



# TRABAJO FIN DE GRADO

Universidad Pontificia Comillas

Educación Primaria

Curso: 2020/2021

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Grado en Educación Primaria y Educación Infantil

Universidad Pontificia Comillas

FECHA

BREAKING DOWN BARRIERS BETWEEN  
SUBJECTS: *MATENGLISH* PROJECT THROUGH  
*STORYTELLING* FOR THE 4TH GRADE OF  
PRIMARY EDUCATION.

ROMPIENDO BARRERAS ENTRE ASIGNATURAS:  
PROYECTO *MATENGLISH* A TRAVÉS DEL  
RECURSO *STORYTELLING* PARA 4º DE  
EDUCACIÓN PRIMARIA.

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### A) RESUMEN

Este proyecto de innovación tiene como objetivo desarrollar un proyecto interdisciplinar para el 4º curso de Educación Primaria que combina el desarrollo del inglés como lengua extranjera al mismo tiempo que la competencia matemática.

Aunque existen una gran cantidad de libros de literatura infantil, nos hemos centrado en cuatro de ellos, seleccionados en base a los 4 bloques de la asignatura de matemáticas establecidos por la legislación autonómica (DECRETO 89/2014, de 24 de julio, del Consejo de Gobierno, por el que se establece para la Comunidad de Madrid el Currículo de la Educación Primaria). Los contenidos matemáticos nos darán el contexto para la enseñanza de los contenidos de la asignatura de inglés, atendiendo a los contenidos establecidos por la ORDEN 5958/2010, de 7 de diciembre, de la Consejería de Educación, por la que se regula los colegios públicos bilingües de la Comunidad de Madrid. Además, este proyecto permitirá el desarrollo de las cuatro destrezas de comprensión oral, expresión oral, expresión escrita y comprensión de texto escritos.

Haciendo referencia a las cuatro destrezas, la comprensión oral es la que más impulsada se verá. Esto se debe a que el principal recurso que se va a utilizar es *storytelling*, lo que potenciará la capacidad de los alumnos para entender textos orales en la segunda lengua inglesa.

Otro punto a destacar de este proyecto de innovación es la propuesta del trabajo colaborativo entre docentes, también llamado *co-teaching*. Esta enseñanza en equipo se ha planteado con el deseo de ofrecer una mejor educación a nuestros alumnos, así como para establecer mayores conexiones entre las diversas asignaturas y aprender de manera contextualizada.

Las cuatro intervenciones pedagógicas que se han desarrollado tratan de favorecer el desarrollo integral del niño. Se han llevado a cabo metodologías activas, dinámicas y manipulativas que permitan a los alumnos experimentar, aprender de una manera divertida y conectar ambas materias.

El principal objetivo de este trabajo es demostrar que es posible la unión de estas dos asignaturas, desarrollar la competencia de la lengua extranjera al mismo tiempo que la competencia matemática sin aumentar la complejidad del proceso de aprendizaje, sino contextualizándolo.

**Palabras clave:** Innovación educativa, aprendizaje interdisciplinar, inglés, matemáticas, literatura infantil, comprensión oral, Educación Primaria.

## **B) ABSTRACT**

The objective of this innovation project is to develop an interdisciplinary project for the 4th grade of Primary Education by combining the development of English as a Foreign Language and the mathematical competence at the same time.

Although there are a large number of children's literature books, we have focused on four of them which have been selected based on the 4 blocks of the subject of Mathematics established by the regional legislation (DECREE 89/2014, of July 24, of the Governing Council, which establishes for the Community of Madrid the Curriculum for Primary Education). The mathematical contents will provide the context for teaching the English contents, taking into account the contents established by the ORDER 5958/2010, of December 7, of the Ministry of Education, which regulates the bilingual public schools of the Community of Madrid. In addition, this project will allow the development of the four skills of listening, reading, writing and speaking.

Referring to the four skills, comprehension is the one that will be boosted most. This is due to the fact that the main resource that will be used is storytelling, which will enhance the students' ability to understand oral texts in English as a second language.

Another highlight of this innovative project is the proposal of collaborative work among teachers, known as co-teaching. This idea has been made with the desire to offer a better education to our students, as well as establishing greater connections among the various subjects, thus learning in a contextualized way.

The four pedagogical interventions that have been developed try to favour the integral development of the child. In addition, active, dynamic and manipulative methodologies have been used to allow students to experiment, learn in a fun way and connect both subjects.

The main objective is to demonstrate that it is possible to learn English and Maths in a cross-curricular way as well as to develop English as a second language simultaneously with mathematical competence without increasing the complexity of the learning process, but rather contextualizing it.

**Key words:** Educational innovation, interdisciplinary learning, English, mathematics, children's literature, oral comprehension, Primary Education.

## 2. INTRODUCTION AND JUSTIFICATION

It has been four years since I began my adventure as a teacher at Comillas Pontifical University, a period of time in which, after a great deal of work, there has been a great change in my vision of education. Moreover, I feel I am competent and fully able to offer my students a quality education which will help them face the world successfully.

This evolution is also related to the internships carried out every year. Internships allow us to face challenges as well as apply practice theoretical knowledge we have acquired throughout the training stage. During these four years I have had internships in different schools. Each school works in a different way, some more traditional and others more innovative. However, I have seen that the way of working not only depends on the school, but also on the teachers and their desire to offer students the best education, taking into account the fact that each student is different as well as his/her needs and ways of learning.

Teachers have a very important role, depending on the way they work they will allow students to achieve success. Moreover, their main objective should be to motivate students towards the different subjects from an active and dynamic methodology. That

is why in this Final Degree Project I am going to focus on both subjects English and Mathematics.

In my point of view, these subjects have great potential when working transversally, offering students the opportunity to learn the foreign language of English in a contextualized way through the use of children's literature books.

From my experience as an elementary school student, mathematics has always been one of the subjects that you never wanted to get to that time in the schedule. Math is seen as one of the most demanding subjects in school. After these four years of training to be a teacher, I can say that Math is one of the most fun subjects in the classroom. The same happened with the subject of English to those students that aren't good at it: they weren't given the necessary means that facilitate the acquisition of contents. The problem in both subjects is that in the past they were often taught in a very mechanical way, without contextualizing the content. For teachers, it was enough for the students to be in silence listening to them while they explain the contents and later complete the exercises correctly. The only thing I can clear up from my experience as a student of Primary Education is that you end up unmotivated and rejecting learning these subjects.

Due to the fact that each student learns in a different way, teachers should offer students the necessary means so as to motivate and help them to be successful. Definitely, the way of working in classes has changed, highlighting in the first place the progressive integration of cross-curricular work. Besides, as the Royal Decree 126/2014 of February 28 rightly states, cross-curricular work is the basis of competent learning. The main aim of cross-curricular teaching is to offer students a methodology following the needs of society where team work is growing significantly. Therefore, this way of working will allow them to connect the contents of the different areas and thus have a more complete knowledge that will allow them to be competent people in this interconnected and constantly changing world.

One of the reasons that motivated me to carry out this project is that in my last internship school English is very important, it's the language all students and teachers speak as well as the language used to teach most of the subjects. Despite the good level



of English students have and being an international school, mathematics is taught in Spanish, something that surprised me. Although mathematics and English are seen as two of the most difficult subjects at school, being this the main reason why they are taught in the children's mother tongue, my aim with this proposal is to show that both subjects can be taught together in a cross-curricular way without increasing the complexity of learning.

This cross-curricular project has been designed to be taught through children's literature books, through *storytelling* or *story heard*. Normally, in most schools, the contents are presented through textbooks, following the curriculum order. On the other hand, the benefits of *storytelling*, in addition to contextualizing learning, promoting comprehension of oral texts and participation in conversations, is to show that both math and English often appear together without realizing it, as well as take advantage of this moment to work or review mathematical content already known by students from that book that has allowed us to contextualize learning.

In addition, cross-curricular learning is much easier and more complete when it is carried out by two teachers. The following project suggests co-teaching as a way to motivate schools to work in a cross-curricular way as well as collaborative work among teachers. During these four years of internships in three different schools, I have observed there is little coordination among teachers as they don't often work collaboratively. Moreover, it is not part of their plans for two teachers to be in the same classroom teaching the same subject. From my experience as an internship student, being two teachers in the same classroom makes it easier to pay attention to all student's needs. Furthermore, more complete learning is offered to students as both teachers combine their knowledge and teaching abilities so as to offer students the best learning process.

From my point of view, co-teaching is an enriching experience for both teachers and pupils. Making reference to students we generally insist them to work in groups, cooperatively. However, teachers are rarely a positive model of teamwork. Co-teaching is an example for students. Additionally, when referring to teachers co-teaching contributes to their professional development, communicative and interpersonal skills,

as well as the increase of their motivation. Besides, in my opinion, teachers' reflection process is supported by co-teaching as they receive feedback from their co-workers. Finally, I believe this proposal is quite complete and interesting. I have tried to include those aspects I consider to make learning motivating and exciting for students, such as cross-curricular work, the use of *storytelling* as the main learning method, and my desire to integrate reliable teamwork among teachers in the classroom. It is a project I would like to carry out in my future class, as well as I would like other teachers who have the same desire as I do to integrate these aspects in their teaching to enjoy it. As a result of this way of teaching, we will offer students a different, innovative, interesting, enriching, and fun education.

### 3. OBJECTIVES

The main objective of this Final Degree Project is to work in a cross-curricular way two subjects that will help students to understand and develop successfully in their daily lives. This is intended to be achieved through methods that enable the contextualization of learning, from the general to the specific.

#### **General Objective**

To develop an interdisciplinary innovation project between the subjects of English and Mathematics for 4th grade of Primary Education. Moreover, this project will use children's literature books, *storytelling* method, as a resource to contextualize content and learning.

#### **Specific Objectives**

1. To analyze the possibilities and potential of using storytelling as a resource and strategy to reinforce various linguistic skills, mainly auditory competence.
2. To design an interdisciplinary project whose guiding thread is the development of mathematical competence in the teaching-learning process of the Foreign Language-English, using storytelling as the main resource.

3. To promote co-teaching and collaborative work among teachers as a way to enrich the teaching-learning process, while offering greater attention to the diversity of the classroom.

## 4. THEORETICAL FRAMEWORK

### 4.1 INTRODUCTION

For the elaboration of this work, we have taken into account different aspects using many authors as a reference. Firstly, this section analyses different aspects that benefit the teaching-learning process, being able to highlight interdisciplinary and co-teaching as two methods that allow students to have a more complete knowledge about their world and receive and enriching learning. Next, the importance in the current world of the second language is taken into consideration and, therefore, mastering any subject or area of learning in a different language to the mother tongue one, focusing on this case on the area of mathematics and Foreign Language of English. Finally, stories are presented as an active method from which it is possible to work on mathematics together with the English language. This allows developing the listening skills and the other three communicative skills dynamically with activities that will be carried out based on storytelling, working on both English and mathematical content.

### 4.2 INTERDISCIPLINARY METHODS

Many authors agree on the importance and the usefulness of working in an interdisciplinary way in the classroom since this allows students to establish connections between the different disciplines and becoming competent people. The Royal Decree 126/2014, of 28 of February (LOMCE), the current Primary Education curriculum, is supposedly designed so that it departs from the social and cultural context of the students, which allows them to learn about their world. However, in the current legislation, the different disciplines are treated independently one from another, with

specific issues and times, when in reality these disciplines or subjects are constantly related outside the classroom or school (Rodríguez, 2020).

Literacy presents different definitions of what is interdisciplinary, assuming each of them the particularities of the context in which they are used (Latucca, 2001). In general, we can understand the interdisciplinary or cross-curricular work as a pedagogical strategy that involves the interaction of various disciplines to gain more complete knowledge of reality (Van del Linde, 2007).

Furthermore, Posada (2004) defines it as the second level of disciplinary integration, in which cooperation between disciplines mean real interactions and, as a consequence, a mutual enrichment, offering students the possibility of generating more flexible thinking, improve their learning abilities, increase their critical thought and facilitate the understanding of the different disciplines, being the principal objective of the interdisciplinary teaching offer students meaningful teaching (Ackerman, 1988).

#### **4.3 THE VALUE OF CROSS-CURRICULAR WORK IN PRIMARY EDUCATION AND CLIL PROGRAMS**

In order to provide quality education for all students there exist different programs that allow teachers to teach the second language to students but in a contextualized way. This refers to teach a non-linguistic subject, like Maths or history, through a language different from the mother tongue. This methodology is called CLIL, a method that Kaye (2018) considers as an “exciting teaching proposition”.

What is CLIL? CLIL stands for Content and Language Integrated Learning. This term can be traced back to 1994 and Professor David Marsh of the University of Jyväskylä in Finland (Stevie, 2016), but for us is something new and innovative (Kaye, 2018 and Stevie, 2016). When we make mention of CLIL we can differentiate two elements: (1) The subject that refers to any academic subject, in this case, mathematics; (2) the medium of instruction that refers to the language that we are going to use during the class (Stevie, 2016). Different authors agree on the idea that CLIL is an “integrated” suggest that hits two birds with one stone, the subject and the target language, without any specification of the importance of one over the other. It must be made clear that

the objective of CLIL is not to teach a language, but a subject class in a certain language that is going to be improved (Stevie, 2016; Kaye, 2018; University of Cambridge, 2014; and Coyle, 2006).

In 1994, when CLIL programs were first introduced, the idea of working on content at the same time as the foreign language was not new. In the 1970s, the teaching of a second language at an early age was considered detrimental, insisting on the maintenance of the mother tongue as the main means of communication in the classroom and the transmitter of content. This was because, at that time, it was thought that learning two languages at the same time was incompatible (Alonso, 2015). Later, within the field of psycholinguistics, several studies were carried out. They demonstrated that the acquisition of communicative competence in one language did not lead to a loss of competence in the other language.

Because of this, since the 1970s, governments all over Europe have been considering the creation of programs to promote the teaching of foreign languages in schools. In Spain, the first projects designed to promote bilingual education began to be implemented in 1996 when the Ministry of Education and Science and the British Council signed an agreement to develop an integrated curriculum that would allow the implementation of a program that promotes bilingual education in public schools.

Based on this agreement, a new project was launched to improve the results of the traditional model (LMEP). This new project was called the Bilingual Education Project (PEB), 2010, which had as its main objective that students acquire "a fluent, flexible and accurate use of the foreign language by the end of Primary Education" (p.12) (Dobson, Pérez & Johnstone, 2010).

The evaluation report of the bilingual education project in Spain (2010) reflects the main differences between this new project and the previous one:

- Early start of foreign language teaching, around the age of 3.
- Increase in the number of school hours in which the foreign language is taught and used.
- Learning the content of important curriculum subjects through the foreign language.

In the case of the Bilingual Program in Comunidad de Madrid (Spain) for public schools was implemented in 2004-2005. The main objective of this programme is to provide students with the communicative skills in three languages in order to be able to manage successfully throughout their lives. These three languages are English, French and German, what allow us to call the Community of Madrid “Madrid Multilingual Community”. This trilingual education offered by the community of Madrid is one of its hallmarks and what makes it a quality education system (Comunidad de Madrid, s.f)

More specifically, the Spanish-English bilingual programme runs from Primary Education to Baccalaureate, although it is being extended to the infant education stage.

Moreover, in this programme, at least 30% of the teaching time must be taught in English in order to provide pupils with the expected language skills. With this in mind, in addition to the English area, at least two other areas of the primary curriculum should be taught in English. In this way, the Community of Madrid aims to educate linguistically competent pupils (Comunidad de Madrid, n.d.)

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#### **4.3.1 MATHEMATICS IN THE L2.**

The fact that Mathematics is normally seen as one of the most difficult subjects at school can be the reason why these two subjects are not frequently worked together, as it involves combining two difficulties that complicate the learning process for students.

However, as we have seen before, the idea of teaching the different subjects in the foreign language is supported by the Ministry of Education. Referring to the present time and the teaching of the different curricular subjects in the foreign language in Madrid, in this case, the teaching of English and mathematics in an integrated way, is not carried out. Although the Royal Decree 126/2014, of 28 of February considers it possible to work in a cross-curricular way some subjects such as Spanish Language and mathematics, the Order 5958/2010, of 7 of December, that regulate the bilingual public schools of the Community of Madrid, makes clear that all the subjects can be taught in English except for Mathematics and Spanish Language and Literature.

Besides that, the Royal Decree 126/2014, of 28 of February also states that numerous studies demonstrate that the acquisition of communicative competence in a second language is often associated with an improvement in the language of instruction, as well as in other areas, such as mathematical competence. As we can see, it seems contradictory and may generate confusion as to how is the best way of working in the classroom.

This project seeks to demonstrate that teaching English and mathematics is possible and has numerous benefits for students, among them an increase in cognitive flexibility by exposing the brain to new challenges; the absorption capacity of children allows them to develop their linguistic diversity as they learn new words quickly; and the importance of learning in a contextualized way a new language as well as maths, what will let students apply what they learn to real-life situations (Cabral, 2018)

Nevertheless, some authors think it's possible and support the idea that it depends on the way you teach it (Kaye, 2018; Stevie, 2016). Teaching English and Maths or another subject jointly can help students stay motivated when learning the language because they need to understand it in order to gain a further understanding of the subject (Kaye, 2018). It's very important to give students a real-life reason that motivates their learning and CLIL provides students a context for learning, considering the subject matter the base of their learning (Kaye, 2018; Stevie, 2016). With CLIL approaches students learn words, phrases, and concepts as they need them, attending to the context of real-life situations in which they can apply them (Stevie, 2016).

What other things should we take into account to offer students meaningful interdisciplinary teaching? The first thing teachers should do is to consider both, Maths and English learning outcomes and objectives. Another important point all teachers should consider is the importance of communicating the subject-specific vocabulary effectively, giving students language support in words, sentences, and text to help them to understand the content of the subject (Kaye, 2018; Cambridge University, 2014).

Considering that joining two subjects increase the complexity for learners to understand what is being taught, it's important to know that this interdisciplinary method requires more ways of communicating language apart from language. In order to find out what

resources help students to learn a certain subject in English, some surveys were carried out (Bentley & Philips, 2007) with Spanish learners that were studying science in CLIL contexts. Some of the students' answers were: The use of easier words or, as Cambridge University (2014) calls them, content-compatible language; games or pictures that illustrate the subject-specific vocabulary; clearer teacher explanations, put the English word with its translation... (Favilli et al., 2013).

When students have learnt the different words, expressions, or sentences that they will need for understanding the subject, teachers should present differentiated tasks that demand those concepts and require different challenges so that all students are engaged in the classroom (Cambridge University, 2014). In most traditional language education the focus is on grammatical correctness and long lists of vocabulary that students should study, without leaving time to practice the target language, when, in reality, the language is learnt through the usage of language while discussing content matter (Surmont et al., 2016). For this reason, it is very important to integrate communicative activities during the lesson, instead of leaving them to the end of the class or not even working on it (Cambridge University, 2014). It's also important to make sure that the materials we use in those tasks are effective and facilitate students achieve the content and language learning outcomes and objectives (Cambridge University, 2014). Moreover, it is recommended to finish the lesson with demanding tasks in which students have to apply the language and subject knowledge to everyday situations, moving along the lesson from less to more language production (Favilli et al., 2013).

Finally, now that we know more about cross-curricular teaching and its benefits, it is interesting to highlight that learning a second language in a contextualized and interactive way is not the only positive aspect it has. The fact of working through CLIL or another integrated methodology has several advantages for students, for example, in CLIL contexts students receive feedback through scaffolding, ensuring the pupils are constantly in "the zone of proximal development", a concept used by Vigotsky (1978) to refer to the distance between what the student can do alone and what can do with the help of an adult (Cambridge University, 2014; Surmont et al., 2016).



For all these reasons, today's education needs this type of innovative and integrative methodologies, whose purpose is to improve the educational offer. Second language acquisition is a challenge currently faced by both learners and teachers, who seek to provide quality education to students. English language teaching is often conducted in a decontextualized manner, not presented in a useful way or connected to students' daily lives. Learning through CLIL is the new way to learn a second language, in this case, the foreign language of English is taught in a natural, motivating, dynamic and contextualized way, giving the student a reason to learn the second language while acquiring new content. Working in an interdisciplinary and integrated way the subjects of English and mathematics (CLIL) has multiple benefits for the students considering that they are the protagonist of their learning. Among the many benefits of CLIL, we can highlight the following: motivating students to learn, improving long-term memory, developing competence in linguistic communication and promoting teamwork.

#### **4.4 STORYTELLING AS A STRATEGY**

Most Western societies place the teachers as the main focus of knowledge, turning teaching into what Freire (1972) calls a “banking model”. This model refers to the metaphor of students as containers in which teachers have to deposit knowledge, which makes students passive characters of their learning (Surmont et al., 2016). Referring to this teaching model, CLIL uses an opposite methodology, a pupil-centered method, in which the emphasis is on the student experience and the encouragement of active student learning (Cummins, 2005; Marsh, 2012).

As we have spoken before, it is very important that learning is contextualized so that students see that what they are learning can be applied to real-life situations. The use of stories has many intellectual advantages, in fact, Marín (2007) defines the stories as an “intellectual food” because it is useful to instill values, acquire more vocabulary, improve students’ expression and comprehension, and develop their creativity, imagination and reflection. We usually associate stories with the linguistic area, in fact, most of the things that are mentioned above refer to linguistic skills, but stories are a

very useful resource to work any subject at school, standing out the use of them to teach maths (Marín, 2013; Saá, 2002; Flecha, 2014; Zúñiga, 2014).

Marín (2003; cited in Marín, 2007) exposes that in a story mathematical concepts appear in a context and therefore have a complete meaning, which facilitates their understanding and allows students to see the natural wealth, vitality and usefulness of mathematics (Marín, 2007). Stories also help students to build their logical-mathematical structure while they enjoy learning mathematics in a ludic way, with pleasure and enthusiasm. At this point, it is interesting to stand out some words of Aymerich (Ayemrich, 2010, as cited in Alsina, 2012, p. 12) that shows two characteristics of stories: “they benefit the work of mathematics from an interdisciplinary context” and that “stories contribute to creating mental representations, ideas that can later be recovered for specific work of higher content related to the initial idea.”

Up to this point, we have seen how beneficial it is to use stories to teach maths. Knowing all the advantages it has, how useful would it be to work maths in English through a story? Imagine working at the same time maths, English and develop students' reflection, imagination and all aspects mentioned before.

By definition, storytelling involves listening and comprehension. Nowadays a lot of people that study English or any other foreign language don't have the opportunity of speaking with native speakers in order to improve their second language, but they have access to literature written in the language they are learning (Haji, 2008). When we refer to improving any language by ourselves, we always think in watching films or TV series to improve linguistic abilities, but listening to stories or literature-based activities, in addition to contextualizing learning, is also a good resource for successful language acquisition in a motivating, challenging and enjoyable way, three characteristics that Ellis & Brewster (2014) use to describe stories (Tugrul, 2012). According to Winch et al. (2004, p.402), children's literature “provides a wonderful opportunity for children to see language in action”.

Storytelling entertains and educates young learners. It is considered as one of the most supportive in pedagogical theory, being a fundamental resource to education and an effective and natural way of teaching/learning a new language, as well as for working another subject in a second language (Mixon & Temu, 2006; Cortazzi, 1994; Brumfit & Johnson, 1979). To achieve this, teachers must do correctly one of the most important tasks, select stories that pique students' interest and motivation to listen and consequently, to learn. A good selection of children's literature should include age-appropriate themes, simple language, do not overuse metaphors and unfamiliar experiences, realistic dialogues, brevity and finally one of the most important, good illustrations that help students to understand and interpret the text (Smallwood, 1988).

If teachers bring to class stories with the characteristics mentioned above, they will help students to acquire new vocabulary and improve it; acquire grammatical structures in an authentic context, while they learn to construct more sophisticated sentences and syntax (Niemann, 2002; cit. Tugrul, 2012; Winch et al., 2004). As Ellis & Brewster (2014, p.7) say, they "expose the children to language in varied, memorable and familiar contexts, which will enrich their thinking and gradually enter their speech"; develop their creative powers as they learn more about the culture of their country. About the effectiveness of stories Ellis & Brewster (2002, p.6) write that "stories can help develop positive attitudes towards the foreign language, culture and language learning". Also, Ellis & Brewster (2014, p.24) say that "they may bridge the gap between language study and language use and link classroom learning with the world outside. Some of the activities do not always have a very large language element but are nevertheless important in creating a feeling among the pupils that learning English means fun, activity, creativity and enjoyment".

In order to get students to enjoy and develop those positive attitudes towards English, it's very important to provide students with interesting and comprehensible language input in a low anxiety setting, an idea that Slatterly & Willis (2001) support and complete by recommending the use of storytelling to practice, especially, listening, in the second language with reduced anxiety (Haji, 2008; Ellis & Brewster, 2014). Furthermore, storytelling promotes especially listening skills in a meaningful context (Mixon & Temu,

2006; Soleimani & Akbari, 2013). Apart from the listening skills Gibbons (2002; cited in Soleimani & Akbari, 2013) state that storytelling involves sub-skills such as predicting, guessing and linking new information to prior knowledge so as to understand the meaning of the story. Students can understand the meaning of a text even if they don't know each word because of prediction, guessing or the gesture, the posture, and the intonation of the teacher (storyteller) (Setyarini, 2012; Rashid, 2011 (cit. Soleimani & Akbari, 2013)).

Moreover, the way we tell the story is very important to attract the students' attention, as well as to highlight what we want the students to pay attention to, in our case the mathematical and English language contents. We must tell stories in a way that makes them exciting. Some recommendations to achieve this are, as we have said before, to choose the book we are going to narrate properly; have eye contact with the child, this will allow us to know better what he likes and what he does not like; introduce questions or topics related to what we are reading to encourage students to participate in the reading; voice changes depending on what happens in the story; use a lot of vocabulary and descriptions that help the child to imagine the environment, the characters, etc.; go slowly, so that the students enjoy it; finally, one of the most important, do not be shy and enjoy the story, be passionate about it. We must transmit this emotion to the students (Brusa, 2020).

