

Facultad de Educación Palencia

GRADO EN EDUCACIÓN PRIMARIA TRABAJO FIN DE GRADO

"THE DEVELOPMENT OF MEDIATORS IN THE ENGLISH SCIENCE CLASS"

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ABSTRACT:

This work tries to show a pack of useful resources to be used in the area of Science in a bilingual school. The resources are divided in learning mediators and final task because they are closely related but they are different. The learning mediators are an important support for pupils to complete the final task. These resources will not be useful if teachers do not follow a methodology based on task-based method and if they will not wish to develop in pupils their own learning process in which they can build up thinking skills to allow them to grow fully. All the resources I used have been analyzed in order to show their function and the possibilities to create learning which develops language and non-language contents which are collected in the Spanish Official Curriculum for primary education.

KEY WORDS: Thinking skills, learning mediators, task-based learning method and final task.

RESUMEN:

Este trabajo trata de mostrar un conjunto de recursos que pueden ser utilizados en el área de Conocimiento del medio en un colegio bilingüe. Los recursos están divididos en mediadores de aprendizajes y tareas finales porque ambos están estrechamente relacionados pero son diferentes. Los mediadores de aprendizaje son un soporte importante para que los alumnos sean capaces de completar la tarea final. Todos estos recursos no serían útiles sin el uso de una metodología adecuada, en este caso centrada en el aprendizaje por tareas y pensada para que los alumnos desarrollen su propio proceso de aprendizaje, en el que se desarrollan sus habilidades de pensamiento indispensables para el desarrollo integral del alumnado. Todos los recursos que he diseñado y usado dentro del aula han sido analizados para mostrar cuál es su función y sus posibilidades para trabajar con ellos los contenidos lingüísticos y no lingüísticos que se recogen en el currículum oficial de España para Educación Primaria.

PALABRAS CLAVE: Habilidades de pensamiento, mediadores de aprendizaje, aprendizaje basado en tareas y tarea final.

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1. INTRODUCTION

This work has been done with the objective of presenting a practical proposal based on tasks and learning mediators that a teacher can use in a lesson of Science. I have decided to work in learning mediators because I have done my internship in a CLIC public school in Palencia and I had to create many materials for the lessons. Those materials are not simple cardboards but they are learning tools which help children to organize their learning process.

Although I have worked on how to create learning mediators in my degree, I had not had the opportunity to put them in practice until the Practicum II; it was in that moment when I decided to lead my work towards this topic; because I was in a real context in which to base my work and assess the results.

Nowadays, there is not still only one clear methodology defined to be used for bilingual schools in Spain; so there are many methods and resources to use in the class. Following my mentor work during my internship I selected a type of methodology to adopt in the lesson.

And I have also had in mind some pedagogical theories in order to create useful resources for pupils. Besides, I wanted to reflect the entire process that teachers have to follow to create useful materials because there are many resources in their hands. However, they must be adapted because pupils are different and teachers have to take into account the necessities and abilities of all of them. It is something that seems so easy, when you see it on the wall of a classroom, but that needs a great period of reflexion and adaptation by the teacher.

In addition, I am working with the learning of a foreign language so the learning mediators are thought not only to develop Science contents but text structure too. Because in first cycle I did not work with grammar, I worked with text structure in order to give sense to everything that pupils have to reproduce.

Finally what I have tried to show with my work is that teachers teach their pupils to learn and this has many connotations because we not only transmit them knowledge but we teach them to think, to broaden their capacities in order to be more and more autonomous and to develop a critical thinking which is in demand for our society.

2. AIMS

The main objective of this work is to design a set of tasks and learning mediators to be used in the area of Science in first course of Primary Education. In other words, I will try to offer a bank of useful materials to develop in pupils the scientific thinking and to help them to create their own learning process. I have based this practical proposal in a theoretical background which is made up on many pedagogical theories in the educational area. Besides, the practical proposal is also based on a specific context and class group where I have put it in practice.

With this work I want to get some professional competences that are compulsory to be an English teacher. These are my aims with this work:

- To know the main teaching currents about teaching English to elementary school children. To apply these currents in an effective way, identifying the best action points in each one.
- To know and perform the Primary Education Official Curriculum, specially, the language and science areas.
- To stimulate in pupils the metacognitive and cognitive development to acquire a
 new language, across relevant tasks which have are meaningful and are related
 with the pupils' reality.
- To be able to plan a syllabus in a foreign language, English in this case. To elaborate teaching strategies, different types of activities and materials based on the pupils needs.

3. MOTIVATION BEHIND THE STUDY

Due to the fact that our society is changing and it is more and more multicultural, the government have elaborated bilingual policies to apply in schools, where bilingual programmes have been promoted in order to give the students the possibility of being able to be proficient in communicating in different languages, especially Spanish and English.

The Spanish bilingual programmes consist on teaching the contents of non-language subjects such as Science, Arts and Crafts and Physical Education, in a foreign language.

However, the implementation of a bilingual programme in a school requires teachers who have good abilities in English language and knowledge about how to work with a multilingual method. Besides, the resources and materials that are available in our country are provided by editors, following the law; they publish books to help teachers with their work but sometimes they focus on grammar and rules.

Books should not be the only resource that a good teacher should use to teach because books cannot be adapted to the specific contexts that are found in schools. So, teachers in bilingual programmes have to look for materials that are useful to develop the non-linguistic contents and the foreign language at the same time.

There are many theories that offer different methodologies but there are few created materials. It is true though, that nowadays many resources and materials can be found on Internet; there are many pages that have been made by English teachers where they upload the resources that they have used in their lessons. Although those are excellent materials there is always a need for adaptation as in some occasions they are designed for English children. That will make them difficult for Spanish children who do not have the same handling of the English language than English pupils of the same age. So what is really important is to take into account the skills, attitudes, needs and interests of the students to be able to deal with the learning of a second language.

As a conclusion, the creation of materials is part of an English teacher labour, so it is part of her competences. I will try to define a methodology that allowed me to create some materials to develop the linguistics and non-linguistics contents in six-year-old children in a bilingual program.

4. THEORETICAL BACKGROUND

Firstly we should begin explaining what a learning mediator is. A learning mediator is a tool that teachers give to pupils in order to help them in their learning process. Learning mediators show concepts collected in simple schemes which help the pupils to organize different information in their minds. Besides it is a good resource to keep the attention of the students because they can focus it in a physical and manipulative object. Moreover the mediators make pupils be more autonomous and motivated because they can work by themselves and they can solve their problems only with the support of a

mediator. Finally, the learning mediators help pupils develop their thinking skills because they create their own thinking and they can organize their mind in their own way.

I have based my practical proposal in different theories that are meaningful to the methodology that I have followed in order to create the learning mediators.

4.1. Task-based learning

The task-based learning is a pedagogical method based on tasks. There are many authors who have worked and investigated on this method. So I will refer to some definitions of "task", that is a basic idea to understand this way of working.

Firstly, I have to say that I am referring to a task as a pedagogical task because this is the area where this method is. So, these are some definitions of task:

"..an activity or action which is carried out as the result of processing or understanding language (i.e. as a response). For example, drawing a map while listening to a tape, listening to an instruction and performing a command may be referred to as tasks. Tasks may or may not involve the production of language. A task usually requires the teacher to specify what will be regarded as successful completion of the task. The use of a variety of different kinds of tasks in language teaching is said to make language teaching more communicative . . . since it provides a purpose for a classroom activity which goes beyond the practice of language for its own sake."

