the proposal developed as well as the overview of the proposal for change.

RELATION WITH THE COMPETENCES OF THE DEGREE

As mentioned in the first paragraph, this is the Final Dissertation that brings together the contents seen during the course. Thus, a series of competences have been developed which, many of them, have helped me to develop this dissertation.

General competences

- To be able to recognise, plan, carry out and evaluate good teaching-learning practices
- To be able to integrate the information and knowledge needed to solve educational problems, mainly through collaborative procedure
- To be able to coordinate and cooperate with others from different fields of study to create an interdisciplinary working culture based on learning-centred objectives
- To develop communication skills through the Internet
- To develop interpersonal skills, associated with the ability to relate to other people and work in groups
- To develop the ability to engage in research activities
- To encourage the spirit of initiative and an attitude of innovation and creativity in the in the exercise of their profession

Specific degree competences

Basic competences

- To know and apply innovative experiences in Primary Education
- To plan and develop teaching and learning processes of basic competences
- To know and apply methodologies and basic techniques of educational research and be able to design innovation projects
- To develop the ability to work in a team with the rest of their colleagues, as a necessary condition for the necessary condition for the improvement of their professional activity

- To be able to use and incorporate information and communication technologies appropriately in teaching-learning activities
- To facilitate the knowledge of intercultural reality and the development of attitudes of respect, tolerance and respect, tolerance, and solidarity towards different social and cultural groups
- To recognise the mutual influence between science, society, and technological development, as well as relevant behaviours for a sustainable future
- To acquire basic mathematical skills

Foreign Language (English)

- To acquire linguistic (phonetic-phonological, grammatical, and pragmatic) and sociocultural knowledge of the foreign language
- To use techniques of corporal expression and dramatization as communicative resources in the foreign language concerned
- To know the main didactic trends in the teaching of foreign languages to children and their application to the foreign language classroom and their application to the foreign language classroom at the different levels established in the curriculum
- To be able to stimulate the development of metalinguistic/metacognitive skills
- To be able to develop the ability to use relevant and meaningful tasks close to the learners
- To progressively develop communicative competence through the integrated practice of the four skills in the foreign language classroom

2. OBJETIVES

MAIN OBJETIVES

In order to conduct the research for this Dissertation, a series of general objectives have been set. These goals have been proposed with the aim of investigating certain educational factors applied in a classroom to observe their impact on pupils and to determine the degree to which they have been achieved.

The main objective is to observe the influence of ICT in the classroom on the development of autonomous learning and thinking skills using a Foreign Language (FL). For this purpose, different tools such as “Makey Makey” have been chosen, which are different from those traditionally used when ICTs are employed in the classroom. All of this was achieved through STEAM education to analyse the influence on student motivation, the acquisition of content and the language.

The aim of all this is to facilitate a communicative approach to English, so that students improve their skills and acquire this FL. Thus, following the parameters found in the Real Decreto 126/2014, 28 February, as well as in the Common European Framework of Reference for Languages, by giving this language a communicative meaning within a learning context.

SPECIFIC OBJECTIVES

To achieve the above objectives, more specific objectives have been set:

- Use English as a vehicular language, opting for a communicative approach
- Coordinate teaching activity with the rest of the teaching staff to achieve interdisciplinarity and promote STEAM education
- Introduce students to programming processes
- Encourage manipulative and experiential learning using new technologies
- Promote personal autonomy and the competence of learning to learn
- Use new tools in the classroom to achieve greater motivation
- Promote thinking skills in students
- Choose individualised learning in which students' personal situations are considered by setting three levels of expectation
- Use content related to their environment to favour contextualised learning

3. JUSTIFICATION

The research proposal of this document is focused on a school in a big town in Castilla y León, Spain. The school has a Bilingual Program in English, following the CLIL premises to work with Natural Sciences, Social Sciences and Arts & Crafts. It follows the curriculum of *Castilla y León* (ORDEN EDU/519/2014) which indicates that the purpose of all Foreign Language (FL) studies is the acquisition of it through communication and its contextualization, that is, using this language as a vehicular language. All this, following the Common European Framework of Reference for Languages: Learning, Teaching and Assessment (CEFR) which reinforces this communicative approach to languages.

Moreover, this school is certified as level 4 in ICTs, so new technologies are very present in the daily life of the students. These ICTs are not limited to teaching the class through a digital board, rather they provide the students with tools for their use in an efficient and safe way.

Thus, the research proposal in the classroom aims to combine these two features of the school to give greater continuity to students and provide useful tools to students for their development in society. Therefore, students will be more capable of developing in a changing, globalized and, to a certain extent, technological society. For this reason, this proposal is oriented towards generations born in the technological era, the digital natives (Prensky, 2001). According to Davis & Gardner (2013) this "APP Generation" has very specific characteristics such as creativity, communication, or frustration. For that reason, we could identify the need to use STEAM education so that students are trained in all areas in an interdisciplinary way. This serves as the basis of the scaffolding knowledge in which all information is connected.

We must start from the premise that, the students with whom this proposal has been put into practice, from 7 to 9 years old, already have a theoretical basis and have been previously introduced to the Scientific Method as well as trained on thinking skills techniques.

All this tend to develop the seven key competences named in the Real Decreto 126/2014 saying that those are "essential for the welfare of European societies, economic growth and innovation, and the essential knowledge, skills and attitudes linked to each of them are described."(BOE, 2014, p. 4) This learning by competencies favours learning processes and

motivates learning. For the purposes of Real Decreto 126/2014, the competencies of the curriculum will be the following:

- Linguistic communication.
- Mathematical competence and basic competences in Science and Technology.
- Digital competence.
- Learning to learn.
- Social and civic competences.
- Sense of initiative and entrepreneurship.
- Cultural awareness and expressions.

In accordance with this:

> “Competencies, therefore, are conceptualized as a "know-how" that is applied to a diversity of academic, social and professional contexts. For the transfer to different contexts to be possible, an understanding of the knowledge present in the competencies, and the linking of this with the practical skills or abilities that integrate them, is indispensable.” (BOE, 2014, p. 6)

Thus, one of the objectives of Primary Education is the development of these competencies. In particular, the competences Linguistic communication, Mathematical competence and basic competences in Science and Technology, which are very much reflected in the development of the proposal.

It should be noted that the Common European Framework of Reference for Languages (CEFR) proposes one more competency, as follows:

- Literacy
- Multilingualism
- Numerical, scientific, and engineering skills
- Digital and Technology-based competences
- Interpersonal skills, and the ability to adopt new competences
- Active citizenship
- Entrepreneurship
- Cultural awareness and expression

4. THEORETICAL FRAMEWORK

OFFICIAL DOCUMENTS

For the development of this proposal, different documents have been considered to support and provide a rationale. This rationale is based on official documents as well as on articles, theories elaborated or defended by different authors. First, the official and legal documents necessary to develop a bilingual proposal in the Spanish territory are presented. Then, an analysis will be made of how different authors have influenced in the elaboration of the proposal.

The “Real Decreto” 126/2014, 28 February, is the official document that regulates Primary Education in Spain. This Decree emphasizes the importance of students to adapt to the changes in society. According to this document, the school must be a place where students develop the necessary skills that allow them to participate successfully in a society that is becoming more and more global, but at the same time rooted on a pluricultural perception of our world. Therefore, "the ability to communicate is the first requirement that the individual must meet in order to function in an increasingly multicultural and multilingual context". (BOE, 2014, p. 39). This indicates that the school must provide students with the tools to communicate in one or more foreign languages. Thus, this first stage of Primary Education aims to provide communicative skills in different languages, which favours the development of artistic expression, communicative skills and reading and writing.

The basic curriculum for Primary Education follows what is described in the Common European Framework of Reference for Languages (CEFR). This establishes that language teaching should be oriented towards the expression and interaction of oral and written texts.

According to Royal Decree 126/2014, 28 February, "At Primary Education, it should be considered that we start from a basic competence level so that, both in communicative interaction and in the comprehension and production of texts, it will be always essential to refer to familiar contexts for young students, thus taking advantage of the previously acquired knowledge and the skills and experiences they possess. Based on this fact, a contextualized use of the language will be encouraged, within the framework of communicative situations typical of diverse environments and which allow for a real and motivating use of the

language." (BOE, 2014, p.40) This means that learning must be contextualized and close to the student's environment so that the language used has a communicative purpose.

As far as the Common European Framework of Reference for Languages (CEFR) is concerned, it supports that language learning must be closely related to the use of the language in real life. Moreover, this is based on interaction with others and is therefore collaborative learning. Thus, the activities proposed should be presented under the parameters mentioned above: reception, production, interaction, and mediation. In this way, the interpretation and expression of oral and written texts is achieved.

Techniques based on collaborative learning described above are also reflected in an experiential learning or 'action-oriented approach' according to the CEFR. In this way, some of these collaborative tasks in the classroom become essential, as they make it possible.

The CEFR approach or scheme is compatible with other models such as the task-based approach. All of them supporting transactional and interpersonal language, as well as the use of interpersonal and ideational language which helps to develop in our students' minds critical thinking, scientific supported ideas and thinking skills. Creating the setting where all the former elements are present, would be real thanks to the model that advocates contextualised activities.

Furthermore, it is very important to emphasise the significance of the use of mediators in communication to facilitate understanding. This is because "establishing links to prior knowledge is an important part of the mediation process, as it is an essential part of the learning process. The mediator can explain the new information by making comparisons, describing how it relates to something the receiver already knows, or helping the receivers to activate their prior knowledge, for example." (Council of Europe, 2001, p. 118) Texts can be used as mediators or relating the information seen to the new concepts, etc. Moreover, questions can also be asked to activate that prior knowledge or to provide examples and definitions to use it as mediators.

All of this is reflected in the ORDEN EDU/519/2014, which adapts these documents to the current curriculum used to develop the proposal. This curriculum structures Primary Education around two fundamental axes, comprehension, and production, i.e., the expression

and interaction of oral and written texts. According to this order, the curriculum is systematised around the following:

- Block 1: Comprehension of oral texts.
- Block 2: Production of oral texts: expression and interaction.
- Block 3: Comprehension of written texts.
- Block 4: Production of written texts: expression and interaction.

It should be stressed that the main objective of this area in the curriculum is the use of the language in a communicative context. Therefore, "teaching practice would not be understood if teachers did not use the foreign language from the very beginning. It is through the use of the language that pupils feel the need to use the language in the classroom. [...] The teacher will assume the role of guide, promoter and facilitator of competence development in the learner, designing activities which the learner must solve, making appropriate use of the different types of knowledge, skills, attitudes and values". (BOCYL, 2014, p. 34466)

STEAM EDUCATION

Language and thought are associated in our interaction linked to a task, we should think about a theme or be involved on a task. Scientific thought helps us to create this setting to reflect, observe hypothesize, and analyse. The interdisciplinary nature of STEAM education allows us to use the Foreign Language (FL) as a vehicle to design learning following a Scientific and experimental approach. This implies a break between the barriers of Science, Mathematics, Technology and Arts at school. Learning by intuition, visualising data and being able to operate with it with the help of others, thus controlling it, can encourage interest in areas of knowledge that are a priori opaque and abstract. (Cilleruelo & Zubiaga, 2014; Martín & Santaolalla, 2020)

It is a model that " claims a transdisciplinary and transpersonal field of educational research supported by physical and virtual communities (makerspaces) whose main base is opening access to knowledge (sharing knowledge) oriented to shared learning (sharing learning) and peer-learning". (Cilleruelo y Zubiaga, 2014, p.15) It is therefore essential to increase the learning resources and networks that allow new knowledge to relate to previous knowledge.

Moreover, this knowledge must be based on personal interests and curiosity as a guide to learning.

This interdisciplinary or cross-curricular teaching increases in a grand extend students' motivation for learning. In this type of learning, students participate in experiences and become more actively engaged, providing meaning to learning. According to Darn (n.d.), "students learn more when they use language skills to explore, write and speak about what they are learning. Cross-curricular teaching is characterised by thematic units, offering the teacher flexibility over a period in terms of adopting a strict content-based or more global timetable of lessons." (Darn, n.d., p.2-3)

This implies a methodological change towards an integration of knowledge, interdisciplinarity. For this reason, cooperation between students and teachers and the design of learning situations that favour the application of knowledge and problem solving are essential. In this way, STEAM teachers are part of the same team as this interdisciplinarity implies the elimination of barriers between subjects, sometimes imposed by a curriculum divided into different subjects. This requires a very precise organisation of common projects and objectives. (Martín & Santaolalla, 2020)

Connecting these experiences to learners' real life and context results in deeper learning involving systems thinking, creativity, persistence, and self-reflection. This is because students learn best when they are allowed to create and solve problems that are in their interest. (Quigley et al., 2020)

It is worth noting that traditionally the 'A' in STEAM was not included in this model. Despite this, research suggested adding this "A" to STEM, as the need for it has been seen, in fact, in the field of engineering is increasing demand for products that excite emotion, is looking for employers to design such products with an appeal beyond aesthetics. (Sochacka, Guyotte, & Walther, 2016). This means that arts education should go beyond simple drawing and involves a whole product design.

To develop the proposal and approach STEAM education, the "Makey Makey" board has been used, an academic and artistic project created by Jay Silver and Eric Rosenbaum, members of the Massachusetts Institute of Technology, MIT.

In essence, "Makey Makey is an electronic board that simulates a keyboard or a mouse and allows you to control any program running on a computer using everyday objects" (Gamito Gomez & Aristizabal Llorente & León Hernández, 2019, p.787). This board gives us the opportunity to interact with the computer in creative ways. The kit contains: board, crocodile cables, jumpers (connection cables) and USB cable (*Image 1*).

Imagen 1. Makey Makey kit.

The operation of Makey Makey is simple and is based on a closed electrical circuit in which all conductive objects and/or materials can be used. It can be used to control all kinds of software already created such as educational applications or self-created software such as games programmed in Scratch. In the *video 1* it could see an explicative video made by the Makey Makey applications designer.