As we have mentioned before, Mixon & Temu (2006) consider stories and storytelling a good resource for working with other subjects in a second language or carry out "cross-curricular links" as Ellis & Brewster (2014) call it. These authors state that storytelling also helps students to learn how to develop sub-skills such as planning, hypothesizing or reviewing and also developing study skills, apart from transmitting citizenship, diversity and multicultural education. Due to the fact that students might experience mathematics concepts as they appear in real life, teachers should stop teaching in such an abstract and formulaic way (UniofReading, 2019). According to this, the use of stories can show students that mathematics is part of their everyday life. These also help students to understand mathematical concepts, they are shown visually through page illustrations.

Is storytelling a good way of working considering the diversity of a class? Students with different needs are a day-to-day reality for teachers and we should look for methods that respond to the learning needs of all learners in order to maximize individual achievement. Storytelling is an inclusive strategy that will make the need of all students meet (Ellis & Brewster, 2014).

To conclude, storytelling is a useful methodology that has educational, cultural and linguistic benefits. Allows the cross-curricular integration of subjects such as mathematics and English, not only developing listening skills but also achieving linguistic and curricular objectives of both subjects in a motivating, meaningful and contextualized way, where cognitive and emotional elements are naturally integrated.

#### **4.5 CO-TEACHING/COLLABORATIVE TEAM TEACHING**

This interdisciplinary work can be carried out by a single teacher, but wouldn't it be more enriching if two teachers were involved? Interdisciplinary methods, as we have mentioned before, mean the connexion between two or more disciplines and, therefore, benefit co-teaching. Co-teaching is a method that Cook & Friend (1995) define as a way of teaching that consists of two teachers' sharing one classroom in order to deliver substantive instruction to a diverse group of students. Both teachers will join their knowledge and their teaching abilities to offer meaningful learning to their students.

Cambridge University (2014) considers a key to success that both teachers, the subject and the language one, need to feel confident about the area that is not their own, that is to say that the subject teachers need to feel confident about their English level while the language teachers need to feel confident about their knowledge and abilities related to the subject. In this way, they will be able to support each other during the instruction of the class, as Honigfeld & Dove (2015) say.

The first version of co-teaching was adopted in many open-concept schools during the 1970s. This first version consists of teachers sharing their planning responsibilities for

instruction while they continue teaching separately (Easterby-Smith & Olive, 1984). Referring to special education, teachers dedicated to this part of education used co-teaching to share their responsibilities for students in self-contained classrooms (Garvar & Papania, 1982). After seeing the benefits of this way of teaching special education, teachers and general education teachers decided to work in a constructive and coordinated way (Bauer, 1975; Walker, 1974), so that both teachers are involved actively in the instruction of a diverse group of students. General educators focus on understanding, structuring, and pacing curriculum for groups of students are paired with special educators, who specialize in identifying individual students' needs and enhancing curriculum and instruction to match these needs, and as consequence, offer meaningful learning.

What differentiates co-teaching from other collaborative activities is that teachers that use this way of working join their efforts so as to provide direct services to students with special needs during instruction within the general education classroom. But they also say that though co-teaching supports inclusive practices; it is not synonymous with inclusion (Cook & Friend, 1995).

#### **4.6 BENEFITS OF CO-TEACHING**

The first and most important reason is that two teachers offer better teaching approaches and instructional strategies because both perspectives and strengths are brought together (Friend, Reising, & Cook, 1993). Co-Teaching gives students more opportunities to be successful because it puts them closer to more and different instructional approaches. When teachers participate in co-teaching students obtain greater academic gains. The second reason is that co-teaching improves the intensity and continuity of the program. This benefits both, students in a pull-out program that tend to leave the general classroom in order to attend their special education or related services, and general students because they will always work with all their classmates in one instructional environment, the general education classroom (Cook & Friend, 1995). Finally, the third reason is that students with specific supplementary services prefer to

receive supports in the classroom with their peers rather than leave the classroom for special services (Walsh, 1992).

Finally, co-teaching increases professional support considering that co-teachers relieve each other during the instruction. Without coordination, co-teaching will fail. In true co-teaching classes at times, one teacher leads the instruction while the other supports him/her; they help each other during the different activities and explanations. At other times, both teachers may take similar roles and responsibilities. Everything is based in trust, the foundation of the entire co-teaching cycle. (Honigsfeld & Dove, 2015).

Cook & Friend (1995) suggest different co-teaching approaches that can have variations depending on the subject that is going to be taught, age and maturity of students and creativity of the teachers. These approaches are *One Teaching, One Assisting*, *Parallel Teaching*, *Alternative Teaching* and *Team Teaching*.

<b>CO-TEACHING APPROACHES</b>	
<b><i>One Teaching, One Assisting</i></b>	Both educators are present. One takes a clear lead in the classroom and the other observes students.
<b><i>Station Teaching</i></b>	Teachers divide the content into several segments and present it at separate locations within the classroom. Students start at one point and rotate when the teachers indicate it to the next segment of content.
<b><i>Parallel Teaching</i></b>	Teachers plan the instruction jointly, but each delivers it to a heterogeneous group consisting of half the class. Students receive the same instruction in the same amount of time.
<b><i>Alternative Teaching</i></b>	Usually used with students with exceptional learning needs or to make sure that all students receive opportunities to interact with a teacher in a small group.  One teacher works with the small group while the other instructs the large group.

<b>Team Teaching</b>	Both teachers share the instruction of students. For example, while one teacher is speaking the other demonstrates a concept.
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A similar approach to *One teaching, One assisting* will be implemented in the present proposal. What I mean by “similar” is that in some sessions both teachers will participate, but if we think realistically, it is very difficult to schedule so many hours for two teachers to coincide. For this reason, in some sessions only one teacher will be present as they will be taking turns. In any case, each session will be planned jointly and both teachers will do the complete follow-up of the story project.

Referring to any of those co-teaching approaches, we must consider that it is not easy to work hand to hand with other teachers or to carry out collaborative strategies in class. What do co-teachers need to be successful? The first thing teachers need is to have opportunities to develop communication skills, instructional strategies and collaborative planning as well as administrative support that support professional partners who coteach by modeling desirable traits that promote collaboration and by fostering those traits in others (Cook & Friend, 1995).

Another point to consider is that co-teaching is not a comfortable arrangement for all teachers. Some issues that are involved in co-teaching may be challenging for some teachers while for others are a source of excitement. Honigsfeld & Dove (2015) mention that two teachers with different expertise, talents, strengths and abilities are put together to synchronize instruction for the benefit of students. For this reason, the first step all teachers should pay attention to is to examine their own readiness and see if they are prepared to carry out a co-teaching method in their classroom (Cook & Friend, 1995).

Co-teachers should be able to share responsibilities, modify teaching styles and preferences or working closely with other teachers to achieve success and integrated collaborative instruction. For a good co-teaching session, co-teachers must follow the entire co-teaching cycle, which includes co-planning, co-teaching, co-assessment of student work, and reflection, this way learning will flourish. At this point becomes



necessary to trust your co-teaching partner, another element to have success (Honigsfeld & Dove, 2015). When co-teaching it is important to be flexible and have strong interpersonal and communication skills, such as collaborative problem-solving and decision-making skills and to have well-developed judgment so that they can evaluate the information they receive from their colleagues to use it later (Cook & Friend, 1995).

In conclusion, co-teaching is beneficial for both, teachers and students. It is a way of working collaboratively with other teachers and being an example for the students. In addition, it allows establishing a reciprocal relationship at a professional level, considering new dynamics and methodologies that allow them to create better teaching approaches for the benefit of students.

In this way of working, a great implication is expected from the teachers, who seek to master both their area of knowledge and the other teacher one. In this way, they will join their knowledge and teaching abilities in order to offer the students complete and meaningful learning since connections between different subjects are established.

#### **4.7 CONCLUSION**

The Spanish educational system's objective is to train students to be able to solve day-to-day situations, making use of the knowledge they have acquired in school. To continue, in order to make this possible, we propose a cross-curricular project that seeks to combine maths and English, achieving an enriching, integrated, innovative and contextualized learning, favoring this with the use of storytelling as the main tool. Teachers must stop teaching how they were taught and start working globally, developing projects that harmoniously integrate and join the different areas and subjects of the curriculum, considering that this is the life and reality of students. Co-teaching methods seek, in addition to greater coordination between teachers, a greater connection between subjects, so that students can see the real relationship between school and their daily lives, as well as receive the meaningful education that teachers seek to provide them through this greater collaboration.

## 5. INNOVATION PROPOSAL

### 5.1 PROPOSAL PRESENTATION

The following proposal is a storytelling project for the 4th grade of primary school. This project aims to work in a cross-curricular way on the subjects of mathematics and English. The main resource that is going to be used is children's literature, the storytelling method.

Due to the fact that children's literature books contextualize the contents of both subjects, the learning process and acquisition of contents are easier for pupils. As a result of this contextualized learning, students receive meaningful learning, which is learning that enables students to apply the knowledge acquired in class to their real lives, thus connecting school with their daily life.

So as to carry this storytelling project four books have been selected to be applied in the grade mentioned before. In order to put into practice the comprehension of oral texts (listening skills), all the books selected are in English. Not only is going to be worked the listening skill but also writing, reading and speaking. These three skills are going to be worked in the activities suggested after the storytelling, which will also help students to learn English and mathematical contents of the different blocks in a manipulative, experimental, practical, contextualized and related way, thus giving a complete meaning to the story.

This project is designed for each story to take place over two weeks, for a total of 5 sessions per story. The timing of application of each story is flexible: this means that it can be introduced in the classroom at any time when the contents that are presented in each story are wanted to be taught in a cross-curricular way. Furthermore, this project must be carried out when the teachers are willing to plan together, coordinating their knowledge and teaching skills so as to provide students meaningful learning. Moreover, being one of our objectives to encourage co-teaching, apart from planning together teachers should be ready to share the teaching space and the goals to be achieved. If all this is put into practice, teachers will ensure that students receive contextualized, meaningful learning and, as a result, become competent people in real life.

## 5.2 SPECIFIC OBJECTIVES PURSUED BY THE PROPOSAL

### **General objectives:**

- To propose a cross-curricular Project for the 4th Grade of Primary, which allows developing English as a Foreign Language and mathematical competence at the same time.
- To offer students the possibility of learning in a contextualized, manipulative and meaningful way through the use of storytelling as the main resource.
- To introduce co-teaching as a benefit that will enable the professional growth of teachers and, as a consequence, provide a better education for pupils.

### **Specific objectives:**

- To work on English and Math in an integrated way, which is a benefit for the meaningful learning of the students.
- To purpose the use of storytelling as the main resource so as to improve students' listening skills and to contextualize learning.
- To use storytelling as a method that allows connecting several areas and subjects.
- To suggest interactive, motivational and manipulative activities that enable the integral development of the pupil.
- To encourage teachers to work cooperatively in order to establish more connections among subjects.
- To use formative assessment as a way of helping students to grow both academically and personally.

## 5.3 DEVELOPMENT OF THE PROPOSAL

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### 5.3.1 CONTEXT OF APPLICATION

- **School**

In this part, we will analyze the different contexts in which this approach could be implemented. In the first place, it could be carried out by any school that is committed to working in a cross-curricular way and sees the possibility of working on mathematics and English together as a benefit for its students.

Due to the important role that both, mathematics and English, play in this project, it must be a school that transmits to its students the usefulness of mathematics in daily life as well as a commitment towards active learning of English. As for English, the school should not only give importance to the learning of vocabulary or grammar, but also promote the four main skills (listening, reading, speaking and writing). In this case, through storytelling, listening is the main skill that is going to be worked on, the other three will be worked dynamically while integrating the contents of both subjects.

Furthermore, the school that proposes to carry out this project must take into account that the subjects are not seen in an isolated way so that they should be worked independently of each other as if they had no connection. Just the opposite, in this approach the subjects of mathematics and English are worked openly, without limits and with multiple possibilities. This school should allow students to experiment and play with content as a way of learning. The school should be a place that helps students to understand many things in their day-to-day lives. This requires a contextualized learning full of meaning and life.

- **Co-teachers**

In addition to this, it should be also carried out by two 4th grade teachers willing to work collaboratively in both subjects, combining their skills, knowledge and strengths to offer students meaningful learning, different from what they are used to. In this way, although this approach is already planned in 5-6 sessions

each book, it can also be adapted by teachers so as to achieve their learning outcomes and meet the needs of students.

Moreover, apart from the fact that both teachers must be sure about working mathematics and English in a cross-curricular way, as well as believe in the potential that CLIL teaching has, they must be confident about the area that is not their own and prepared to work hand to hand with another teacher. If they aim to create better teaching approaches that benefit students, co-teachers should be flexible to modify their teaching styles and preferences and share responsibilities.

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### 5.3.2 SELECTION CRITERIA

The books that are going to be used for the storytelling project have been selected in order to attend both mathematics and English content, without one being more important than the other. Thus, the stories have been chosen so as to focus on the maths content for 4th-grade students and the English content established by the ORDER 5958/2010, 7th of December, for bilingual public schools in the Community of Madrid. Although there will only be developed sessions that correspond to four books, a total of four books have been selected. They have been selected attending to the following reasons and criteria:

- Bearing in mind that working mathematics in a second language is difficult, but at the same time our main objective is to demonstrate that this is possible, we have chosen books in which **mathematical and English contents appear implicitly in a joint way**, giving a context to the child's learning.
- Mathematics is presented dynamically and experimentally. In these books, the protagonists work mathematics in a manipulative way, showing children that mathematics can be fun and learnt in different ways, not just doing worksheets or exercises.
- They take into account the **cognitive development of children** and are adapted to their age. Different aspects and contents are considered so that

students have no problem understanding the story when listening to it or with the activities based on it.

- **They promote values** such as empathy, generosity, humility or friendship.

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### 5.3.3 SELECTED BOOKS

To continue with the approach, we will present the books we have selected for the storytelling project. Through them, it is possible to work and advance in the learning of English as a foreign language, as well as the mathematical competence in 4<sup>th</sup> grade of primary school in a dynamic and contextualized way. The following table shows the title of the books that have been selected, together with their respective author, publisher, year of publication and number of pages.

Title	Author	Publisher	Year	Number of pages
<i>The Lion's Share</i>	Matthew McElligott	Bloomsbury USA Childrens	2012	40
<i>Arthur's Funny Money</i>	Lilian Hoban	HarperCollins	1984	64
<i>Bigger, Better, Best</i>	Stuart J, Murphy	HarperCollins	2002	33
<i>Lemonade Sale!</i>	Stuart J, Murphy.	HarperCollins	1997	40

### 5.3.4 TARGET CURRICULAR CONTENT

<b>BOOK 1: THE LION'S SHARE</b>	
<b>ENGLISH CONTENTS</b>	Adjectives for quantity and measuring (half, many, a piece, a lot, enough)
	Lexis: <ul style="list-style-type: none"> <li>- Numbers 1-1000</li> <li>- Animals</li> </ul>
<b>MATH CONTENTS</b>	Fractions: Proper/improper fractions and mixed numbers.
	Twice and half of a number.
	Fractions greater/less than unit or equal to it.
<b>NATURAL SCIENCE CONTENT</b>	Causes of species extinction and actions to avoid it.
<b>P.E</b>	Autonomy and confidence in different situations, solving motor problems with spontaneity and creativity.

<b>BOOK 2: ARTHURS FUNNY MONEY</b>	
<b>ENGLISH CONTENTS</b>	Verb forms: present and past simple, present continuous and present perfect.
	Lexis: Vocabulary about costs and amounts.
<b>MATH CONTENTS</b>	European monetary system.
	Addition and subtraction of prices with euros and cents.
	Problems resolution in which money is included.
<b>SPANISH LANGUAGE AND LIETARTURE</b>	Creation of a theatre script.

<b>BOOK 3: BIGGER, BETTER, BEST</b>	
<b>ENGLISH CONTENTS</b>	Grammar: Comparatives and superlatives.
	Verb tenses: Present, past and future simple.
	Lexis: Plane geometric shapes. Words to talk about areas.
	Oral text comprehension.
	Creative writing.
<b>MATH CONTENTS</b>	Multiplications.
	Plane geometric shapes area (triangle, square, rectangle, rhombus and trapezium).

<b>BOOK 4: LEMONADE SALE</b>	
<b>ENGLISH CONTENTS</b>	Sequence adverbs.
	Adjectives: Quantity.
	Lexis: Food.
	Story writing.
<b>MATH CONTENTS</b>	Bar graphs and double entry tables.
	Pictograms.



## 6. PEDAGOGICAL INTERVENTION

### 6.1 METHODOLOGY AND RESOURCES

The main resource used in this innovation project has been children's literature, which connects with the storytelling methodology, which has allowed us to work on listening skills. In addition, children's literature gives us the opportunity to connect English and mathematics contents, as well as carry out a variety of activities and games. The different methodologies and resources we have used can be applied to different content, depending on the teacher's objectives.

Throughout the sessions presented in the following section, we have worked mainly in a manipulative way, letting the students experiment and face situations that they may encounter in their daily lives. Moreover, in all sessions we have tried students to work together cooperatively, supporting and learning from each other. Apart from this, we have used the following methodologies:

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#### A) EXPERT GROUPS: COOPERATIVE LEARNING STRATEGY

It is a dynamic to work and promote cooperative learning. Many schools are currently introducing co-operative methodologies into their educational projects, but I would like to highlight the Ártica School in the Community of Madrid (Spain). This school is committed to cooperative methodology as a way for its pupils to build their knowledge in a shared way. They understand co-operative work as a classroom structure which enables pupils to interact and as a system of interactions which organises the influence between team members.

Referring more specifically to the expert groups' methodology, it is important to say that it is usually used when the activity is usually divided into sub-tasks. To start, teachers assign each student to a group that will be called the base group. Each group decides the part in which each member of the team is going to specialize, understanding that all of them are necessary for the achievement of

the task. Once this has been decided, the main groups are separated and expert groups are created, formed by the specialists of each base group.

Each expert group will work on the task assigned to them and, once they have completed the task, they will return to their home groups to share with their peers what they have learnt, found out and done. By working in this way all students have a responsibility and learn to cooperate.

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## **B) CORNERS**

Learning through corners consists of creating small spaces in the classroom where children, in small groups, experiment, manipulate, develop their creativity and learn the contents more dynamically way, at the same time they interact with their peers.

In each corner, there is a different activity previously thought by the teacher or teachers so as to students acquire the expected knowledge. Therefore, all the activities are related to the theme of the unit, to the contents.

The main objective of this methodology is to improve the conditions that make possible the active participation of children in the construction of their own learning.

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## **C) GAMES**

This methodology is closely related to the corners one. It also consists of learning by manipulating and experimenting, playing with the contents.

The game is a great protagonist in the children's lives, which allows us to capture their attention and allows them to learn while having fun at the same time. We have always said that you learn from what motivates you and children find this motivation in games. It is possible to learn by game, by experimenting.

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## **D) TOTAL PHYSICAL RESPONSE**

Total Physical Response is a technique created by Dr. James J. Asher (1966). The TPR technique is based on the psychological theory of imprinting, which consists of leaving an imprint in the learner's mind through a memorised association. In this case we focus on teaching language or vocabulary by using physical movements. It is said that children learn their mother tongue through gestures or “language-body conversations” they have with their parents. Although the child doesn’t speak, he/she is taking in all of the language, as well as the sounds. When some time has passed, the child reproduces the language quite spontaneously. This method aims is to mirror this effect, the second language acquisition through movement. Richard and Rodgers (1986) affirm this by saying that the more intensively the memory association is made, the easier it will be for the student to remember the concept that have learnt. They also refer to the different ways in which this association can be made by highlighting the one that can be done verbally or the one that can be done through movement, which is the one associated with the TPR technique.

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## **E) INFORMATION GAP ACTIVITY**

This method aim is to practice speaking, the interaction between students. These activities began to be implemented as a result of society's need and desire to learn a second language in an effective way, which means by using quality teaching resources. In these activities, each student is given information that his/her partner is missing. Students have to interact in order to share their information, in other words, to “bridge the gap” between them. Students need their peers’ information to complete the activity.

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## F) ROTATORY PAPER

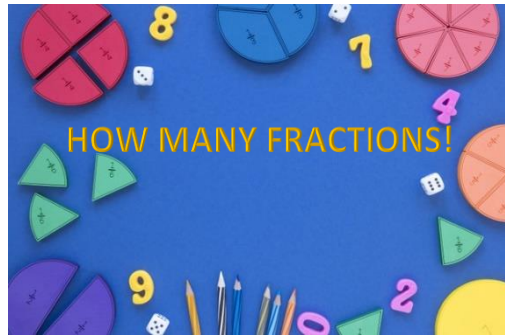
In groups, this methodology seeks to develop writing skills. It consists of passing a sheet of paper and making a written contribution in turn, among the members of a work team with the content indicated to them. The person in charge ensures that turns are respected.



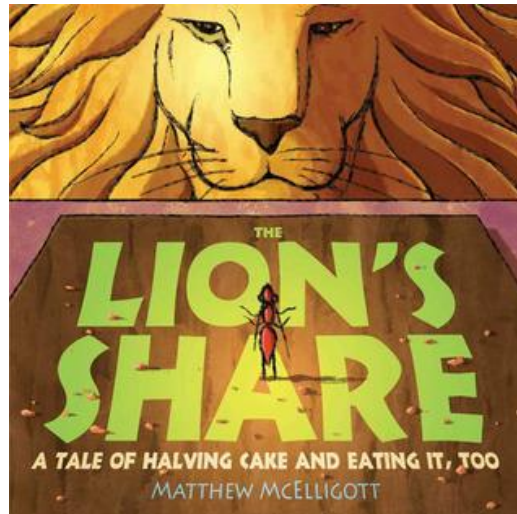
## PEDAGOGICAL INTERVENTION 1

### *MATENGLISH 1*

#### PROJECT NAME



#### STORY: THE LION'S SHARE



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#### STORY DETAILS

- **Author and illustrator:** Matthew McElligott.
- **Publisher:** Bloomsbury USA Childrens.
- **Date:** 3<sup>rd</sup> July 2012
- **ISBN:** 0802723608.

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## **STORY JUSTIFICATION**

This book has been selected because of the number of contents that is possible to work with it, not only English but also maths, values or natural science. Moreover, the contents are very well integrated with the story, in the conversations between the different characters, a conversation that students could have between them at any moment. English and maths contents appear closely connected.

In addition, this book will allow us to discuss generosity and be kind to other people. Finally, as the story characters are animal, it allows us to learn animals' vocabulary, what means to relate the story with natural science.

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## **STORY SUMMARY**

A humble ant gets invited to King Lion's dinner party. Later at the dinner, a cake is being passed around. The greedy elephant starts by taking half of the cake, and each of the remaining animal guests then takes half of the remaining cake. By the time it gets to the ant, only a very tiny slice of cake remains. When she attempts to halve it to share with the king, it crumbles. Feeling mortified, the ant promises to bake a cake for the King. Not to be outdone, each of the other animals then takes a turn to try to impress the King by promising to bake twice as much cake as the previous animal's promise. Soon enough, the number of cakes to be baked is growing rapidly. How many cakes will the last animal have to bake? (Matthew McElligott, 2012)

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## **LINGUISTIC ANALYSIS OF THE STORY**

In this part you will find an analysis of the story from a language perspective, referring to three main points: lexis, grammar structures and language functions. Each of these points makes the book enriching for the students, as it allows us to work on different aspects of language.

**A. LEXIS**

- a) **Subject-specific lexis:** Half, a slice, one-quarter, twice, sixteen, thirty-two, sixty-four, one hundred and twenty-eight, two hundred and fifty-six.
- b) **General English:** Lion, ant, beetle, frog, macaw, warthog, tortoise, gorilla, hippo, elephant, a lot, a piece.

**B. GRAMMAR STRUCTURES**

Quantity adjectives: many, a piece, total, a lot, enough, slice, twice.

- o With a grand gesture, he cut the cake in half.
- o As she struggled to cut the tiny slice in two, it crumbled to pieces on her plate.
- o That sounds like a lot.
- o I shall bake the king twice as many carrot cakes: eight!