(Richards, et al. 1986: 289)

"...any structured language learning endeavour which has a particular objective, appropriate content, a specified working procedure, and a range of outcomes for those who undertake the task. 'Task' is therefore assumed to refer to a range of work plans which have the overall purpose of facilitating language learning – from the simple and brief exercise type, to more complex and lengthy activities such as group problemsolving or simulations and decision-making."

(Breen 1987: 23)

"A task is a work plan that requires learners to process language pragmatically in order to achieve an outcome that can be evaluated in terms of whether the correct or

appropriate propositional content has been conveyed. To this end, it requires them to give primary attention to meaning and to make use of their own linguistic resources, although the design of the task may predispose them to choose particular forms. A task is intended to result in language use that bears a resemblance, direct or indirect, to the way language is used in the real world. Like other language activities, a task can engage productive or receptive, and oral or written skills and also various cognitive processes."

(Ellis 2003: 16)

Finally, the last definition that I considered important to share is by Jane Willis (1996):

"a goal-oriented activity in which learners use language to achieve a real outcome. In other words, learners use whatever target language resources they have in order to solve a problem..."

After checking all these definitions, I have developed my own definition of task that has been the base to create the tasks of my practical proposal. For me a task is an activity in which pupils have a clear goal to achieve, pupils are the center of the learning process because they are autonomous in doing the task. Pupils can use all their personal experiences and the resources, which the teacher gives them in order to help them overcome their possible problems in the task performing, to do the task.

David Nunan (2014: 35) defines seven clear principles that are basic for the elaboration of a task- based approach, I will define them first, and then I will explain them with my own words.

1. <u>Scaffolding:</u>

"Lessons and materials should provide supporting frameworks within which the learning takes place. At the beginning of the learning process, learners should not be expected to produce language that has not been introduced either explicitly or implicitly."

I will talk and reflect later about the Scaffolding term because I consider that it is a basic idea in my work. In relation with this principle David Nunan wants to say that

teachers have to give the pupils the necessary support in order to achieve the learning goals. The amount of materials that the teacher gives to the pupils at the beginning is bigger than at the end of the learning process, because those materials or learning mediators help pupils to create a mental scheme where they assimilate processes and knowledge. When pupils have assimilated new knowledge the different supports that the teacher had given them have to disappear little by little in order for the learning process to be completed because if it is maintained too long, the learners will not develop the independence required for autonomous language use.

2. Task dependency:

"Within a lesson, one task should grow out of, and build upon, the ones that have gone before."

The task-based learning is a process in which all the tasks are linked and you need to work all of them in order to achieve the final task. It is a complete process; the tasks are not isolated activities. Besides, the tasks evolve because at the beginning of the learning process, the task will be receptive what means that pupils have to receive information and develop specially listening and reading skills; when the process progress the task will be productive where pupils have to do a productive work based on writing and speaking skills.

3. Recycling:

"Recycling language maximizes opportunities for learning and activates the 'organic' learning principle".

When pupils acquire a determined linguistic item in an area, it will be used in other context and area. What I understand in this principle is that the contents of different areas are connected, for example I worked with adverbs of time in order to create a story in English and I used those adverbs to explain the process on an experiment, so what I try is that pupils use what they learn in different contexts.

4. Active learning:

"Learners learn best by actively using the language they are learning."

This principle is based on the experiential learning and defends that pupils learn better by doing through their own knowledge than having it transmitted by the teacher. If we take this principle into account in teaching languages what it means is that it is important to give the pupils the opportunity of using the language. That does not mean that the teacher is not important but on the contrary, the teacher is an important mediator in the learning process and it is the reference for pupils.

5. <u>Integration:</u>

"Learners should be taught in ways that make clear the relationships between linguistic form, communicative function and semantic meaning."

In the teaching of languages these aspects of the language have been separated but it did not work effectively. What task-based learning method tries is to teach the language with completely sense, and it can be done if you work with the text typology. When you work a text, you are working with all levels of the language and it is a contextualized and therefore useful learning.

6. Reproduction to creation.

"Learners should be encouraged to move from reproductive to creative language use"

In reproductive tasks, learners reproduce language models provided by the teacher, the textbook or the tape. These tasks are designed to give learners mastery of form, meaning and function, and are intended to provide a basis for creative tasks. The type of task that I have designed to work with first course pupils is reproductive task because they are not able to create a task by themselves due to the fact that they have not got enough knowledge of the language and the mature mind to do a creative task which are task where pupils use their knowledge to develop it in new ways.

7. Reflection

"Learners should be given opportunities to reflect on what they have learned and how well they are doing."

This principle says that it is important that pupils reflect about their work and they have to be able to realize that they can do things and they have to improve in other things. It is the final task of a process; we can name it as a self-assessment. This reflection makes

the pupils be interested in their learning process and be responsible for getting their goals.

So, I have explained what a task is and what the main principles are that we have to follow in order to apply a task-based learning method. Now I would like to say what things we have to take into account in order to design a task, and they are based on the theory of Shavelson and Stern (1981: 478):

- Content: the subject matter to be taught.
- Materials: the things that learners can observe/manipulate.
- Activities: the things that learners and teachers will be doing during a lesson.
- Goals: the teachers' general aims for the task.
- Students: their abilities, needs and interests are important.
- Social community: the class as a whole and its sense of 'groupness'.

In my practical proposal I will show the materials that I have designed for different activities into the lessons. But when I created the materials, I had to take into account the contents which I wanted to work with the pupils and the goals that pupils have to achieve. Besides, the materials are adapted to the students, their abilities and interests, and I have designed group activities in order to create a social community into the classroom. So, all of these elements, which Shavelson and Stern defined as essentials, are connected to each other and create a complete structure to develop a task-based learning method.

A pedagogical theory, which is related to the idea of taking into account the abilities and characteristics of the students, is Gardner's multiple intelligences theory. What Gardner (1983) said in his theory, in a simple way, is that there is more than one type of intelligence; specifically he refers to nine different intelligences. And this means that there are many ways to learn and each of us has our own set of intelligences as well as our own way of learning; due to this fact we, as teachers, have to give the pupils the opportunity of learning in different ways being aware of their different ways of learning and it is as easy as giving them a variety of activities to work the same content.

This is why I created visual mediators; six years old pupils need a visual support in order to understand the teacher's oral discourse, especially in a second language.

Besides, they have a short attention span so the mediator helps them to re-enlist to the lesson. The mediators are manipulative too, so we offer them the possibility of touching and even one of the mediators was worked through a song. Therefore the mediators work with the different intelligences (Spatial intelligence, musical intelligence, language intelligence, kinetic intelligence, naturalistic intelligent...) and allow pupils to learn in the best way.

4.2 Vygotsky theory: ZPD and Scaffolding

The "Zone of Proximal Development" (ZPD) is Vygotsky's term for the range of tasks that a child can complete independently and those completed with the guidance and assistance of adults or more-skilled children. The lower limit of ZPD is the level of skill reached by the child working independently. The upper limit is the level of additional responsibility the child can accept with the assistance of an able instructor.

Vygotsky (1978) focused on the child-in-context acting in a situation or event as the smallest unit of study. Vygotsky defined "context" as a child's culture and how they express their culture. Further, the child is continually acting in social interactions with other people. Vygotsky argued that if we observe the child development without his cultural context we will get a distorted view of his development, and it often causes that we consider the child has conduct problems due to his mind however it could be the context what produces those problems.