Video 1. Jay Silver explaining the applications of Makey Makey.

The combination of Makey Makey with the Internet offers an infinite number of uses for both teachers and students. Thus, it allows teachers to create their own materials to work on different skills or content in an interactive and manipulative way. (Gamito Gomez & Aristizabal Llorente & León Hernández, 2019)

In this proposal, the Scratch platform has been used to introduce students to the world of programming. It is mainly designed for ages 8 to 16, but it is used by people of all ages (Scratch, n. d.). In this case, it is destined for pupils between 7 and 9 years old, so the programming will be done by the teacher and the pupils will be the ones to test it.

It is also important to note that the proposal will be implemented with digital nativities (Prensky, 2001) or the named "APP Generation" (Davis & Gardner, 2013). Therefore, the use of STEAM education is so important, as the new generations are living in a very global world. The Makey Makey boards help us to use this technology beyond social networks or games to turn it into a tool. This makes it become an "app-enabling" according to Dacis & Gardener (2013) and that helps us to create and innovate.

This could be framed within UNESCO's educational innovation proposals (INNOVACIÓN EDUCATIVA Serie “Herramientas de Apoyo Para El Trabajo Docente,” 2016) since the proposal encourages the students' research capacity. Besides, activities of initiation to programming are performed.

TASK-BASED METHOD

Task-based learning is supported by four basic ideas: identifying the learner's needs, defining the syllabus content, organising the language acquisition opportunities, and measuring the learner's achievements. Thus, these "tasks" should consider all the former features. Besides, it should provide a basis for the learner to assimilate the content, as well as to organise and apply it to everyday life, i.e., to develop thinking skills. (Hyltenstam & Finnemann, 1986)

This model aims to focus on the students' experiences, and therefore prioritises theory through practice. The contributions of Nunan (2014) clearly show the need to start from the bottom - up. Thus, the first task that must be set is the final task and, in this way, it will serve to motivate and raise the students' awareness of what we are going to do. In this way, and with the help of the teachers, students develop thinking skills so that they know where we are starting from and where we want to go. All this is done by dividing these tasks into sub-tasks that help to achieve the objectives. Therefore, through practical experience, students acquire the theoretical contents and know how to relate them to each other, to use them later.

Is important to note that tasks are meaningful in themselves, in such a way that students need to communicate with each other to proceed to the following step. Tasks have a specific outcome so that students and teacher identify, assess, and monitor successful communication. (Larsen-Freeman et al., 2011).

In this way, students improve their foreign language knowledge at the same time they become aware of their learning achievement. Larsen-Freeman et al. (2011) consider that "there are a number of ways in which grammar can be addressed as a follow-up to a communicative task, including direct explicit instruction and traditional practice-type exercises." (Larsen-Freeman et al., 2011, p.193)

METHODOLOGY

When applying theories to a proposal, the difficult part comes organizing all the elements step by step, selecting the most suitable techniques, mixing students' needs, resources, and contents in the proposal. It was decided to use a variety of techniques provided by different methods: collaborative learning, experiential learning, or guided participation.

Collaborative learning

Firstly, regarding group work, it is generally considered to be of three types: peer tutoring, cooperative learning, and collaborative learning. These three types are distinguished according to the level of engagement and equality among learners (Kenneth Tolmie et al., 2010). In the case of collaborative learning, it is based on discussion and exchange of ideas and information among learners. In this type of learning, the student completes tasks autonomously and focuses only on the joint activity with the aim of creating a shared vision of the task performed.

This makes collaborative learning, and thus group work, very beneficial for learners. According to the study by Richard Light (2001), he found that learners who study in small groups, even once a week, obtain big benefits. They are much more committed and prepared for meaningful learning. Thus, learning is reinforced by a group of peers.

Collaborative learning (CL) is an educational approach that has as its main characteristics' collaboration between/among students (through interaction and communication) with

teachers and other students. Furthermore, it has a teamwork approach to problem solving, while maintaining individual responsibility, in which each member has a role and is a participant. This CL develops social interaction skills, stimulates critical thinking, and helps students to clarify ideas (Akhrif et al., 2019). Its main objective is to "integrate interdisciplinary learning while engaging our students and helping them develop knowledge and problem-solving skills. Therefore, the creation of a team of learners is crucial for optimal student grouping"(Akhrif et al., 2019, p.55).

Experiential learning

Collaborative learning is closely linked to experiential learning. This term was used by Kolb (1984) in his Experiential Learning Theory (ELT), which provides a theoretical framework for understanding and managing how groups learn from their own experience (Kolb, 1984) In their theory Kayes & Kolb (2005) they examine the application of experiential learning to six areas related to group work -purpose, membership, roles, context, process, and action taking- and describe how teamwork increases the effectiveness of learning. The experiential learning could be interpretate as a cycle and is the most recognised and used concept in ELT (Kolb 2015; Kolb & Kolb 2017). This cycle is based on four stages, experiencing, reflecting, thinking, and acting. These four stages are simple and useful in a learning environment (Kolb & Kolb, 2018).

Experiential learning is an approach of learning in which students construct knowledge and skills through direct action, experience, and reflection. Thus, the teacher provides experiences where learning takes place through active reflection. Experiential learning has its origins in Dewey's (1938) inquiry-based approach to learning (Mascolo, 2009).

Guided participation

As for the teacher's role, as already mentioned, it will be as a guide and facilitator of learning situations. According to Rogoff's theory (1990, 1993, 1995) this role is within the concept of "guided participation", which serves as a general framework for thinking about teaching and learning. This concept is based on the idea that learning does not have to be teacher-centred or learner-centred. This type of learning requires a contextualisation through socio-cultural activities, resulting in the concept of participation going beyond the idea of active learning.

This theory, in which the student is the centre, has its origins in constructivism (Piaget, 1948/1973) and the educational movements mentioned above (Dewey, 1938). Constructivism refers to the conception that students construct their understanding of the world because of their interaction with it. Therefore, students must be participants in the construction of their own understanding of the world.

It should be noted that one way to involve students is through activities conducted in small groups. These activities build a scaffolding, since, in the same group, the most expert partner in an activity will lead the rest, divide the task so that it is more manageable, assign roles and support the rest of the partners, etc. (Mascolo, 2009).

In order to do so, the teacher should identify what content and skills students need to acquire to go successfully through all the different tasks and actions required to get to an end. The teacher should also help students to perform these activities by guiding them and facilitating their acquisition. Furthermore, students must participate in active acts such as reading, writing, listening, speaking, or doing projects, in such a way that it is a conscious process. Therefore, the teacher will offer suggestions and guidance to these actions so that students can develop these skills and knowledge (Mascolo, 2009).

Content and Language Integrated Learning (CLIL)

It is important to clarify the term of CLIL, as Darn (n.d.) said:

> "The term Content and Language Integrated Learning (CLIL) was originally defined in 1994, and launched in 1996 by UNICOM, University of Jyväskylä and the European Platform for Dutch Education, to describe educational methods where 'subjects are taught through a foreign language with dual-focussed aims, namely the learning of content, and the simultaneous learning of a foreign language'.
>
> The essence of CLIL is that content subjects are taught and learnt in a language which is not the mother tongue of the learners. Knowledge of the language becomes the means of learning content, language is integrated into the broad curriculum, learning is improved through increased motivation and the study of natural contextualised language, and the principle of language acquisition becomes central. Broadly

> speaking, CLIL provides a practical and sensible approach to both content and language learning whilst also improving intercultural understanding and has now been adopted as a generic term covering a number of similar approaches to bilingual education in diverse educational contexts." (Darn, n.d., p.2)

This CLIL methodology has the basis in the interdisciplinary/cross-curricular teaching that facilitates a meaningful learning "in which students can use knowledge learned in one context as a knowledge base in other contexts." (Darn, n.d.) This interdisciplinarity approach helps students to integrate, apply and transfer knowledge at the same time s/he develops critical thinking.

Therefore, CLIL implies changing the approach in the classroom since the teacher is not using the mother tongue of the students to communicate, but a foreign language is used instead, which becomes a challenge for both students and teachers. Teachers are supposed to provide students with tools to search for information on their own and supporting each other, talking about the topic, and even thinking in the other language. In this way, the use of the FL is turning into a part of the learning process itself. (Attard Montalto et al., n.d.)

Doing this, the teacher train students to act in our connected world, as well as going forward from the idea of Literacy far away from reading given texts or communicating following already set of linguistic patterns, but following online premises, working hand in hand with each other and using other languages to communicate with different people, it short it means a new perspective of Literacy. This requires the development and competence of different skills and tools regarding to different specialization. Thus, CLIL methodology prepare students for the present and the future and provides the opportunity for them to improve learning competences at the same time they develop their own autonomy. (Attard Montalto et al., n.d.)

Attard Montalto et al. (n.d.) explained that Ioannou Georgiou y Pavlou, P (2011) set three main features of CLIL:

I. "Additional language learning (AL) is integrated with content subjects, such as Science, History or Geography. Students learn a language and through the language the content is facilitated.

II. CLIL has its origin in different socio-linguistic and political contexts and is related to any language, age, and level of studies from early childhood, primary, secondary, and vocational education. In this sense, CLIL responds to the proposal of the lifelong learning program for all citizens, where multilingualism and multiculturalism are believed to promote integration, understanding and mobility among Europeans.

III. CLIL is an approach that involves the development of social, cultural, Cognitive, Linguistic, Academic, and other learning skills that will facilitate achievement in both content and language. (Cf Mehisto et al 2008: 11-12).” (Attard Montalto et al., n.d., p.7)

Features, which at the same time are grounded on the five principles of CLIL (Content and Language Integrated Learning) methodology: Cognition, Communication, Culture, Content and Competence. *(Image 2)*. These principles serve as the basis for the development of communicative competence in a foreign language. (Ting, 2011)

Image 2. The 5 Cs of CLIL methodology (Attard Montalto et al., n.d.)

Regarding to the Content, the lessons are based on the previous knowledge of the students. In this way, students build their knowledge of the contest as a scaffolding, step by step. (Attard Montalto et al., n.d.)

In a CLIL method, the class has a communication approach, in which students are the centre and teachers give them the opportunity to talk and to work in groups. Thus, they learn new contents at the same time they improve strategies and skills in the new language, the teacher´s role would be providing a good learning sequence design as well as the support whenever it might be necessary to help the development of fluid communication.

About the Competences, the teachers should study and design the steps for his or her students to attain the goal or target expected. Therefore, students reach the content, skills, or communication in a FL that teacher set.

Following this complex process, teachers help to connect content, skills, and communication strategies to the world around us. This connection makes meaningful the content to the students, as they identify content as a part of the "real world" and see themselves as real thinkers discovering the world. So, when teachers select the content, to study about they are supposed to be aware of their students' interests.

It is necessary to note that teachers help students to develop thinking skills to achieve this CLIL approach. Then, the first questions in their minds should be: "What", "Who? "When?" "Where?" and in the end "How?" followed by a search for answers. In this way, it is possible to develop thinking skills Using somehow the classification offered in the Blooms' taxonomy (Bloom, 1956).

CLIL approach leads to encouraging these thinking skills using abstract, complex, and analytic questions (Attard Montalto et al., n.d.). In this way, we remember the concept, comprehend, apply, analyse, and evaluate before use it in real life.

5. PROPOSAL DESING

CONTEXT

This proposal has been developed in a public school the town previously mentioned. The Primary School building is located on one of the main roads. The location and its context are very significative, as it is next to the river and the fauna and flora is very close to the school and the playgrounds. It is worth pointing that the school borders several neighbourhoods, so the pupils come from different parts of the city. Regarding the characteristics of the school, it should be noted that the school is divided into two buildings, located in different streets. One of them is for Primary Education and the other for Infant Education.

The Primary building has mainly, a gym, two playgrounds, an AL and PT classroom, an assembly hall, a computer room, an isolation room, and a library. Due to the current situation, the library has been transformed into a classroom. As before the COVID 19 pandemic the school used to have two lines, but due to classroom capacity restrictions, years 5 and 6 were divided into three different classes.

An important part of the organisation are the school's programmes and projects. An example of the projects could be, the Autonomy Project, Manipulative Mathematics Workshop, Young Programmers Project, Bilingual Section, Red XXI and New Technologies and the Educational Platform: the school website, the Virtual Classroom and Twitter.

All these projects are closely related to new technologies as it is a school graded level 4 ICT. This means that new technologies play an important role in this school. For this reason, various school programmes have been developed such as the continuous teacher training programme. Related to this, we also find the ICT programme. This programme aims to integrate the New Information and Communication Technologies in the teaching-learning process of the different curricular areas, developing didactic and methodological models that favour meaningful and collaborative learning.

As far as English is concerned, the school is an English bilingual school. This means that there are certain subjects in which English is the vehicular language as a basic component of the pupils' education. In addition to this, a multicultural methodology is followed in which English culture, festivities and traditions are seen in the classroom.

Furthermore, the current framework of the European Community, in which it is considered necessary to respect, preserve and promote the linguistic diversity of the European Community, guides the school. However, a major educational effort is needed to ensure that this diversity finishes being an obstacle to communication and becomes a source of mutual enrichment and understanding.

It should be noted that the school includes three subjects using English as a vehicular language as part of the Bilingual Section Program: Social Sciences, Natural Sciences and Arts & Crafts. In addition to this, they have extra Literacy lessons per week.

Regarding to the class, this proposal was developed in Year 2 in which students are between 7 and 9 years old. There is a big difference in the rhythms of learning within the class itself. In this class there are three high-capacity pupils, three students with disruptive behaviour and two students who require significant curricular adaptations. In short, learning pace within the class itself is quite different.

The tutor adapts the contents inside the classroom, especially in the Bilingual Section, for the better assimilation of the pupil, in addition to all the routines followed. Outside the classroom, the pupil goes twice a week to the AL and PT classroom, to get reinforcement in certain competences and areas.