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**LESSON PLAN TABLE**

<b>Unit</b>	<b>HOW MANY FRACTIONS!</b>	<b>Lesson</b> 1	<b>Group</b> 4th grade	<b>Time</b> 5 sessions
<b>Project title</b>	How many fractions!		<b>Class</b> English	
<b>Skills</b>	<input type="checkbox"/> Listening <input type="checkbox"/> Speaking <input type="checkbox"/> Reading <input type="checkbox"/> Writing			
<b>Systems</b>	<input type="checkbox"/> Grammar <input type="checkbox"/> Phonology <input type="checkbox"/> Lexis <input type="checkbox"/> Function <input type="checkbox"/> Discourse			
<b>Competences</b>	<input type="checkbox"/> Grammatical <input type="checkbox"/> Socio-linguistic <input type="checkbox"/> Discourse <input type="checkbox"/> Strategic			
<b>Contents</b>	<p><u>English:</u></p> <ul style="list-style-type: none"> <li>- Grammar: Adjectives for quantity and measuring (half, many, a piece, a lot, enough)</li> <li>- Lexis: Numbers 1-1000 / animals.</li> </ul> <p><u>Mathematics:</u></p> <ul style="list-style-type: none"> <li>- Concept of a fraction</li> <li>- Concept of a fraction when the numerator is greater than the denominator (improper fraction) and detects whether a fraction is less than, equal to or greater than unity.</li> <li>- Fractions greater/less than unit or equal to it.</li> <li>- Representation of simple fractions with accessible materials.</li> <li>- Twice and half of a number (review).</li> </ul> <p><u>Natural Science:</u></p> <ul style="list-style-type: none"> <li>- Identify and explain some of the causes of species extinction.</li> </ul> <p><u>P.E:</u></p> <ul style="list-style-type: none"> <li>- Demonstrates autonomy and confidence in different situations, solving motor problems with spontaneity and creativity.</li> </ul>			

<b>Learning outcomes</b>	<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>- Express quantity using the main adjectives.</li> <li>- Talk about animals using the appropriate vocabulary.</li> <li>- Recognize proper/improper fractions and mixed numbers.</li> <li>- Identify whether a fractions is greater than, less than or equal to unit.</li> <li>- Calculate twice a number.</li> <li>- Understand the plot of the story read aloud.</li> <li>- Join a conversation in which fractions terms appear.</li> <li>- Write a rap about fractions.</li> <li>- Talk about species extinction.</li> </ul>
<b>Evaluation criteria</b>	<p>Written in simple present. Examples:</p> <ul style="list-style-type: none"> <li>- Students effectively employ quantity adjectives.</li> <li>- Students identify proper/improper fractions and mixed numbers.</li> <li>- Students identify mixed numbers.</li> <li>- Students effectively employ fractions vocabulary.</li> <li>- Students effectively calculate the double and half of a number.</li> <li>- Students effectively represent fractions with affordable materials.</li> </ul>
<b>Previous knowledge</b>	<ul style="list-style-type: none"> <li>- Basic animals' vocabulary in English e.g. ant, lion, beetle, frog, macaw, gorilla and hippo.</li> <li>- Identifies a fraction and its terms.</li> <li>- Identifies and knows how to represent proper fractions.</li> <li>- Doubling and halving a number.</li> <li>- How to calculate quadrilaterals area.</li> </ul>

## PRE-STORYTELLING

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### SESSION 1

Teachers: Both Maths and English teachers will be in class in order to introduce the new project.

Learning outcomes:

- Students will be able to talk about animals using appropriate vocabulary.
- Students will be able to recognize actions to prevent the extinction of animals.
- Students will be able to make predictions about what the story is going to be about.

Materials: Book, fraction kit, foamy cake, animals' pictures and names (laminated), K-W-L chart, quantity adjectives and fractions vocabulary (laminated), text to complete.

Interaction: Whole class.



## Preparation

---

Before starting the storytelling activity, we will gather the children in assembly in order to give them information about the new *Matenglish* project called “How many fractions!”. Teachers will explain to them which subjects are involved, the main resource to be used (storytelling), how long working on each story will take, the methodologies to be used and what is expected from them.

In order to arouse the interest of students, before they get to class we will have prepared several things in the assembly which will make students ask themselves: What’s going on? What are we going to do? We will stick pictures of the different animals that appear in the story on the blackboard with their names placed underneath at random, provoking them to ask themselves whether they are correct or not. Also, at the centre of the assembly, students will find space fractions kits, fractions written on papers and a big cake made by the teachers with foam. This cake will be used to represent the evolution of fractions in the story. We will let them observe and play freely and experiment with the cake, put the pieces in and out and create fractions unconsciously.

When several minutes have passed, we will start saying aloud our “storytelling alarm”:

- *Teacher: What time is it? (pointing to the clock)*
- *Students: Storytime!!! Sit down and listen! (sitting and holding his/her ear)*

\*The words that are underlined are those that we will say most intensively when communicating with students, which are words we want pupils to remember.

## Lexical preteach (10 minutes)

---

When they are all quiet, we will ask them: How many animals are there? Does anyone know the name of any of them? The student who knows the name of any animal will be permitted to approach the blackboard by raising his/her hand and placing the name of the animal under its image.

When all the animal names are well labelled, more animal names will be added. To continue, students will repeat their names while the teacher points to the picture of each one of them. When students have memorized the names we will take off the

names. Then, we will randomly point to different pictures and they have to say the name of that animal. As the vocabulary is simple, we will do it faster and faster to increase the complexity.

### **Connection with natural science (10 minutes).**

---

Afterwards, in order to relate this session with natural science, we will ask them: *Do you know if any of those animals are in danger of extinction? Do you know what is to be in danger of extinction? Can someone explain it to the rest of the class? Do you think we can do something to avoid animals' extinction?*

With this conversation we aim to make students think about the impact that some of our actions have on nature and, therefore, causing the extinction of some animals. In addition, we will reflect on what actions we should change so as not to harm either nature or animals. Later, we will write them down on small pieces of paper. We will also create a corner called "saving the world", where we will place all our proposals to achieve a better world.

### **Making predictions (2 minutes)**

---

After this, we will focus on the cake, the fraction kits and the fraction written on paper and ask students while showing one of those: *What is this? A fraction? What is a fraction?*

After listening to the students proposals, the teacher will show the students the cover of the story, tell them the title, and taking into account the cake and the animals we have seen before, we will ask the following question: *What do you think the story is going to be about?* After listening to their proposals, we will start reading the story.

## WHILE-STORYTELLING

Teachers: The Math teacher will read the story while the English teacher observes the students.

### **Previous questions**

---

Before listening to the story, the teacher will bring up questions that students should know how to answer after listening to the story.

- *How did the story start?*
- *Which animals went to the party?*
- *What did the lion offer the animals to eat?*
- *What happened with it?*
- *How much cake did each animal eat?*
- *When it was the ant's turn to eat, what happened? And the lion?*

### **Storytelling (8 minutes)**

---

To indicate that storytelling is going to start and bring students back to silence, we will repeat the “storytelling alarm”:

- *Teacher: What time is it? (pointing to the clock)*
- *Students: Storytime!!! Sit down and listen! (sitting and holding his/her ear)*

After this, storytelling will take place.

### **Listening comprehension (2 minutes)**

---

When we finish listening to the story, we will ask students the questions mentioned before to check they have understood what happened in the story and listening comprehension at the same time as practicing oral communication.

After this listening comprehension, as our aim is for students to learn in a fun a manipulative way, we will assign some students the different animals that appear in the story. In this way, by reading the part of the story again in which they start eating the cake, as the animals appear, they take as many pieces as their animal does in the story.

## Playing with contents (15 minutes)

---

Before we start, we will give each student a K-W-L chart (Annex 1, see page 134) in which they will write what they know about fractions and what they would like to learn.

When finished, we will start this activity by showing the students the cake, which has already been divided in equal pieces by the teachers. *Are all the pieces the same size? Do you know how many are there? Let's calculate it!* The cake has lots of pieces, so, as it is a rectangle, if they start counting one by one we will ask them: *What shape does the cake have? Do you remember how to calculate the area of a rectangle?* This will also make students remember how to calculate the area of a square and rectangle, which is content they are supposed to know. In the case that any student is calculating the total of pieces by multiplying both sides we will let him/her finish and later ask him/her to explain to the rest of the class how he/she calculated so quickly. *How many pieces are there? There are 256 pieces! That's a lot!*

*Do you remember the parts of a fraction? What does each of them indicate to us? So where do we situate the total?*

We will continue by asking “Elephant” to take half of the cake. Our aim is that students verbalize the whole process so that they practice both contents: adjectives to express quantity and maths vocabulary to talk about fractions. In order to help students to verbalise everything, we will show them the following flashcard. When we see that they remember it, we will remove it little by little.

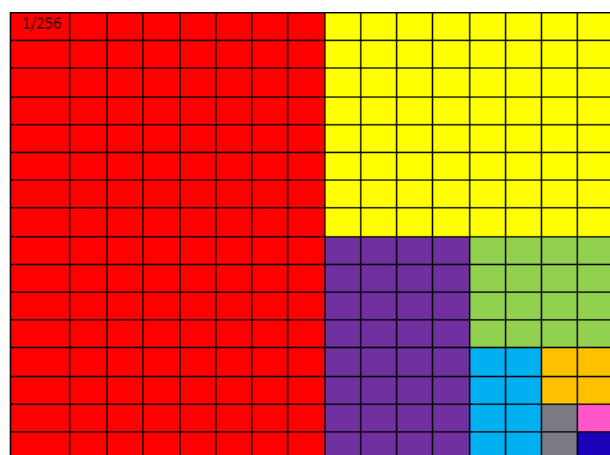
There is a total of...

A has eaten \_\_\_\_\_

X out of X

A: Animal.

X: Number.



### Example

The teacher reads: *The elephant looked at the cake. "I could eat this in one bite", he thought, "but that might seem greedy." With a grand gesture, he cut the cake in half and passed the rest to the hippo.*

Student "Elephant": *There are a total of 256 pieces. The elephant has eaten half of it.*

Teacher: *How do we calculate the half of a number?*

Student: *Dividing into two. The half of 256 is 128.*

Teacher: *Which fraction represents the amount of cake that "Elephant" has eaten?*

Student: *128 out of 256. (The student writes the fraction in the whiteboard).*

Then, the hippo.

The teacher reads: *"What a pig." Thought the hippo. "But if he's taking half, I'm taking half of what's left."*

Due to the fact that they can get confused about the total of pieces, the teacher asks the student: *How many pieces are there in total? 256? The elephant has eaten half of the cake so we don't have that part. Think about it.*

Student "Hippo": *There are a total 128 pieces and I eat half of it. The half of 128 is 64. The fraction that represents what the hippo has eaten is 64/128.*

We will do this with all the animals that appear in the story, asking different students to ask their classmates. This way all of them will get used to using this vocabulary.

## WHILE-STORYTELLING

---

### SESSION 2

Teachers: The English teacher will carry out this session.

Learning outcomes:

- Students will be able to be generous with people.
- Students will be able to understand for gist oral messages.
- Students will be able to use correctly quantity adjectives and fractions terms.
- Students will be able to differentiate proper/improper fractions and mixed numbers.
- Students will be able to identify the main information of a text.

Materials: Poster and words (laminated), Digital screen, papers with short explanations of each type of fraction, fraction kits, cardboards.

Interaction: Beginning: Whole class.

Expert groups methodology: Five groups of four students.

### Review activity (5 minutes)

---

When students get to class, they will find a big piece of paper stuck on the wall. They are not allowed to look at what is behind it. *What do you think it is?* After different suggestions, we will take off the paper. It is a letter from “Gorilla”. He wants to test what we know about fractions. Students must complete the letter so as to understand it. To do so, we will provide students with different words they might fill in the gaps with so as to complete the letter.

**WORDS**

A PIECE	HOW MANY	FRACTION	32 OUT OF 64	
TOTAL	ENOUGH	DENOMINATOR	NUMERATOR	
A LOT	FRACTION	32/64	HALF	64

## TEXT

Hello 4<sup>th</sup> grade students! I'm



. I know that you have learnt \_\_\_\_\_ of

things today with the story, but I really don't understand anything about \_\_\_\_\_, can you help me? I know it is formed by two numbers, the \_\_\_\_\_ and the \_\_\_\_\_. The one below indicate the \_\_\_\_\_ and the one above what I have eaten. When I received the cake it didn't have the same amount of \_\_\_\_\_ as when the elephant started to eat, so the \_\_\_\_\_ of pieces changes, doesn't it?

I had a total of \_\_\_\_\_ and I ate \_\_\_\_\_ of what I received from hippo, which I think is \_\_\_\_\_ to keep me from being hungry for the rest of the day. \_\_\_\_\_ pieces did I eat? So the \_\_\_\_\_ that represents what I have eaten is , that is read \_\_\_\_\_.

When it is completed, we will read the whole text again and hang the poster on the wall (Annex 2, see page 135). We have put the words in a bright colour so that they stand out and students can count on that help when they need it throughout the different activities.

### **Connection with values (5 minutes).**

---

When students go back to their seats, we will play an audio of a lion roaring (double click) in order to motivate students for this session



Lion roaring.aac

The teacher will then say: *Guys! Who is that? It's the Lion! We have forgotten to give him cake! Maybe he is angry with us!*

At this moment, we will start a conversation about being generous so as to relate the story with values.

- *Is it nice to forget about someone?*
- *Do you like when people don't think about you?*
- *How would you feel if they forget about you?*
- *We should take care of others, not only friends but also with people around us.*

**Presentation of new content (10 minutes).**

---

At this very moment, we hear the lion roaring again. The teacher looks surprised so as to motivate students. Suddenly, the lion starts to speak; he has a message for the

students.  Lions' message 1.mp3

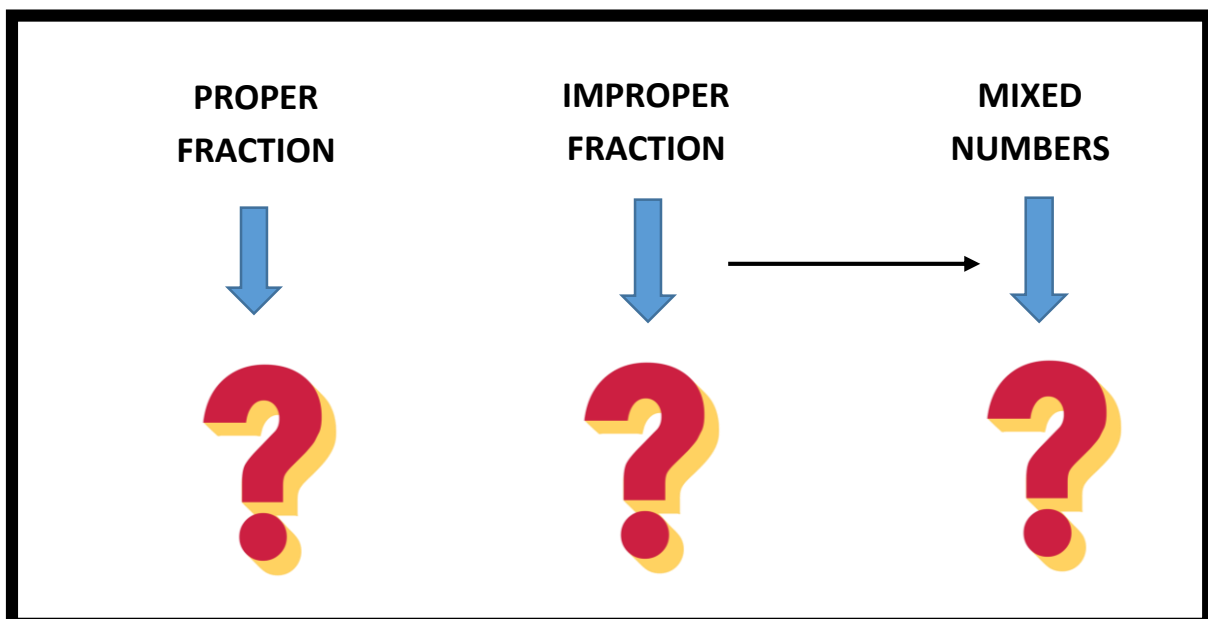


Hello 4<sup>th</sup> grade students. I'm de lion. I would like you prepare a meal for me. That would be very nice. But there is a problem, I want a very specific meal and I think you don't know enough about fractions so as to prepare me that meal I want. Hmmmm let me think, mmmm I'll talk to your teacher and see what we can do. Byeeee 4<sup>th</sup> grade students! See you soon!

After listening to the lion's message, the teacher asks:

- *What did the lion say?*
- *Do we know enough about fractions so as to prepare a very nice meal for him?*
- *What do you already know about fractions?*

After listening to the students' previous knowledge on fractions, which is also useful for the teacher in order to know what needs to be reviewed and what they already know, the teacher projects the following on the digital board:





It is true that students know about proper fractions since they are the first ones they get to know. However, teachers sometimes forget to say the specific term “proper fractions”. Due to this, we will start by asking:

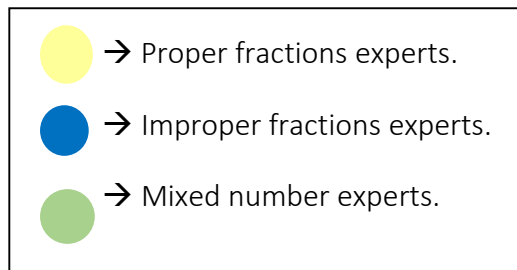
- *Does someone know what we mean by proper fraction?*
- *And improper fraction?*
- *What can that arrow that joins improper fractions and mixed numbers mean?*

We will listen to the students’ proposals and ideas in order to know their previous knowledge.

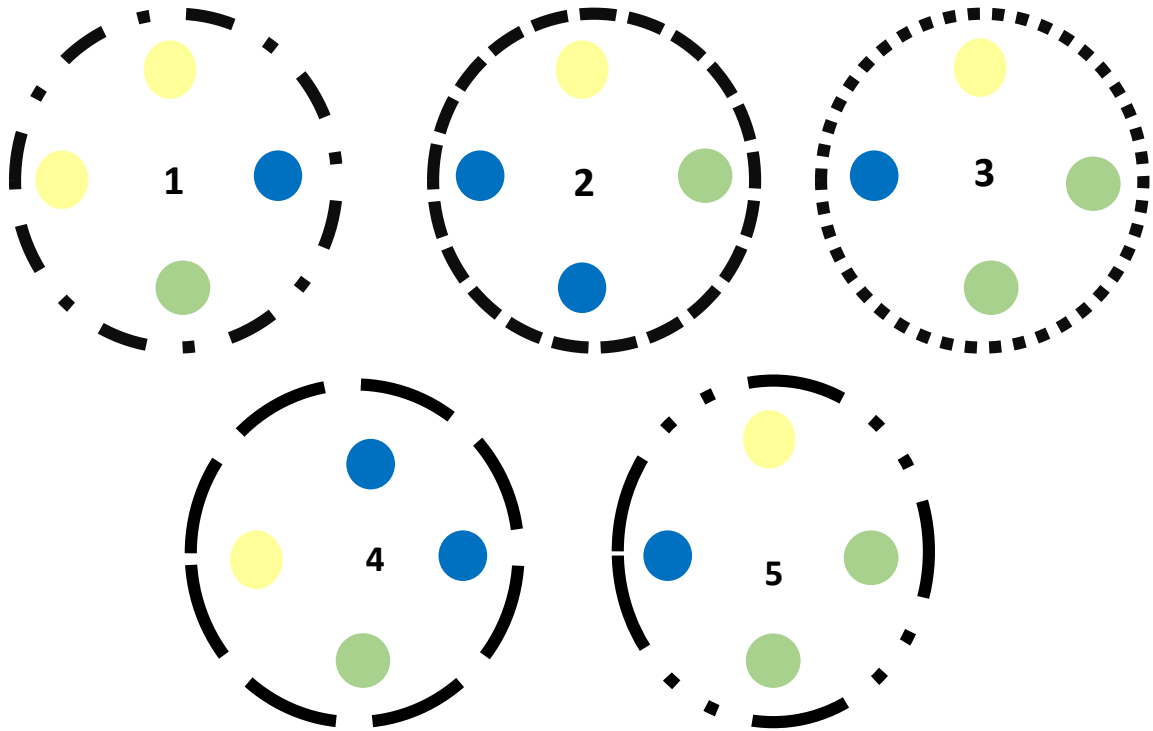
### **Expert groups: Cooperative learning strategy (20 minutes)**

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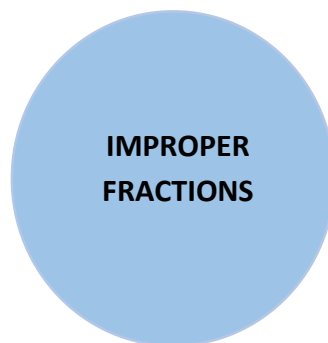
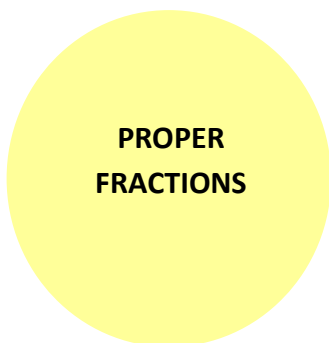
After that, we will divide the class into five groups of four students each. As our aim in this session is that students learn the difference between the three types of fractions by themselves, we are going to work with the expert group method.



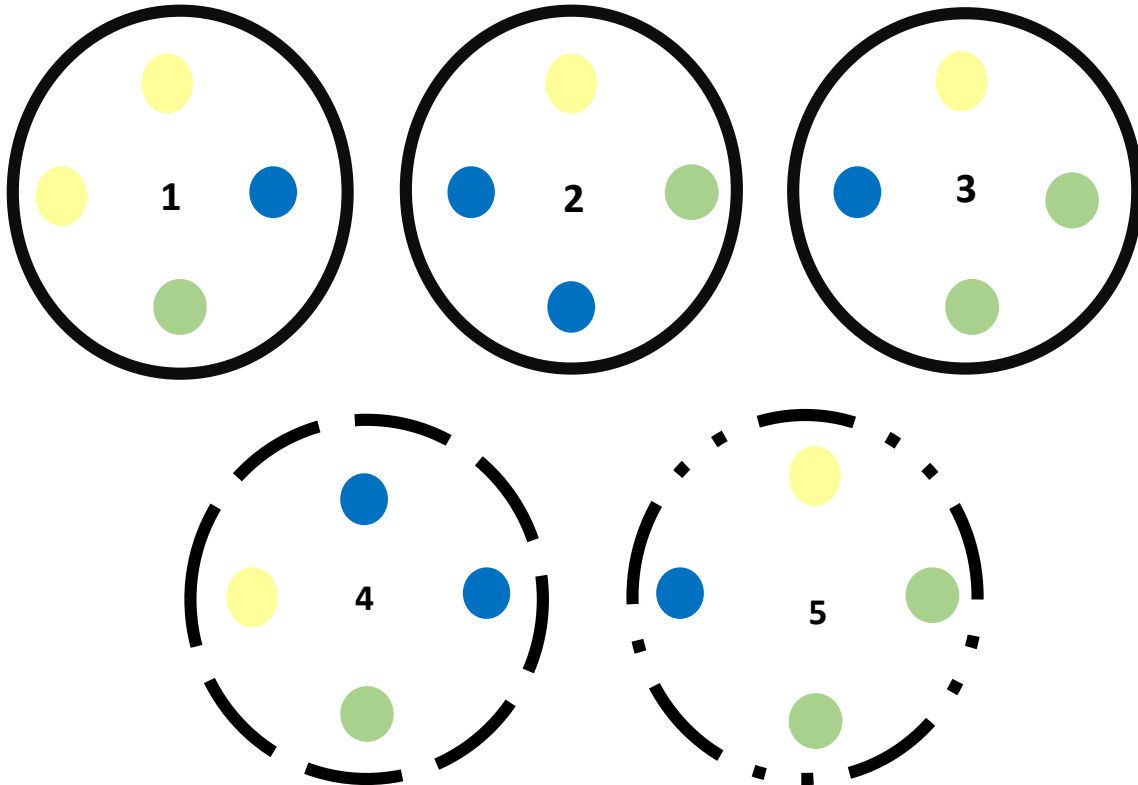
1. When students are divided in groups the teacher will assign a type of fraction to each student, the one they have to become an expert on. She will then hand out, depending on what they are experts in, a paper that explains that type of fraction. It is important to insist on what we expect from them, that is, a clear definition of that type of fraction and an example of it (5 minutes).



- When the time is up, the experts from the initial groups will meet with the experts from the other groups that are working on the same fraction as them. Each expert will tell the others what he/she has understood and, together, they will discuss the best definition and the example. In this part, the teacher must insist on the importance of being able to explain it to their peers afterwards and make these concepts clear to them. For this part, each group will be given a fraction kit, which will help them to understand what they have read, to construct the definition and to give an example (10 minutes).



3. Finally, experts will return to their initial group. Each expert will explain to their classmates what they have become experts at. They will be allowed to use the fractions kit so as to show their peers examples of what they are explaining (10 minutes).



#### Explanation of contents (5 minutes)

To continue the session, the teacher will ask three experts in each type of fraction to write on the whiteboard an example of each fraction in which each is an expert. After, the teacher will ask another student to indicate which type of fraction it is. Then, she will continue with more examples to make this clear to students. She will use the fractions kits to make it more visual.

#### Group work (10 minutes).

Later, when we are sure that students have understood the three types of fractions, we will ask them to create a poster that includes a title (type of fraction), short definition, an example and a picture that represents that fraction. Our aim is to remove the question mark, something that will demonstrate that we have acquired new knowledge.

Finally, we will stick the posters on the wall in our maths corner. Now, we are more ready to prepare a good meal for the lion, but it is not enough!

---

### SESSION 3

Teachers: The maths teacher will carry out this session.

Learning outcomes:

- Students will be able to indicate if a fraction is greater than, less than or equal to unit.
- Students will be able to apply their knowledge to solve challenges.

Materials: Chocolate bars, fractions papers, domino, bingo and brainbox.

Interaction: Five groups of four students each.

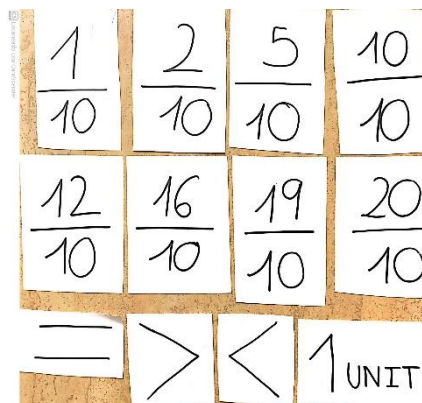
#### **Manipulating contents (25 minutes)**

---

In this session, as we already know the difference between proper/improper fractions and mixed numbers, our aim is to know which fractions are greater than, less than or equal to unit. In order to learn this in a fun and manipulative way, we will divide the class into five groups of four students each. After, we will give to each group two bars of chocolate, which they have to crack each of them into 10 equal pieces.

To show the sequence of this session I am going to use pictures that show what I would do in the classroom.