What I wanted when I created a learning mediator is to expand the ZPD of the children to give pupils the possibility of being able to do all the tasks independently because they only needed to go to the mediators to get the necessary help to complete the task. I realized that pupils can work independently when they work in things that they knew before, so every learning have to start from their personal experiences and of course as Vygotsky said, in their context. As it would be seen in my practical proposal all the tasks are based on the pupils' reality and the mediators are a support for them.

In addition to the ZPD there is another interesting point in Vygotsky's theory that supports the idea of creating learning mediators; this idea is the Scaffolding. As it was said before the Scaffolding is a basic principle to develop the task-based method. Scaffolding is a term that refers to all the resources and displays that teachers give to the pupils in order to let them be autonomous and independent learners.

My final proposal tries to display what types of Scaffolding or mediators I would give to pupils to complete the final task that I have designed for them. One important point in the scaffolding is that teachers have to be conscious of the pupils' learning because they are the managers who have to remove the mediator when the learning has been assimilated. If the teacher removes the mediator before pupils have assimilated the knowledge the learning will not be completed, so pupils will forget it. On the other hand, if the teacher does not remove the mediator when the learning process has finished pupils will be dependent of the mediator forever.

Vygotsky also defined a theory about language acquisition. He divided the learning of a language in different steps which have several sort of speech:

- **Public speech**: exchange communicative between two or more people.
- **Private speech**: internal speech, when the people talk aloud to themselves. Vygotsky believed that children who engaged in large amounts of private speech are more socially competent than children who do not use it extensively.
- **Inner speech**: speak with yourself. Inner speech is not an internal aspect of talking; it is a function in itself.
- **Verbal thought**: the way of thinking, due to your own culture.

I had this theory in my mind when designing the mediators and especially the final tasks because the first part of my work as a teacher was defining the text that it will be used in the lessons. In other words I have to define my public speech in order for pupils to assimilate it and to create their private speech. Sometimes, the public speech it is not exactly the same as the private speech but it is the teacher who connects both. As it will be shown in the final tasks designed, an important part of them is the text that I wanted pupils to produce, that sometimes (as in plants) it is not the same that the text that I produce as teacher.

Finally the common thing between the ZPD, Scaffolding and language acquisition of Vygotsky that is very important for my work is that what I look for is that pupils develop their own way to analyse the world and to express themselves into the context in which they live. So, I wanted to help them to think and reflect about their reality and this fact lead me to the next point of this work, the thinking skills.

4.3 Thinking Skills

Traditional education approaches have centred teaching in the transmission of contents, especially theoretical contents. However, the education is changing and we expect more things for our students than memorizing some contents. In "How to Create and Develop Thinking Classroom" Mike Fleetham (2003) writes:

"In our evolving world, the ability to think is fast becoming more desirable than any fixed set of skills or knowledge. We need problem solvers, decision makers and innovators. And to produce them, we need new ways to teach and learn. We need to prepare our children for their future, not for our past"

What Fleethan is expressing is the need to teach our pupils to think. This is the start point to support the teaching of thinking skills. Firstly, I have to explain what we understand for thinking skills.

Thinking skills (Mayer, R, 1988) are those elements that we need for our integral development, they are essential to learn. Besides, we can understand thinking skills as cognitive skills which people develop in teaching-learning process. Therefore, in a global vision of thinking skills we can say that thinking skills are mental processes which help us to assimilate new information and experiences in our mental scheme and make us use our knowledge in the best way in order to solve the problems we have.

The teacher has to be able to help the pupils develop their thinking skill. In first cycle, I have tried to help them create mental schemes where they can organize the different knowledge that they assimilated across their learning process. Learning mediators are simple schemes which pupils were given to organize their thinking.

An example to explain this fact is that the pupils' brain is a big shelf where children have different boxes. The teacher has to give the pupils strategies in order for pupils to be able to organize the content of the boxes following a simple scheme. At the beginning, the boxes are a bit full but this new knowledge will fill them up well organized because the pupils will have clear mental schemes. Besides, the different mental schemes will be linked together because we will work with different experiences and knowledge at the same time.

5. METHODOLOGY

The methodology that has been used for the development of this work can be divided in two parts. The first one is composed of a theoretical description based on important pedagogical theories such as task-based learning (Nunan, D, 2004), multiple intelligences theory (Gardner, H. 1983) or language development (Vugotsky, L. s. 1985). The sources that have been consulted are related with the main points of the theoretical background such us thinking skills, multiple intelligences, scaffolding, task-based method... The bibliographical search for this theoretical part of the work has been carried out mainly through specialized databases that provide access to numerous publications and by consulting text books in printed and digital format, as well as various websites.

The second and practical part of the work has to do with a teaching proposal for pupils of Year 1 of Primary Education in the subject of Science. This proposal consists of designing a final task for each topic and the different illustrators that let the pupils complete the final task by themselves. The practical proposal is closely linked with the theoretical background because it is based on the task-based method where the pupils are autonomous in their learning. Besides, the teacher is an important mediator for the pupils and he is the one responsible to give the pupils the correct scaffolding and resources which help the pupils to achieve their final task by themselves.

Finally there is reflection about the work, especially about the practical proposal because it has been put in practice in a real class, so, I have observed the advantages and disadvantages of applying this type if methodology.

6. PRACTICAL PROPOSAL

I have designed two practical proposals to demonstrate that a methodology based on task-based method is an effective way of learning. I have put in practice one of the following proposal about Plants and the other proposal is the result of reflecting about the mistakes on plants and I have designed an improved proposal for the topic of Water.

I did my internship in the Public School Padre Claret in Palencia. This school is a bilingual school with a bilingual section since 2008. The bilingual programme has been

expanding during the last six years; nowadays the school offers Science and Arts and Crafts completely in English language.

I have worked in this school with the English tutor on the first course of primary education and I used the task-based learning method to develop thinking skills in the pupils.

To understand the practical proposal I am going to describe the context of the class, their specific characteristics and I am going to talk about the different routines and lines of work that they have already assimilated.

6.1. The context

We worked with pupils of first course of primary education. My mentor was the tutor of 1°A class. Year one A group is composed by 25 pupils; all of them have their particularities but in general the class is very homogenous. When you plan an activity for them 80% of pupils are in the "most of the pupils can do" level of attainment. They are 6 and 7 years old. Some characteristics in these ages which we have to take into account are:

- They are growing and changing gradually, their bones and muscles are
 developed and they have improved in their movements and coordination; they
 especially control with their hands the different objects which they use every
 day in the class such as pencils, crayons, scissors...
- They have a great physical strength and they are very active, they need to move and enjoy with their body, so we have to develop kinetic activities to cover this necessity of moving.
- They use their bodies to learn, they need to touch and observe everything they
 are learning because they have not developed an abstract thinking; this is the
 reason to offer then the opportunity of experiment and use the scientific method
 in the classroom.
- Their ability to concentrate is still reduced; they have already started a new school stage and the need new routines that help them to control themselves. We

need many routines and many different activities in a lesson if we want that pupils follow the class most of the time. Task-based method gives us the opportunity to give our pupils different moments in the lesson in which they have to use different skills.