PROPOSAL

About the unit

This proposal is titled *Plant Composers* and is the unit number five. This unit fits in the third term, from the 28th of April to 20th of May of 2021. It consists of 6 lessons developed during three weeks, two hours per week, one hour on Tuesdays and one hour on Wednesdays. *(Appendix. Unit template)*

Along the former weeks, students have been working on the evolution of the technology in the cinema connected to the life and work of Miguel Delibes. This allowed us to work on the evolution of the technology in a way that the challenge of creating a musical plant was considered an area of interest for our students.

In this way, the aim is to reinforce interdisciplinary learning between the different subjects as well as to relate very closely the contents seen in the previous unit. The goal is to achieve global learning while developing thinking skills, allowing students to analyse their reactions as well as everything important that happens in class. Aiming at strengthen STEAM education in the classroom, at the same time that students would be aware of the importance of the interdisciplinary links among the subjects.

Furthermore, next year a school garden will be planted in addition to different initiatives of the school. In this way, the intention is to make pupils aware of and educate them in certain aspects. Moreover, together with this unit, an investigation has been developed in Year 2 classroom designing the features of their new school garden. In this way, this unit goes beyond the four walls of the classroom to become an action that has a real life away from the classroom walls at the same time that contributes to the whole school welfare.

The proposal was adapted from a textbook and the pre-established course syllabus. Since a project on Delibes was conducted in the school, the pre-established planning at the beginning of the course was modified. For this reason, there was a slight change in the schedule and in the pre-established programme.

The main idea of this Didactic Unit was to bring a seemingly complicated technology into the classroom environment for pupils. In this way, learning about, in this case, plants, became much more manipulative and accessible to the pupils, thus encouraging their interest and motivation.

The main objective is to acquire the contents, but also to be able to understand everything that these activities implied. This means that students are able to observe in a physical way the developments in technology and all its usefulness today. It should be noted that all of this would have been possible thanks to the prior knowledge and skills that pupils have developed throughout the first and second years of primary school.

Despite this, in coordination with the tutor and the other teacher who teaches in the bilingual section, we would reach an agreement on when and how to develop the unit, without letting aside the contents of the textbook, which were adapted to be used in some lessons.

Moreover, as it is a unit designed for an interdisciplinary model in which the STEAM model prevails, it could be included in the timetable of other subjects such as Mathematics. In this way, it would be encouraging this global idea of knowledge.

As it was mentioned above, this Unit is designed under the premises of the Task-Based Learning Methodology. Therefore, at the beginning of the Unit, the pupils were already aware of what the final task as well as the expectations to be achieved in every step. As a result, students are much more motivated and predisposed to achieve the final objective that has been set, and they are more interested in the steps to be followed to achieve it.

As far as the aims of the unit are concerned, they are mainly based on the acquisition of basic notions about plants. Additionally, there are other objectives, previously mentioned, related to Mathematics, music, or other elements according to the respect and care of the environment.

Competences developed

Decreto 26/2016 (LOMCE):

- Competence in linguistic communication: during the speaking and presentations of the pupils to share with the class.
- Mathematical competence: during the "mathematical maze" pupils must solve some operations to find the secret sentence.
- Learning to learn: in the process of play the different games and analyse how to do it.
- Competence in social skills and citizenship: sharing information with their group mates.
- Autonomy and personal initiative: in the activities in which they have to decide different topics about the unit.
- Cultural and artistic competence: in the creation of a musical plant.
- Competence in processing information and use of ICT: in the utilisation of Makey Makey during the hole unit.

Common European Framework of References for languages:

General competences

- Skills and know-how: it is developed when students work with the different panels an know how to use it.
- Existential competence: it is developed when students share their ideas and opinions with their groupmates or answer the questions made.
- Ability to learn: it is developed through the unit.

Communicative language competences

- Linguistic: it is developed in each lesson when the pupils work with the vocabulary of the topic.
- Sociolinguistic: it is developed with the group work.
- Pragmatic: it is developed when students create the share their ideas or opinions with the rest of the group or the class.

Development of the proposal

In order to develop this unit, it must be considered that the timetable established for Science is on Tuesdays and Wednesdays before break time. This means that when the class is over, it has to be cleaned up quickly so that the pupils can be disinfected. *(In the Appendix could be found the unit template with the development of the lessons in detail)*

Lesson 1

The main goal of this lesson is to introduce the topic in the classroom. In order to reach our targets a leading activity was design: “mathematical maze” that summarise the theme of the unit.

At the very beginning of the lesson, the mechanism of the Makey Makey board will be introduced. That would be made throughout the connection between that device and an electric circuit since they had already made one. It would also relate to the videogames that they usually play.

After that, they should solve nine operations in groups. Then, they go to the corridors to complete the labyrinth searching for the right answer. At the end of the maze, a secret word will appear over a background of plants. When they get the secret word, they write it down in their booklets *(Appendix. Booklet).*

Once they go back to the classroom, they must order the words and form the sentence “There is no cinema without music.”. Then, all together, analyse the meaning of that sentence and the relation between what we were talking about the last unit and the next topic. They write it in their booklets and the final task will be set. In this way, we are activating their prior knowledge as well as setting what they want to know about plants. Thus, their evolution will be clearer, and they already know what they can expect.

Lesson 2

First, it is important to note that each lesson has a different leading activity. These activities change depending on whether it is adapted from the textbook or based on the textbook itself, as well as the different objectives that are planned for that lesson.

In this lesson, the textbook will be use. For that, some interactive videos will be made to facilitate the comprehension of the pupils as well as their motivation.

Lesson 3

The main goal of this lesson is to reinforce the contents seen during the previous lesson. In this way, materials have been developed to help pupils to assimilate those contents. These materials are both physical and digital.

These materials were interactive panels that told information about the parts of a plant, the parts of a flower and the types of plants. *(Appendix. Activities)*

During the first minutes of class, pupils should draw a plant with all the parts of a plant we had seen the day before. In this way, the degree of assimilation and comprehension of the previous day was known. Then, one of the interactive posters explain the functions of each part of the plant. Students, collaboratively, fill in the information obtained in their booklet and then we will correct it.

After this, the parts of a flower were explained, and which parts form it. With the second interactive panel, the students connected the parts of the flower with its name. After that, they completed the information in the booklet. Finally, the types of plants will explain and ask them a few questions about it.

If it had been possible, for this lesson, different plants and materials would have brought for observation and manipulation of the contents seen during this session. *(Appendix. Lesson overview modified)*

Lesson 4 and 5

The following two lessons will be based on an adaptation of the textbook. As the lesson 2, some videos will made to explain the contents to reach a better understanding of the contents.

During the lesson 5, they should decide the instruments of their musical plant, first individually and then by groups. Doing this, they must try put a rationale in their decisions and then explain it for the rest of their groupmates.

If it had been possible, these lessons would have developed in more depth the contents seen previously through experimentation. Also, more emphasis would have been placed on the development of the musical plant. *(Appendix. Lessons overview modified)*

Lesson 6

The aim of this lesson is to bring together all the previous lessons and to observe the evolution of the pupils' learning.

It is expected that the students will be able to distinguish which is their plant according to how its parts sound. Then, a musical plant of one group will be played and that group should recognise it. When the plant will be found, the owner group will be played the next musical plant.

After this, we are going to play bingo to assess and self-evaluate their work. This bingo has both the vocabulary words seen during the course and the theoretical contents seen, since questions are asked to get the jokers. *(Appendix. Activities)*

EVALUATION

As far as evaluation is concerned, an initial, continuous, and final evaluation has been applied. In this way, the previous knowledge that the pupils have of the subject is known, how this knowledge has progressed and, finally, what the new learning has been.

The main techniques and instruments used were observation by rubrics. These rubrics assess the work done in class and the work done in the booklets. In this way, many aspects involved in learning are considered and not only the conceptual ones.

Three different rubrics have been used to assess the different days and the different activities performed during these days. For the development of these rubrics, a range of items have been set based on the objectives and expectations of each lesson. Furthermore, a section of observations has been added to record those relevant aspects that have not been clarified in the previous section. These rubrics have five degrees of achievement: *(Appendix. Evaluation)*

1: Needs improvement
2: Developing
3: Fair
4: Good
5: Very good

Beside these observation rubric, self-assessment and peer-assessment grids have also been developed. In this way, students can assess their own behaviour and learning throughout the unit as well as that of one of their group mates. These rubrics are also useful to see in which contents students need reinforcement.

These rubrics have four levels of achievement, in this case described by face stickers, where pupils must colour in the face that most closely matches their thinking. These levels of achievement are:

1: I need to improve
2: I am working on it
3: Good job
4: My best job

In both grids there is also a section for observations in case they need to clarify any of the items or want to give feedback on the activities. *(Appendix. Booklet)*

Regarding marking, the three observation grids as well as the self- and peer-assessment grids have been considered. In this way, the three rubrics would have a thirty percent weight each and the peer and self-assessment rubrics would have a five percent weight each.

To mark each rubric, the following criteria have been applied according to the degree of achievement:

- Twenty-five points will be given each time a 5 is obtained in the degree of achievement

- Twenty points will be given each time a 4 is obtained in the degree of achievement
- Fifteen points will be given each time a 3 is obtained in the degree of achievement
- Ten points will be given each time a 2 is obtained in the degree of achievement
- Five points will be given each time a 1 is obtained in the degree of achievement

This means that to obtain the maximum score, the number of items must be multiplied by twenty-five. Thus, if you add up all the points, divide them by the maximum score and multiply this by ten, you will get the mark achieved in that rubric over ten. This mark will be thirty percent of the total mark.

In the case of the self-assessment and co-assessment rubrics the scores vary a bit:

- Twenty-five points will be given each time a 4 is obtained in the achievement grade
- Twenty points will be given each time a 3 is obtained in the achievement grade
- Fifteen points will be given each time a 2 is obtained in the achievement grade
- Ten points will be given each time a 1 is obtained in the achievement grade

To obtain the final mark for these rubrics, do the same as in the previous case.

With the accomplishment of these rubrics and the marks achieved, the three levels of expectation set on the pupil can be clearly observed.

METHODOLOGY

In this chapter, the different methodologies applied in the proposal will be detailed. The methodologies used are closely related to each other and support them. In this way, it is aimed students develop thinking skills and critical thinking, to achieve autonomous learning and thus a development of the competence of learning to learn.

This methodology is based on the five principles of CLIL (Content and Language Integrated Learning) methodology: cognition, communication, culture, content, and competence. (Ting, 2011) Taking this into consideration and the CEFR, the proposal serves as the basis for the development of communicative competence in a foreign language.

Learning a new language is a cognitive challenge for students, thus developing thinking skills as well as communication skills. For the development of these communicative skills, language

is necessary, which allows us to interact in a meaningful way, both with the development of receptive and productive language skills.

All of this is focused on a multicultural perspective since language, thought and culture are closely related. And, to make all this possible, it is supported by the content. This content must be contextualized and should be relevant to the students' development. Therefore, this proposal follows a CLIL methodology in which the content is closely related to pupils' environment to achieve the development of the Foreign Language (FL)

To contextualize this proposal, following the curriculum of *Castilla y León* and the previous programming of the classroom teacher, plants have been chosen. This school is located next to a river, so the fauna and flora surrounds the whole school area. In this way, the contents seen are related to the lived experience. Moreover, being a level 4 ICTs school, so technology is very present in their daily lives. The goal in this proposal was to go beyond the use of technology as a resource, creating a music instrument with plants.

In this way, there is bilingual learning of all subjects. This is because the vehicular language used for communication is English. Thus, the students are aware of the language through the acquisition of new knowledge.

Collaborative learning

In order to achieve all these aims, in this proposal the students are organise in small working groups. According to Ramírez-Donoso, Pérez-Sanagustín, & Neyem (2018), it promotes the development of social skills as well as the development of critical thinking. This helps the student to order their thoughts and ideas and to sequence a discourse in their head.

This group work is organized by work roles. These work roles are already assimilated by the students. This allows the students to be much more aware of their role in the group, they feel involved and responsible for what happens. In this way, the groups are better organized and there is a greater possibility of success in the tasks. Also, there is a deeper understanding of the tasks. This helps to have a critical perspective of the colleagues as well as of oneself. Thus, the work becomes much more accurate as you get feedback from your peers.

These working groups are composed by a leader, an organizer, a scribe, and a reporter. The director is the one who organizes the tasks, decides the steps to be followed and establishes the rules of the group. The organizer is the one who ensures that this organization and these rules are not broken, which is very important in the Covid situation currently being lived. The scribe is the one who performs the actions, who writes down what the group says and elaborates, as clearly as possible, the discourse. Finally, the reporter is the one who explains for the rest of the class what the group thinks. All the groups are formed by four members, except for one group, which is formed by three people. In this case, the director is also the reporter.

Experiential learning

Closely related to collaborative learning is experiential learning. This learning theory by Kolb (1984) argues that experiential learning in conjunction with collaborative learning reinforces learning processes. Additionally, it creates a connection between theory and practice which encourages the application of this knowledge as well as increased autonomy.

This experiential learning is an attempt for students to develop their own skills and knowledge through direct action, experience and then reflection on what has happened. In this way, in this proposal the teacher provides experiences to the students so that they are able to analyse what happened. Thus, learning becomes manipulative, and students can learn about their own experience and about what they are living at that moment. Moreover, learning is contextualized to reality, to their reality, and to the questions or doubts they may have. Therefore, the students ask themselves questions and wonder about different issues and thus develop strategies for the resolution of these questions.