1. First, we will ask all students to write down in papers fractions from  $\frac{1}{10}$  to  $\frac{20}{10}$ , 1 UNIT, and the symbols  $>$ ,  $<$  and  $=$ .



2. Then, we are going to learn to differentiate fractions less than unit and equal to unit.

¿How many squares are in a chocolate bar?

The fraction that represents the whole chocolate bars is  $10/10$  that is the same as 1 unit.

$$\frac{10}{10} = 1 \text{ UNIT}$$



3. Are you hungry? You can take 2 pieces. What fraction represents what we have just done? Is there any piece left? Is this fraction greater than, less than or equal to  $10/10$ ?

$$\frac{2}{10}$$

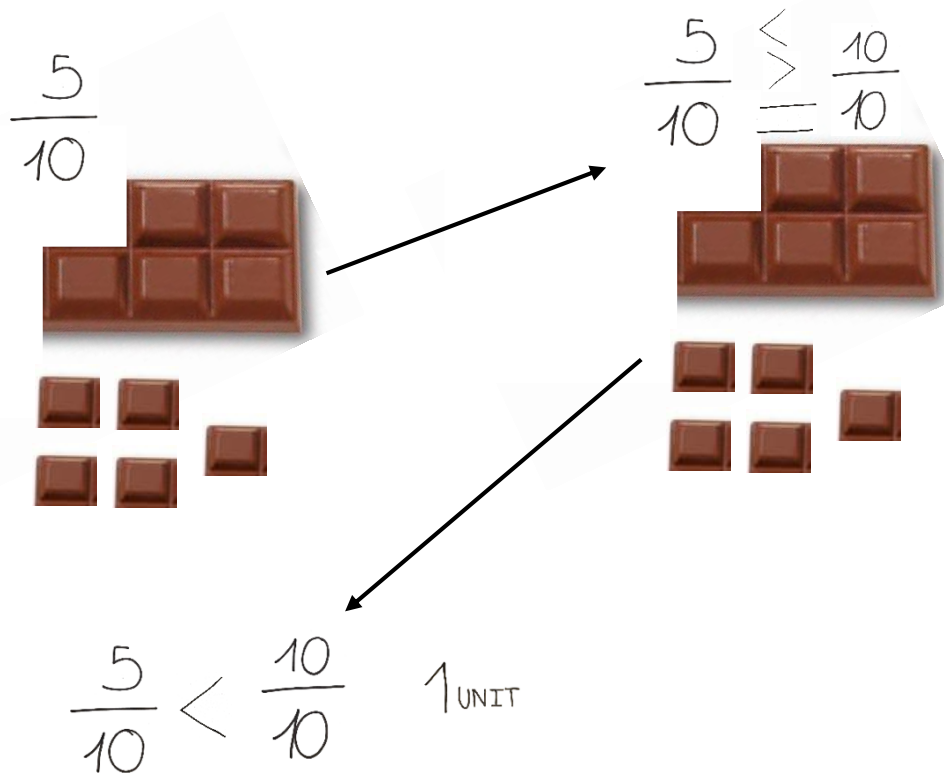


$$\frac{2}{10} < \frac{10}{10}$$



$$\frac{2}{10} < \frac{10}{10} \quad 1 \text{ UNIT}$$

And if I eat half of the chocolate bar? Ask yourselves, is there any piece left?



And if we eat it all? Is there going to be anything left? How many pieces of chocolate have we eaten?

$$\frac{10}{10}$$

Is there another way of saying 10 out of 10 ( $10/10$ ). We have eaten the whole chocolate bar, so we have eaten...

1 UNIT

4. I'm so hungry! I'm going to eat  $16/10$ . Do you remember the name of this type of fraction? We are going to take one chocolate bar and eat  $16/10$ .



What happened? Do we have enough pieces of chocolate? What can we do? We can take another chocolate bar but first think. How many pieces have we eaten already? Show me the fraction that represents what we have eaten up to now.

$$\frac{10}{10} \quad \text{or} \quad 1 \text{ UNIT}$$

We have already eaten 1 unit of chocolate. How many pieces are missing if I want to eat  $\frac{16}{10}$ ? We take the second chocolate bar and how many pieces should we take?

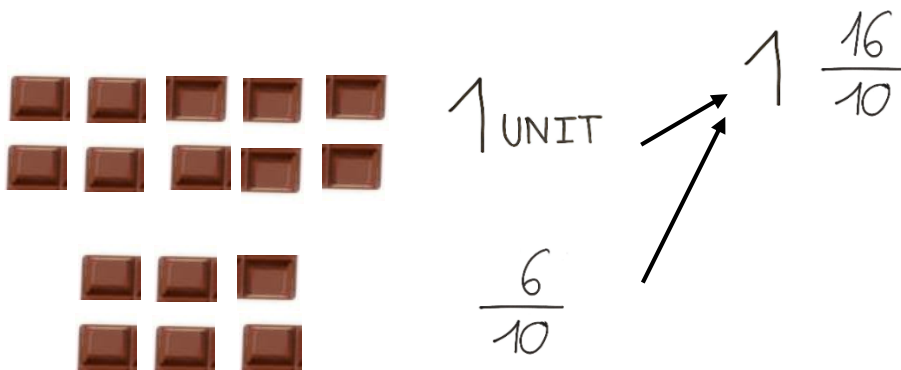


Which fraction represents what we have taken from this chocolate bar?

$$\frac{6}{10}$$

If we have eaten one chocolate bar and  $\frac{6}{10}$  from the second one, which fraction represents this?

How do we call this type of number? Is it greater than, less than or equal to the unit?



$$1 \frac{16}{10} > 1 \text{ UNIT}$$

When we finish this, we will ask students to keep doing more examples and write down all the processes they follow in their notebooks. When the class finishes, the teacher will collect all their notebooks and see how they are going, if everything is clear or if there is something necessary to review.

### **Corners (25 minutes)**

---

The English teacher will arrive at this time so as to help the maths teacher to monitor the different corners. Each game will be explained beforehand. Also, a timer will be placed on the whiteboard for students to keep track of the time.

### **Fractions domino**

The set consists of a total of 26 pieces. The students will share them out and the student who has the domino counter indicated by the teacher will start playing.

### **Sorting fractions**

A large arrow will be placed in the middle of the group, with the right side of the arrow being larger than the unit and the left side being smaller than the unit. In addition, they will be given a large number of laminated fractions that they will have to put into order.

### **Brainbox**

Brainbox is a box containing 54 cards. Each card shows interesting facts about animals from around the world, including where they live, what they eat, whether they are endangered, how large they grow and how long they live.

The aim of the game is that one student take one card, tries to memorize the information for 10 seconds and then answers a question based on the roll of a die. If the student answers the card correctly, the card is kept. The student with the highest number of cards after 5-10 minutes is the winner.

### **Fractions bingo**

Fraction bingo is played in the same way as traditional bingo. The teacher will call out the fractions listed on the template. The students, as fractions appear on their cards,



will place a counter on top of that fraction. When a student completes a line, he/she will say "LINE", whoever completes the whole card will say "BINGO".

Materials: Annex 3 (See page 136)

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## **SESSION 4**

Teachers: Both maths and English teachers will carry out this session, as well as the P.E teacher.

Learning outcomes:

- Students will be able to solve different challenges by using English, their maths knowledge and physical abilities.

Materials: The ones needed in each activity.

Interaction: Four groups of five students each.

### **Explanation.**

---

To start with this session we will use the poster students did to remember what we have learnt in the last session.

- *Are we now prepared to serve the lion such a nice meal?*
- *Do you want to know how are we going to prepare it?*

For this activity we will go to the playground and, in groups, they have to complete different challenges in order to complete a menu for the lion. For each challenge they overcome, apart from three points, they will be given a new dish in order to complete the menu or clues to know what the lion wants. This activity allows us to work in a cross-curricular way maths, English and P.E.

To start, we will divide the students into four groups of five students each using the sticks method. Each group is going to represent an animal of the story. Also, we will provide them a map which indicates where the different challenges were and a table

that will help students to know to which challenge they have to go. This will allow us to work on the students' autonomy. Finally, before we start teachers will highlight the importance of speaking all the time in English, which will help the different groups to score more points. (Annex 4, see page 140).

### **Game rules and maps.**

Before we go to the playground, we will show students a poster that reflects the different rules we have to take into account when playing. Also, we will hand them out the maps in which are the challenges marked (Annex 5, see page 140).

After we read them, we will go down to the playground so as to start with the activity. Each group should look at their chart to see which challenge they start with.

As for the teachers:

The English teacher: Challenges 1 and 2.

The maths teacher: Challenges 3 and 4.

The P.E teacher: Challenge 5. As no student will attend this challenge until the last moment, the P.E teacher will be assisting the other teachers. They will do the same when the students come to challenge 5.

There will be a total of 10 minutes per challenge so that all students start and finish each challenge at the same time, thus favouring the development of the session.

Below we present the different challenges that will be given to the students, trying to integrate both mathematics and English content.

---

### **CHALLENGE 1: COMPLETE UNITS!**

In this challenge, two groups will compete. The members of one group will hook a red kerchief to their pants, and the members of the other group will hook a green kerchief. The objective is that each group take the kerchiefs from the members of the other group. If they succeed, they must hook those handkerchiefs on their pants, the other group can pick it up again. The group with the most handkerchiefs wins and, as a

consequence, they receive a clue they have to solve in order to know one of the dishes to complete the lions' menu.

In this clue, we will suggest a challenge that includes a mixed fraction. The teacher will help them. To do this, we will provide them with five pizzas of foamy (Annex 6, see page 141) and the following paper written by the lion.

I love pizzas and I would like to eat  $\frac{8}{8}$  cheese pizza,  $\frac{8}{8}$  barbecue pizza and  $\frac{3}{8}$  ham and cheese pizza. Represent this with the pizzas you have and then write down the number that represents the amount of pizza I'm going to eat.

---

### **CHALLENGE 2: THREE IN A ROW!**

For this challenge we will have laminated 3 images of rice and 3 of spaghetti. Two groups will compete, one will represent the rice and the other the spaghetti.

The game we are going to play is "three in a row", a game known by most of the students. To do this, we will place three or more meters away from the students "the board" that we will make with ropes. The members of each group will line up and when the teacher gives the signal the first of them must run to the board and place his/her image where he/she considers. He/she will run back, shake hands with his partner and the second student will run to place his picture in a place where it will favor his group to achieve three in a row. This movement will be repeated as many times as necessary until one of the groups manages to make three in a row.

The group who wins will get the following clue:

I love cookies. I have sixty cookies, but I want twice that. Then you add forty and subtract twelve. That's a lot for me! I just want half of that.

---

### **CHALLENGE 3: LET'S GO FISHING**

For this game we will need a basin of water, small floating plastic fish and spoons.

The students, individually and taking turns, should put the spoon in their mouth and, without the help of their hands, try to catch a fish.

After a few minutes, the teacher will let them know that the time is up and will give them the next clue:

It is very important to eat fish at least twice a week, that's why I have sent you fishing. To get the points you must write the fraction that represents the amount of fish caught out of the total number.

---

### **CHALLENGE 4: BLINDLY**

For this challenge we will need two kerchiefs that allow two students to cover their eyes. When they cannot see the teacher will stick on the wall different images that will represent adjectives that express quantity. For example: half, enough, nothing, a lot, a piece.... (Annex 7, see page 142).

In addition, that adjective cards are going to be laminated too. The classmates who can see will give the others one of the targets and must guide them, without touching it, to the wall and get them to place the adjective next to the correct image.

If they get them all right they will receive the following clue:

I would love to have this fruit on the menu:

I am a fruit. I taste sweet.

You can serve me in a cake

With whipped cream. You

Can bake me in a pie. Who am I?

---

### CHALLENGE 5 FINAL COUNTDOWN!

All groups will compete in this last event. The pupils, in pairs, will have to overcome a circuit and reach the end to take a food item from their basket. To return they do not have to complete the circuit.

Sounds easy, doesn't it? The pupils in each group will be placed in pairs and will tie the left foot of one with the right foot of the other so that they cannot be separated when completing the circuit.

The group that collects the most food will be the winner of this event. We will add four points to their final score, which does not mean that they are the winner.

### End of the session

---

Finally, when all the games are completed we will all together tidy up and go back to class. When all are relaxed the teachers will play another audio from the lion thanking

the students for the great food they have managed to prepare for him.



Lions message.mp3

(Double click)



I want to thank you all for everything you have done for me. The food was amazing! That shows you have learnt a lot about fractions and managed to pass all the challenges. Once again, thank you very much!

This session will conclude by informing the students that in the next class they will be told who has won the lion menu and will therefore be rewarded.

---

### SESSION 5

Teachers: The English teacher will carry out this session.

Learning outcomes:

- Students will be able to write a rap song which includes quantity adjectives and fractions terms.

Materials: Paper

Interaction: Four groups of five students each.

### **Prize-giving.**

---

We will start the session by giving the winners of the last session activities their prize. The prize is a big box with sweets that, if they want, they can share with the rest of the class since in the other session we have learnt with “lion” that it’s rude not to share things with other people.

### **Writing a rap song.**

---

This session marks the end of the “How many fractions!” project. Our aim is to finish in a fun way and keep learning while we have fun. Because of this students will create a fractions rap that will help them to review everything they have learnt, as well as to remember fractions in the future. This rap must include:

- Animals’ vocabulary.
- Adjectives of quantity (many, a piece, half, a lot, enough)
- Parts of the fraction
- Three types of fractions
- Examples

Before they start creating their raps, we will divide students in groups and show them this video as an example: <https://www.youtube.com/watch?v=bjNHcYQ3D9o>

After viewing the video, we will inform students they have the whole session to prepare their rap and that, in the next session, they have to sing it to their classmates so, if they want, they can change clothes and bring any material they need.

Finally, we will hand out the rubric that will guide the students to complete this task (Annex 8, 143).

---

## **SESSION 6**

Teachers: Both maths and English teachers.

Learning outcomes:

- Students will be able to verbalize a rap song clearly.

Interaction: Four groups of five students each.

This last session will be devoted to listening to the different raps that the students have created. In order to give them feedback, the teachers will create a rubric which will include the five objectives that should be achieved with this rap. When all the groups are finished, the teachers will hand over each rubric to its respective groups.

Finally, we will give them back their K-W-L chart so that they can fill in what they have learnt along these 6 sessions.

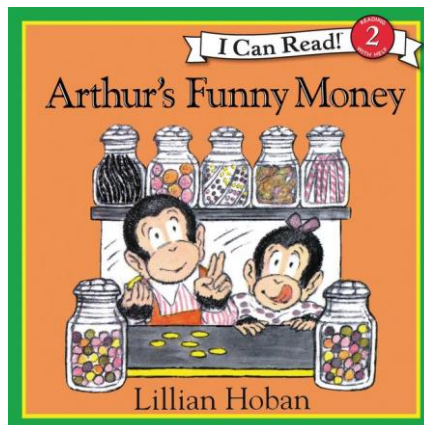
## PEDAGOGICAL INTERVENTION 2

*MATENGLISH 2*

PROJECT NAME



STORY: ARTHUR'S FUNNY MONEY



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### STORY DETAILS

- **Author and illustrator:** Lillian Hoban
- **Publisher:** HarperCollins; 1st edition.
- **Date:** 11 April 1984.
- **ISBN:** 006444048.



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## STORY JUSTIFICATION

This book has been selected because of the variety of English content that it offers, especially verb tenses. Moreover, mathematics content appears in a very integrated way in the story. In addition, considering that on many occasions children set up their own business in Summer or they play at selling things, we could say that these mathematical contents are applied in a context close to the pupils. Besides, the book presents simple vocabulary, easy to learn for the pupils, but which will help them in their fluency when talking about money.

Finally, this story will let us discuss the importance of saving money and the benefits it has.

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## STORY SUMMARY

Arthur wants to buy a T-shirt and a matching cap, but he doesn't have enough money. His sister, Violet, gives him the idea of setting up a bike-washing business. Arthur thought it was a good idea and they got on with it. To do this, they count the money they had, what they had to buy to clean the bikes and, most importantly, the price at which they were going to clean the bikes so as not to lose money (Lilian Hoban, 1984).

---

## LINGUISTIC ANALYSIS OF THE STORY

In this part you will find an analysis of the story from a language perspective, referring to three main points: lexis, grammar structures and language functions. Each of these points makes the book enriching for the students, as it allows us to work on different aspects of language.

### A) LEXIS

- a) **Subject-specific lexis:** Euro, cents, left over, missing money.
- b) **General English:** make money, piggybank, set up a business.

## B) GRAMMAR STRUCTURES

- **Present simple:** I know you don't like peas.
- **Past simple:** Arthur and Violet went into the store.
- **Present continuous:** I am working with number right now.
- **Past continuous:** Arthur was counting the money in his piggy bank.
- **Future simple:** I'll ride all over town and get you lots of business.

## C) LANGUAGE FUNCTIONS\*

- **Giving advice:**
  - You should charge half as much.
  - You could wash bikes.
- **Comparing and contrasting:**
  - A trike is only half as big as a bike.

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### LESSON PLAN TABLE

<b>Unit</b>	<b>MONEY, MONEY, MONEY!</b>	<b>Lesson</b>	2	<b>Group</b>	4th grade	<b>Time</b>	5 sessions
<b>Project Title</b>	MONEY, MONEY, MONEY!			<b>Class</b>	English		
<b>Skills</b>	<input checked="" type="checkbox"/> Listening	<input checked="" type="checkbox"/> Speaking	<input checked="" type="checkbox"/> Reading	<input type="checkbox"/> Writing			
<b>Systems</b>	<input checked="" type="checkbox"/> Grammar	<input type="checkbox"/> Phonology	<input checked="" type="checkbox"/> Lexis	<input type="checkbox"/> Function	<input type="checkbox"/> Discourse		
<b>Competences</b>	<input type="checkbox"/> Grammatical	<input type="checkbox"/> Socio-linguistic	<input type="checkbox"/> Discourse	<input type="checkbox"/> Strategic			
<b>Contents</b>	<p>English:</p> <ul style="list-style-type: none"> <li>- Lexis: Money vocabulary (costs/amounts).</li> <li>- Verb forms: present continuous, present perfect.</li> </ul> <p>Mathematics:</p> <ul style="list-style-type: none"> <li>- Recognition of the European monetary system.</li> <li>- Addition and subtraction of prices with euros and cents.</li> <li>- Problems resolution.</li> </ul>						

	Spanish Language and Literature: <ul style="list-style-type: none"> <li>- Theatre script.</li> </ul>
<b>Learning outcomes</b>	Students will be able to: <ul style="list-style-type: none"> <li>- Make predictions using the future tense.</li> <li>- Use the appropriate vocabulary to talk about money.</li> <li>- Interact using different product prices.</li> <li>- Identify the European monetary system.</li> <li>- Add and subtract money.</li> <li>- Make different groups of coins with the same amount of money.</li> <li>- Solve problems in which are included euros and cents.</li> <li>- Write a theatre script according to the established criteria.</li> <li>- Perform a theatre scene.</li> </ul>
<b>Evaluation criteria</b>	<ul style="list-style-type: none"> <li>- Students identify the European monetary system.</li> <li>- Students effectively employ costs/amount vocabulary.</li> <li>- Students effectively make operations with euros and cents.</li> <li>- Students effectively solve mathematical problems.</li> <li>- Students write a theatre scrip including the established criteria.</li> <li>- Students speak clearly to the public when performing.</li> </ul>
<b>Previous knowledge</b>	<ul style="list-style-type: none"> <li>- Verb tenses: Present simple, past simple, present continuous.</li> <li>- Recognition of European monetary system.</li> <li>- Decimal numbers.</li> </ul>

## PRE-STORYTELLING

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### SESSION 1

Teachers: Both the maths and English teachers will carry out this session so as to present the new project.

Learning outcomes:

- Students will be able to make predictions about what is going to happen in the story.
- Students will be able to identify the European monetary system.
- Students will be able to add and subtract money.
- Students will be able to use the appropriate vocabulary to talk about money.

Materials: Plastic money, story, clothes, objects, labels and flashcards.

Interactions: Whole class.

### **Presentation of the project and lexical preteach.**

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Firstly, before students come to class teachers will place at the center of the assembly objects, plastic money and labels. When they arrive the song “Money” of Mamma will be on (Annex 9, see page 147). Teachers will tell them to sit in the assembly and let them play freely for 5 minutes. Later, teachers will gather them in assembly in order to inform them about the new *Matenglish* project. The Maths teacher will start the session.

- *What can you see in the middle of the assembly?*
- *What do you think it's the new project about?*
- *Do you have money saved up?*
- *What do you use that money for?*

Before listening to the story we will practice some vocabulary related to it. To do so, we will ask two students to go into the center of the assembly. We will give them some money and ask them to take the objects they like most.



Imagine we have given them 32 euros with different coins and bank notes and they have taken the pin-pong racquets and the tennis balls.

- *T: How much money do you have?*
- *S: 32 euros.*

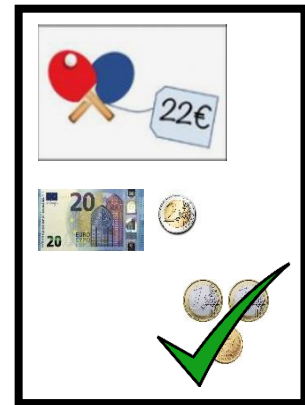
- T: Do you have enough money to pay for those objects?

All together we will help them to count their money. First, we will separate the money needed to pay for the pin-pong racquets and later the tennis balls.



- S: Yes, we have enough money to pay.
- T: So you have money left over.

At this moment we will show students the next flashcard:



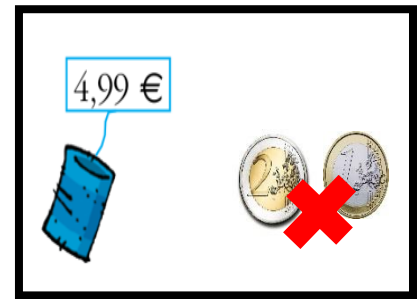
To continue, we will give other two students just 3 euros and ask them to take something from the middle of the class. They choose the wristband.

- T: How much money do you have?
- S: 3 euros.
- T: How much is the wristband?
- S: 4.99 euros
- T: Do you have enough money to pay for those objects?



- S: No, we don't have money.
- T: So, you are missing money.

At this moment we show students the following flashcard:



To continue, as we are missing “make money, piggybank and set up a business”, we will say students a sentence at the same time we show them the flashcard that represents what we are saying at that moment. For example.

*Next month, I’m going to start selling sweets so as to earn money and save it in a box.*



We will repeat the sentence two times. Afterwards, we will show again all the flashcards at the same time students repeat the vocabulary.

### WHILE-STORYTELLING

The English teacher continue with the session

Before listening to the story, the teacher will provide the students a checklist containing the main objectives to be achieved during these sessions. The English teacher will read them aloud. Later, she will explain students they will get again the checklist when the project finishes so as to complete it and reflect on what they have learnt.

After students have knowledge of the vocabulary that appears in the story, we will show them the cover of the story. *What do you think the story is about?*

To indicate that storytelling is going to start and bring students back to silence, we will repeat the “storytelling alarm”:

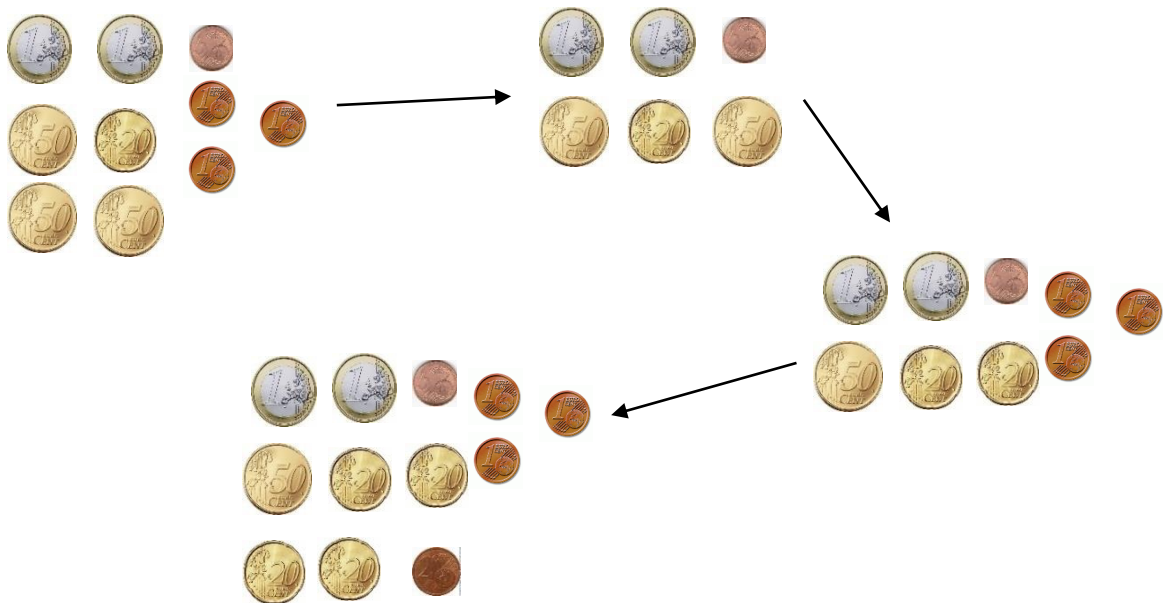
- *Teacher: What time is it? (pointing to the clock)*
- *Students: Storytime!!! Sit down and listen! (sitting and holding his/her ear)*

After this, storytelling will take place.

Before storytelling starts, we will leave some money in the middle of the assembly in order to show students what Arthur, the protagonist of the story, does with the money. We will ask for a volunteer so as to help the teacher in this process.