- Friendship is very important for them and they prefer to work in groups than
 individually. The tutor has worked with them with different groupings and there
 is always a moment to develop individual work and another moment to share
 and work in group.
- This is the year when learning problems can begin to be visible. It is important that the teacher deals with those problems; however, it is more important to maximize the great skill of these pupils over their problems. Working in groups is a good way to encourage these pupils and motivate them to learn.
- Pupils are learning how to write, although in the second term they already wrote fairly well (they know how to separate words and create sentences) it is difficult for them to write in English because words are not written as they sound. It is the main aim of our illustrator to help our pupils to write the words which they know and really understand.
- The fear to make mistakes also starts in these ages because they really realise that they are in a new stage where they are judged and graded. The learning mediators that are used in the class give our pupils the confidence that they need. When pupils are confident they are really motivated to learn.
- They have a close relationship with the teacher because the teacher is their support point. They are very loving and respectful with the teacher, they need to feel loved and supported but it does not mean that they do not have to be punished sometimes, because they need limits.

6.2 The methodology

This work is clearly based on the task-based method which means I have designed a final task which pupils have to do at the end of the unit and I have also designed the

different mediators that pupils need to achieve a good result in the final task. The different contents were developed during the entire unit but the mediators were worked in determine time. However, I set the mediators on the walls after I have used them in order for pupils to refer to them when they needed it. There is a process in which the display I designed turns into a learning mediator, and a main part of that process is to create the mediator with the pupils or use it to work certain knowledge.

The final task is an individual task because it is the main resource for the teacher to do the assessment of each pupil. However the different activities through the lesson have been done in groups, big group or three students groups. Everything that the pupils need to complete the final task is displayed on the learning mediators.

Pupils are the centre of the learning process; the teacher is only a learning mediator for them. However, there is a part of the lesson in which the teacher explains the task or reminds in big group important information to develop the tasks. Besides, the teacher expends more time in explanations at the beginning of the course, when she has to establish the routines in the class, than in the second term because children already know the methodology used. This is the scaffolding that the teacher gives to the pupils to make them become more autonomous and responsible of their work.

When pupils are developing the different tasks, which can be individual or group ones, the teacher is observing them working, in order to see their progresses and help them when they have some problems to complete the task or if they make mistakes.

Working in different groupings lets the pupils help each other. Pupils will then learn how to work in groups and develop social skills, such as respecting different opinions, cooperation, taking decisions in group, reaching agreement and helping other people. Social skills are very important nowadays because the Spanish Official Curriculum expresses the necessity of developing good citizens who know how to work in group and live in society. Besides, working in groups is a good way to deal with the diversity of the class because the groups will be heterogeneous, so children overcame their learning problems and strengthen their good capacities.

6.3 Topics

During my internship period I worked in a Science topic of: Plants. I designed the Plants unit according to the methodology that my mentor used in the class which I observed during my first week in the school. In this work I will describe the final task and the mediators which were used in Plants. Besides, a new proposal will be also shown about Water, based on the results got in the implementation of the Plants unit in the class.

The first step in the process is to classify the contents that must be developed because they are compulsory; these contents are specific of each unit but they are based on the Spanish Official Curriculum, specifically, in the area of Science, contents for first cycle, Block 1 "Geography. The environment and its protection" and Block 2. "Science. The variety of living things."

PLANTS			WATER		
*	Cycle of life of living things.	*	Places where water is found.		
*	Parts of the plants: the roots, the	*	Difference between salt and fresh		
	stem, the leaves and flowers.		water.		
*	Basic needs of plants: sunlight,	*	Places with salt water and places		
	soil, air and water.		with fresh water.		
*	Growing process of a plant.	*	States of water.		
*	Changes in plants during the	*	Changes of state.		
	seasons.	*	Uses of water.		
*	Places where plants grow.	*	Actions to save water.		
*	Different uses for plants.				

These are only the contents but I look for learning process, so, what I needed was to define clear aims which pupils have to achieve in each unit across different types of activities. Each process required a determined activity which will help children to get the aim.

PLANTS	WATER	
 Organize the cycle of life. Identify the different parts of a plant. Recognize the needs of a plant. Sign the growing process of a bean plant. Identify different seasons depending on how plants are. Link specific plants with their habitats. 	 WATER ❖ Identify different places where we can find water. ❖ Discover the differences between salt water and fresh water with a simple experiment. ❖ Record the changes of states of water. ❖ List and draw different uses for water. ❖ Classify actions to save or 	
Classify plants depending on their uses.	waste water.	

The new educational law in Spain has designed for each course not only the contents in Science but the assessment criteria and learning standards too. Learning standards refer to the process that the pupils have to be able to do, so the new law gives us a more detailed idea about the learning process that we have to follow. And it really has a more scientific point of view in the work of science than the previous before.

Once the processes that our pupils have to get are defined, it is easier to create different activities to develop them. Besides, you can also think about what types of materials you need. The final task is the union of all the processes, because we need to develop the entire different subtasks if we want pupils to complete the final task correctly.

6.3.1 Plants

We developed this unit taking on account the fact that spring was coming and they were going to see the change of season through the plants around them. They were working about living things too. They had worked with the human body and animals, so, plants are the last living thing they had to work about. Besides, the pupils, before this unit, have had some experiences in their life about facts related with looking after plants and they paid attention to the differences in plants during seasons. They also knew about taking care of plants because they have plants in their houses; if the trees in their parks have leaves or not, depending on the season or the different plants that they eat in their daily life. In Infant education they have worked with this topic too.

6.3.1.1 The Final Task

The final task was a Plant Book (Appendix 1) which is a scientific book in which each chapter is related with the contents of the unit.

The book is organized as a real book: it has a cover and back cover; in each chapter there is a title with the important issue emphasized in black writing, there are different texts and pictures to accompany the text...It is important because in Science they are learning about Science contents but they are learning about literacy too, so it is important that we select a correct format in order to show children real things.

The book has different types of activities in order for it to be enjoyable and give the pupils more possibilities when they work. There were activities to write, draw, color, complete, cut, paste... Besides, in the first cycle it is important to give children the possibility to do something when they have finished the final task, in this case the book, because in this cycle the different speeds at which children work are remarkable. So, once they have finished, they could color the cover and the back cover. Children in first cycle love coloring and it is a way to improve their manipulative skills too.

The text in the book is the text that we have work in class and there were clear spaces to complete the text. Those spaces could be filled out with the help of the illustrators that have been worked with in the different lessons and which were on the walls of the class after. The images were similar to the pictures that appeared in their book or the images that we were using in the lessons, because they have their mental image of each thing and they create these images during the lessons so the images in the final task have to be similar if we want our pupils to relate knowledge. In addition, pupils have some spaces where they have to draw; they need to have a clear image about what they have to draw, so it is the responsibility of the teacher to work in the different lessons with clear images that pupils can associate.

This book will be given to the pupils in the last lesson of plants unit and it will be show their individual work. However, there was another option in which children could complete the book chapter by chapter in order to collect the knowledge that they have works in the previous lesson.

6.3.1.2 Learning mediators

When there is a clear idea about the text that is needed for the final task, designing different mediators that help the pupils understand the text production in the class is the next step to be done.

A learning mediator is not a fixed resource but it changes as pupils assimilate knowledge.

I have developed a mediator per chapter of the final task. They can be found in Appendix 2. I will explain them one by one to show how I created them and the purpose that they had.

1. Cycle of life mediator.(link to the mediator in appendix2)

This mediator is very important because it has two roles. On the one hand it is the starting point of the unit that connects the previous units with the unit of the plants. On the other hand it is the scheme of the entire unit because the contents that we worked in plants are exactly the same as the parts of the mediator. In other words, each part of the cycle of life is a part of the unit:

- Born: Where plants are born?
- Grow: What do need plants to grow? The growing process of a plant. Parts of the plants.
- Change: how do plants change during the seasons? Where do plants live?
- Reproduce: How do plants reproduce?
- Die: We use plants for...