Interdisciplinary learning

Contextualized learning could not be achieved in a different way than interdisciplinary learning between subjects. Therefore, for the development of this proposal, it has been necessary to coordinate with other teachers. Thus, a closer connection between the subjects is achieved, making possible a better connection among the topics dealt with. For this, it was necessary to coordinate with the music teacher to overlap, in a certain way, the contents seen

in both classes. If it had been possible, they would also have been coordinated with the subject of arts and crafts, thus making this interdisciplinarity go further and achieve a STEAM education. In this way, it is achieved that all subjects have a theoretical and practical learning that is developed at the same time.

This STEAM education, in this case, is based on the development of the question "Is it possible to create music with plants?". To do this, first, we will need Science to learn more about plants. Technology to see what instruments are needed to make that possible. Engineering and Mathematics to make it happen. And the Art to design it. In this case, Science, Technology and Engineering fit, on a smaller level, into the subject of Natural Sciences. In this way, a model of reciprocity is created between the subjects that makes the students establish connections between the contents of the different subjects.

Guided participation

Regarding the role of the teacher during this proposal, it will be a guiding role. This proposal follows a line of guided participation, in which the students have an active role in constructing their own learning. All this based on the constructivism theories of Kolb (1984) Piaget (1948/1973) or (Dewey, 1938).

Despite this, guided participation goes beyond the learner being active in his or her learning. According to Rogoff (1990, 1993, 1995), guided participation is not that in which the teacher is the centre, or in which the student is the centre. It is where learning is contextualized to their socio-cultural situation. In this sense, students construct new learning and skills from their actions in a social context. All this leads to the construction of a scaffolding in which all is connected. And this is closely related to the methodologies mentioned above.

6. RESULTS

Regarding the results obtained from the proposal, it is concluded that the objectives have been accomplished. For data collection, we opted for observation rubrics as well as student booklets making a qualitative research. For this, the steps followed were collecting, analysing, interpretate the data, evaluate the results and get conclusions. In the next paragraphs will be explained in more detail what happened and its implications.

In lesson 1, the schedule had to change, and the times were misadjusted. The following day the lesson finished, and we could go through all the contents. Nevertheless, the lesson went according to plan.

As far as this lesson is concerned, it was very illustrative and informative about several aspects. First, all the complexity and unexpected events that can occur in the classroom, especially when you are using electronic devices. Moreover, the time it took to place the mazes in the corridors was longer than expected, as well as the complications that occurred when many of the laptops were out of battery power. All this could have been solved with different strategies, but these unforeseen events were not considered. Despite having made some adaptations in the operation, two students did not know how to go through the operations. That means that, in this part, the level of expectation set were no accurate.

The following lesson was as planned. Pupils identify the different parts of a plant, and we talk about what are they for. Besides, we discovered more about the different parts of a flower.

In lesson 3, the pupils were excited about the panels. It was a very visual session in which they were motivated for learning. The impact of the ICTs was clear since they wanted to be part of the class and touched all panels to discovered more information. The timing for this class was very limited and the contents were exposed in a hurry. That is why, in the pupils' self-assessment, on one part regarding to this lesson, pupils had more doubts.

The following two lessons was as planned. Pupils had doubts about the parts of the plants that humans eat. The plant composer plan was developed during these sessions in groups. There were some differences and discussions regarding to the sounds, but everyone was solved.

During the lesson 6, we listened our plants and we identify from which group they were. They clearly identify their plants, and they were excited for played their plants as a plant composer. Then, as an evidence for assessment, we played a bingo. During this game, few pupils were lost about the vocabulary names, but the rest identify almost every word.

	Observaiton grid	Observaiton grid	Observaiton grid	Self-assessment grid	Peer-assessment grid	
Students	**30%**	**30%**	**30%**	**5%**	**5%**	**Mark**
A	10,00	10,00	10,00	9,17	9,67	**9,94**
B	6,80	2,00	4,00	6,17	8,67	**4,58**
C	9,20	9,00	9,33	9,17	9,67	**9,20**
D	8,80	10,00	10,00	8,33	9,33	**9,52**
E	7,00	6,00	7,56	9,17	7,67	**7,01**
F	6,00	8,00	8,44	8,00	7,67	**7,52**
G	8,40	6,33	7,33	9,00	9,00	**7,52**
H	9,60	9,33	9,43	2,00	8,67	**9,04**
I	8,00	8,00	8,67	8,00	8,67	**8,23**
J	2,40	6,00	6,67	6,83	7,00	**5,21**
K	8,40	2,00	4,44	8,67	9,00	**5,34**
L	8,00	2,00	4,67	9,00	9,00	**5,30**
M	7,20	7,33	8,22	7,33	6,00	**7,49**
N	4,00	5,67	5,11	5,17	6,67	**5,03**
Ñ	2,00	4,33	5,33	6,33	6,00	**4,12**
O	2,00	2,00	4,67	5,67	8,33	**3,30**
P	8,80	7,00	7,33	6,67	4,00	**7,47**
Q	7,60	4,67	6,00	7,50	7,33	**6,22**
R	9,20	7,00	8,00	8,50	7,67	**8,07**

Figure 1. Marking grid.

All the previous paragraphs indicates that there was an achievement of the objectives. This can be observed in the students' assessment rubrics and the marking *(Figure 1).* It indicates a high rate of assimilation of the contents as well as comprehension. Moreover, a high degree of understanding in terms of ICT management could been shown.

Despite this, it is necessary to review the expectations that were set for the pupils during the elaboration of the Didactic Unit. Most of the expectations set have been close to reality and have been quite in line with the way the class has been working. To achieve these expectations, the situations of each pupil were considered and adapted based on that, making complementary activities, but in the case of some pupils, more reinforcement would have been needed in some respects. Despite this, and observing the evaluations, the average expectations of the class are very accurate.

Being more specific, approximately:

- The 37% of the pupils were inside the first level of expectations
- The 42% of the pupils were inside the second level of expectations
- The 21% of the pupils were inside the third level of expectations

Regarding behaviour, we identified that, when playing interactive games with the computer, pupils are much more motivated and concentrated. Even though, they are more competitive, they are stressed and therefore shout. That fact did not happen when they are using the panels.

It is necessary to highlight how the students have perceived themselves in the development of the proposal and how they have evolved with respect to their learning. In the self-assessment grids, different items related to the contents seen during the proposal can be observed. Students have self-assessed themselves and reflected on their work.

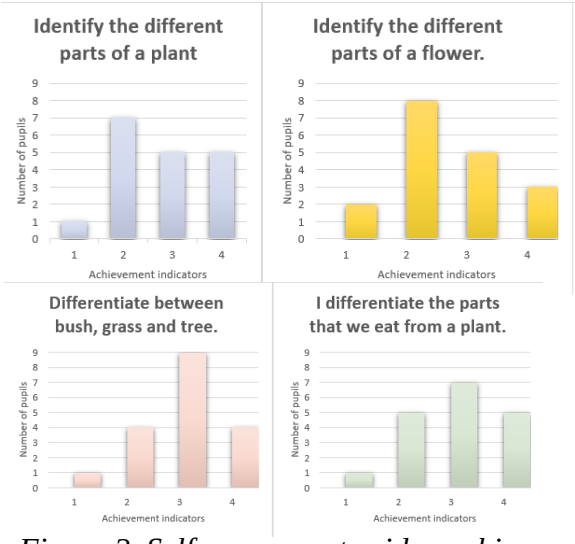


Figure 2. Self-assessment grid graphics.

Figure 2 shows four graphs of four different items. In these graphs we can observe an average trend of the students to consider "good job" or "I am working on it". This can be explained by the fact that when a survey is conducted, people always tend to choose the central values.

Apart from this, the results are in line with the above-mentioned comments about expectations. These four items have been chosen because the explanations have been made using the Makey board or through interactive games. In the case of the first three items, they have been explained by using the board. In the case of the last item, it has been explained by using an interactive game. It can be seen how the graphs are slightly uniform and do not show significant changes from one to the other, except for one of them, which is much higher in indicator 3.

It should be noted that one of the students was unable to attend during the development of the Didactic Unit. For this reason, in the four graphs there is always at least one student who considers that s/he needs to improve.

7. CONCLUSIONS

Following the STEAM activities using English as the language of communication, a series of conclusions have been reached. In this way, the research has been completed and it has been observed some factors to consider for the improvement of the proposal as well as the improvement of some concepts for the acquisition of the foreign language.

First of all, it is necessary to emphasise the need for a high level of coordination among teachers, as well as an agreement on the premises to be follow in the school. To develop this type of activities, as we have seen in the theoretical framework, interdisciplinarity between subjects is necessary, thus achieving connected learning. Therefore, all disciplines will be connected and related to each other. Moreover, when taught through a foreign language, this interdisciplinarity helps students to connect concepts and develop language.

It is important to note that the use of Makey Makey boards makes learning through ICTs much more manipulative and experiential. It also allows pupils to develop their intuitive skills, since, as the activities progressed, they became much more aware of what they had to do and how they had to do it, without the need of a guide.

Despite this, it is a tool that can have many technical drawbacks. Even if you have already prepared the materials, many unforeseen events can happen due to the use of electronic devices, such as the laptop running out of battery, no internet connection or programming errors. All of these can be solved if you have alternatives such as a computer or if you have already downloaded the application on your laptop. However, it must be considered that for all these unexpected events it is necessary to have enough time, because it is a preparation that requires time that, perhaps on many occasions, is not possible to have in the classroom.

Nevertheless, it is a very useful tool for introducing programming. This, together with the Scratch application, makes the students feel like participants and creators of this "gadget" or, in our case, like real "plant composers". This makes science and technology much more attractive and perhaps encourages girls to follow science careers, which is currently a very small percentage in comparison.

Another factor to bear in mind is motivational. Working with materials that are present in everyday life and knowing the way they work is very motivating and favours the acquisition

of the language necessary to interact. This has been reflected at the end of the Didactic Unit, during other subjects, since, if they saw a plant or had seen a plant in the playground, some pupils referred to it using the scientific terms studied.

In conclusion, it has been possible to observe how there has been an evolution in the pupils' skills and knowledge. To a certain extent, this short example of STEAM education has favoured the acquisition of contents and the development of communicative competences in the Foreign Language.

In the same way, the rest of the methodologies followed have provided the necessary support for its development. For example, in the case of the task-based methodology, it has had a very positive impact on the development of the proposal. From the beginning of the Didactic Unit, there has been a great motivation and enthusiasm on the part of the students when they knew what the final objective would be. As a result, pupils know what they want to achieve and, in a guided way, this final objective is gradually narrowed into more achievable goals. Thus, learners are aware of where they start from - what they know - and where they want to get to - what they want to know.

To conclude, I would like to highlight the next lines of work. Despite the achievement of the objectives proposed both in the Didactic Unit and in the research, the classroom intervention proposal would have been implemented in a different way.

This proposal would have covered more lessons and therefore a longer number of hours, thus making the interdisciplinary nature of the subjects greater. Furthermore, it would have included more lessons in Art, thus adding the "A" to STEAM in a more integrated way in which the design of the content would be worked on. Also, more emphasis would have been placed on the programming process, so that, besides using it, they would have more information about the commands, as it is something that is very familiar to them and that they see on their computers or in their video games.

This is reflected in the lesson overview made with the relevant adaptations to the lessons implemented (*Appendix. Lesson overview modified*). Moreover, it can also be seen that in the adapted lessons, the textbook is not used, as it is replaced by a more collaborative and experiential learning approach.

As a further development of the way of working STEAM and FL, it would be interesting to investigate the impact of ICT on bilingual learning using different resources or approaching them from a less interdisciplinary perspective. In this way, the differences, and similarities between both could be evidenced. Besides this, the search for other ICT materials could be used to try to overcome the technical difficulties that the Makey Makey board may present.

8. REFERENCES

OFFICIAL DOCUMENTS

Council of Europe (2001). Common European Framework of Reference for Languages: Learning, teaching, assessment. Cambridge (England) Cambridge University Press.

DECRETO 26/2016, de 21 de julio, por el que se establece el currículo y se regula la implantación, evaluación y desarrollo de la Educación Primaria en la Comunidad de Castilla y León.

REAL DECRETO 126/2014, de 28 de febrero, por el que se establece el currículo básico de la Educación Primaria.

Competencias Grado en Educación Primaria. (2017). (pp. 1-19). Valladolid: Universidad de Valladolid. Recuperado de:

http://www.uva.es/export/sites/uva/2.docencia/2.01.grados/2.01.02.ofertaformativagrados/_documentos/edprimpa_competencias.pdf

THEORIES

Akhrif, O., Benfares, C., el Idrissi, Y. E. B., & Hmina, N. (2019). Smart Collaborative Learning. *International Journal of Smart Security Technologies*, *6*(2), 52–66. https://doi.org/10.4018/IJSST.2019070103

Alice, K., & David, K. (2018). *Eight Important Things to Know About The Experiential Learning Cycle*. Australian Educational Leader, 40(3).

Attard Montalto, S., Walter, L., Theodorou, M., & Chrysanthou, K. (n.d.). *GUÍA CLIL*.

Cilleruelo, L. & Zubiaga, A. (2014) *Una aproximación a la Educación STEAM. Prácticas educativas en la encrucijada arte, ciencia y tecnología*

Darn, S. (n.d.). *Content and Language Integrated Learning (CLIL) A European Overview*.

Davis, K. & Gardner, H. (2013). *The app generation: How today's youth navigate identity, intimacy, and imagination in a digital world Digital Badge project View project Connected Lib View project*. https://www.researchgate.net/publication/261773538

Kayes, A. B., Kayes, D. C., & Kolb, D. A. (2005). *Experiential learning in teams*. Simulation and Gaming, *36*(3). https://doi.org/10.1177/1046878105279012

Kenneth Tolmie, A., Topping, K. J., Christie, D., Donaldson, C., Jessiman, E., Livingston, K., & Thurston, A. (2010). *Social effects of collaborative learning in primary schools. Learning and Instruction* (Vol. 20).

Larsen-Freeman, D. & Anderson, M. (2011). *Techniques& Principles in Language Teaching*

Light, R. J. (2001). *Making the most of college: Students speak their minds.* Cambridge, MA: Harvard Uni-versity Press.