For example:

*“Now,” said Arthur, “write down \$3.78. That’s how much I had to start. Under that write take away 53c, and take away 27c. That’s for the soap and Brillo”. Violet wrote down all the numbers. “Now add on 42c,” said Arthur. “And that’s how much I have now”.*



Can we make any changes so as to have fewer coins? Let's count all together:



How many cents are there? 100cents? 100 cents is the same as...



This way of working allows students to learn experimentally, manipulating, they discover contents through Arthurs' story.

After listening to the story, so as to finish with this session, we will ask students the following questions to make sure they have understood what we have listened to.

- *What did Arthur want to buy?*
- *Did he have money?*
- *What did he do to solve the problem?*
- *Did anyone help him?*

## POST-STORYTELLING

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### SESSION 2

Teachers: The math teacher will carry out this session.

Learning outcomes:

- Students will be able to write in decimal numbers the value of a coin.
- Students will be able to add decimal numbers.
- Students will be able to make mental sums of prices with cents.
- Students will be able to collect the same amount of money by using different coins or bank notes.
- Students will be able to estimate products prices.
- Students will be able to explain their actions using different verb tenses.



Materials: Mini white-boards, plastic money, objects, clothes...

Interaction: Whole class. 4 groups of five.

### Revision of addition of decimal numbers.

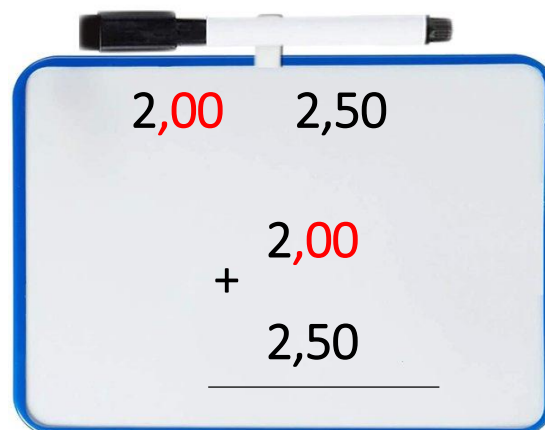
Our aim in this session is to practice the addition of money, practicing at the same time decimal numbers. Firstly, we will revise the position of each number when adding decimal numbers so as to get the correct solution. At the same time, the teacher writes on the whiteboard, students will be given small whiteboards so that they can also practice, as well as red and dark markers. Writing in different colours makes learning more visual to students.

*What is the difference between these two numbers?*

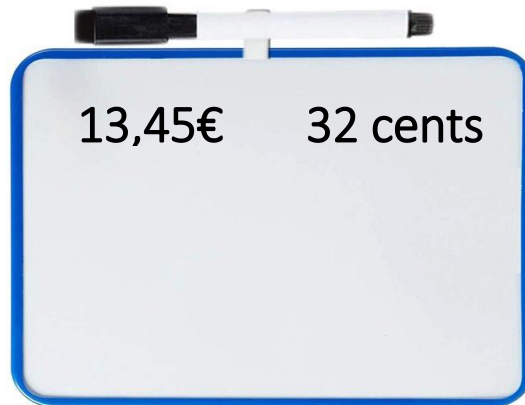


*What do we have to take into account when placing both numbers so as to add them?*

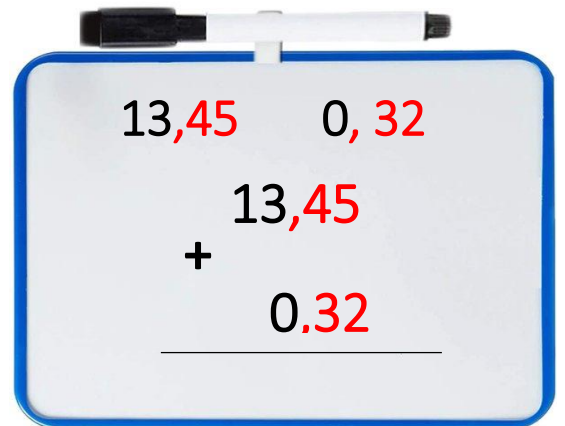
*If I do this, is the amount the same? Did I add any cent to the 2€? Is it easier now to place the numbers?*



And if we try with these numbers? In the second number do I have a complete euro?



We put the coma and, as I don't have any euro I put a 0. Where do we have to put the coma? Just under the other coma.



### Manipulating money

After revising with students the position of the numbers so as to add up two decimal numbers, as one of our learning outcomes is students to make mental sums of prices with cents, we will add up money manipulating the money.

For example:  $13,50 + 2,25$ .

1. We are going to focus on the first number.

How many euros do we have?  $13,50$



And how many cents? 13, 50



Here we have our first group:



2. Now, we are going to focus on the second number: 2,25.

How many euros do we have? 2, 25.



And how many cents? 2, 25.



Here we have our second group



And now, if we put it all together:

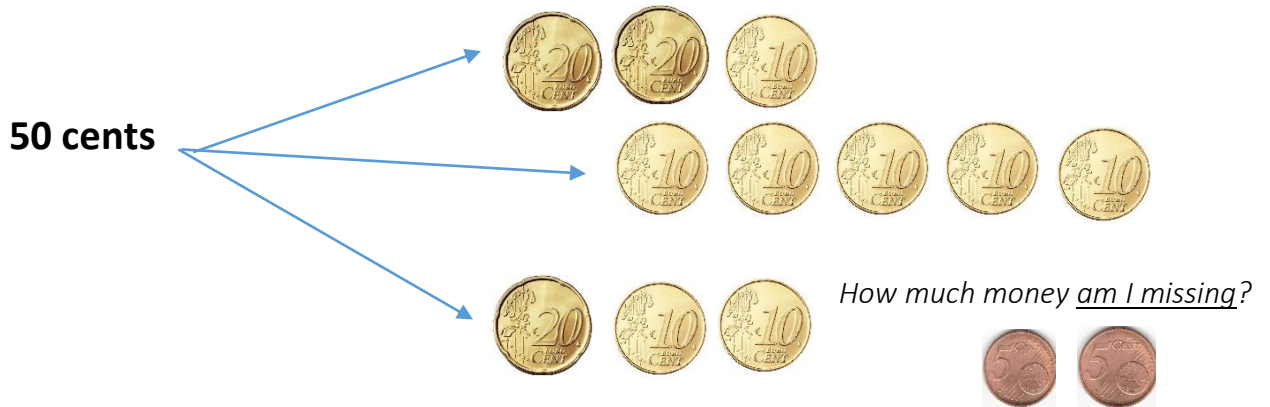


Can I make any changes?



### The same amount of money, different coins and bank notes.

Secondly, we will practice all together how to create different piles of money but all of them with the same amount of money. For example:



### Game to practice Math contents and introduction of English content.

We will finish this session by playing a game in which students will practice the addition of money, as well as price estimation.

In order to carry out his activity, we will divide students into five groups of four and place at the front of the class different objects such as clothes, games and food. Also, we will give each group an amount of money that they should count before starting the game.

1. When the teacher gives the signal, one student per group will run to the front of the class.
2. Taking into account how much money his/her group has, he/she will estimate the prices of the different products and take everything he/she thinks is going to be able to pay. They have 20 seconds.
3. They go back to their groups. All together estimate the prices of the different subjects and write down the total of money they thought they were going to pay.
4. Later, we will give each group the brochure in which the different objects appear. They will write down the different prices and sum them up using plastic coins.

When all the groups have finished we will write down in the whiteboard:

- We had.....
- We have bought.....
- We are missing.....  
We have ..... left over.

With this part of the activity we will practice the vocabulary and introduce the grammar. In this case, verb tenses: Present simple, past simple, present perfect and present continuous.

After doing this same process several times so that students have practiced the sentences used, we will clean the whiteboard to check that students are able to write these sentences in the correct verb tense. Finally, we will ask each group to write down in their notebooks one example of each verb tense.

---

### **SESSION 3**

Teachers: The English teacher will carry out this session.

Learning outcomes:

- Students will be able to evaluate those aspects necessary to set up a business.
- Students will be able to recognize different verb tenses.
- Students will be able to join a conversation using different verb tenses.
- Students will be able to add up money.
- Students will be able to make different groups of coins with the same amount of money.

Interaction: Five groups of four.

## Previous preparation

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Before students arrive at class, the teachers will have prepared a supermarket in the back of the class. This supermarket has a variety of products that will allow students to set up a business to solve the problem is going to be suggested.

## Introduction

---

Taking into account that the activities which are going to be developed in this session are connected to the story, we will start this session by asking students the following questions:

- *What problem did Arthur have?*
- *What did he do to solve it?*

## We set up a business

---

Taking as a reference the answers, we will suggest students the following situation:

*Your mother has asked you to buy 5 products to clean the house, but she forgot to give you money and you only have saved 2,25 €. You have to set up a business you think will allow you to make money and buy the products for your mum.*

*I'll let you 5 minutes to think in groups and create an attractive name for your business. When you all have an idea, I will let one member of each group go to the supermarket and get a maximum of three products that will allow you to start your business. When you access the supermarket you have to take into account the amount of money you have and, did Arthur spend all the money or did he save some?*

*When you have your products you will go back to your group and, with the rest of the members, you will write down the money you had, what you have bought and how much money you have left over.*

Do you remember the three sentences we used in the last session?

- We had.....
- We have bought.....
- We are missing.....  
We have ..... left over.

T: Does someone identify the verb tense of the first sentence?

<b>PAST SIMPLE</b>	Subject + verb-ed/irregular	To talk about something that has already happened	I <b>had</b> 45 euros. I <b>played</b> football.
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T: And the second verb tense?

You haven't learnt this verb tense yet, but is very very easy.

<b>PRESENT PERFECT</b>	Subjetc have+past participle	+	To talk about something that has happened before now. Recent/unfinished past.	I <b>have bought</b> two lettuce and four tomatoes.
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*T: Finally, which verb expresses what we are doing at that moment?*

<b>PRESENT CONTINUOUS</b>	Verb to be + verb-ing.	Used to express activities at the moment of speaking.	I <b>am missing</b> 3 euros.  I <b>am writing</b> a letter to my mum.
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After this short explanation, we will ask students for more examples of each so as to practice before starting the games. We will write down these sentences on the whiteboard and students will copy them in their notebooks as examples. Apart from this, the teacher will print the different tables in big sizes so as to stick them on the class wall.

---

### **Games to earn money.**

When we have revised the verb tenses with students, we will explain the different games and why they are useful for them.

There is going to be a total of three games:

1. The piggybank.
2. No more, no less.
3. When?

Two groups will compete in games 1 and 2. The third game is going to be played by all the groups at the same time. Winning the different games will allow the different groups to earn money and make the business grow. For each game won they can get a total of 20 euros. The winning group will be awarded.

#### **Game 1: Piggybanks.**

Materials: Eight-sided die. On each side one coin. Laminated piggybanks pictures. Plastic money.



All members of the group will participate. Each member will play against another member of the opposing group, in pairs. In this game students will have 1 minute to play, they will all start at the same time.

Each student will take one piggybank and place it in front of him/her. Each pair will have one die and plastic coins. Whichever of the two students will throw the die first. The coin that comes up must be found among his/her coins and put into his/her piggybank. Then is the turn of the other students. They have to repeat this action until the minute is up.

When the time has passed, each student will sum up their coins. Afterwards, the groups will meet again and add up all the amounts to find out how much money they have saved in total. When finished, the winning group will say: *We have earned .....* *The loser group will say: We have earned..... We are missing..... to have the same amount of money as group X.*

Finally, the winning group will get the amount of money they have earned.

### **Game 2: No more, no less.**

Materials: cards with prices. Plastic money.

In this game students will demonstrate they know how to make different groups of coins with the same amount of money. We will give them different cards with a price. They have to make three groups with that amount of money using different coins in each.

The students will work in groups using the verb tenses and vocabulary we have worked on: *we are missing .....* *We have..... left over.* They will also practice math vocabulary they already know such as add or take away.

The winning group will win 20 euros.

### Game 3: When?

Materials: Verbs tables. All groups will play this game at the same time. Each group will be given the following laminated sentences and table:

PRESENT SIMPLE	PAST SIMPLE	PRESENT CONTINUOUS	PRESENT PERFECT

I have 24, 50 euros.	The pillow costs 10 euros.	I have bought two pairs of shoes for 6 euros.
Jaime lent me 40 euros yesterday.	After buying milk I had 13 euros left over.	I have bought two pairs of shoes for 6 euros.

\*More sentences will be given to students.

Each group has one minute to complete the table as much as possible. When time is up we will go group by group checking their answers. The winning group will explain to the others where they went wrong. This not only allows us to check if the students have understood the difference between the different verb tenses, but it is also good for students to learn from each other. The winning group will get 25 euros.

When the 3 games are finished, each group will go back to their seats and count how much money they have in total. The winning group will receive a round of applause from the other groups, as well as chocolate.

---

## SESSION 4

Teachers: The math teacher will carry out this session.

Learning outcomes:

- Students will be able to solve problems in which euros and cents are included.
- Students will be able to interact using money vocabulary related to prices and amounts.
- Students will be able to interact using different verb tenses.

Materials: Mathematical problem printed and laminated, plastic money, black and red marker, mini whiteboards.

Interaction: Four groups of five students each.

### Introduction

---

Solving mathematics problems is something students tend to dislike. Our aim in this session is that students learn to solve problems in a manipulative and easier way as they are usually taught. Firstly, we will divide them into groups and then explain how we are going to work.

### Exercise 1

---

**Materials:** Mathematical problem printed and laminated, plastic money, blue and red marker, mini whiteboards.

This first part is going to be guided by the teacher. We will share out 4 different problem formulations to each group (Annex 10, see page 147), all the same. These problem formulations will be printed and laminated in A4 size. This way students will be able to paint over them with markers and make circles to important information. We will also share out the mini whiteboards, which students will use to do the operations.

During this time, we will help students to reflect in order to get the correct solution. We will solve two problems together and then we will give them time to solve the rest of them in groups. When they are all finished, we will correct them in group following the same process as before.

An example of how we will work it together:

1. All groups take the same mathematical problem.

Angela had 5€ and 47 cents in her purse. She bought a tub of butter for €2.50 and a tomato for 60 cents.

How much money did she have left over?

2. The teacher reads it slowly.

3. *What does the problem tell me?*

We let a student paraphrase what we have just read.

4. *What data do we have?*

At this point, we will circle with the red marker the data students will say out aloud.

Angela had 5€ and 47 cents in her purse. She has bought butter for €2.50 and a tomato for 60 cents.

How much money did she have left over?

Then they will draw in a whiteboard the butter and put under it the plastic coins which represent the price of it. They will do the same with the tomato.



### BUTTER PRICE



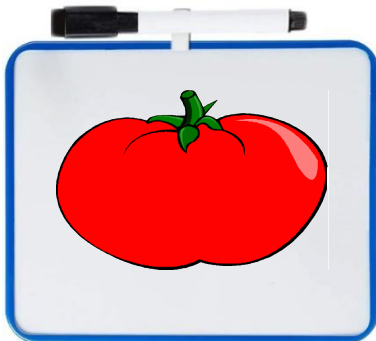
### NEW TOTAL



As we don't have euros coins they should make changes.



### TOMATO PRICE



### NEW TOTAL



6. *What are we being asked?* We will circle it in blue.

Angela had 5€ and 47 cents in her purse. She has bought butter for €2.50 and a tomato for 60 cents.

How much money did she have left over?

7. *What operation should we use? Let's think!*

*If we had 5€ 47 cents in total, and we HAVE TAKEN 2,50€ and then 60 cents. What am I doing, adding or subtracting?*

Students will write down and calculate the operation. Later, we will count the coins we had left over and see that the result is the same.

## Exercise 2

---

In this activity, we will give each group different problem formulations, the development of the math problem, and the solution. They are going to be all mixed up.

In groups, they should read carefully each of them and try to put together the different parts so as to complete and make them have sense. The plastic coins will be available to manipulate and check the different operations.

For example:

Joaquín had in his piggybanck 12€ and 73 cents. How much will be have if he adds 2€ and 80 cents?

15,53€

$$\begin{array}{r} 9,90 \\ + \\ 1,80 \\ \hline \end{array}$$

No, they were missing 80 cents.

María and Manuel went to Mc Donalds and bought two medium Mc Menus for 9,90€ and one Mc Flurry for 1,90€. They had a total of 11€. Did they have enough money to pay? How much are they missing?

$$\begin{array}{r} 12,73 \\ + \\ 2,80 \\ \hline \end{array}$$

This exercise will allow students to put into practice all they have learnt: Vocabulary, verb tenses and operations with money, as well as an understanding of mathematical problems.

We will finish this session by checking altogether the different mathematical problems, asking some students to explain to others the reasons why a problem is the way it is.

---

## SESSION 5

Teachers: The English teacher will carry out this session.

Learning outcomes:

- Students will be able to write a theatre script according to the established criteria.

Interaction: Four groups of five students each.

In this session, students will demonstrate they have understood all the contents. So as to connect the subject of English with Spanish Language, students will compose a short theatre scene. This play must include:

- At least two verb tenses.
- Vocabulary (euro, cents, missing, left over)
- Addition or subtraction of money.
- Different groups of money with the same amount.
- 3 parts: opening, climax, ending.

In order to guide the students' theatre script creation, we will hand them out a rubric that will guide them in the realization of this task (Annex 8).

Students will have the whole session to create their theatre scenes. The English teacher will also let them know that in the next session they will dramatize their scene for the rest of the class. To do so, they can come dress up and bring or take all the materials they need. Each play will last a maximum of 10-15 minutes.

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## SESSION 6

Teachers: Both maths and English teachers will be in this session.

Learning outcomes:

- Students will be able to perform a play.

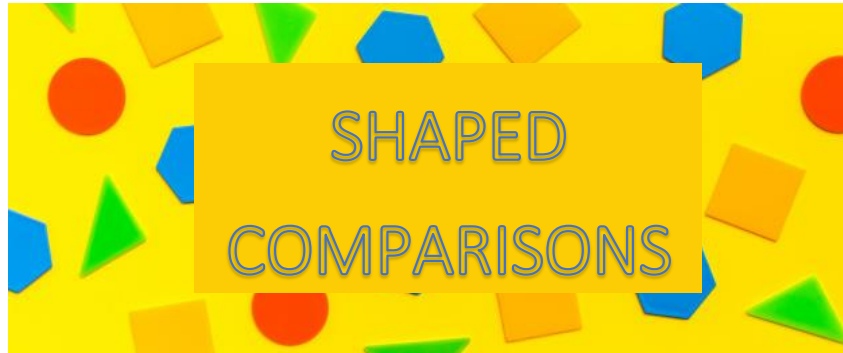
Interaction: Four groups of five students each.

This session will be dedicated to performing the different theatres. Finally, in order to finish this project, we will draw conclusions about what we have learnt along with the “MONEY, MONEY, MONEY!” project. Later, we will hand out the checklist we have shown students at the beginning of the project. We will read them all together and the students will have to point out if they have achieved that objective or not, allowing them to reflect aloud on each of the points about what they liked the most, what they would change and what they would have liked to do. This will help the teachers to reflect on their work, as well as to know at what stage each student is at concerning these contents.

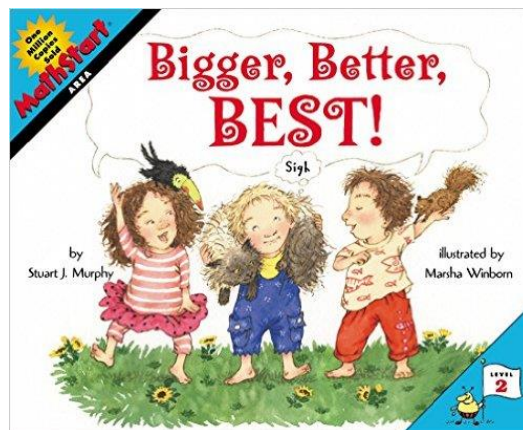


**MATENGLISH 3**

**PROJECT NAME**



**STORY: BIGGER, BETTER, BEST!**



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**STORY DETAILS**

- **Author:** Stuart J, Murphy
- **Illustrator:** Marsha Winborn
- **Publisher:** HarperCollins; 1st edition.
- **Date:** 20 August 2002
- **ISBN:** 9780064462471.

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## STORY JUSTIFICATION

This book has been selected because of the implicit way in which English and mathematics contents are shown. In addition, these contents are presents in such a way that Jeff and Jenny, the main characters, make use of them to solve their daily life problems, showing students that what they learn at school can be applied in their own lives.

Moreover, this book will allow us to talk with our students about values and the relationship they have with their brothers and sisters. We will discuss the negative aspects of Jeff and Jenny's relationship and that we should not reproduce. Besides this, we will talk about those things that make us have a good relationship with our siblings.

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## STORY SUMMARY

Jeff and Jenny are all the time arguing about who have the better things. One day, their mother announced to them that they were moving to a new house. Once there Jenny and Jeff are driving their little sister, Jill, crazy. Who has the bigger window? Who has the bigger bedroom? How they will calculate once and for all whose room is bigger? (Stuart J, Murphy, 2002)

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## LINGUISTIC ANALYSIS OF THE STORY

In this part you will find an analysis of the story from a language perspective, referring to three main points: lexis, grammar structures and language functions. Each of these points makes the book enriching for the students, as it allows us to work on different aspects of language.

### A. LEXIS

#### a) Subject-specific lexis:

- **Nouns:** area, square, rectangle, rhombus and trapezoid.

#### b) General English:

- **Noun:** pad of paper, row.
- **Adjectives:** Old, tiny, good, big, large, high, long, across, small, wide.
- **Adverb:** close to, far away, across.

## B. GRAMMAR STRUCTURES

### a) Present simple:

- My backpack can hold more books than yours.
- My book's the best.
- My room is better.

## C. LANGUAGE FUNCTIONS

### a) Comparing and contrasting.

- Bet mine is bigger than yours.
- My room's better than yours.
- My room is closer to the bathroom than yours.

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## LESSON PLAN TABLE

<b>Unit</b>	<b>SHAPED COMPARISONS</b>	<b>Lesson</b> 3	<b>Group</b> 4th grade	<b>Time</b> 5 sessions
<b>Project name</b>	Shaped comparisons		<b>Class</b>	English
<b>Skills</b>	<input type="checkbox"/> Listening	<input type="checkbox"/> Speaking	<input type="checkbox"/> Reading	<input type="checkbox"/> Writing
<b>Systems</b>	<input type="checkbox"/> Grammar	<input type="checkbox"/> Phonology	<input type="checkbox"/> Lexis	<input type="checkbox"/> Function <input type="checkbox"/> Discourse
<b>Competences</b>	<input type="checkbox"/> Grammatical	<input type="checkbox"/> Socio-linguistic	<input type="checkbox"/> Discourse	<input type="checkbox"/> Strategic
<b>Contents</b>	<p>English:</p> <ul style="list-style-type: none"> <li>- Comparatives and superlatives adjectives.</li> <li>- Present simple sentences.</li> <li>- Past simple sentences.</li> <li>- Future simple sentences.</li> <li>- Subject-specific lexis: Vocabulary of plane geometric shapes and specific word to talk about areas.</li> <li>- Oral text comprehension (procedural).</li> <li>- Creative writing.</li> </ul> <p>Mathematics:</p> <ul style="list-style-type: none"> <li>- Multiplications.</li> <li>- Plane geometric shapes area.</li> <li>- Areas of the triangle, square, rectangle, rhombus and the trapezium.</li> </ul>			

<b>Learning outcomes</b>	<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>- Compare differences between two or more objects.</li> <li>- Indicate which object is at the higher or lower end of a quality.</li> <li>- Correctly construct the comparative or superlative of adjectives.</li> <li>- Formulate comparative sentences.</li> <li>- Calculate the area of quadrilaterals: Square, rectangle, rhombus and trapezium.</li> <li>- Calculate the area of the triangle.</li> <li>- Calculate the area of irregular shapes.</li> <li>- Compare quadrilaterals areas.</li> <li>- Understand the story read aloud.</li> <li>- Write a new ending for the story.</li> <li>- Join a conversation about quadrilaterals and comparisons.</li> </ul>
<b>Evaluation criteria</b>	<ul style="list-style-type: none"> <li>- Students accurately describe objects employing comparatives and superlatives adjectives.</li> <li>- Students effectively formulate comparatives sentences.</li> <li>- Students identify plane geometric shapes.</li> <li>- Students perform the necessary calculations to compute the area of the quadrilaterals.</li> </ul>
<b>Previous knowledge</b>	<ul style="list-style-type: none"> <li>- Multiplications</li> <li>- Names of simples geometric figures.</li> <li>- What is and adjective.</li> <li>- Present simple sentences structure.</li> </ul>

## PRE-STORYTELLING

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### SESSION 1

Teachers: Both maths and English teachers will be in class in order to introduce the new project.

Learning outcomes:

- Students will be able to make predictions about what is going to happen in the story.
- Students will be able to calculate the area of squares and rectangles taking as a unit the area of a minimum square of the same.
- Students will be able to understand vocabulary related to geometry.

Materials: Book, objects of different sizes, thicknesses, antiquity... and squared papers.

Interaction: Whole class.

## **Playing with contents**

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Before starting the storytelling activity, we will gather the children in assembly in order to give them information about the new *Matenglish* project called “How many fractions!”. Teachers will explain to them which subjects are involved, the main resource to be used (storytelling), how long working on each story will take, the methodologies to be used and what is expected from them.

After the introduction, teachers will start a conversation that introduces the main topic of the story, as well as the contents that we want to work with them in the next sessions.

In order to arouse the interest of students before the storytelling, we will place in the centre of the assembly objects of different sizes, thicknesses, antiquity... that students may find in their daily lives. We will let them play freely during 5-10 minutes with them at the same time that we approach them to generate conversations in which they use the comparative or superlative degree, for example, telling a child that his object is very big, being the one his classmate has bigger. In this way we look for reactions and responses that make the students compare objects, thus introducing them to the grammar that will be worked on later. After, we will change these objects to squares and rectangles logic blocks, the real objects that will appear in the story.