The shape of the mediator is circular because it stands for a cycle which does not have an end, because it is always repeating.

Pupils had worked with the cycle of life when they worked with animals, so I created this display with them as a manner to link the previous units with the plants unit in order for pupils to realize that plants are living things too. I worked with this display in the first lesson. I created the display little by little through what pupils remembered and all they knew about living things and their cycle of life. I stuck the title in the middle of the blackboard and I wrote 5 numbers into a rectangle. Then pupils gave me suggestion

about what words they would write in the spaces. Finally, they got to complete the display.

I did a CLIL activity to support the knowledge. They have to order the cards of cycle of life to complete the worksheet. They really follow a clear process and with the activity they really assimilated the idea.

2. Needs of a plant.

This display is linked with the mediator 1 (Cycle of life) because we worked the needs of the plants as the needs that a plant have to cover to grow, so that a physical I really connection was established with mediator number one.

The mediator is very simple but it gives the pupils the idea that was needed: to connect "growing" with the different needs to be fulfilled. The final mediator has got written cardboards but when I worked with this mediator in the class I used pictures in order to illustrate the cards. I had to work with pictures because in the final task pupils have to draw and write the needs. It is difficult for pupils to draw air, soil or water if they are not given a model. However, the pictures next to the cards were not stack on the mediator because pupils had assimilated the pictures and it was not necessary.

I used a color and letter code, the cardboard with the word "NEED" is green and the word is written in capital letters because it is the title of the category; on the other hand the cardboards with the different needs are in blue color and they are written in small letter because they are in the same level inside the category of what plants need.

In this case the mediator was created when the contents had been worked in order to collect the ideas. I worked the contents with an on-line experiment in BBC where pupils can observe what happens if the plant does not have the four things it needs. They really recognize what are the needs in a plant because they worked with the experimenting process.

3. Parts of a plant and Growing process.

I work with both mediators as the same time. Although in the photo (Appendix 2 photo number 3) it can be seen a fixed flower with its parts, it was a mobile mediator as the parts were put together step by step and then it was all set on the wall.

It was necessary to know the parts of the plant to understand the growing process but there was also a need to know the growing process to really understand the parts of the plants. This is the reason why I decided to work with the parts of the plant and the growing process at the same time.

Firstly, I created the text that was needed to describe the growing process in a simple way, in order for the text to be easy to reproduce by pupils. The text that was given to the pupils as my output was different from the text that was used as my input. The difference was on the quantifiers. (Appendix 2 photo number 4)

The text pupils had to reproduce is in black; this is the text that pupils will reproduce. Besides in orange color we introduced the pupils the time adverbs because they are learning how to use them in language and it was necessary to introduce them then. But an order number have to be written next to the adverb in order for our pupils to understand the adverb and relate them with order. Finally, in purple color, it is marked the quantifier that the teacher used in order to increase the knowledge, although, it was not an aim for pupils.

- 1. First, I plant a seed.
- 2. Then, the roots grow, longer and longer.
- 3. Later, the stem grows, taller and taller.
- 4. Next, the leaves grow, bigger and bigger.
- 5. Finally, the flowers grow.

To introduce the text, in which we worked with the growing process of plants and its parts too, I designed a plant display. The display has the following parts in order to grow little by little:

- Two seeds.
- 3 roots of different sizes.
- 3 stem of different length.
- 4 leaves of different sizes.
- 1 flower.

What I did was to make the plant grow as I produced the text. This way, children associated the text with the image and understood the learning process, so they really

understood the text too. However, they needed to repeat the text many times to be able to assimilate it, so apart from creating this display and simulate the growing process I prepared an experiment.

For the experiment they had to write the text describing it, so I set the mediator in the place where they could see it when they had to write the text. I set the final plant of the growing process on the wall as the picture shows in the appendix 2 picture 3.

4. Experiment "My growing plant"

The experiment is a complete process where pupils have to pass over all the scientific method steps.

First, we had to make our pupils ask a question to them; this question is: How do plants grow? Then I worked with the mediator about how plants grow and their parts. Later, pupils planted a seed in order to observe how the seed grew and checked if they were correct in the idea that they had worked in class with me. Next, they had a recording book where they had to write the results of the growing process. Finally, they realized that the plant grew in the same way they had thought, so their hypotheses were correct.

This is a complete thinking process where pupils are responsible for their learning. After all the process pupils had assimilated the text that I gave them, and they were able to reproduce it. Besides, they were able to explain the growing process of a plant, so they did not only repeat but they really understood.

5. Plants change during de seasons.

This display was made after we worked with this content with a song. The song was very simple and it said exactly what happened to a tree in the different seasons. In this case I used pictures in the display because we had worked only with the lyrics of the song and the movement and in the final task pupils had to draw a tree in each season. Although they know the typical characteristics of a tree in the seasons, they would not know how to draw it if they have never had a reference. This is the reason way the trees of the display are very simple and they are made by hand in order to look similar to their future drawings.

Besides, in the final task they had to complete a text with specific words; that text was the simplified lyrics of the song. I decided to use simplified lyrics because the song has useless parts which made the song catchy.

Due to the fact that I modified the text which I had worked with pupils with the song, I had to give them a text guide in order for them to be autonomous in completing the final task. So, I set in the display the keywords that they had to write in the final task.

Most of the pupils would not have needed the keywords in the mediator because they knew them due to the song; however some pupils needed those words because they had not been able to link the lyrics of the song with the text that they have to use in the final task.

The display has vertical position because in the Plants Book the activity is in this same position. Besides, the seasons follow this order because it is the order in which we worked; in addition, the song was in that way.

The color code is very clear and it is always the same: green for spring, yellow for summer, orange for autumn and blue for winter. This is a logical color code for the seasons because those are the more meaningful color for them. They have assimilated this color code since they were in Infant Education and they always link those colors with the seasons. When I chose the colors for each season I did it thinking about the pupils' previous knowledge.

Then, I proved if pupils link the colors which I have selected with each season using a simple activity. I put four cardboards (green, yellow, orange and blue) on the blackboard and I asked them what they thought the cardboards represented. Immediately, they answered me that the cardboards were the four seasons and they associated each card with each season following the same code that I had thought.

It is important that the start point is pupils' previous knowledge because it is that way pupils complete their mental schemes.

6. Plants live in...

This mediator is something different from the others. The mediator was created by brain storming. In the previous unit they had worked with animals. One of the categories that

they knew about animals was the places where animals live. For them it was very easy to connect plants in those places. They knew the places so they need to know what type of plants live in those environments, but it was very easy for them because they have seen what plants can be found in the park, in the beach, in the desert...

What I did was set the cardboard with the different environments and then I tried to draw one example of a representative plant for each place. I had to draw one example because in the final task they had some pictures of the different places and they have to write the place and draw some plants so they need a model of a plant to draw.

This display was not fixed because they had written the different places in the display of animals, and after working with this mediator they had a clear idea about one plant to draw in each picture.

7. Plants are used for...

This mediator was made as a result of a CLIL activity in the classroom. In this case the CLIL activity was based on discovery learning. They had three word cards with the uses and then they have some cards with drawings. They had to associate each drawing with its use. The result was good but I had to introduce the new terms and I explained them to pupils because furniture was difficult for them; however they were able to associate because they understood the rest of the cards. The mediator was created when we corrected the exercise on the blackboard so that pupils were aware of their good work.