Martín, O., & Santaolalla, E. (2020). *Educación STEM*. Padres y Maestros / Journal of Parents and Teachers, 381, 41–46. https://doi.org/10.14422/pym.i381.y2020.006

Mascolo, M. F. (2009). *Beyond Student-Centered and Teacher-Centered Pedagogy: Beyond Student-Centered and Teacher-Centered Pedagogy: Teaching and Learning as Guided Participation Teaching and Learning as Guided Participation*. In Pedagogy and the Human Sciences (Vol. 1). https://scholarworks.merrimack.edu/phs/vol1/iss1/6

Prensky, M. (2001). *Digital Natives, Digital Immigrants Part 1*. On the Horizon, 9(5). https://doi.org/10.1108/10748120110424816

Quigley, C. F., Herro, D., Shekell, C., Cian, H., & Jacques, L. (2020). *Connected Learning in STEAM Classrooms: Opportunities for Engaging Youth in Science and Math Classrooms*. International Journal of Science and Mathematics Education, 18(8). https://doi.org/10.1007/s10763-019-10034-z

Texto 1 INNOVACIÓN EDUCATIVA Serie "Herramientas de apoyo para el trabajo docente" (1st ed.). (2016). ARTOLAN E.I.R.L. www.unesco.org/lima

Ting, Y.-L. T. (2011). *CLIL in Spain: Implementation, Results and Teacher Training*. ELT Journal, 65(4). https://doi.org/10.1093/elt/ccr056

9. APPENDIX

Unit template

About the unit/ Where this unit fits

UNIT 5: PLANTS COMPOSERS

INTRODUCTION

This it is planned for pupils form Second Year. It fits in the third term, from the 28th of April to 20th of May of 2021. It consists of 6 lessons developed during three weeks, two hours per week, one hour on Tuesdays and one hour on Wednesdays.

In order to develop this unit and accomplish a better understanding and comprehension of the contents, it is going to be used a non-verbal language during the lessons using emblems, illustrators, etc. In addition, diverse forms of paralanguage such as tone, volume, pitch, intonation will be used to make them aware of the most important parts of the speech, giving them highlight.

JUSTIFICATION

During the previous week's students have been working on the evolution of the technology in the cinema and the life and work of Miguel Delibes. This allows us to work on the evolution of the technology in a way that we can create a musical plant. This will be introducing with a "mathematical maze" in which a *rat* has to find the correct answer through a *path* to find the secret sentence related to cinema and music. All of this makes a summary of all the contents that we were working on and the final task that we will have. In addition, we are going to continue with the cinema theme, as we are going to create the soundtrack of our own plant.

In this way, the aim is to reinforce interdisciplinary learning between the different subjects as well as to relate very closely the contents seen in the previous unit. The goal is to achieve global learning while developing thinking skills through which students can react and analyse what happens during the classes. All of this is intended to strengthen STEAM education in the classroom, so that students are aware of the importance of the interdisciplinary approach of the subjects.

FINAL TASK

The final task of this unit is going to be making a musical plant.

CONTENTS

- Parts of a plant
- Parts of a flower
- Types of plants
- Deciduous and ever green trees
- Parts of a plant that we eat
- How human being uses plants

COMPETENCES

Decreto 26/2016 (LOMCE):

- Competence in linguistic communication: in the speaking and presentations of the pupils to share with the class.
- Mathematical competence: in the “mathematical maze” pupils have to solve some operations to find the secret sentence.
- Learning to learn: in the process of play the different games and analyse how to do it.
- Competence in social skills and citizenship: in the share of the pupil’s knowledge and the group works.
- Autonomy and personal initiative: in the activities in which they have to decide different topics about the unit.
- Cultural and artistic competence: in the creation of a musical plant.

- Competence in processing information and use of ICT: in the utilisation of *makey-makey* during the hole unit.

Common European Framework of References for languages:

General competences

- Skills and know-how: it is developed when students work with the different panels an know how to use it.
- Existential competence: it is developed when students share their ideas and opinions with their groupmates or answer the questions made.
- Ability to learn: it is developed through the unit.

Communicative language competences

- Linguistic: it is developed in each lesson when the pupils work with the vocabulary of the topic.
- Sociolinguistic: it is developed with the group work.
- Pragmatic: it is developed when students create the share their ideas or opinions with the rest of the group or the class.

Prior Learning	**Language used in the unit**	**Important Resources**
This unit is related to the previous unit, technology, as students need to be aware of all the existing technological advances necessary for us to be able to make a musical plant. In addition to this, students have already seen the human body and the different systems. It is important to emphasise this as pupils at this age tend to have misconceptions about plants because they relate them to the human body. For this reason, during the development of the unit, special emphasis will be placed on these concepts, trying to	In the development of this unit, non-verbal language as well as parallel language will be used such as intonation, volume, pitch, tone, emblems, or illustrators. It is also going to be used verbal language related to the topic: - Parts of a plant - Characteristics of a plant	- *Makey makey* - Digital board - Laptops - Booklet - Textbook - A3 panels.

use similes to make it easier for them to assimilate the concepts, as well as using manipulative techniques and experimentation.	- Parts of a flower - Types of plants - Deciduous and ever green trees - Fruits and vegetables - Music instruments	

Expectations

At the end of this unit all the children must	- Identify the steps to follow when growing a plant with help. - Recognise some parts of a plants. - Recognise some parts of a flower. - Identify a different type of plant with help. - Identify what happened to the trees in the different seasons with help. - Differentiate between deciduous and evergreen trees with help.
At the end of this unit most of the children should	- Identify the steps to follow when growing a plant without help. - Recognise the parts of a plants. - Recognise the parts of a flower. - Identify some different types of plants with help.

	- Identify what happened to the trees in the different seasons without help. - Differentiate between deciduous and evergreen trees without help.
At the end of this unit some of the children could	- Identify the steps to follow when growing a plant and explain what the plant needs. - Recognise the parts of a plants and identify what they are for. - Recognise the parts of a flower and identify what they are for. - Identify different types of plants without help. - Identify what happened to the trees in the different seasons and explain why. - Differentiate between deciduous and evergreen trees and recognise some characteristics.

LESSONS OVERVIEW

Lesson	Learning goals	Learning outcomes	Main activity	Assessment criteria
1 28/04	• To make three-digit additions. • To make three-digit subtractions. • To make two-digit multiplications. • To find the secret word. • To complete the sentence and find the meaning.	• Make three-digit additions. • Make three-digit subtractions. • Make two-digit multiplications. • Find the secret word. • Complete the sentence and find the meaning.	Mathematic maze	**All children must be able to…** - Organize the roles. - Complete some of the operations with help. - Finish the maze with help. - Complete the secret sentence with help.
2 04/05	• To differentiate between park, forest, orchard, and garden. • To know how plants develop. • To identify what happens to plants with the change of seasons.	• Differentiate between park, forest, orchard, and garden. • Know how plants develop. • Identify what happens to plants with the change of seasons. • Classify plants according to the characteristics of their stem.	Lesson videos	**All children must be able to…** - Answer some questions. - Identify what happened in the different seasons with the plants with help. - Identify the steps to follow when growing a plant with help. - Recognise some parts of a plants.

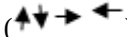
	• To classify plants according to the characteristics of their stem. • To identify and to describe orally parts of plants. • To identify and to describe orally the parts of the flower.	• Identify and describe orally parts of plants. • Identify and describe orally the parts of the flower.		
3 05/05	• To classify plants according to the characteristics of their stem. • To identify and to describe orally parts of plants. • To identify and to describe orally the parts of the flower.	• Classify plants according to the characteristics of their stem. • Identify and describe orally parts of plants. • Identify and describe orally the parts of the flower.	• Parts of a plant chard • Parts of a flower chard • Classify plants according to the characteristics of their stem chard	**All children must be able to…** - Draw a plant with help. - Complete 1 or 2 words of the parts of the plant looking at the blackboard to write the word. - Connect 1 or 2 words of the parts of the flower. - Connect 1 or 2 pictures of types of plants.

4 11/05	• To classify plants according to the characteristics of their stem. • To identify and to describe orally the parts of the flower. • To recognise how people use plants. • To recognise different fruits and vegetables.	• Classify plants according to the characteristics of their stem. • Identify and describe orally the parts of the flower. • Recognise how people use plants. • Recognise different fruits and vegetables.	Lesson videos	**All children must be able to…** - Recognise some parts of a flower. - Identify a different type of plant with help. - Answer a question of the game of the fruit and vegetables.
5 12/05	• To differentiate between deciduous and evergreen trees. • To classify plants according to their stem. • To identify and to describe orally parts of plants. • To identify different instruments. • To reach an agreement with the rest the groupmates.	• Differentiate between deciduous and evergreen trees. • Classify plants according to their stem. • Identify and to describe orally parts of plants. • Identify different instruments. • Reach an agreement with the rest the groupmates.	• Lesson video • Deciduous and evergreen trees' game.	**All children must be able to…** - Identify what happened to the trees in the different seasons with help. - Differentiate between deciduous and evergreen trees with help. - Choose 1 or 2 right answers in the deciduous and evergreen game. - Reach an agreement to select the instrument they want to their plant with help. - Choose the sound of the plant with help.

6 18/05	• To classify plants according to their stem. • To recognise how people use plants. • To identify and to describe orally parts of plants. • To identify and to describe orally the parts of the flower. • To recognise different fruits and vegetables	• Classify plants according to their stem. • Recognise how people use plants. • Identify and to describe orally parts of plants. • Identify and to describe orally the parts of the flower. • Recognise different fruits and vegetables.	• Musical plant • Bingo	**All children must be able to…** - Recognise a part of the plant. - Identify some instruments. - Recognise some parts of their plant from the sound of an instrument. - Identify some of the vocabulary words that appeared in his/her bingo template. - Answer a question about plants during the bingo. - Complete most of the self-assessment template. - Complete most of the peer-assessment template.

Lesson 1#		
Learning objectives	Learning outcomes	Evidence for Assessment
• To make three-digit additions. • To make three-digit subtractions. • To make two-digit multiplications. • To find the secret word. • To complete the sentence and find the meaning.	• Make three-digit additions. • Make three-digit subtractions. • Make two-digit multiplications. • Find the secret word. • Complete the sentence and find the meaning.	• Observation grid • Maze • Booklet
Discourse/Text targeted	Language targeted- Non-verbal L Targeted	
Outline of leading activities		
Math maze		

Classroom	Timing	Grouping	Pupils	Teacher	Resources

	10’	Big group	Divide the previous group’s roles (Director, reporter, scribe, organiser) Decide which member are going to control each direction and who will control the “space”.	Explain how the maze works: - You will have some instructions to follow, that instruction will be mathematical operations. When you solve the first operation, you move to the answer and press the cable of “space”. If you were right, the number will disappear. - At the end of the maze, a word will be appeared, and you must copy on your booklet, that is the clue of your maze. - Now, each member of the group will have a direction () of the maze, and he or she will control it. Prepare each computer and give to the groups.	- Laptops - “Makemakey” - Aluminium paper (for the arrows) - A paper with the operations - Wire
	15’	Small groups	Complete the Math maze in groups. Talk each other trying to solve the operations. Move to the correct answer of the multiplication, plus or rest.	Tell that they have 15’ to complete the maze in group. Put the timer.	- Laptops - “Makemakey” - Aluminium paper (for the arrows) - A paper with the operations - Wire

					- Classroom timer
	15’	Small groups	Go to the corridors and complete maze. Move to the correct answer of the multiplication, plus or rest.	Put the timer.	- Laptops - “Makemakey” - Aluminium paper (for the arrows) - A paper with the operations - Wire - Classroom timer
	5’	Individual	Complete the booklet with the secret word that appeared in the maze.	Tell them that they must complete their booklets with the secret word.	Booklet
	5’	Big group	Say their words out loud and put the words in order.	Write the words on the blackboard. Writhe the sentence.	Blackboard
	5’	Individual	Complete the booklet with the sentence.	Tell them that they must complete their booklets with the sentence.	Booklet
	10’	Big group	Talk about the sentence and the meaning. Answer the questions.	Make the pupils some questions: - What do you think that sentences mean?	
Assessment Criteria					

All children must be able to	**Most of the children will be able to**	**Some of the children could**
- Organize the roles. - Complete some of the operations with help. - Finish the maze with help. - Complete the secret sentence with help.	- Organize the roles and control the directions of the maze with help. - Complete most of the operations. - Finish the maze without help. - Complete the secret sentence and understand the meaning with help.	- Organize the roles and control the directions of the maze with help. - Complete all operations early. - Finish the maze without help and in less time. - Complete the secret sentence and understand the meaning without help.

Lesson 2#		
Learning objectives	Learning outcomes	Evidence for Assessment
• To differentiate between park, forest, orchard, and garden. • To know how plants develop. • To identify what happens to plants with the change of seasons. • To classify plants according to the characteristics of their stem.	• Differentiate between park, forest, orchard, and garden. • Know how plants develop. • Identify what happens to plants with the change of seasons. • Classify plants according to the characteristics of their stem. • Identify and describe orally parts of plants. • Identify and describe orally the parts of the flower.	• Textbook

• To identify and to describe orally parts of plants. • To identify and to describe orally the parts of the flower.		