## **Vocabulary**

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After the students have played unconsciously and used the grammar that we intend to work on, we will look at the “Wonder Wall” in which the teacher will have stuck the words we want students to know before the storytelling. These words are geometric shapes names, terms and adjectives that will allow us to describe those shapes.

# WONDER WALL

AREA			
SQUARE			LONG
RHOMBUS	FAR AWAY	TINY	SMALL
RECTANGLE	CLOSE TO	GOOD	BIG
TRAPEZIUM	ROWS	OLD	SHORT
SQUARE METER	ACROSS	WIDE	

To continue, the English teacher will read aloud all the words and ask the pupils to repeat them. At this point, we should pay attention to phonology. For helping students to have good pronunciation we will use flashcards in which they appear the phonemes, as well as different methods to help students with the position of their mouth. We will pay attention to the vowels and consonants that are most problematic for Spanish speakers to produce. These include:

Vowels: /i/ and /i:/ /o/ and /o:/ /u/ and /u:/ Schwa /æ/

Consonants: /v/, /z/, /dʒ/, /r/, /ʃ/, /ð/, /j/, /w/ and /ʒ/

This will help students pronounce correctly. Some students may gesture that they know some words, which will help us to find out the students' previous knowledge. The mathematics teacher takes notes of this.

After, the maths teacher will continue with a Total Physical Response activity. She will say the word aloud and make a movement that represents that word. When she finishes representing all the words, she will say aloud the word and the students are the ones who have to make the gestures. The English teacher will observe students.

Finally, when we have learnt the vocabulary needed to understand the story, we will present the story to the students, show them a picture of the cover and ask the following question: *What do you think the story is going to be about?* After listening to their proposals, we will start reading the story.

## WHILE-STORYTELLING

### Storytelling

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We will continue the session by listening to the story.

To indicate that is the time of storytelling, we will say aloud the “storytelling alarm”:

- *Teacher: What time is it? (pointing to the clock)*
- *Students: Storytime!!! Sit down and listen! (sitting and holding his/her ear)*

After this, the English teacher will start the storytelling.

### Interventions during storytelling.

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It is very important that when we are going to stop with the storytelling and we start again we make it clear, maybe with gestures. It is also important that when we finish the conversation and we continue with the story we repeat 2-3 sentences already said before. In this way, the students will place themselves again in the story and in what was happening in it.

**Intervention 1:** The teacher will ask questions such as: *Who are the characters? Do you have brothers or sisters? Have you ever argued with them about rooms? Is your room the largest or the smallest of your house?*

**Intervention 2:** There is a moment in the story in which Jeff and Jenny, the two siblings, argue about which room has the biggest window. To check this, the mother gives each of them some sheets of paper in the shape of squares that work as 1cm<sup>2</sup> squares. In the story, the mother tells her children that a quick way to check which window is bigger is to fill them with these sheets and the one that needs more to cover it completely is the biggest (Annex 11, see page 149). At this moment, we will stop the storytelling and do the same in class to introduce the concept of area, as well as how to calculate it in figures such as the square or rectangle.

When in the classroom we have filled the windows with sheets we count how many sheets are in each one and, as a consequence, we know which one is bigger. Afterwards, we will ask the following questions assuming that one of the windows is 3 sheets wide

and 5 sheets long: *Does anyone know a quicker way to calculate it instead of counting all the squares? What happens if we multiply  $3 \times 5$ ? Is the result the same? And the other window? So which window is bigger? Is it the biggest of the class?*

In this way, we introduce the concept of area and the formula that let us calculate it quickly. This will allow us to know the previous knowledge of the students since these are contents that are seen for the first time in third grade.

After this pause to learn in a manipulative and experiential way the concept of area and the formula to calculate it in squares and rectangles, we continue with the story until the end.

When we finish, through the sticks method, two random students will write in the math corner that we have called "fun math" the two formulas learnt in this session, that is, the square and the rectangle, accompanied by a drawing to make it more visual.

## POST-STORYTELLING

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### SESSION 2

Teachers: The maths teacher will carry out this session in the math class.

Learning outcomes:

- Students will be able to calculate the area of a rhombus and trapezium.
- Students will be able to calculate the area of the triangle.
- Students will be able to split up irregular figures so as to calculate their area.
- Students will be able to join a conversation about geometry.

Materials: Geoplanes and elastic band. Digital board. Vocabulary cards.

Interaction: Whole class.



### Story review (5 minutes maximum)

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In this session we will have already finished the story, so we will start by asking some questions to remember it: *What were the brothers' names? Why did they argue so much? What did their mother give them to prove it? How did we say it was a quick way to calculate the area of the square and the rectangle?* This way, we will refresh the students' memory, which will allow us to continue teaching new content.

### Presentation of shapes (15 minutes)

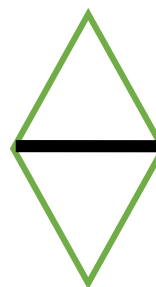
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After this, we will introduce two new formulas, the rhombus and the trapezium. To begin, we will let students experiment with figures for a while with the geoplanes. After a few minutes, we will ask them: *What shapes have you created?* Children love to experiment. Because of this, many of them will create irregular shapes. Some students will be asked to show them to their classmates.

Two of the shapes we want to see are the rhombus and the trapezium. In case they do not appear among the ones created by the students, the teacher will show these two figures and stick them on the board. In the case of the rhombus, at the same time that she shows which the major and minor diagonal are, she will indicate the measures of these. With the trapezoid she will do the same, indicating the measure of the major and minor base, as well as the height. When the teacher finishes students will represent these figures on their geoplanes.

Question: *Does someone know how to calculate the area of these two figures? If you look at the rhombus, can you find any other shape?* After this question we can obtain several answers, among them a square if we move the sides, triangles... being the last one the expected one to continue with the session.

At this point we will ask them to divide their rhombus into two triangles, placing a different colour elastic band in the place of the minor diagonal, so that the two ends meet and the two triangles are clearly visible.



### **Math content discovery (10 minutes)**

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We continue by saying: The formula to calculate the area of the rhombus is:  $\frac{D \times d}{2}$

*Do you think there is an easier way now that we have divided it into two triangles? The purpose of this last question is to remember the formula for calculating the area of the triangle. If a rhombus is formed by two triangles and we already have the area of one of them, what do we still need to do?*

We will do the same with the trapeze. We will present the formula, being difficult to remember we will decompose the figure in those we already know, in this case, a square in the center and two triangles on the sides.

In this whole process the teacher will do it at the same time as the students in an online geoboard, for example, “Geoboard” (<https://apps.mathlearningcenter.org/geoboard/>) This will help students to understand the whole process and to demonstrate that the results are the same.

The teacher will create a poster with these two figures we have learnt. This poster will include both figures, the rhombus and the trapezium, both formulas, and inside of each the figure decomposition.

### **Vocabulary games**

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As we have twenty minutes left, we will work on vocabulary through games so as to learn in a dynamic, enjoyable and active way. For this we will create two types of cards, the first ones will show the concepts we want the students to learn and the other cards will show the definitions of those concepts (Annex 12, see page 150).

There are a total of 5 games that we will present as 5 levels. Students will work in pairs or groups of three. They have a total of 5 minutes to complete each game. Every time they complete a game/level, the teacher will check their work and give them points that correspond to their successes. After this, they will move on to the next level.

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### **GAME 1: LEVEL 1: LOOK FOR THE PAIRS**

We will give them the two types of cards out of order. The students will have to match the concept with its definition. At the same time they try to form the pairs they have to read the definitions. This will be the first contact the students have with the new vocabulary, which will help them to start remembering the words.

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### **GAME 2: LEVEL 2: MEMORY GAME**

For this game, we have to face down all the cards. Later, students will have to pick them up two by two to see if they can find the pairs. If they don't find them they have to turn them over again and so on. If they find a pair they will remove it from the center and continue with the game until they find all the pairs.

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### **GAME 3: LEVEL 3: DISCOVER THE CONCEPT.**

In this game, we will just use the definitions cards. Students will read one by one and guess what concept it refers to. They will write down the concept on paper and put it on top of the definition.

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### **GAME 4: LEVEL 4: PENCIL UP!**

This is presented as a self-assessment game. We will use the concept cards randomly. First, they will write on a sheet of paper the definition or a phrase that includes that concept. When they finish writing it they will say aloud: *Pencil up*. The student will read what he/she has written. If it's correct we continue with another word. On the other hand, if it's wrong the rest of the students have another chance. In this way, we will check if they have learnt the vocabulary.

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### SESSION 3

Teachers: Both maths and English teachers will carry out this session in the English class.

Learning outcomes:

- Students will be able to correctly construct the comparative or superlative of adjectives.
- Students will be able to formulate comparative sentences.

Materials: Comparative and superlative rules table, story, magnetic sticks, geoplanes, UNO cards (Annex 13, see page 156).

Interaction: Four groups of five students each.

In this session, we will work on the rules necessary for the correct construction of comparatives and superlatives. To do so, we will prepare a very simple table that will allow students to clearly remember how to form the comparative/superlative of each word.

Firstly, we will read the table altogether. As you can see, there are three adjectives as examples but when forming the comparative and superlative there are just two done. This is because we will ask students to form the comparative and superlative for the third adjective, as well as to put new examples different to the ones that appear in the table.

Number of syllables	Adjectives	Comparative	Superlative
Type 1: <u>One</u> syllable	Fast High Small	Adjective + - er + than  Faster than Higher than	The + adjective + - est  The fastest The highest
Type 2: <u>Two</u> syllables	Heavy Happy Busy	Remove “y” (Heavy) → adjective + -ier + than  Heavier than Happier than	Remove “y” (Heavy) → The + adjective + -iest  The heaviest The happiest
Type 3: <u>Three</u> or more syllables	Important Intelligent Careful	More + adjective + than  More important than More intelligent than	The + most + adjective  The most important The most intelligent

Our objective is not that the students study this table, but that they practically acquire this knowledge. To do this we will work through corners. For that, we will divide the class into 4 groups of five students each. Each group will do an activity for 15-20 minutes and then rotate.

### CORNER 1: CAN YOU FIND ME?

The English teacher will guide this corner.

After seeing how we should make comparative and superlatives depending on the number of syllables, students should identify and underline comparative and superlative forms in the story we have read. To do so, we will print the story we have read and the table that is shown above. Although this is not the aim of this corner, with this activity students will also practice reading.

When they have underlined all the comparative and superlative forms, they will complete the following table. The teacher will provide one table for each student.

Comparative/superlative	Adjective	Number of syllables	Structure
Example: The smallest	Small	One	The + adjective + -est

Before the time finishes, the teacher will check what they have written. After, they will stick the table in their notebooks. Thus they have examples of superlatives and comparatives.

### **CORNER 2: GET TO KNOW ME**

The maths teacher will guide this corner.

In the second corner we can find an information gap activity. This is a type of activity in which each student is given information that his/her partner doesn't have and they have to interact in order to share their information and complete the activity.

In this case, each student is going to be provided with one type of worksheet (Annex 14, see page 157). These worksheets show 4 characters with information about their age, height, intelligence and speed. With these data, they must fill in the different sentences with an adjective in superlative or comparative so that these sentences correspond with the data of each character. None of the students has all the information, so they must interact with each other to get all the data and correctly complete the sentences. For example: Is Ironman younger than Superman? No, he isn't. He is 42 years old. Another example: Is Ironman the most intelligent? Yes, he is. He is 90.

The aim of this corner is to practice comparatives and superlatives and compare characteristics between people or objects. It is also useful to practice the structure of questions with the verb *to be* (Is/are + subject + complement).

### **CORNER 3: MINE IS BIGGER!**

The maths teacher will guide this corner.

The students of this corner will work with magnetic sticks and geoplanes. This activity is intended to link in a certain way the geometry seen in other sessions and the comparatives and superlatives.

The activity is intended as a small competition. Each student, with their magnetic sticks, will position themselves in the opposite direction to their classmates so that they cannot see what they are doing. Afterwards, a countdown clock will be set for a maximum of 20-30 seconds. In this period students must try to build the largest figure among their classmates.

When the time is up, they will return to their initial position, observe the figures of their classmates and without calculating anything, they will comment on which one they think is the biggest. After this estimation, it is time to check it with the geoplanes and the necessary calculations. When all the calculations are done and they proved which figure is the biggest, they will write down in their notebooks a superlative and a comparative sentence that reflect whose figure is the biggest. For example:

- Superlative: *Manuel's rectangle is the biggest, with an area of 72 cm<sup>2</sup>.*
- Comparative: *Manuel's rectangle is bigger than Maria's rhombus.*

### **CORNER 4: UNO!**

The English teacher will guide this corner.

In this corner we will play the traditional card game called UNO, but adapted to the English grammar we are working on. We will give students the deck of cards, composed

of 40 different adjectives, including short and long adjectives, y- endings and from one to three syllables (Annex 14).

In order to play this game, there are two levels.

- Easy: Students must say the adjective as a comparative or superlative in order to use the card.
- Difficult: Students must form a comparative or superlative sentence with the adjective that appears in the card.

The main objective of the game is to get rid of all the cards played from the beginning (7 for each player) plus those drawn during the game. When we have only one card left we have to say *UNO*. If we don't do it another partner can throw his cards at us and win.

Game rules:

- If the comparative or superlative he/she says when he/she throws his/her card is not correct, he/she must draw 3 cards.
- The player who indicates that the comparative or superlative is not correct, in the case that it is correct, will be that player who draws the 3 cards.
- Each player must write down the adjective that appears on his/her cards along the comparative/superlative he/she has said. When the game is over the teacher will take a look at them and check that everything is correct.
- The player has to put a card of the same colour as the one that is in the center.
- The cards "+2" can only be thrown if they are the same colour as the one that is in the center. The card "+2" means that the next player to whom that card has been dealt must draw 2 from the pile.
- "Change of direction" cards can only be thrown when the colour is the same.
- "Change colour and +4" cards give the player who is playing at that moment the opportunity to change the colour that is being played with and choose one that will benefit him in the game. In addition, the next player must draw 4 cards.



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## **SESSION 4**

Teachers: The maths teacher will carry out this session.

Learning outcomes:

- Students will be able to formulate comparative sentences using the correct form of adjectives.
- Students will be able to calculate areas of irregular shapes.

Materials: Logic blocks (Annex 15, see page 159).

Interaction: Whole class.

The aim of this session is to check that students have really understood both, the English and mathematics content. To do so, we will use “geometric blocks” as the main material for the development of this activity.

### **Free playtime with shapes materials and the creation of shapes.**

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Firstly, we will provide each student a variety of geometric blocks and let them play freely for 5 minutes. When this time has passed, we will give them some minute to create a figure, freely. We will let them use all the logic blocks except the circle, of which they do not know how to calculate the area.

### **Calculation of irregular shapes area.**

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After this minute, each student will calculate the area of their figure. It looks difficult because they have mixed lots of different blocks, but they have learnt how to calculate the squares, rectangle, rhombus, triangle and trapezoid area, enough to be able to calculate the area of the figure they have created. This activity will allow us to work on the students’ autonomy and problem-solving. When all the students have calculated the area of their figure, they will compare them to the rest of the class.

### **Comparing irregular shapes**

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The next thing we want to know is if students have understood comparative and superlative grammar. For that, we will ask different students selected with the names

sticks to form different comparative and superlative sentences using the data of the class member areas. For example: *Marta's rabbit is bigger than Álvaro's house / Laura's shark is the biggest animal in the class.* At the same time they say aloud these sentences, we will write them down on the whiteboard and analyze the adjective we have transformed into a comparative or superlative, the syllables it has and the changes it has undergone.

### **Suggestion of adjectives for the last activity.**

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To finish this session we will ask students to say aloud adjectives that describe people, but no adjectives that describe a person's physique, but things that people do well, positive aspects of people, for example, funny, smart, sporty, worker, friendly, kind... When we have enough to assign one to each student we will write down altogether the superlative of each and explain to students why we have done this selection on positive adjectives.

We will create diplomas for each student. For this, it will not be the teacher who assigns each adjective to each student, but the students themselves. To do so, a message will be sent to their parents explaining the activity and the link that will allow students to vote. The questionnaire will be simple, the adjective will simply appear in superlative and below it the name of all the students. They will have to select the classmate they think most identifies with that adjective. (Annex 16, see page 159).

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## **SESSION 5**

Teachers: Both maths and English teachers will carry out this session.

Learning outcomes:

- Students will be able to create a new ending integrating all the contents studied in both mathematics and English.

Materials: Diplomas, paper and digital board.

Interaction: Individual work.

## Writing a new ending

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This session will be the last one. Due to this reason, students will demonstrate that they have acquired the knowledge we expected them to learn with this *Matenglish* project. So as to reward students for their great behaviour and participation during the whole project, and also to motivate them for next month's project, we will give them the diplomas.

Then, we are going to ask them to create a new ending individually in order to practice another communicative skill different from listening and speaking. Before they start, we will remember altogether the whole story. To do so, we will ask them some questions that will help them to remember it and start thinking about new ideas.

Questions:

- *Does someone remember how the story finished?*
- *What was the name of the three characters?*
- *Jeff and Jenny were all the time arguing, why?*
- *Finally, which bedroom was larger?*
- *How did they calculate it?*
- *Did Jill, the youngest brother, mind about having the smallest bedroom?*

After this conversation with the students, we will ask them to create a new ending from the part of the story where they go to visit the new house.

This new ending must include the following requirements:

1. Comparatives.
2. Superlatives.
3. Figures seen in class (square, rectangle, triangle, rhombus and trapezium)
4. The concept of "area" must appear
5. Calculation of the area of these figures using different methods.
6. Sentences comparing things.

In order to make it easier, we will project in the digital whiteboard pictures that represent the beginning of the story up to where they have to start creating. Also, they will be given the rubric that will guide them to complete this task (Annex 8).

Finally, we will give each student his/her diploma with the adjective that his or her classmates have decided that best defines him or her. This is a very emotive moment for them!

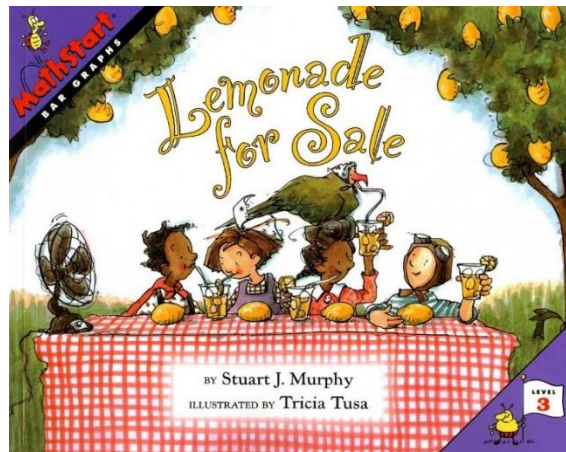
Although the project finishes here, when the teacher has corrected all the new endings, she will create a mural with the project name at the top of it. Afterwards, we will stick to it all the writings.

*MATENGLISH 4*

PROJECT NAME

- 1
- 2 ALL GOOD,
- 3 ALL IN ORDER!

STORY: LIMONADE FOR SALE!



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STORY INFORMATION

- **Author:** Stuart J, Murphy.
- **Illustrator:** Tricia Tusa.
- **Publisher:** HarperCollins; Illustrated edition.
- **Date:** 18 December 1997.
- **ISBN:** 9780064467155.

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## STORY JUSTIFICATION

This book has been selected for the integrated way in which both subjects appear. In addition, it allows us to work vocabulary related to quantities and food, something simple to work together with statistics.

Fourth grade is the first grade in which we work on statistics. In this book there is a very simple data collection, being this one of the main reasons why the book has been selected. This will allow us to present to the students the double-entry tables and graphs without an excessive load of data, being clearer for the students.

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## STORY SUMMARY

When members of the Elm Street Kids' Club decide to sell lemonade to raise money to fix up their clubhouse, they do it in style.

Dressed in special "lemon hats", with Petey the Parrot, the club mascot squawking, "Lemonade for Sale!" business booms at first. Sheri keeps track on a bar graph, plotting the number of cups sold against the days of the week. But sales drop quickly when Jed the Juggler comes to town.

What will the Elm Street kids do?

(Stuart J, Murphy, 1997)

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## LINGUISTIC ANALYSIS OF THE STORY

In this part you will find an analysis of the story from a language perspective, referring to three main points: lexis, grammar structures and language functions. Each of these points makes the book enriching for the students, as it allows us to work on different aspects of language.

### A) LEXIS

a) **Math lexis:** Bar graph.

b) **General English:**

**Verb:** Keep track, shake, squeeze.

**Nouns:** Lemons, sugar, ice, cup, lots.

**Adjectives:** more, even more, a few.

## B) GRAMMAR STRUCTURES

**Sequencers adverbs:** First, next, then, finally...

First, Matthew squeezed the lemons. Next, Meg mixed in some sugar.

### LESSON PLAN TABLE

<b>Unit</b>	4	<b>Lesson</b>	4	<b>Group</b>	4th grade	<b>Time</b>	50 minutes
<b>Topic / Session Title</b>	ALL GOOD, ALL IN ORDER!			<b>Class</b>	English		
<b>Skills</b>	<input type="checkbox"/> Listening	<input type="checkbox"/> Speaking	<input type="checkbox"/> Reading	<input type="checkbox"/> Writing			
<b>Systems</b>	<input type="checkbox"/> Grammar	<input type="checkbox"/> Phonology	<input type="checkbox"/> Lexis	<input type="checkbox"/> Function	Discourse		
<b>Competences</b>	<input type="checkbox"/> Grammatical	<input type="checkbox"/> Socio-linguistic	<input type="checkbox"/> Discourse	<input type="checkbox"/> Strategic			
<b>Contents</b>	<p>English:</p> <ul style="list-style-type: none"> <li>- Adverbs. Sequence.</li> <li>- Adjectives: Quantity.</li> <li>- Vocabulary: Food.</li> </ul> <p>Math:</p> <ul style="list-style-type: none"> <li>- Data collection in bar graphs and double-entry tables.</li> <li>- Pictograms.</li> </ul>						
<b>Learning outcomes</b>	<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>- Use sequence adverbs.</li> <li>- Talk about food in a fluent way.</li> <li>- Write a recipe.</li> <li>- Use quantity adjectives.</li> <li>- Understand the story told aloud.</li> <li>- Write a story from a given sentence.</li> <li>- Make predictions.</li> <li>- Keep track information in a graphic bar.</li> <li>- Collect data in a double-entry table.</li> <li>- Interpret drawings/pictograms.</li> </ul>						
<b>Evaluation criteria</b>	<ul style="list-style-type: none"> <li>- Students effectively employ sequence adverbs to indicate a process.</li> <li>- Students effectively employ quantity adjectives.</li> <li>- Students effectively talk using food vocabulary.</li> </ul>						

	<ul style="list-style-type: none"> <li>- Students effectively write a recipe including the correct adjectives and vocabulary.</li> <li>- Students identify the variables they need to complete a double entry-table.</li> <li>- Students effectively keep track information in a graph bar/double-entry table.</li> <li>- Students identify objects/words through drawings.</li> </ul>
<b>Previous knowledge</b>	<ul style="list-style-type: none"> <li>- Quantity adjectives (More, enough, a lot...)</li> <li>- Food vocabulary.</li> </ul>

## PRE-STORYTELLING

### SESSION 1

Teachers: Both maths and English teachers will be in class in order to introduce the new project.

Learning outcomes:

- Students will be able to make predictions about what is going to happen in the story.
- Students will be able to keep track of information in a graphic bar.

Materials: Pictures of graphic bars, colour bars, flashcards.

Interaction: Whole class.

### Previous preparation

Before pupils get to class, teachers will place in the middle of the assembly pictograms, bar graphs, double-entry tables and different colour bars. These materials will make students ask themselves what they are going to learn in this project.

First, we will gather the children in assembly in order to give them information about the new *Matenglish* project called "Limonade for sale! Later, we will continue by asking:

- *What can you see?*
- *Do you know what these materials are for? What can we do with them?*



## Vocabulary

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Teacher: The English teacher.

After listening to the students' proposals, we will introduce the vocabulary students will need so as to understand the story. To present the vocabulary we will follow the next steps:

1. Show a picture at the same time we say the word aloud and students repeat. We will pay attention to students' pronunciation.
2. Make a gesture or movement that represents that word at the same time we say the word.
3. Show flashcards with the word written down.
4. Put on the floor the picture and under it the word.

\*We will show more food vocabulary than appears in the story (Annex 17, see page 161)

When we finish presenting all the words, the teacher will repeat again all of them. Later, she will face down all the cards and show them just one or make the gesture that represents that word. Students have to guess which word is it. As they guess correctly, the math teacher will place the words on the wall, both the image and the written word.

## WHILE-STORYTELLING

Teacher: The math teacher will continue with the session.

After we have learnt the vocabulary that appears in the story, the English teacher will start the "storytelling alarm".

- *Teacher: What time is it? (pointing to the clock)*
- *Students: Storytime!!! Sit down and listen! (sitting and holding his/her ear)*

After this, the English teacher will start the storytelling.

## Modifications in the story

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In order to learn the adverbs of sequence, we will make some changes in the story. There are five parts along the story that show the order in which the ingredients are added to

make lemonade. In this part, we will include adverbs such as "first, next, then, later, finally..."

### **During the storytelling**

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Along the story, the teacher will highlight the words learnt. Also, the teacher will draw on the whiteboard a graphic bar that will use to represent the information shown in the story. She will imitate the parts in which the girl keep track the information of the lemonade sold.