I did not create a fixed mediator because they have enough knowledge about the topic to be able to complete the final task. They had created a mental image about this because they had really manipulated the mediator.

6.3.2 Water

Having in mind the previous work with the Plants unit, and taking on account all the necessary changes that were made as well as the results, I intend to develop a final task for the topic of Water, and the mediators that would be necessary for this final task. The topic was chosen because it is a very important one into the Spanish Official Curriculum. Pupils are in contact with water every day, so water is part of their lives. In the first cycle, we have to work with the closest reality to children because we want them to be able to learn things connected with their daily experience.

I have selected three important points to work in this unit and they are connected with the following aspects:

- Where is water in the Earth?
- Types of water
- States of water. Change of estate.
- Saving and wasting water.

I would work the first two aspects in the same mediator because they are connected; because water can be found on the Earth in two types of water and into those types we can also distinguish the different places where it can be found.

6.3.2.1 The final task

As a final task I designed a pull down folio where pupils can reflect everything that they have learnt about water (Appendix 3). This mediator is thought to be shown on the corridors and it is useful to make pupils do a "Show and Tell" about water because the final task is very visual.

As in Plants, the final task in water has many pictures to color in order to attend to the different work rhythms. However, in the activities about "Water on Earth" and "States of water" coloring is part of the assessment. In the first activity they only have to color the water, so they need to be able to recognize what is water; in the second activity they have to color the arrows, in red the arrows over the pictures and in blue the arrows under the pictures because it is a color code relate to the change of temperature.

The most important knowledge about water are the changes of states, that I would work with different types of activities and experiments, this is the reason why I have set the activity about states of water in the center of the paper. (Appendix 3) Besides it is the activity in which there is the most important text that I would use in this unit.

The activities are displayed in the same way as in the mediator that I have designed for this unit, although the activity about saving water would give children the freedom of selecting what actions they want to draw about it. The mediator displays many actions in couples, in which one of the pictures shows an action to save water and the other shows an action where water is wasted. To complete the final task pupils have to realize what actions save water and choose three of them, then they have to write the actions.

The rest of the activities have the same disposition as the mediator so it would be easy for kids to complete them. Maybe, the most difficult activity would be the change of states of water; however this content would have been worked in many different ways and the text will be worked enough in order for pupils to be able to produce it.

The final task is done by hand because it is very difficult to create a model on the computer because it is a very specific model. I have done pictures very similar to the pictures that I would use in the lessons as it is shown in the mediators. The letters are clear and the most important words have been stood out in order to make the activity easier.

6.3.2.2 Learning mediators

For this unit I have designed 3 mediators to hang on the walls, but they are also thought to work them as CLIL activities or experiments in the class. This unit is very physical so it is very important that pupils can observe the physical changes and prove their hypothesis experimenting with water.

1. Water on Earth (Mediator and CLIL activity)

In this case I would not put the mediator on the wall because it would not be completed. I will create a mediator on the blackboard with a big card that says "WATER", then I will draw six arrows and I will link one picture with each arrow (Appendix 4). Later in groups of three, pupils will have to associate the cards with the images with the cards with the names. Finally, pupils will draw the water in blue, only the parts of water because we want pupils to be able to recognize water in nature.

This is a way to start the unit because children realized about water; before doing this activity it is important that the teacher had reviewed the pupils' previous knowledge because we want pupils to start from their own experiences, because we work with meaningful learning.

2. Types of water (Mediator and Experiment)

The way I would work about types of water and their characteristics is across a simple experiment. Pupils are in groups and they have three glasses with water, however each glass has a different type of water: salt water, fresh water or sweet water (with sugar); pupils have also a worksheet where they have to answer some questions about water, for

example It is the same type of water? Is there something else in the water? This worksheet will make pupils realize about three different water flavors and the elements that are mixed in the water. We need to make them realize what two types we can find in nature, it would be very easy because they have known the salt water and the fresh water.

Then we will give pupils the pictures which they have colored in the previous lesson and we will ask them to divide the pictures in salt water and fresh water. When every group have finished we will check the results on the blackboard. It is in this moment when the mediators will be created. Finally, I will put the mediator on the wall after the lesson (Appendix 5). It has a color code because it is other way to remark the two types; besides they are set in two clear columns as in the final task.

3. States of water (Mediator, text and experiments)

This is the most important mediator in the unit because I consider the states of water as the most important content to treat. Firstly, I think about the text that I need to describe the changes of state and this is the final text that the pupils have to be able to understand and reproduce.

-	If I HEAT/COOL	, it turns into	
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In the spaces, pupils should write Ice Water, Liquid Water and Vapor Water according to the correct changes of state.

I have design three big cards with a representative drawing of each state and then I have connected them with arrows, this arrows are related with the temperature, over the pictures there are red arrows in order to show that the temperature rise and under the pictures there are blue arrows that show temperature drop.

I think that it is not necessary to add the different text because I am going to repeat it many times and pupils have to reproduce it in the experiments, so the text is going to use many times in order to make it repetitive which makes pupils assimilate it easily.

You can check the mediator in the Appendix 5.

4. Save and Waste water (Mediator)

This mediator is created to compare different types of actions with water. The Spanish Official Curriculum transmits the care of the planet as part of the contents in science so it is important to show pupils the importance of saving water. There are many types of activities to develop into the classroom to create an ecological awareness in pupils.

The mediator is useful because it gives pupils a clear action to do in order to protect the planet. Pupils can do all the actions in their daily lives, so we really work with their realities. It has clear images that represent the action very well, besides the sentences are related to familiar vocabulary because they have worked with routines at home and the parts of the house, so they are simple to be reproduced by pupils.

The opposite pictures are together and they have a circle, red circle if the action wastes water and green circle if the action saves water.

7. CONCLUSIONS AND FINAL CONSIDERATION

After the implementation of learning mediators and the final task in the unit of plants, following a task-based learning methodology, I have obtained some interesting conclusions:

- Working in groups develops in pupils a cooperative awareness; they learn how to support their classmates in order to obtain the best results. Besides, when pupils work in groups there are some arguments between them, because they cannot get an agreement, but this is also a good thing because you can give them the strategies to get agreements and respect others in an argument. So, it is a simple way to develop in pupils social values.
- The motivation is higher when they have to take part in the class actively and the activities give them the opportunity of working in different ways; for example talking, dancing, singing, coloring, writing... I had really paid attention to the

multiple intelligences in the final task where there are many types of activities, besides in the entire unit I worked in different ways because I really wanted to strengthen all the pupil's intelligences.

- Pupil's autonomy was increased as the unit advanced. Because learning mediators give them the opportunity to work in an independent way in order to complete the task, especially in order to complete their "Scientific book about their growing plants and their final task "My book of plant". Although there were pupils who needed my help to complete the text, I never told them the answer, what I did was refer them to the mediator.
- The main mistakes in the task were grammar mistakes, because they sometimes write the word as it sounds. However, when I indicated them the error (I underlined the word) they went to the mediator to check how they had to write the word correctly, so the mediator not only helps them in knowledge assimilation but mediators help children in their writing, so in the language acquisition too. Although, I made them correct their grammar mistakes I had not considered it for the assessment because they had really assimilated the knowledge and grammar is not a problem for kids in first cycle.
- I realize that the action of the teacher is very important; although teachers are not the center of the learning process they are essential for pupil's learning. I checked this because pupils had assimilated the text and they were able to reproduce it because I had repeated it many times and I had worked with the text in different moments. This is the reason why in the water unit I have prepared a very simple text which I would work in many ways. You can only get that the teacher's public speech to turn into the pupils' private speech, there should be a cyclical revision of contents done in so many times, to generate in pupils the echo effect.
- Pupils are using the language constantly, when they are working in groups and
 when they are working individually too. Besides, the conversations are based on
 the topic of the unit because they are really implicated in their work. This is a

very good thing that is in contrast with the traditional methodologies where the teacher gives the pupils a master lesson and pupils talk to each other to be distracted from a boring lesson.