Discourse/Text targeted	Language targeted- Non-verbal L Targeted

Outline of leading activities

- Lesson videos

Classroom Management

Timing	Grouping	Pupils	Teacher	Resources
5’	Big group	Take the Natural Science book.	Turn on the digital board. Say to the pupils that they have to take the book.	- Digital board - Textbook
10’	Big group	Answer the questions. Complete the exercise.	Ask questions: - Do you know the difference between a park, an orchard, a forest, and a garden? - Can you recognise this park? Put the video. Tell pupils to complete the exercise.	- Digital board - Textbook
10’	Big group	Ask questions. Complete the exercise.	Put the song. Answer the question that pupils could have about the song.	- Digital board - Textbook

			Sing the song.	Sing the song. Tell pupils to complete the exercise.	
	5’	Big group	Answer the questions. Complete the exercise.	Ask pupils questions about what happen to the plants in the different seasons. Tell pupils to complete the exercise.	- Digital board - Textbook
	20’	Big group	Answer the questions. Complete the exercise.	Ask pupils questions: - What are the parts of a plant? - Do you know what they are for? - What part is underground? - What part supports the plant? - What parts of the plant are related to the function of nutrition? - What parts of the plant are related to the function of reproduction? Explain based on what the pupils have answered. Tell pupils to complete the exercise.	- Digital board - Textbook

	5’	Big group	Answer the questions.	Introduce the topic to the pupils. Ask pupils questions: - What are the parts of a flower? - Do you know what they are for?	
	5	Big group	Answer the questions.	Introduce in the different types of plants. Ask pupils questions: - Do you think that all the plants are the same? - Can you identify different plants? - Can you tell me 3 different types of plant? - Do you know how them are called?	

Assessment Criteria

All children must be able to	**Most of the children will be able to**	**Some of the children could**
- Answer some questions. - Identify what happened in the different seasons with the plants with help. - Identify the steps to follow when growing a plant with help.	- Answer most of the questions. - Identify what happened in the different seasons with the plants without help. - Identify the steps to follow when growing a plant without help.	- Answer all the questions. - Identify what happened in the different seasons with the plants and explain why. - Identify the steps to follow when growing a plant and explain what the plant needs.

- Recognise some parts of a plants.	- Recognise the parts of a plants.	- Recognise the parts of a plants and identify what they are for.

Lesson 3#

Learning objectives	Learning outcomes	Evidence for Assessment
• To classify plants according to the characteristics of their stem. • To identify and to describe orally parts of plants. • To identify and to describe orally the parts of the flower.	• Classify plants according to the characteristics of their stem. • Identify and describe orally parts of plants. • Identify and describe orally the parts of the flower.	• Observation grid • Booklet

Discourse/Text targeted	Language targeted- Non-verbal L Targeted

Outline of leading activities

- Parts of a plant	- Parts of a flower	- Classify plants according to the characteristics of their stem.

Classr	Timing	Grouping	Pupils	Teacher	Resources

	5’	Big group	Answer the questions.	Ask the pupils some questions: - Do you remember what we were talking about yesterday? - What things do you remember that we have already seen about plants?	
	5’	Small group	Draw a plant in their booklet. Say how to draw a plant. Say the parts of the plant.	Say that they must draw a plant in their booklet. Draw a flower in the blackboard. Named the parts of the plant	Blackboard.
	15’	Small group	Touch a part of a plant (Flower, stem, leaves or roots) and listening the sentence that sound. Complete in their booklets the sentence. Share the information with the group.	Explain how the interactive panel works: - Do you remember how a circuit works? - You have to close the circuit, so you touch the “circle” with one hand and touch the part of the plant that you want to listen with the other. - Then, listen the sentence and write it in your booklet. Bring to the groups the panel.	- Parts of a plant panel - Booklet - *Makeymakey* - Wire
	10’	Big group	Share the information with the class and correct it.	Complete the sentences and correct the misinformation.	Booklet

	10’	Small group	Talk with the group which word connect with which part. Connect the part of a flower with their word. Write the word in the drawing of their booklet.	Ask them to connect, by groups, the panel. Bring to the groups the panel.	- Booklet - Parts of a flower panel - Makeymakey - Wire
	15’	Small group	Connect the type of plants (Grass, bush, or tree) with the right picture. The group have to agree and choose the right answer.	Explain how the panel works: - You have to touch with one pen a type of plant, and with the other pen the picture. - If it is right it will sound. Bring to the groups the panel.	- Types of plants panel (appendix) - Wire

Assessment Criteria

All children must be able to…	**Most of the children will be able to**	**Some of the children could**
- Draw a plant with help. - Complete 1 or 2 words of the parts of the plant looking at the blackboard to write the word. - Connect 1 or 2 words of the parts of the flower. - Connect 1 or 2 pictures of types of plants.	- Draw a plant without help. - Complete 2 or 3 words of the parts of the plant looking at the blackboard to write the word. - Connect 3 or 4 words of the parts of the flower. - Connect 3 or 4 pictures of types of plants.	- Draw a plant without help and label the parts in a correct way. - Complete all the words of the parts of the plant looking at the blackboard to write the word. - Connect all the words of the parts of the flower. - Connect all pictures of types of plants.

Lesson 4#

Learning objectives	Learning outcomes	Evidence for Assessment
• To classify plants according to the characteristics of their stem. • To identify and to describe orally the parts of the flower. • To recognise how people use plants. • To recognise different fruits and vegetables.	• Classify plants according to the characteristics of their stem. • Identify and describe orally the parts of the flower. • Recognise how people use plants. • Recognise different fruits and vegetables.	• Textbook • Game

Discourse/Text targeted	Language targeted- Non-verbal L Targeted

Outline of leading activities

- Lesson videos

	Timing	Grouping	Pupils	Teacher	Resources
Closure	5’	Big group	Close and clean the table.	Tell the pupils to close and clean the tables.	

	10’	Big group	Take the bottle of water an put one drop on the table. Take the piece of toilet paper and put it on the drop of water. Observe what happened.	Tell students to take the bottle of water an put one drop on the table. Tell students to take the piece of toilet paper and put it on the drop of water. Explain that this is how plants absorb water through their roots, by capillarity. The roots get in contact with the water and the water is absorbed by capillary action.	- Bottle of water - A piece of toilet paper.
	25’	Big group	Answer the questions. Complete the exercise.	Ask pupils questions: - What are the parts of a flower? - Do you know what they are for? - What parts of the plant are related to the function of reproduction? - Do you know how some fruit is formed? And where does it appear? Explain based on what the pupils have answered. Tell pupils to complete the exercise.	- Digital board - Textbook
	5’	Big group	Answer the questions.	Ask pupils questions: - Do you remember yesterday's chard on plant types?	

			- Can you tell me a plant which is a bush? - And a grass? - And a tree? - What are the differences between them?	
5’	Big group	Answer the questions.	Ask questions: Now that we already know the parts of the plant… - Can you tell me which part of a plant are we eating when we eat a tomato? - And when we eat a broccoli? - …	
10’	Big group	Answer the questions of the game one by one.	Put the game and click in the answer that they choose.	Computer https://wordwall.net/es/resource/7152568/parts-plants-we-eat

Assessment Criteria

All children must be able to	**Most of the children will be able to**	**Some of the children could**
- Recognise some parts of a flower. - Identify a different type of plant with help.	- Recognise the parts of a flower. - Identify some different types of plants with help.	- Recognise the parts of a flower and identify what they are for.

- Answer a question of the game of the fruit and vegetables.	- Answer 2 or 3 questions of the game of the fruit and vegetables.	- Identify different types of plants without help. - Answer all the questions of the game of the fruit and vegetables.

Lesson 5#

Learning objectives	Learning outcomes	Evidence for Assessment
• To differentiate between deciduous and evergreen trees. • To classify plants according to their stem. • To identify and to describe orally parts of plants. • To identify different instruments. • To reach an agreement with the rest the groupmates.	• Differentiate between deciduous and evergreen trees. • Classify plants according to their stem. • Identify and to describe orally parts of plants. • Identify different instruments. • Reach an agreement with the rest the groupmates.	• Booklet • Textbook

Discourse/Text targeted	Language targeted- Non-verbal L Targeted

Outline of leading activities

- Lesson video	- Deciduous and evergreen trees' game.

Classr	Timing	Grouping	Pupils	Teacher	Resources

	5’	BG	Take the Natural Science book.	Turn on the digital board. Say to the pupils that they must take the book.	- Digital board - Textbook
	15’		Answer the questions. Complete the exercises	Ask pupils some questions: - What happens to trees in the autumn? Does it happen to all trees? - What happens to trees in the winter? Does it happen to all trees? - What happens to trees in the spring? - What happens to trees in the summer? Does it happen to all trees? Explain what an evergreen and a deciduous tree is: Some trees are deciduous. In autumn, their leaves change colour and fall. In spring, they grow new leaves. Some trees are evergreen. They have leaves all year. The leaves are always green. Tell pupils to complete the exercises.	- Digital board - Textbook
	10’	Small group	Play by groups to the tree game. The group have to agree and choose the right answer.	Click the answer that the groups said in the computer.	Digital board https://wordwall.net/es/resource/7023259/deciduous-or-evergreen

	10’	Big group	Answer the questions.	Now that we know all these things about plants, we return to our initial question. Can plants make music? If that is true: - What type of plant do you think that is better to do it? - How do you think that we could do it? - Do you think that we will need technology?	
	20’	Small group	Choose, first individually and then by groups which sound do they want to have in their plants (piano, sax, drums, trumpet, guitar, or a singer) Then, they must choose where they want to put the sound. Choose a name for their plant.	Tell them that they have to choose by groups which sound do they want to have in their plants (piano, sax, drums, trumpet, guitar, or a singer) Then, tell them that they must choose where they want to put the sound. Ask them some questions: - Do you remember the pitch and the volume? - Do you think that a little leaf has the same pitch than a big leaf? - How do you want that your plant sound? Tell them that they have 10’ to choose and “compose” their plant. After that, they have to choose a name for their plant. Put the timer.	Booklet
Assessment Criteria					

All children must be able to	Most of the children will be able to	Some of the children could
- Identify what happened to the trees in the different seasons with help. - Differentiate between deciduous and evergreen trees with help. - Choose 1 or 2 right answers in the deciduous and evergreen game. - Reach an agreement to select the instrument they want to their plant with help. - Choose the sound of the plant with help.	- Identify what happened to the trees in the different seasons without help. - Differentiate between deciduous and evergreen trees without help. - Choose 3 or 4 right answers in the deciduous and evergreen game. - Reach an agreement to select the instrument they want to their plant without help. - Choose the sound of the plant without help.	- Identify what happened to the trees in the different seasons and explain why. - Differentiate between deciduous and evergreen trees and recognise some characteristics. - Choose 5 or more right answers in the deciduous and evergreen game. - Reach an agreement to select the instrument they want to their plant without help earlier. - Choose the sound of the plant without help and have a rational for each of them.

Lesson 6#		
Learning objectives	Learning outcomes	Evidence for Assessment
• To classify plants according to their stem. • To recognise how people use plants.	• Classify plants according to their stem. • Recognise how people use plants. • Identify and to describe orally parts of plants.	• Observation grid

• To identify and to describe orally parts of plants. • To identify and to describe orally the parts of the flower. • To recognise different fruits and vegetables.	• Identify and to describe orally the parts of the flower. • Recognise different fruits and vegetables.	• Booklet (self-assessment and peer-assessment) • Bingo

Discourse/Text targeted	Language targeted- Non-verbal L Targeted
1. Now it's time to Natural Science so close the books and clean up the table please. 2. Do you remember what we were talking about the previous weeks? 3. Do you remember what are we going to do today? 4. What is this? 5. Do you know how is the sound of the piano? 6. Do you know how is the sound of the sax? 7. And the sound of the trumpet? 8. The drums? 9. The guitar? 10. And what is this?	**(Words in bold mean words that are emphasise by the teacher's tone)** 1. **Now** it's time to **Natural Science** so **close** the books and **clean** up the table please. *Closing the hands like closing the book.* 2. Do you **remember** what we were talking about the **previous** weeks???? *Moving the hand backwards.* 3. Do you **remember** what are we going to do **today**???? *Pointing to the floor.* 4. What is **this**???? *Pointing and holding a plastic plant.* 5. Do you **know how** is the **sound** of the **piano**????

11. Okey, now that we already know all the instrument… Let's play our musical plant. 12. I'm going to touch one part of the plant and say which part is it. If that part on your plant sound like that, raise your hand. 13. If all the parts of you plant sounds like mine, raise your hand, because it's your plant! 14. Are you ready? 15. I'm touching the *small leaf.* Raise your hand if it's the same us yours. 16. I'm touching the *big leaf.* 17. I'm touching the *stem.* 18. Remember, don't raise your hand if the previous parts are not like your plant! 19. I'm touching the *flower.* 20. I'm touching the *roots.* 21. Okay, so it's _____ plant. 22. Sounds really good your plant! 23. Do you want to come here to touch your plant?	*Playing the piano sound.* 6. Do you **know how** is the **sound** of the **sax**???? *Playing the sax sound.* 7. And the **sound** of the **trumpet**???? *Playing the trumpet sound.* 8. The **drums**???? *Playing the drums sound.* 9. The **guitar**???? *Playing the piano sound.* 10. And **what** is this???? *Playing a singer sound.* 11. Okey, **now** that we already know all the instrument… Let's **play** our **musical plant**!!!! *Pointing to the plastic plant.* 12. I'm going to **touch one** part of the **plant** and **say** which part is it. If that part on **your plant** sound like that, **raise** your **hand**. *Raising my hand.*

24. The rest, you have to identify the instrument that _____ is touching, okay? 25. So _____ you have to say, the part of the plant that you are touching, for example, I'm touching the *stem.* 26. Ready? 27. Okay it's your turn. 28. You do it great! 29. Do you want to play another plant? 30. Okay 31. Remember the rules, raise your hand if you have all the instruments. 32. Let's go! 33. I'm touching the *small leaf.* Raise your hand if it's the same us yours. 34. I'm touching the *big leaf.* 35. I'm touching the *stem.* 36. Remember, don't raise your hand if the previous parts are not like your plant. 37. I'm touching the *flower.*	13. If **all** the **parts** of you plant **sounds** like mine, **raise** your **hand**, because it's your **plant**!!!! *Raising my hand.* 14. Are you **ready**???? *Putting the thumb up.* 15. I'm **touching** the ***small leaf.*** **Raise** your **hand** if it's the same us yours. *Touching the small leaf.* 16. I'm **touching** the ***big leaf.*** *Touching the big leaf.* 17. I'm touching the ***stem***. *Touching the **stem**.* 18. Remember, **don't** raise your **hand** if the previous parts are **not** like your **plant**. *Nodding with the head.* 19. I'm touching the ***flower***. *Touching the flower.* 20. I'm touching the ***roots***. *Touching the roots.*