### **After storytelling**

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Listening comprehension

- *Why does Elm Street Kids' Club need money?*
- *What did they do to earn money?*
- *How did they control how much lemonade they sell?*
- *Did they sell all the days the same number of lemonade cups?*
- *Which day did they sell more? And less?(Looking at the bar graph)*
- *Why did that happen?*

## **POST-STORYTELLING**

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### **SESSION 2**

Teachers: The math teacher will carry out this session.

Learning outcomes:

- Students will be able to collect data in a double-entry table.

Materials: Lego, double-entry tables,

Interaction: Whole class.

In this session, we will learn to keep track information in a double-entry table. To do so, we will first ask students to represent the information in a bar graph. Then, we will put that information in the double-entry table.

Firstly, we will give each student a small piece of paper in which they will write if they are a girl or a boy and their favourite food between pasta, eggs, chips and lentil soup. Next, we will give each group a lego box which they will use to make the bars of the graphic.

- Red: pasta.
- Green: eggs.
- Yellow: Chips.
- Blue: lentil soap.

After that, the teacher will create her graphic on the whiteboard and start reading the papers without taking into account the students' gender. As she reads the paper, students will add a new lego to the corresponding bar.

When we finish with all the papers:

- *Which food 4<sup>th</sup> students like the most?*
- *Which food do 4<sup>th</sup> grade students like the least?*

To continue, we will keep track this information in the double-entry table, but first, it is important students learn where they have to put each information. In order to show students the different parts of the double-entry table, we will stick in the whiteboard the following table:

FOOD \ GENDER	WOMAN	MAN	TOTAL
LENTILS SOUP			
PASTA			
CHIPS			
EGGS			
TOTAL			

To create a double-entry table we need two variables. In this case food and gender. In the last row we place the total of the variable we already know. In this case, gender. This will help students to know if they are missing any data when writing it down in the table. Also, in the right part of the table, we will write the total of students that prefer each

food, being the total of that column the total of students. Colours help students to know what information they should put in each column.

Next, after explaining the structure of the double entry-table, we will complete it all together looking at the same papers we have used to complete the bar graph.

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### **SESSION 3**

Teacher: The English teacher will carry out this session.

Learning outcomes:

- Students will be able to use sequence adverbs.
- Students will be able to write a recipe including all its points.
- Students will be able to collect information in order to create a bar graph and a double-entry table.

Materials: Arrow, adverbs of sequence (printed and laminated), steps to create a teacup (printed and laminated)

Interaction: Whole class. Five groups of four students each.

#### **Sequence adverbs.**

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In this session, in order to introduce the adverbs of sequence, students will create their own recipes as well as the Elm Street Kids' Club did. Students will create two easy foods and write their recipes.

First, we will stick a long arrow on the class wall with numbers from one to four. Next, we will give five students 5 different sequence adverbs to place on the arrow in the order they consider is correct.



After that, when we have put them in order we will stick beside the arrow the next question.

**HOW TO CREATE A CUP OF TEA?**



Then, we will also stick in the wall the different steps you should follow to create a teacup, but these steps will be out of order. Pupils will have to put them in order and add the corresponding sequence adverb.

**FIRST** we boil some water. 

**NEXT** serve the water in a cup. 

**THEN** put the teabag in the water. 

**AFTER THAT** add some sugar and milk. 

**FINALLY** add a biscuit and enjoy it. 

## Creation of recipes

To continue, we will show students the different parts a recipe has.

1. Name of the food.
2. For how many people it is.
3. The time it takes.
4. Ingredients.
5. Process or directions.
6. Picture.

**Miracle Lasagna**

**Servings:** 6    **Prep Time:** 5 minutes    **Cook Time:** 1 Hr 5 min

**Ingredients:**  
 1 (26 ounce) jar Prego Traditional Italian Sauce  
 6 uncooked lasagna noodles  
 1 (15 ounce) container ricotta cheese  
 2 cups shredded mozzarella cheese  
 ¼ cup grated Parmesan cheese



**Directions:**  
 Spread about 1 cup pasta sauce in 2-quart shallow baking dish (11x7-inch). Top with 3 uncooked noodles, ricotta cheese, 1 cup mozzarella cheese, Parmesan cheese and 1 cup pasta sauce. Top with remaining 3 uncooked noodles and remaining pasta sauce. Cover.  
 Bake at 375 degrees F for 1 hour. Uncover and top with remaining mozzarella cheese. Let stand 5 minutes.

Later, we will divide students in four groups of five and ask them to create two recipes following the instructions. Before they start we will give them some tips to indicate amounts. Moreover, we will let each group have a dictionary.



The recipes must include:

- Food vocabulary.
- Adverbs of sequence (first, next, then, later, finally...)
- Quantifiers to express amounts.
- The parts needed to complete a recipe.

Students will have the full session to create both recipes. Then, in the next playground period they will explain their recipes to students from other grades up to 4 ESO, who will have to choose one of the recipes. The 4<sup>th</sup> grade students should write down the students' decisions, taking into account both the students' gender and the recipe they prefer. Pupils will be allowed to ask to a maximum of 20 students.

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## SESSION 4

Teacher: The math teacher will carry out this session.

Learning outcomes:

- Students will be able to represent data through a bar graph or a double-entry table.
- Students will be able to identify words through drawings.

Materials: Materials students need to create the bar graph and board game (Pictionary).

Interaction: Four groups of five students each.

This session is going to be divided into two parts. First, we will finish the keep track of information about the recipes they created. Second, we will play some games in which are included pictograms.

### **PART I (30 minutes)**

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For this session students will need the information they gather about their recipes and the other students' opinion about them.

1. Pupils will create a bar graph with the materials they want. For example, play dough, pictures of the dish they have created to represent each bar...
2. Pupils will complete the double entry table with the data they have compiled.
3. They will present in 1 minute both, the bar graph and the double-entry table. They will present their recipes using the correct vocabulary and draw conclusions about the results.

Before they start:

- *In the bar graph, which variable do we take into account?*
- *And in the double-entry table? Where do we place each variable?*
- *What do we do first so as not to forget any data?*

When the class finishes we will put all the bar graphs and tables on the class wall.



## **PART II (20 minutes)**

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In order to introduce pictograms as a drawing that represents an object or action, we will play “Pictionary” during the last twenty minutes.

We will divide the students into 4 groups of 5, and 2 and 2 will compete.

The objective of the game is to identify through drawings the greatest number of words in order to reach the final square of the board. Each square on the board corresponds to a category of words and each card contains one word from each category. The categories are:

- P: Person/animal/place.
- O: Object.
- A: Action.
- D: Difficulty:
- AP: All Play. In this category all the drawers draw at the same time, all the players try to identify the word of their drawer.

Each group is given a pencil, a drawing pad and a counter representing the colour of each team. In the center of the board we will place all the cards. After placing the counters in the starting box, each group will roll the die. The one who rolls the highest number starts the game.

The drawer of the starting team looks at the word of the corresponding category without anyone else seeing it. The sketcher has 1 minute to draw the picture for his team. The drawer may not speak or gesture to his teammates during the game. He can draw and try to guess the word until the time runs out. If the team does not guess the word, it is the next team's turn. If they guess the word correctly, they continue playing. They will roll the dice again, advance the number of spaces indicated by the dice and select another drawer, who will take another card from the pack and repeat the dynamic. For each new word there must be a different drawer.

The team that reaches the final box first and guesses the corresponding drawing will win.

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## SESSION 5

Teacher: The English teacher will carry out this session.

Learning outcomes:

- Students will be able to write a story from a given sentence.
- Students will be able to use adverbs of sequence to indicate order in events.
- Students will be able to talk about food in a fluent way.

Materials: Paper.

Interaction: Five groups of four students each.

### **Writing**

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In this last session we will once again promote cooperative learning among students, as well as writing skills by the rotatory paper methodology. To do so, we will give each group a sheet of paper. One of the members will write the sentence with which the story should begin:

**"When they found out about the robbery in the area, they rushed to the restaurant.  
Everything was trashed".**

Then, he/she will pass the sheet of paper to the partner on his/her right, who should continue the story. Each student will have 2 minutes to write and continue what his/her classmates have written. There will be 2 or 3 rounds. The teacher will evaluate according to the length of the stories, as well as the grammar and vocabulary included in it.

Before starting, the teacher will establish the requirements:

- Food vocabulary.
- Sequence adverbs.
- Quantifiers indicating quantity.

After the rounds considered by the teacher, we will give the students some time to read in groups what they have written and make the necessary changes in relation to vocabulary, grammar... as well as create a good ending. Each group will give their story to the teacher so that she can correct them and give them feedback.

## Project end

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Finally, the math teacher will come to the class to wrap up this project. To conclude, we will ask the students:

- *What have you learnt?*
- *What did you like the most?*
- *What did you like the least?*
- *Is there anything you would have liked to do?*

In order to answer these questions, we will stick on the class wall a big paper with the questions written above. We will provide the students markers of different colours so as to answer the questions on the wall paper. When all students have written down their ideas, we will read them out loud all together.

This helps both, the students to reflect on what they have learnt over the five sessions, and the teachers to evaluate the project and see what things could be changed for the better, as well as those that should be maintained.

## 7. PROJECT ASSESSMENT

Throughout the project, we have mentioned some evaluation techniques that could be used after certain activities. Moreover, these techniques can be substituted by any other technique that is more commonly used by the teachers, such as portfolio, one minute paper or interviews.

The feedback we give to students is important for them. It helps them to improve their learning process and to observe their progress. The evaluation part should be understood as a formative process which objective is education quality. Therefore, ambitious goals should be established so as to motivate students to learn.

Along this project, feedback should be given to students after each activity, even if it's oral while correcting activities. The main evaluation method in this project is observation. This evaluation method is present in the day-to-day classroom and focuses on both, attitudes and the knowledge acquired by students. This allows teachers to track each student and see their progress throughout the year.

These observations should be written down so as to take them into account when giving feedback to students, as well as when discussing them with the other teacher who is part of the project. For this purpose, after each class, the teachers will fill in the following checklist for each student. This checklists will help teachers to combine their observations to finally provide formative feedback to students.

Name:		
INDICATOR	YES	NO
1. He/she listen carefully to the story.		
2. He/she shows interest in learning.		
3. He/she participates in group discussions.		
4. He/she performs the activities with the aim of understanding the contents.		
5. He/she takes care of personal and school materials.		
6. He/she respects the speaking time.		
7. He/she proposes ideas in group activities.		
8. He/she accepts others' opinions.		
9. He/she helps his colleagues when they need it.		
10. He/she listens to the teacher's indications.		

Finally, rubrics are a method of evaluation that allows students to become involved in their own learning process. This instrument makes students aware of what is expected of them and guides them in the learning process. For this reason, rubrics should be given at the beginning of the activity that will be evaluated with this instrument, increasing the transparency of the feedback. (Annex 8, see page 143)

## 7.1 SELFASSESSMENT

Checklist: This project proposes the use of checklists as a method of self-evaluation/self-reflection for both students and teachers. It consists of a set of indicators that will allow students to reflect on what he/she has learnt throughout the session or project, to check if he/she has achieved the expected objectives or in which points he/she needs more work to improve and thus achieve the objectives.

As for teachers, this checklist will allow them to evaluate how a session has gone, if they have been able to successfully carry out the expected activities and achieve the objectives previously set. It is an objective and quick technique that will allow us to make changes in our work in order to offer students a quality education.

Students checklist for “Matenglish 2”:

Name:		
INDICATOR	YES	NO
1. I have participated in group conversations.		
2. I listened carefully to the story so that I could then do the activities correctly.		
3. I have been responsible with school materials.		
4. I am able to identify and talk in English using different verb tenses.		
5. I am able to join a conversation in which appear vocabulary about costs and amounts in English.		
6. I am able to add up decimal numbers.		
7. I am able to add up euros and cents mentally.		
8. I am able to create different groups of money with the same amount.		
9. I am able to solve math problems in which appear euros and cents.		
10. I am able to create a theatre script including the three parts.		
11. I have worked well in group, respecting my peers and making joint decisions.		

### Teachers' checklist:



Teacher:				
INDICATOR	ALWAYS OR ALMOST ALWAYS	SOMETIMES	ALMOST NEVER	NEVER
1. I structure the classes in a way that favours cooperative work.				
2. I establish common goals so that responsibility and effort are common.				
3. I observe my students' behaviour to identify difficulties with subject matter or group skills and collect information in my field notebook.				
4. I have presented the contents in a dynamic and motivating way for the students.				
5. I integrate into classroom conversations the content, grammar and vocabulary that I intend students to learn.				
6. I am flexible in the proposal of activities, depending on the students' needs.				
7. I have informed the other teacher of any changes made to the schedule.				
8. I have achieved the expected objectives				
9. I use materials that help students understand both English and math contents.				
10. I am receptive to students interventions and ideas.				

## 7.2 CO-ASSESSMENT

Throughout the proposal, we have opted for cooperative and manipulative work. Moreover, this way of working allows teachers to observe and evaluate the students' attitude towards others, their acceptance of different ways of working and ideas, as well as their responsibility towards school materials and achieving a good result thanks to their efforts.

Co-evaluation will allow students to reflect and evaluate how their teamwork has worked, what aspects can be improved for the next group work and thus achieve a better result. In addition, it will also allow each student to know the opinion of their peers regarding their teamwork, which will also improve their relational skills and responsibility.

 Green → Always       Blue → Almost always.       Yellow → Sometimes.

 Purple → Rarely       Red → Never

Name:					
INDICATORS	Name 1	Name 2	Name 3	Name 4	Name 5
Listen attentively to others.					
He is willing to help.					
Is respectful to others.					
Expresses his/her opinions/ Brings new ideas.					
Is responsible for its actions.					
Accept criticism.					
Accept others' opinions.					
Participate in the realization of the activities.					
Brings the materials when needed.					
Strives to achieve a good result.					

## 8. CONCLUSIONS

### 8.1 GENERAL CONCLUSIONS

After this proposal is finished, I am satisfied with my work. I consider that I have achieved the main objective, to create an interdisciplinary proposal that demonstrates that it is possible to learn mathematics and English at the same time. In order to achieve this objective, I suggested the use of *storytelling* as the main resource to reinforce some linguistic skills such as listening. This method has also been useful for introducing students to the contents that are going to be taught during the sessions following the storytelling.

Although there may be points for improvement such as more phonics activities, more attention, not only in the language of learning and language for learning but also in the through learning and even a better connection between both subjects that will be achieved over time, I believe that I have managed to create a small project that allows the development of the second language of English and the skills associated with it, as well as the acquisition of mathematical competence. I feel that I have included in it several aspects learnt throughout these four years of my degree, for example manipulative and discovery methodologies, the use of stories as a resource to contextualize learning, cooperative learning and formative assessment. Moreover, a dynamic and manipulative methodology that makes students enjoy learning has been implemented.

In addition, in reference to another of my specific objectives, I have opted for collaborative teaching among teachers. Throughout the project, I have tried to demonstrate that co-teaching can be beneficial for the students, since each teacher has different ideas and perspectives as well as different ways of working although the base is the same. Therefore, co-teaching offers students a model of teamwork while they receive a complete and quality education.



## 8.2 PERSONAL CONCLUSIONS

At the beginning of my Final Degree Project I mentioned that one of the reasons that led me to present this proposal was that, despite my internships in an international school and although most subjects were taught in English, this was not the case with mathematics. This motivated me to demonstrate that it is possible to work both subjects in an interdisciplinary way, connecting contents, something that has fascinated me and that I hope to be able to carry out in my future classroom.

This Final Degree Project has made me see the benefits of cross-curricular and competency-based teaching. I am in favour of a greater connection between subjects that used to be taught as totally separate blocks. In addition, I have been able to see the usefulness and importance of connecting students' lives with what they learn in school, contextualizing learning. In this case, storytelling has given us that learning context.

As I mentioned before, I have tried to implement an active, dynamic and manipulative methodology. I believe not only is it important what we teach, but also how we teach it. From my point of view, we should let students "touch" the contents, experiment, and feel the contents close to them. Additionally, I have opted for cooperative teaching among teachers. I believe that this contributes and allows them to develop social skills and attitudes to cope in life, make decisions and solve problems in relation to others.

To conclude, I hope that this small proposal is a first step towards the change in education that is so often discussed. As part of this change, the cross-curricular teaching of English and mathematics should be considered. This project has shown that it is possible, that it can be done in a simple but complete way, offering students an integrated and useful education for their future.

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## 10. ANNEXES

### ANNEX 1: K-W-L CHART FOR PEDAGOGICAL INTERVENTION 1.

<b>K</b>	<b>W</b>	<b>L</b>
<p><b>What do you <u>KNOW</u> about adjectives for quantity and measuring?</b></p>	<p><b>What do you <u>WANT</u> to know about adjectives for quantity and measuring?</b></p>	<p><b>What did you <u>LEARN</u> about adjectives for quantity and measuring?</b></p>
<p><b>What do you <u>KNOW</u> about fractions?</b></p>	<p><b>What do you <u>WANT</u> to know about fractions?</b></p>	<p><b>What did you <u>LEARN</u> about fractions?</b></p>

## ANNEX 2: POSTER GORILLA TEXT COMPLETE

Hello 4<sup>th</sup> grade students! I'm



. I know that you have learnt A LOT of

things today with the story, but I really don't understand anything about FRACTIONS, can you help me?

I know it is formed by two numbers, the NUMERATOR and the DENOMINATOR. The one below

indicate the TOTAL and the one above what I have eaten. When I received the cake it didn't have

the same amount of PIECES as when the elephant started to eat, so the TOTAL of pieces

changes, doesn't it?

I had a total of 64 and I ate 32 of what I received from hippo, which I think is

ENOUGH to keep me from being hungry for the rest of the day.

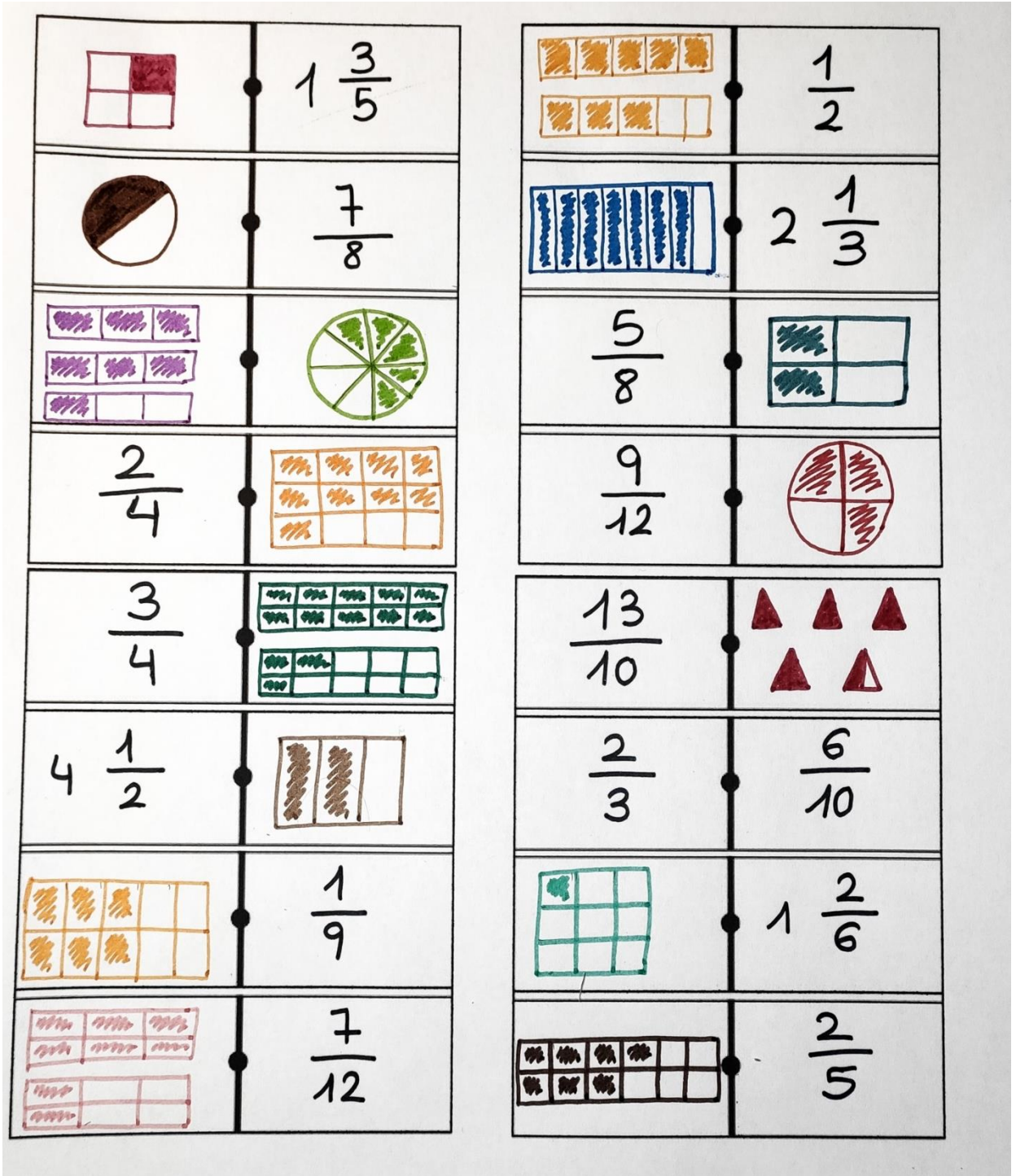
**HOW MANY** pieces did I eat? So the **FRACTION** that represents what I have eaten is **32/ 64**

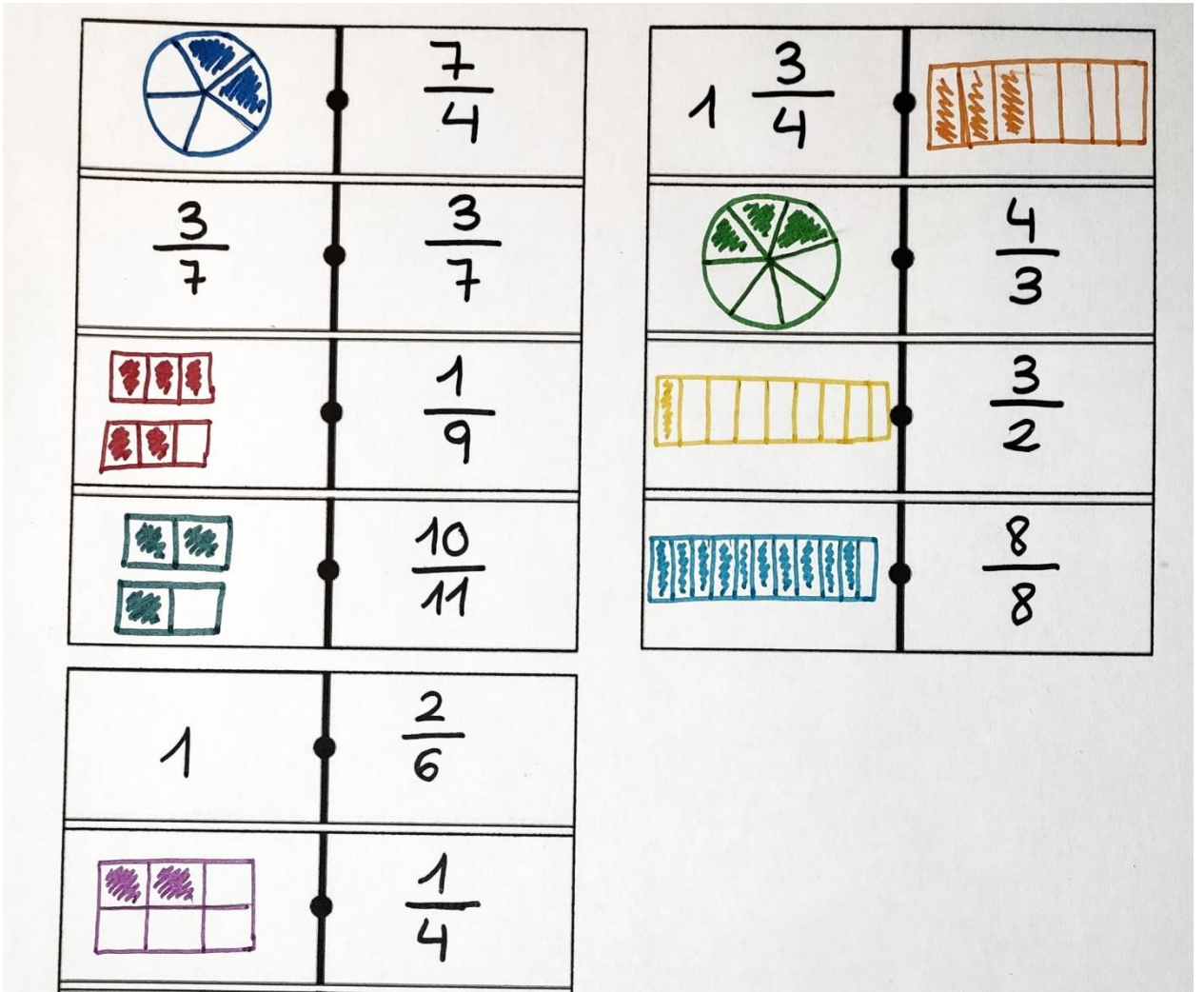
, that is read **32 OUT OF 64**.