• Pupils linked their previous learning with the new ones. I checked it because in the part of "places where plants live" they associated the places with "where do animals live?" Besides, there was a mediator of animals where all the places appear and they went to it. This let us see that they have a mental scheme where they are associating and including new knowledge. When pupils use a mediator in order to connect new knowledge with previous knowledge means that they have achieved that the mediator is useful resource for their learning process.

Besides, pupils have developed many capacities and thinking skills:

- ✓ They are able to explain what they are doing and the reasons why they do it.
- ✓ They are motivated and excited to work in the science lessons.
- ✓ They know where they can find the information that they need in order to complete the task.
- ✓ They are able to work in group, respecting each other's point of view and explaining their opinions in a polite way.
- ✓ They reflect about their works and value the classmates' works too.
- ✓ They are able to follow the scientist method. They formulate hypothesis, experiment, observe the results and finally, they analyze those results.
- ✓ They are more autonomous in their work little by little because they know how to use the resources that can help them to achieve their aims.

To sum up, learning mediators offer teachers a world of possibilities that they should know how to make the most of them. In this work I have only shown mediators for two units but they can be done with all types of contents. I would like my work to encourage teachers and other education professionals to use learning mediators in their lessons in order to give them even more uses.

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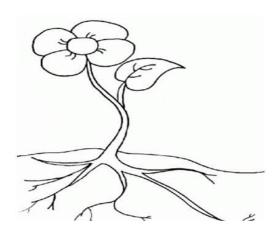
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9. APPENDIX

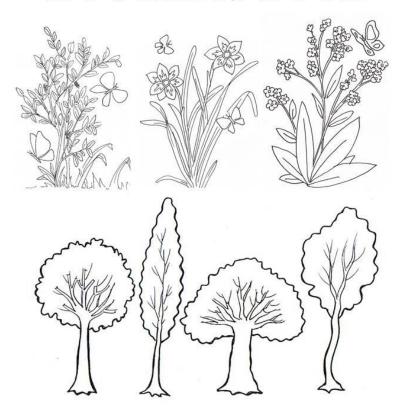
9.1 APPENDIX 1

MY PLANTS BOOK



Ву _____

MY PLANTS BOOK

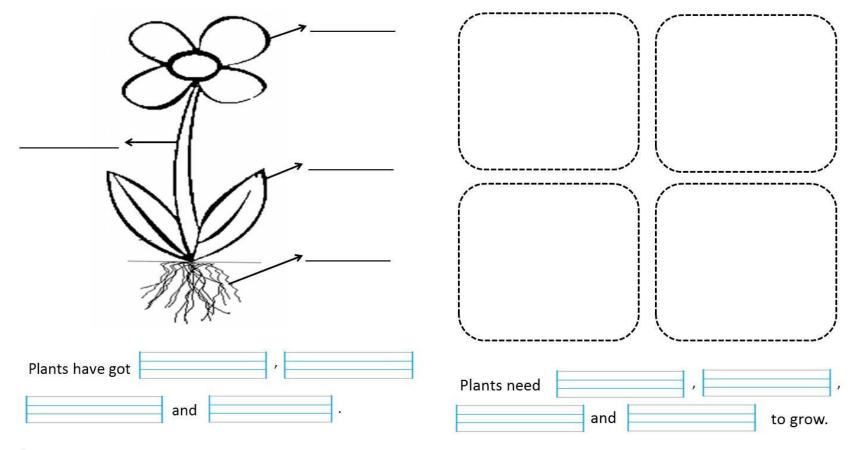


CEIP Padre Claret

1° Course of Primary Education

Parts of the plants

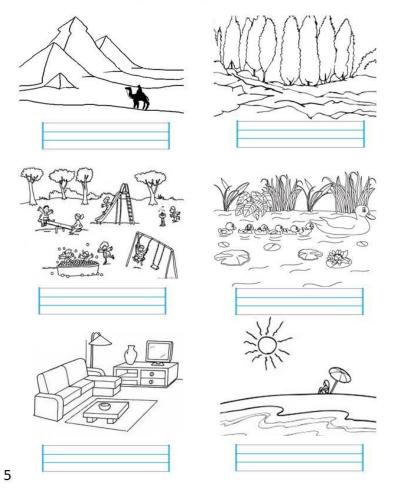
Plants need:



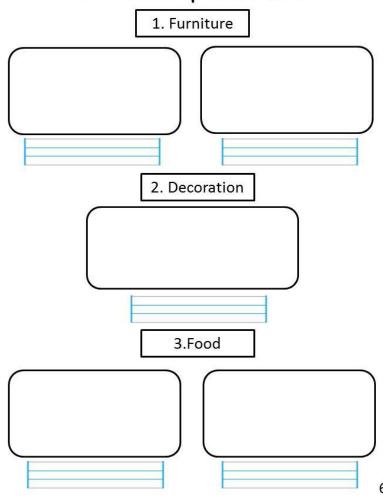
1 2

Cycle of life Plants change: trees have got trees have got fall. trees have got no 3

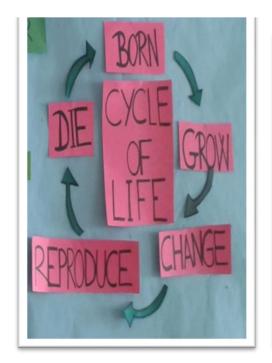
Plants live in:



We **use** plants for:



9.2 APPENDIX 2





- 1. Cycle of life
- 2. Needs of a plant

- 3. Parts of the plants
- 4. Growing process
- 5. Changes in seasons.