38. I'm touching the *roots.* 39. Okay, so it's _____ plant. 40. You're a really good plants composer! 41. Do you want to come here to touch your plant? 42. Now, the rest have to identify the part that _____ is touching, okay? 43. Okay it's your turn _____ the class it's yours. 44. Do you want to play a different plant for your classmates? 45. You only have to touch the part of the plant and say, *I'm touching…* 46. Okay? 47. Perfect, you do it amazing! 48. Now it's time to what you already know about plants, are you ready? 49. Do you now the game *Bingo!* 50. We are going to play it, but with some rules. 51. First you must remove all the stickers that you have on your card.	21. Okay, so it's **_____** plant. *Clapping.* 22. Sounds **really good** your plant! *Putting the thumb up.* 23. Do you want to **come here** to **touch** your plant???? *Moving the hand forward.* 24. The **rest**, you must **identify** the **instrument** that **_____** is **touching**, okay???? *Pointing to* _____. 25. So **_____** you have to say, the part of the plant that you are **touching**, for example, I'm touching the ***stem***. *Pointing to the plant.* 26. Ready? *Looking to* _____. 27. Okay it's your **turn**. *Looking to* _____. 28. You do it **great**! *Putting the thumb up.*

52. Can you read all the words on it? Have any of them been erased? 53. Okay, so now we are going to start the bingo, but you have to take into account that, if my face appears on the wheel, it will be a round of questions. That means that a question will be asked and the person who answer correctly... will win a bonus! 54. And remember if someone have all the card complete… shout bingo! 55. Ready? 56. Let's spin the wheel! 57. A broccoli! 58. Question time… Does anyone want to read? 59. Perfect! Take a bonus. 60. Let's spin the wheel! 61. … 62. We have a bingo! 63. Let's check it. 64. Congratulations, you say bingo! This is your prize. 65. Now it's time to assess our work.	29. Do you want to **play another** plant???? *Putting up my shoulders.* **30. Okay** 31. Remember the **rules**, raise your **hand** if you have all the **instruments**. *Raising the hand.* **32. Let's go!** *Moving the hand forward.* 33. I'm **touching** the ***small leaf.*** **Raise** your **hand** if it's the same us yours. *Touching the small leaf.* 34. I'm **touching** the ***big leaf.*** *Touching the big leaf.* 35. I'm touching the ***stem***. *Touching the **stem**.* 36. Remember, **don't** raise your **hand** if the previous parts are **not** like your **plant**. *Nodding with the head.* 37. I'm touching the ***flower***.

66. But first we must clean up. Give the cards to me please. 67. I'm going to give you a self-assessment template. 68. You have to take a colouring pencil, the one that you prefer. 69. It's the same that we were doing the previous weeks. 70. You must assess your work, so I'm going to read out loud the item and you have to colour according to your work. 71. If you think your work was wonderful, colour the most smiling face. 72. If you think it was not that bad, colour the smile face. 73. If you think you should keep working on it, the serious face. 74. If you think you need to improve a lot, the sad face. 75. Be honest with you! 76. Now I'm going to read it one by one, if you have any question, please ask me. 77. Now, if you want, you can write what do you think about it in the observation, if you would change something about the unit or the activities. 78. Perfect, did you finish? 79. Now, we are going to do the peer-assessment.	*Touching the flower.* 38. I'm touching the ***roots.*** *Touching the roots.* 39. Okay, so it's **_____** plant. *Clapping.* 40. You're a **really good plants composer**!!!! *Putting the thumb up.* 41. Do you want to **come here** to **touch** your plant???? *Moving the hand forward.* 42. Now, the **rest** have to identify the **parts** that **_____** is touching, okay???? *Pointing to* _____. 43. Okay it's your turn **_____** the class it's yours. *Pointing to* _____. 44. Do you want to **play** a different plant for your classmates???? *Putting up my shoulders.* 45. You **only** have to **touch** the part of the plant and say, *I'm **touching**…*

80. It's the same as the other grid so I'm going to read it and if you have any question tell me. 81. Now, if you want, you can write what do you think about it in the observation, if you liked to work with him/her... 82. Did you finish? 83. Great! 84. Good job!	*Looking to _____.* 46. **Okay**? *Looking to _____.* 47. **Perfect**, you do it **amazing**!!!! *Putting the thumb up.* 48. **Now** it's time to what you already **know** about **plants**, are you **ready**???? *Putting up my shoulders.* 49. Do you now the game ***Bingo****!!!!* *Putting up my shoulders.* 50. We are going to **play** it, but with some **rules**. *Pointing to the bingo cards.* 51. **First** you must **remove** all the **stickers** that you have on your card. *Removing one sticker.* 52. Can you **read all** the words on it???? Have any of them been **erased**???? *Pointing to my eye.*

	53. Okay, so now we are going to **start** the **bingo**, but you must take into account that, if my **face** appears on the **wheel**, it will be a round of **questions**. That means that a question will be asked and the person who answer **correctly**... will win a **bonus**! *Pointing to the bonus sticker.* 54. And remember if someone have all the card **complete**… shout **bingo**!!!! *Putting the hand next to the mouth.* 55. **Ready**???? *Looking to the pupils* 56. Let's **spin** the **wheel**!!!! *Spinning the wheel.* 57. A **broccoli**!!!! *Pointing to the wheel.* 58. **Question** time… Does anyone want to **read**???? *Raising up the question card.* 59. **Perfect!!!**! Take a **bonus**. *Putting the thumb up.* 60. Let's spin the **wheel**!!!!

	Spinning the wheel. 61. … 62. We have a **bingo**!!!! *Clapping* 63. Let's **check** it. *Taking the bingo card.* 64. **Congratulations**, you say **bingo**!!!! This is your **prize**. *Giving the prize.* 65. Now it's time to **assess** our work. *Pointing to the assess grid.* 66. But **first** we must **clean** up. Give the **cards** to me please. *Walking around.* 67. I'm going to give you a **self-assessment** template. *Walking around.* 68. You must take a **colouring** pencil, the one that you prefer. *Pointing to the suitcase.*

	69. It's the **same** that we were doing the **previous weeks**. *Moving the hand backwards.* 70. You have to **assess** your **work**, so I'm going to **read** out loud the **item** and you have to **colour** according to your work. *Pointing to the template.* 71. If you think your work was **wonderful**, colour the **most smiling** face. *Pointing to the most smiling face.* 72. If you think it was **not that bad**, colour the **smile** face. *Pointing to the smile face.* 73. If you think you must **keep working** on it, the **serious** face. *Pointing to the medium face.* 74. If you think you **need to improve** a lot, the sad face. *Pointing to the sad face.* 75. Be **honest** with you! *Looking to the pupils* 76. Now I'm going to **read** it one by one, if you have any **question**, please ask me. *Pointing to the grid.*

	77. Now, if you want, you can **write** what do you think about it in the **observation**, if you would **change** something about the unit or the activities. *Pointing to the observation part.* 78. Perfect, did you **finish**? *Crossing hands.* 79. Now, we are going to do the **peer-assessment.** *Pointing to the peer-assessment grid.* 80. It's the same as the **other grid** so I'm going to **read** it and if you have any question tell me. *Moving the had backwards.* 81. Now, if you want, you can **write** what do you think about it in the **observation**, if you liked to **work** with him/her... *Pointing to the observation part.* 82. Did you **finish**? *Crossing hands.* 83. Great! *Putting the thumb up.*

Outline of leading activities

- Musical plant
- Bingo

Classroom Management

Timing	Grouping	Pupils	Teacher	Resources
5’	Big group	Answer the questions.	Ask pupils some questions: - Do you remember what we were talking about the previous weeks? - Do you remember what we are going to do today?	- *Makey* - Laptop - Wire - Plastic plant
5’	Big group	Answer the questions.	Ask pupils some questions about the parts of the plant: - What is this? Ask pupils questions about instrument: - Do you know how is the sound of the piano? - Do you know how is the sound of the sax? - And the sound of the trumpet? - The drums? - The guitar? Put the instruments in the laptop.	- *Makey* - Laptop - Wire - Plastic plant

	10’	Small group	Recognize their plant according to the sound that they chose the previous day. Raise their hands if them recognise the sound.	Say out loud the part of the plant that she/he is touching. Tell them that they must raise their hands if they recognise the sound with the part of the plant.	- *Makey* - Laptop - Wire - Plastic plant
	5’	Big group	Stand up and touch the part of the plant saying, “I’m touching the …” and the part that she/he is touching. The rest of the classmates must recognise their plant.	Say how the plant works and remember to the pupils the sentence that they have to say.	- *Makey makey* - Laptop - Wire - Plastic plant
	15’	Individually	Play bingo. Recognise the picture and relate it with the word. Read out loud the questions that are on the card. Answer the questions to win joker.	Play bingo. Move the random picker.	- Bingo template - Stickers - Computer. - https://wordwall.net/es/resource/16072756/bingo
	10’	Individually	Fill the self-assessment.	Read out loud the self-assessment template and explain it.	Booklet (self-assessment)
	10’	Individually	Fill the peer-assessment.	Read out loud the peer-assessment template and explain it.	Booklet (peer-assessment)

Assessment Criteria		
All children must be able to	**Most of the children will be able to**	**Some of the children could**
- Recognise a part of the plant. - Identify some instruments. - Recognise some parts of their plant from the sound of an instrument. - Identify some of the vocabulary words that appeared in his/her bingo template. - Answer a question about plants during the bingo. - Complete most of the self-assessment template. - Complete most of the peer-assessment template.	- Recognise most of the parts of the plant. - Identify most of the instruments. - Recognise most of the parts of their plant from the sound of an instrument. - Identify most of the vocabulary words that appeared in his/her bingo template. - Answer 2 or 3 questions about plants during the bingo. - Complete the self-assessment template. - Complete the peer-assessment template.	- Recognise most of the parts of the plant. - Identify all the instruments. - Recognise the parts of their plant from the sound of an instrument. - Identify all the vocabulary words that appeared in his/her bingo template. - Answer all the questions about plants during the bingo. - Complete the self-assessment template and write some observations. - Complete the peer-assessment template and write some observations.

Lesson Overview Modified

Lessons Overview				
Lesson	Learning goals	Learning outcomes	Main activity	Assessment criteria
1	• To make three-digit additions. • To make three-digit subtractions. • To make two-digit multiplications. • To find the secret word. • To complete the sentence and find the meaning.	• Make three-digit additions. • Make three-digit subtractions. • Make two-digit multiplications. • Find the secret word. • Complete the sentence and find the meaning.	Mathematic maze	**All children must be able to…** - Organize the roles. - Complete some of the operations with help. - Finish the maze with help. - Complete the secret sentence with help.
2	• To differentiate between park, forest, orchard, and garden • To know how plants develop • To identify what happens to plants with the change of seasons • To classify plants according to the characteristics of their stem • To identify and to describe orally parts of plants • To identify and to describe orally the parts of the flower	• Differentiate between park, forest, orchard and garden • Know how plants develop • Identify what happens to plants with the change of seasons • Classify plants according to the characteristics of their stem • Identify and describe orally parts of plants • Identify and describe orally the parts of the flower	Go out and investigate in their environment and take pictures of the different plants	**All children must be able to…** - Answer some questions. - Identify what happened in the different seasons with the plants with help. - Identify the steps to follow when growing a plant with help. - Recognise some parts of a plants.

3	• To identify and to describe orally parts of plants • To identify and to describe orally the parts of the flower • To measure the dimensions of the panel • To differentiate between the different colours during the sessions • To use different materials and techniques of drawing	• Identify and describe orally parts of plants • Identify and describe orally the parts of the flower • To measure the dimensions of the panel • Differentiate between the different colours during the sessions • Use different materials and techniques of drawing	Design a plant panel a scheme of a plant using different techniques	**All children must be able to…** - Identify some parts of a plants - Identify some parts of a flower - Differentiate a few colours of the sessions - Produce a part of the scheme using a material with help
4	• To classify plants according to the characteristics of their stem. • To identify and to describe orally parts of plants. • To identify and to describe orally the parts of the flower.	• Classify plants according to the characteristics of their stem. • Identify and describe orally parts of plants. • Identify and describe orally the parts of the flower.	• Parts of a plant chard • Parts of a flower chard	**All children must be able to…** - Draw a plant with help. - Complete 1 or 2 words of the parts of the plant looking at the blackboard to write the word. - Connect 1 or 2 words of the parts of the flower. - Connect 1 or 2 pictures of types of plants.
5	• To classify plants according to the characteristics of their stem. • To identify and to describe orally the parts of the flower.	• Classify plants according to the characteristics of their stem. • Identify and describe orally the parts of the flower.	• Classify plants according to the characteristics of their stem chard	**All children must be able to…** - Recognise some parts of a flower. - Identify a different type of plant with help.

	• To recognise how people use plants. To recognise different fruits and vegetables.	• Recognise how people use plants. Recognise different fruits and vegetables.	• Go out and explore the play ground	- Answer a question of the game of the fruit and vegetables.
6	• To use different materials and techniques of drawing • To produce visual productions following the elementary guidelines of the creative process. • To classify and order primary and secondary colours and use them meaningfully in the scheme. • To organise the space of the scheme using basic concepts of composition, balance, and proportion.	• Use different materials and techniques of drawing • Produce visual productions following the elementary guidelines of the creative process. • Classify and order primary and secondary colours and use them meaningfully in the scheme. • Organise the space of the scheme using basic concepts of composition, balance, and proportion.	Scheme of the musical plant	**All children must be able to…** - Produce a simple scheme with help - Choose some colours of the scheme and organize them with help - Organise the space considering the proportions - Analise the structure of the scheme with help
7	• To differentiate between deciduous and evergreen trees. • To classify plants according to their stem. • To identify and to describe orally parts of plants. • To identify different instruments.	• Differentiate between deciduous and evergreen trees. • Classify plants according to their stem. • Identify and to describe orally parts of plants. • Identify different instruments.	• Interactive game • Basic explanation of the Makey Makey board (explanation of the arrows)	**All children must be able to…** - Identify what happened to the trees in the different seasons with help. - Differentiate between deciduous and evergreen trees with help. - Choose 1 or 2 right answers in the deciduous and evergreen game.

	• To reach an agreement with the rest the groupmates.	Reach an agreement with the rest the groupmates.		- Reach an agreement to select the instrument they want to their plant with help. - Choose the sound of the plant with help.
8	• To use different materials and techniques of drawing • To produce visual productions following the elementary guidelines of the creative process. • To classify and order primary and secondary colours and use them meaningfully in the scheme. • To organise the space of the scheme using basic concepts of composition, balance, and proportion. • To identify the different movements of the board and apply them to design the scheme	• Use different materials and techniques of drawing • Produce visual productions following the elementary guidelines of the creative process. • Classify and order primary and secondary colours and use them meaningfully in the scheme. • Organise the space of the scheme using basic concepts of composition, balance, and proportion. • Identify the different movements of the board and apply them to design the scheme	Design of the musical plant Programming basis	**All children must be able to…** - Produce a simple scheme with help - Choose some colours of the scheme and organize them with help - Organize the scheme organizing the cables of the programming with help - Explain the rationale of the distribution with help
9	• To classify plants according to their stem. • To recognise how people use plants.	• Classify plants according to their stem. • Recognise how people use plants. • Identify and to describe orally parts of plants.	• Musical plant • Bingo	**All children must be able to…** - Recognise a part of the plant. - Identify some instruments.

	• To identify and to describe orally parts of plants. • To identify and to describe orally the parts of the flower. • To recognise different fruits and vegetables	• Identify and to describe orally the parts of the flower. • Recognise different fruits and vegetables.		- Recognise some parts of their plant from the sound of an instrument. - Identify some of the vocabulary words that appeared in his/her bingo template. - Answer a question about plants during the bingo. - Complete most of the self-assessment template. - Complete most of the peer-assessment template.

Booklet

GROUP 1

Instructions:

To find the secret word, you have to solve these operations:

1) 6X7
2) 4X8
3) 6X8
4) 57+93
5) 237-202
6) 645-425
7) 89X3
8) 38X5

Write the secret word that appeared in your maze.

The secret word is _____.

Write the secret sentence that all the words make.

The sentence is...

“_____”

What does it mean?

_____

_____

_____

_____

_____

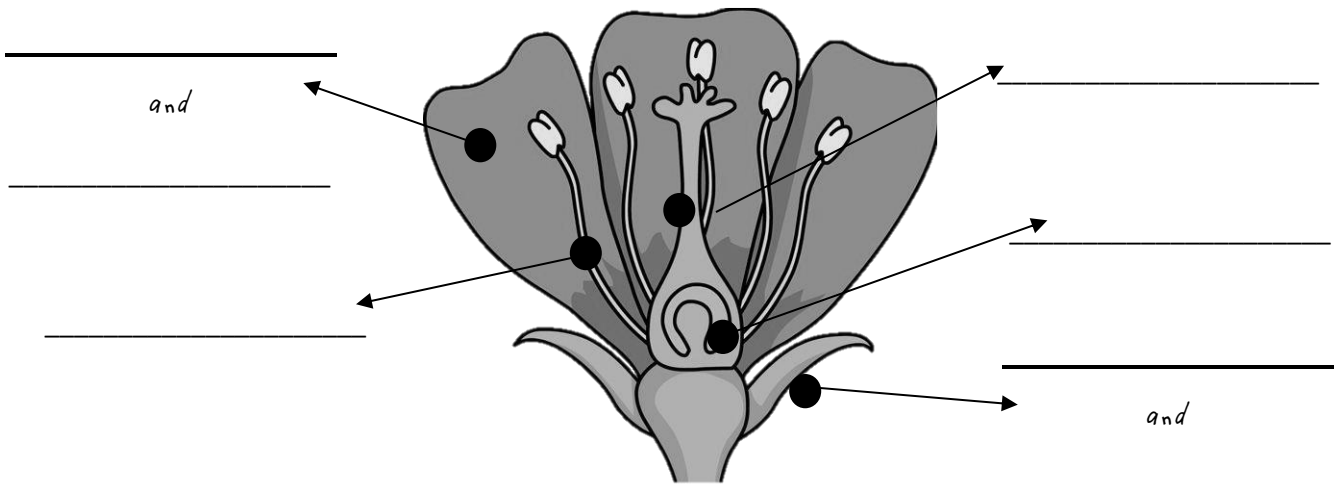
_____

1. Draw a plant.

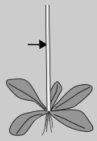
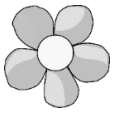
2. Listen and complete.

- The _____ make nutrients for the plant using sunlight and air.
- Many plants also have _____. They produce seeds to produce new plants.
- The _____ grow down into the soil. They absorb minerals and water.
- The _____ supports the plant. It transports water from the roots.

3. Complete the parts of a flower.



4. Choose an instrument for each part of a plant.

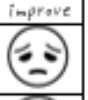
	 Piano	 Sax	 Drums	 Trumpet	 Guitar	 A singer
Small leaf 						
Big leaf 						
Stem 						
Flower 						
Roots 						

5. Draw your music plant.

Name: Date:

SELF-ASSESSMENT

How did I do it?

BEHAVIOUR	My best work	Good job	Working on it	I need to improve
I follow the teacher's instructions.				
I listen when others are talking.				
I participate in class discussions.				
I get my work done on time.				
I try to complete my work independently.				
I ask for help when I don't know what to do.				
I try my hardest all the time.				
I work well with my classmates.				
CONTENTS				
I identify the different parts of a plant.				
I identify the different parts of a flower.				
I differentiate between bush, grass and tree.				
I differentiate the parts that we eat from a plant.				

Observations:

_____

My name: Date:

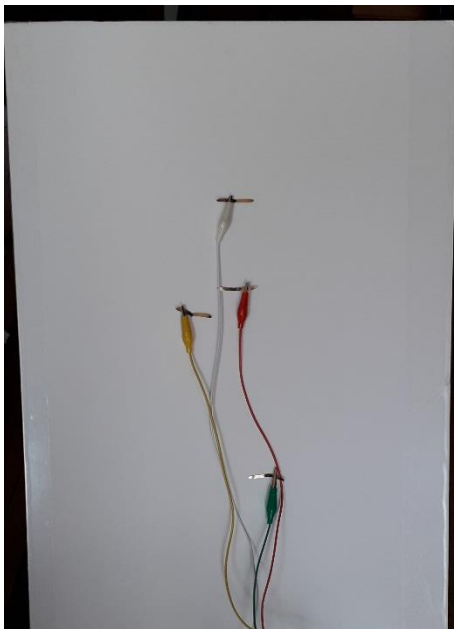
I am assessing:

PEER-ASSESSMENT

	My best work	Good job	Working on it	I need to improve
My partner made a lot of good suggestions.				
My partner was on task for most of the time we worked together.				
My partner was open to my suggestions.				
My partner knew what was expected of him/her.				
I was able to complete my tasks effectively as a result of working with my partner.				
He/she ask for help when he/she doesn't know what to do.				

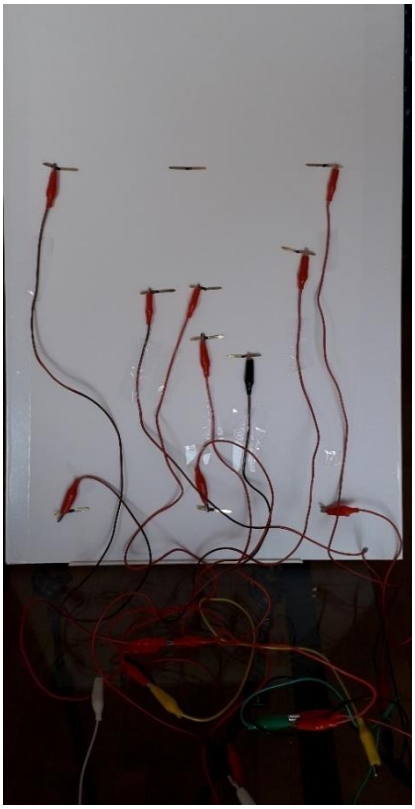
Observations:

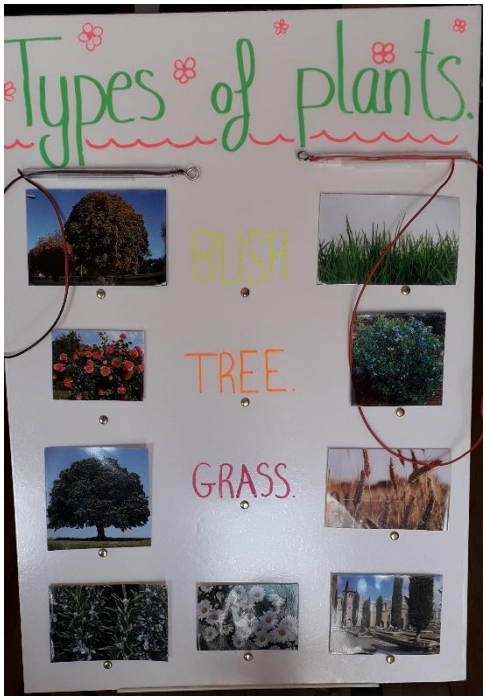
[Activities]

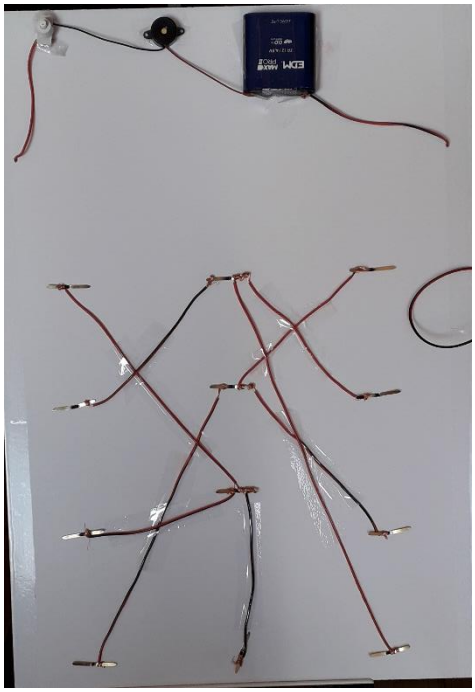


Parts of a plant panel.

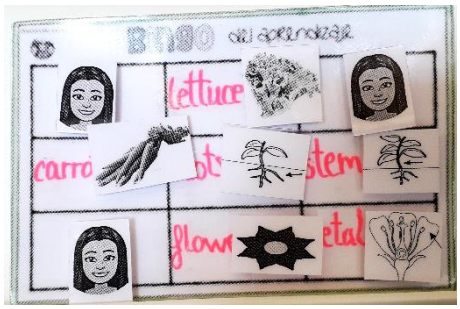
Parts of a flower panel.

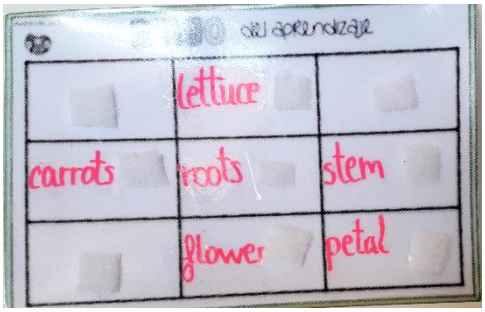






Types of a plants panel.





Bingo cards.

Evaluation

MAZE' RUBRIC

GROUP 1	A Ainoa					B Ariadna					C Teo					D Ainara				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
- Make three-digit addition																				
- Make three-digit subtractions.																				
- Make two-digit multiplication.																				
- Complete simple multiplications.																				
- Complete the secret sentence.																				
Observations:																				

GROUP 2	A					B					C					D				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
- Make three-digit addition																				
- Make three-digit subtractions.																				

Observation grid of the first lesson.

FLOWER GRID

GROUP 1	A					B					C					D				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Draw a plant according to the given instructions.																				
Identify and describe orally parts of plants.																				
Relate the names of parts of plants with the picture that correspond.																				
Identify and describe orally the parts of the flower.																				
Relate the names of parts of flowers with the picture that correspond.																				
Classify plants according to the characteristics of their stem.																				
Observations:																				

GROUP 2	A					B					C					D				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Draw a plant according to the given instructions.																				
Identify and describe orally parts of plants.																				
Relate the names of parts of plants with the picture that correspond.																				
Identify and describe orally the parts of the flower.																				
Relate the names of parts of flowers with the picture that correspond.																				
Classify plants according to the characteristics of their stem.																				

Observation grid of the lessons 2 and 3.

MUSICAL PLANT GRID

GROUP 1	A					B					C					D				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Classify plants according to their stem.																				
Recognise how people use plants.																				
Identify and to describe orally parts of plants.																				
Identify and to describe orally the parts of the flower.																				
Recognise different fruits and vegetables.																				
Answer properly the questions about plants during the bingo.																				
Relate the word with the picture in the bingo.																				
Complete the self-assessment.																				
Complete the peer-assessment																				
Observations:																				

GROUP 2	A					B					C					D				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Classify plants according to their stem.																				

Observation grid of the rest of the lessons.