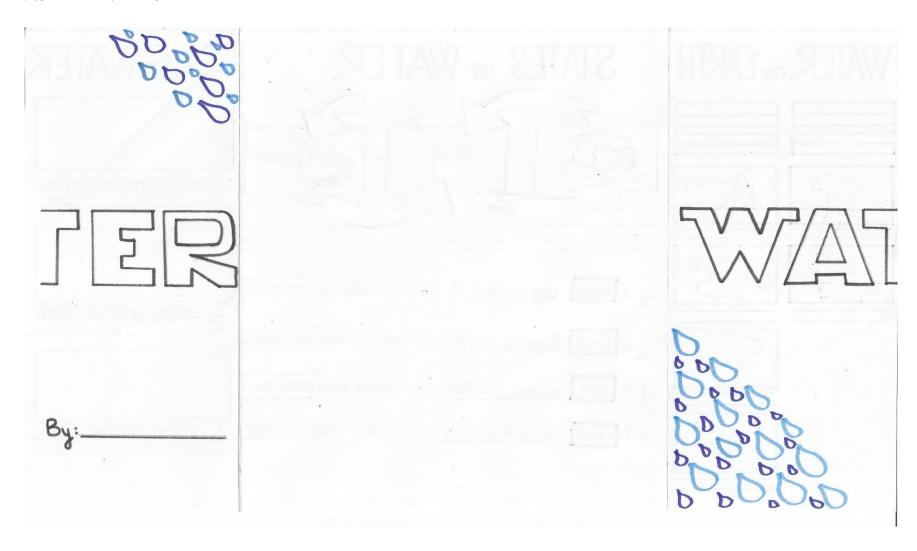


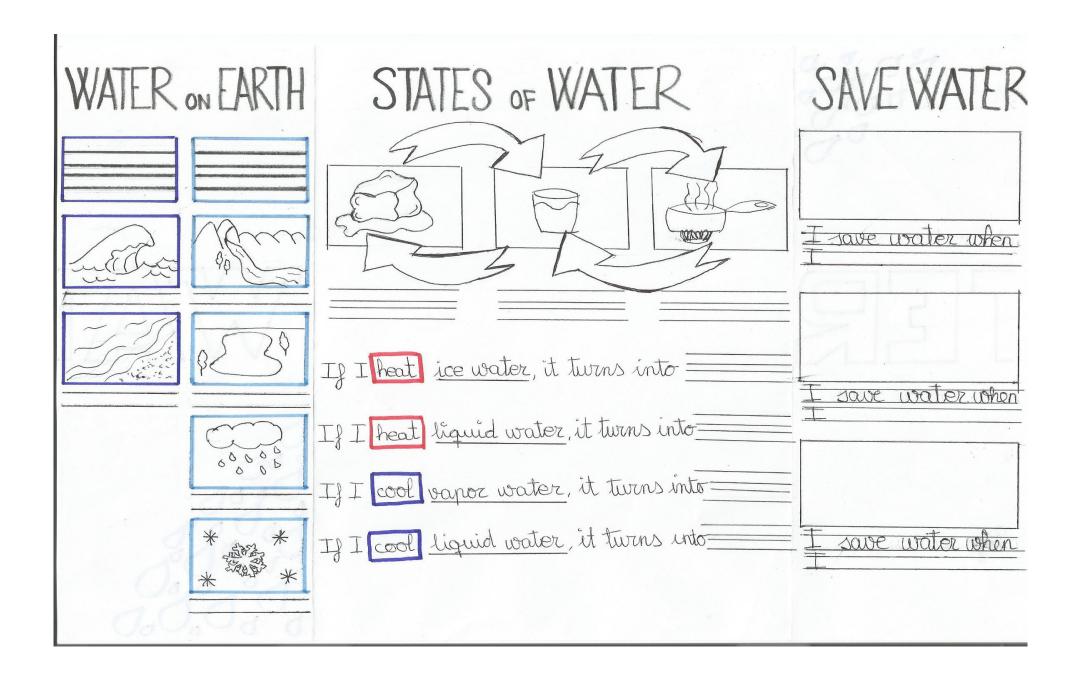




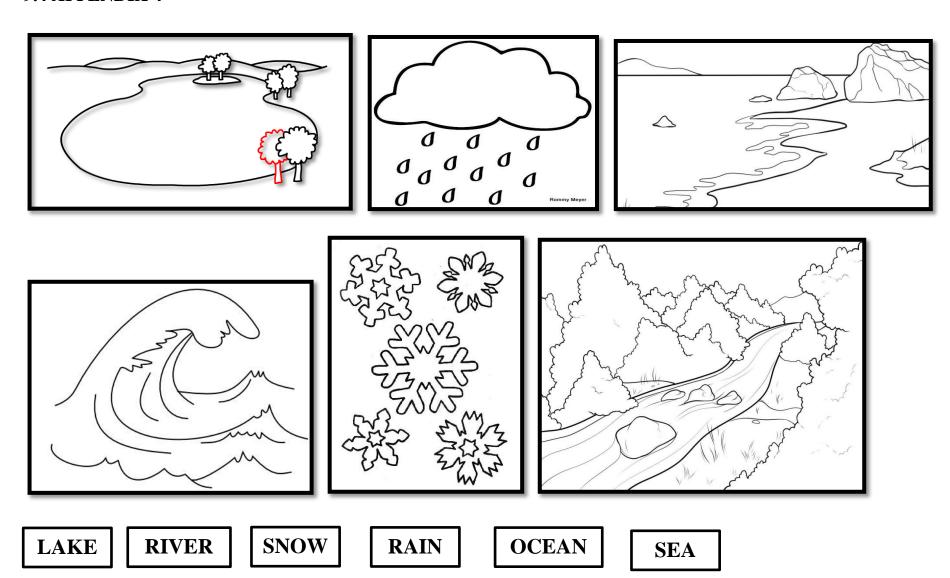
- 6. Places where plants live.
- 7. Uses of plants.

9.3 APPENDIX 3

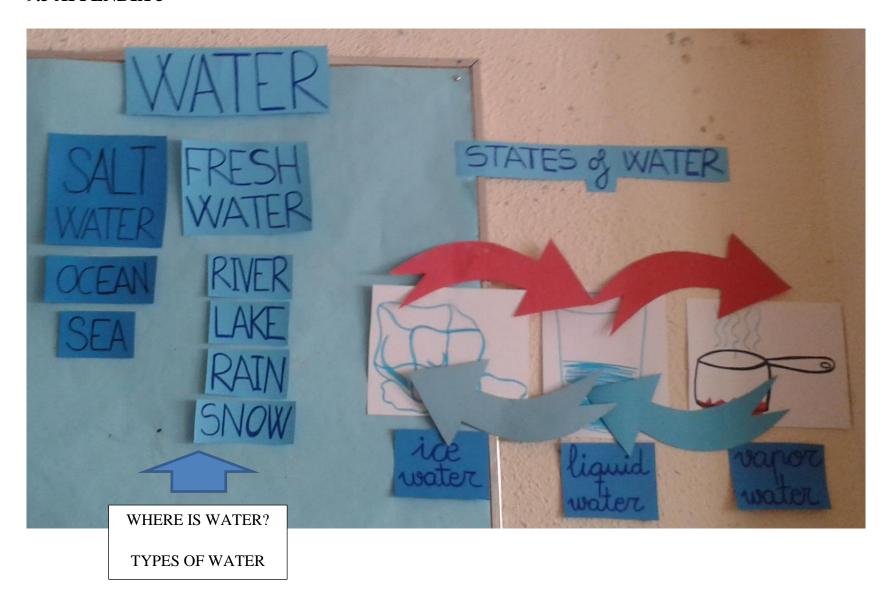




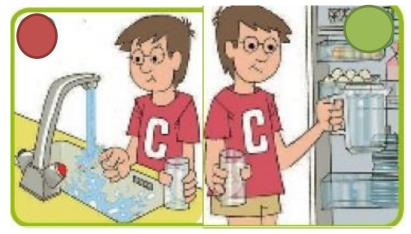
9.4 APPENDIX 4



9.5 APPENDIX 5



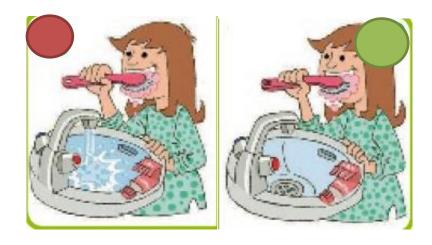
9.6 APPENDIX 6



Take cool water from the fridge, instead of it flows from the tap



Take a shower instead of a bath



Close the tap when I brush my teeth



Put the papers in the bin instead of the water