**Source: Own elaboration**



FRACTIONS DOMINO (Source: Own elaboration)

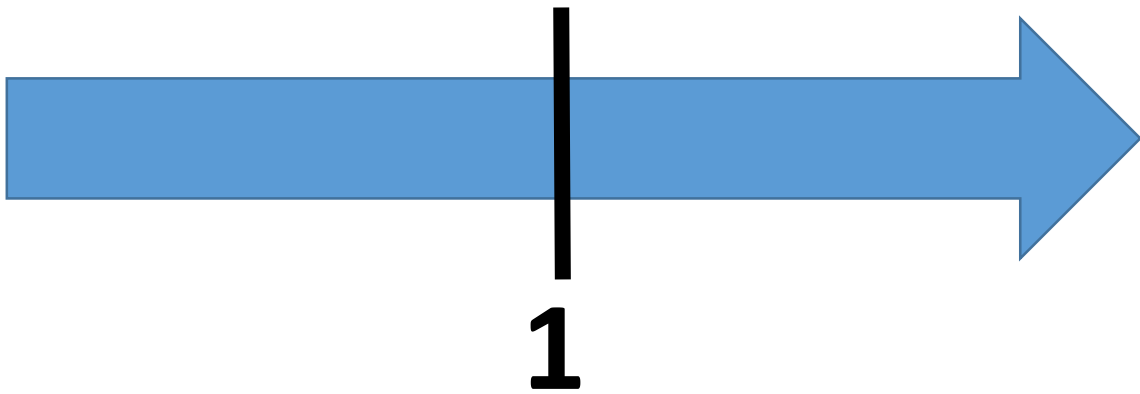




BRAINBOX (Source: <https://www.brainbox.co.uk/blog/article/try-our-games-for-free>)



## SORTING FRACTIONS



$$\frac{1}{2}$$

$$\frac{5}{9}$$

$$5\frac{1}{4}$$

$$\frac{2}{4}$$

$$\frac{7}{6}$$

$$2\frac{1}{4}$$

$$\frac{7}{8}$$

$$\frac{5}{4}$$

$$\frac{7}{4}$$

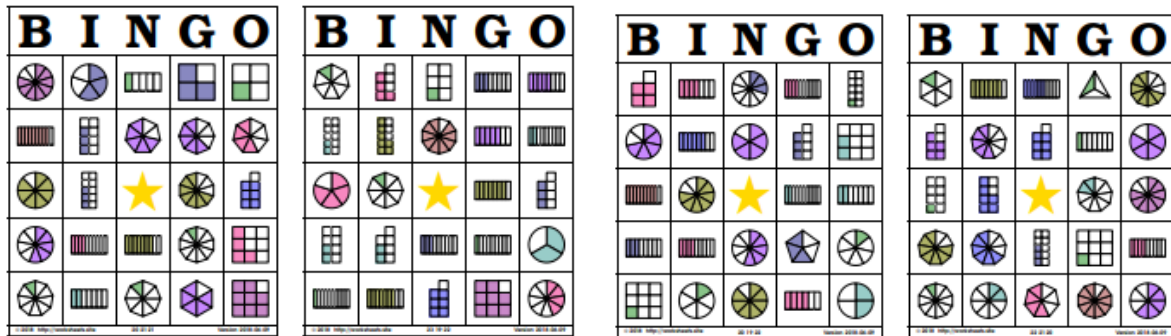
$$3\frac{4}{3}$$

$$\frac{1}{5}$$

$$\frac{4}{3}$$

$$6\frac{5}{5}$$

FRACTIONS BINGO (Source: <https://worksheets.site/fractions-bingo/fractions-bingo.pdf>)



## Fractions Bingo Simulated Cages

Cage 1	
0.	$3/8$ □
1.	$7/9$ □
2.	$3/10$ □
3.	$4/5$ □
4.	$1/5$ □
5.	$1/8$ □
6.	$2/7$ □
7.	$5/6$ □
8.	$1/9$ □
9.	$4/9$ □
10.	$2/5$ □
11.	$3/4$ □
12.	$1/4$ □
13.	$1/2$ □
14.	$1/6$ □
15.	$5/9$ □
16.	$7/10$ □
17.	$3/7$ □
18.	$6/7$ □
19.	$1/3$ □
20.	$3/5$ □
21.	$1/10$ □
22.	$5/7$ □
23.	$5/8$ □
24.	$2/9$ □
25.	$2/3$ □
26.	$9/10$ □
27.	$8/9$ □
28.	$1/7$ □
29.	$4/7$ □
30.	$7/8$ □

Cage 2	
0.	$1/5$ □
1.	$3/10$ □
2.	$8/9$ □
3.	$1/3$ □
4.	$3/7$ □
5.	$7/9$ □
6.	$1/7$ □
7.	$5/8$ □
8.	$4/5$ □
9.	$9/10$ □
10.	$6/7$ □
11.	$5/6$ □
12.	$4/9$ □
13.	$2/5$ □
14.	$5/9$ □
15.	$1/8$ □
16.	$3/8$ □
17.	$3/4$ □
18.	$4/7$ □
19.	$1/6$ □
20.	$7/8$ □
21.	$1/9$ □
22.	$2/7$ □
23.	$7/10$ □
24.	$1/10$ □
25.	$3/5$ □
26.	$1/4$ □
27.	$1/2$ □
28.	$2/9$ □
29.	$2/3$ □
30.	$5/7$ □

Cage 3	
0.	$7/9$ □
1.	$5/6$ □
2.	$1/5$ □
3.	$1/2$ □
4.	$5/8$ □
5.	$6/7$ □
6.	$7/10$ □
7.	$4/7$ □
8.	$1/7$ □
9.	$2/3$ □
10.	$2/9$ □
11.	$3/5$ □
12.	$7/8$ □
13.	$1/9$ □
14.	$1/3$ □
15.	$1/8$ □
16.	$3/8$ □
17.	$8/9$ □
18.	$3/4$ □
19.	$2/5$ □
20.	$9/10$ □
21.	$1/4$ □
22.	$2/7$ □
23.	$4/5$ □
24.	$5/7$ □
25.	$4/9$ □
26.	$5/9$ □
27.	$3/7$ □
28.	$1/6$ □
29.	$1/10$ □
30.	$3/10$ □



**ANNEX 4: TABLE WITH THE CHALLENGES ORDERED ACCORDING TO THE GROUP.**

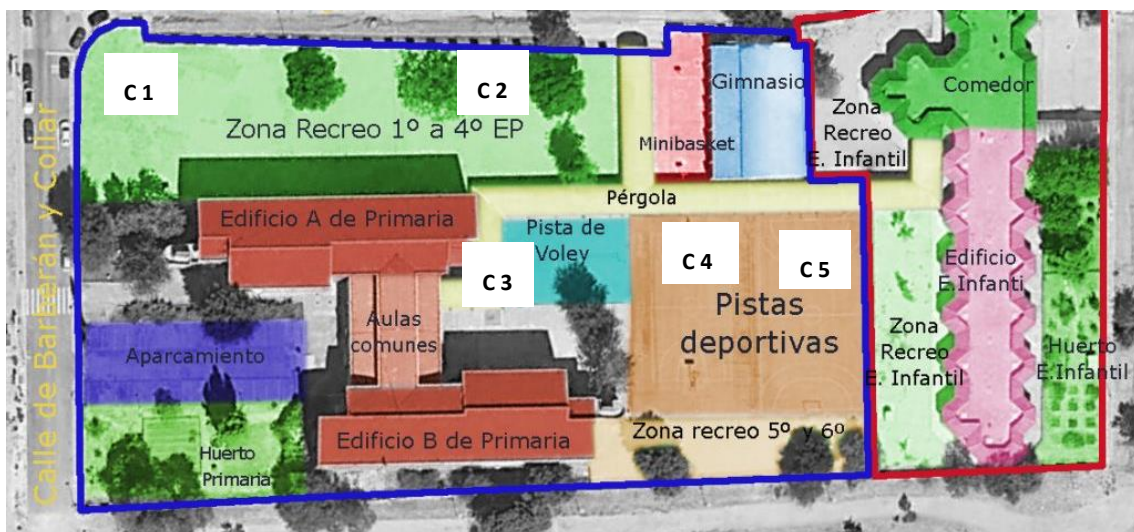
GROUP \ ROUNDS	GROUP 1	GROUP 2	GROUP 3	GROUP 4
ROUND 1	CHALLENGE 1	CHALLENGE 1	CHALLENGE 2	CHALLENGE 4
ROUND 2	CHALLENGE 2	CHALLENGE 4	CHALLENGE 3	CHALLENGE 3
ROUND 3	CHALLENGE 3	CHALLENGE 3	CHALLENGE 4	CHALLENGE 2
ROUND 4	CHALLENGE 4	CHALLENGE 2	CHALLENGE 1	CHALLENGE 1
ROUND 5	CHALLENGE 5	CHALLENGE 5	CHALLENGE 5	CHALLENGE 5

**ANNEX 5: PLAYGROUND MAP WITH CHALLENGES. GAME RULES.**

We have taken as an example the playground of “Ciudad del Aire” School in Alcalá de Henares, Madrid.

Source:

<https://site.educa.madrid.org/cp.ciudadelaire.alcala/index.php/inicio/conocenos/edificios-e-instalaciones/>



# GAMES RULES



**We respect each partner's turn.**



**We take care of the material.**



**We all participate in all the games.**



**We do not get angry if we lose a challenge.**



**The members of the group make joint decisions.**



**WE ARE A TEAM!**

## ANNEX 6: FOAMY PIZZAS

Source: Own elaboration.



ANNEX 7: ADJECTIVES PICTURES.



**HALF**



**ENOUGH**



**NOTHING**



**A LOT**



**A PIECE**

**ANNEX 8: RUBRICS FOR WRITING TASKS.**

Source: Own elaboration.

RUBRIC FOR PROJECT 1

	Excellent	Good	Fair	Needs improvement
<b><u>Conventions</u></b> Punctuation Spelling Capital letters.	Student uses accurate punctuations signs. No spelling mistakes. Student uses a capital letter when appropriate.	Punctuations signs and capital letters mostly correct. Only a few spelling mistakes have been made.	Evident punctuations signs mistakes. Missing capital letters. Multiple spelling mistakes.	Punctuations signs has hardly been used or used incorrectly. Many capital letters are missing. Many spelling mistakes.
<b><u>Organization and style</u></b>	Correct format. Great organization of ideas.	Good format. Few changes in the organization and exposition of ideas are needed.	Format requires some work. Needs more clarity in the organization of ideas.	Format is incorrect. The ideas are not clear, the text is not organised.
<b><u>Topic and contents.</u></b>	Outstanding adherence to topic. Both contents are very well connected. Achieves purpose.	Good adherence to topic. Needs a little more connection between subjects.	Refers to the topic. There is almost no connection between the two subjects.	Treats subjects' separately.
<b><u>Vocabulary.</u></b>	Excellent use of vocabulary of both subjects.	Good use of vocabulary of both content.	Use of vocabulary could be better. Little content-related vocabulary appears.	Vocabulary used is below what is expected at this grade level.
<b><u>Use of adjectives of quantity.</u></b>	Amazing use and variety of quantity adjectives.	A large number of quantity adjectives appear.	Just a few quantity adjectives appear.	No quantity adjectives appear at all.
<b><u>Creativity.</u></b>	Topic has been approached in a creative way. Entertaining to read.	Some creativity has been shown. Shows some entertainment value.	More creativity needed. Holds very little entertainment value.	Not creative or entertaining at all.



RUBRIC FOR PROJECT 2

	Excellent	Good	Fair	Needs improvement
<b><u>Conventions</u></b> Punctuation Spelling Capital letters.	Student uses accurate punctuations signs. No spelling mistakes. Student uses a capital letter when appropriate.	Punctuations signs and capital letters mostly correct. Only a few spelling mistakes have been made.	Evident punctuations signs mistakes. Missing capital letters. Multiple spelling mistakes.	Punctuations signs has hardly been used or used incorrectly. Many capital letters are missing. Many spelling mistakes.
<b><u>Organization and style</u></b>	Correct format. Great organization of ideas.	Good format. Few changes in the organization and exposition of ideas are needed.	Format requires some work. Needs more clarity in the organization of ideas.	Format is incorrect. The ideas are not clear, the text is not organised.
<b><u>Topic and contents.</u></b>	Outstanding adherence to topic. Both contents are very well connected. Achieves purpose.	Good adherence to topic. Needs a little more connection between subjects.	Refers to the topic. There is almost no connection between the two subjects.	Treats subjects' separately.
<b><u>Vocabulary.</u></b>	Excellent use of vocabulary of both subjects.	Good use of vocabulary of both content.	Use of vocabulary could be better. Little content-related vocabulary appears.	Vocabulary used is below what is expected at this grade level.
<b><u>Use of verb tenses.</u></b>	Amazing use of verb tenses along the script.	A large number of verb tenses appear in the script.	Just a few verb tenses appear in the script.	No verb tenses or very simple ones appear in the script.
<b><u>Creativity.</u></b>	Topic has been approached in a creative way. Entertaining to read.	Some creativity has been shown. Shows some entertainment value.	More creativity needed. Holds very little entertainment value.	Not creative or entertaining at all.

RUBRIC FOR PROJECT 3

	Excellent	Good	Fair	Needs improvement
<b><u>Conventions</u></b> Punctuation Spelling Capital letters.	Student uses accurate punctuations signs. No spelling mistakes. Student uses a capital letter when appropriate.	Punctuations signs and capital letters mostly correct. Only a few spelling mistakes have been made.	Evident punctuations signs mistakes. Missing capital letters. Multiple spelling mistakes.	Punctuations signs has hardly been used or used incorrectly. Many capital letters are missing. Many spelling mistakes.
<b><u>Organization and style</u></b>	Correct format. Great organization of ideas.	Good format. Few changes in the organization and exposition of ideas are needed.	Format requires some work. Needs more clarity in the organization of ideas.	Format is incorrect. The ideas are not clear, the text is not organised.
<b><u>Topic and contents.</u></b>	Outstanding adherence to topic. Both contents are very well connected. Achieves purpose.	Good adherence to topic. Needs a little more connection between subjects.	Refers to the topic. There is almost no connection between the two subjects.	Treats subjects' separately.
<b><u>Vocabulary.</u></b>	Excellent use of vocabulary of both subjects.	Good use of vocabulary of both content.	Use of vocabulary could be better. Little content-related vocabulary appears.	Vocabulary used is below what is expected at this grade level.
<b><u>Use of comparative and superlative adjectives.</u></b>	Amazing use of comparative and superlative adjectives.	A large number of comparative and superlative adjectives appear.	Just a few comparatives and superlatives adjectives appear.	No comparatives and superlatives adjectives appear at all.
<b><u>Creativity.</u></b>	Topic has been approached in a creative way. Entertaining to read.	Some creativity has been shown. Shows some entertainment value.	More creativity needed. Holds very little entertainment value.	Not creative or entertaining at all.

RUBRIC FOR PROJECT 4

	Excellent	Good	Fair	Needs improvement
<b><u>Conventions</u></b> Punctuation Spelling Capital letters.	Student uses accurate punctuations signs. No spelling mistakes. Student uses a capital letter when appropriate.	Punctuations signs and capital letters mostly correct. Only a few spelling mistakes have been made.	Evident punctuations signs mistakes. Missing capital letters. Multiple spelling mistakes.	Punctuations signs have hardly been used or used incorrectly. Many capital letters are missing. Many spelling mistakes.
<b><u>Organization and style</u></b>	Correct format. Great organization of ideas.	Good format. Few changes in the organization and exposition of ideas are needed.	Format requires some work. Needs more clarity in the organization of ideas.	Format is incorrect. The ideas are not clear, the text is not organised.
<b><u>Topic and contents.</u></b>	Outstanding adherence to topic. Both contents are very well connected. Achieves purpose.	Good adherence to topic. Needs a little more connection between subjects.	Refers to the topic. There is almost no connection between the two subjects.	Treats subjects' separately.
<b><u>Vocabulary.</u></b>	Excellent use of vocabulary of both subjects.	Good use of vocabulary of both content.	Use of vocabulary could be better. Little content-related vocabulary appears.	Vocabulary used is below what is expected at this grade level.
<b><u>Use of sequence adverbs</u></b>	Amazing use of sequence adverbs.	A large number of sequence adverbs appear.	Just a few sequence adverbs appear.	No sequence adverbs appear at all.
<b><u>Creativity.</u></b>	Topic has been approached in a creative way. Entertaining to read.	Some creativity has been shown. Shows some entertainment value.	More creativity needed. Holds very little entertainment value.	Not creative or entertaining at all.

ANNEX 9: MAMMA MIA SONG.

<https://www.youtube.com/watch?v=y6h5BUsO9Vw>

ANNEX 10: PROBLEMS FORMULATIONS PROJECT 2.

1. PROBLEM 1



Medium Mc Menu → 7,50



4 McChicken → 4,90€



20 McNuggets → 2 €



Happy meal → 5,30€



Menu Big Mac → 4,90€



Mc flurry → 1,90€

A family goes to McDonalds to have dinner and order:

- Medium Mc Menu + Happy meal
  - Menu Big Mac
  - 2 of 20 McNuggets
- How much will they pay?
- For dessert they order 6 McFlurry. How much will they pay for the dessert?
- Will they have enough money with a 50 euros paperbank to pay the whole meal?

## 2. PROBLEM 2



You and your father order:

- 1 Breton Menu
  - 2 Pan Classic sandwiches
  - 2 Twist Ice-cream.
- How much will you pay?
  - How much will you get back if you pay with a 50 euros paperbank?
  - How much will you have left over?

## 3. PROBLEM 3

Ana went to the supermarket with 15€. She bought a kilo of apples at 1.50 €, 1 kilo of chops at 12 € and a litre of milk at 85 cents. How much money does she have left over?

#### 4. PROBLEM 4

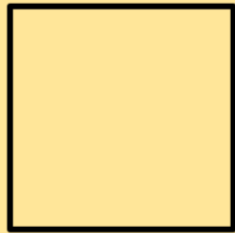
Vera spent 187€ on a coat and €52 on an umbrella. After the purchases, she had 22€ left in her purse. How much money did she have before shopping?

#### ANNEX 11: PART OF THE STORY WE WILL IMITATE IN CLASS DURING STORYTELLING (PAGE 14)

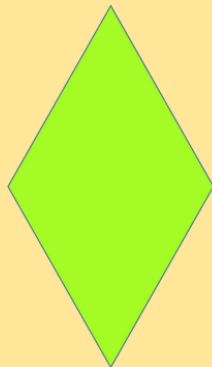


**AREA**

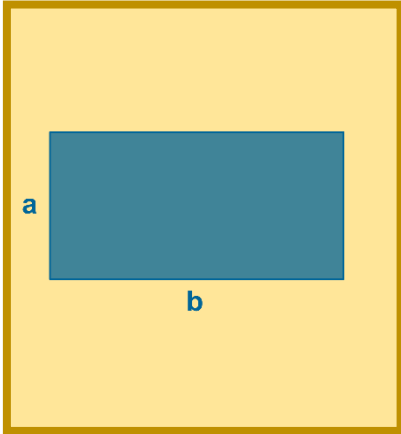
**THE  
MEASURE OF  
THE  
SURFACE OF  
A FIGURE**



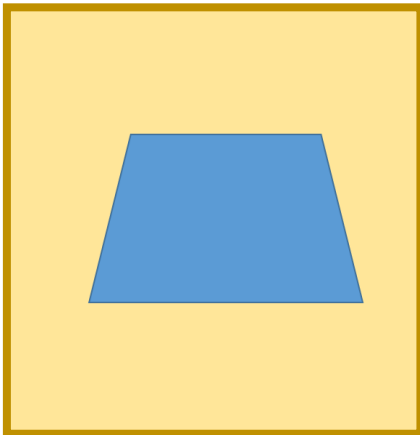
**A PLANE  
FIGURE WITH  
FOUR EQUAL  
STRAIGHT SIDES  
AND FOUR  
RIGHT ANGLES**



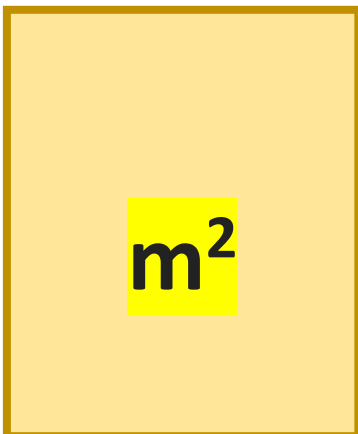
**A FALT SHAPE  
WITH FOUR  
STRAIGHT SIDES  
THAT ARE ALL  
EQUAL LENGTH**



**A FOUR-SIDED  
FIGURE WITH  
PARALLEL  
SIDES**

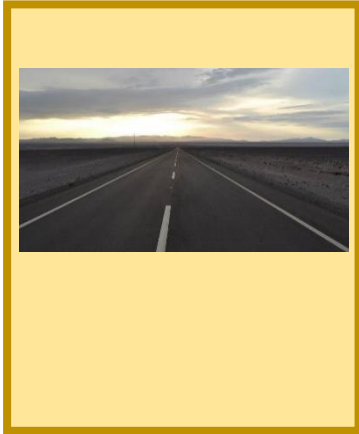


**QUADRILATERAL  
WITH ONE PAIR  
OF SIDES  
PARALLEL.**

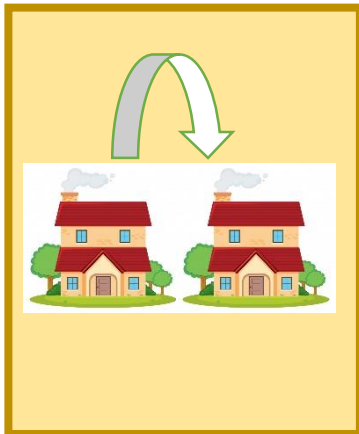


**UNIT OF AREA  
MEASUREMENT EQUAL  
TO A SQUARE  
MEASURING ONE  
METER ON EACH SIDE**





**REFERS TO  
SOMETHING  
THAT IS  
MILES AWAY**



**REFERS TO  
SOMETHING  
THAT IS  
NEARBY**



**SATISFACTORY  
OR EXCELLENT  
IN QUALITY,  
QUANTITY, OR  
DEGREE**



**A NUMBER  
OF PEOPLE  
OR THINGS  
IN A LINE**



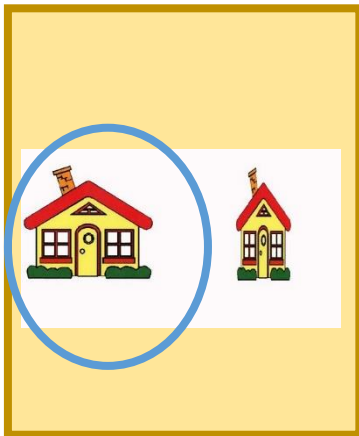
**FROM ONE  
SIDE TO  
THE OTHER**



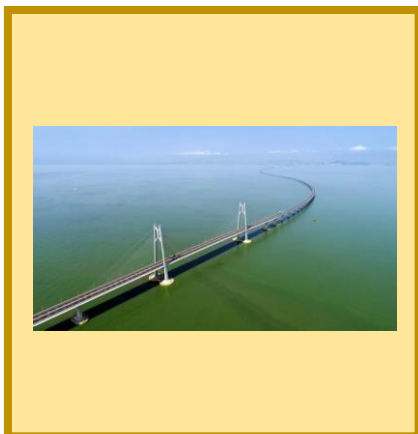
**VERY  
SMALL**



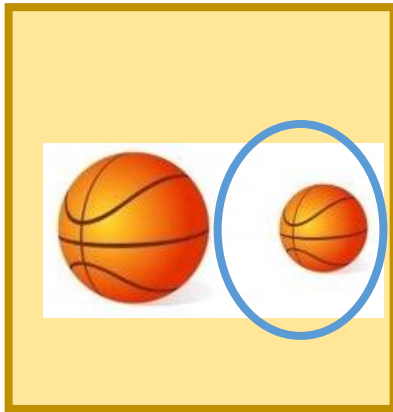
**HAVING  
LIVED OR  
EXISTED FOR  
A LONG  
TIME**



**OF GREAT  
SIZE OR  
EXTENT  
FROM SIDE  
TO SIDE**



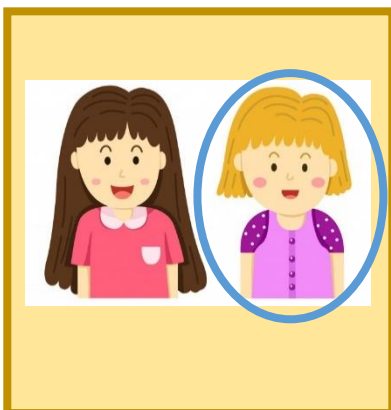
**HAVING A  
MEASUREMENT  
IN LENGTH  
GREATER THAN  
USUAL**



**NOT LARGE  
WHEN  
COMPARED  
WITH OTHERS  
OF THE SAME**



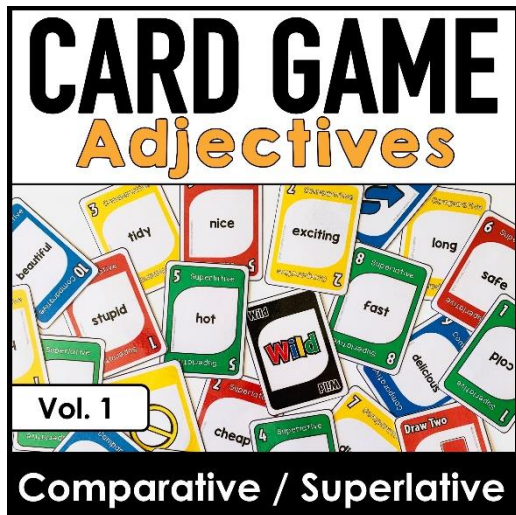
**LARGE IN  
SIZE,  
HEIGHT,  
WIDTH, OR**



**HAVING A  
LITTLE  
LENGTH OR  
HEIGHT**

## ANNEX 13: "UNO" ADJECTIVES GAME.

Source: <https://www.hotchocolateteachables.com/products/adjectives-comparative-superlative-card-game>



## ANNEX 14: MINIONS WORKSHEET.

Source:

[https://es.liveworksheets.com/worksheets/en/English as a Second Language \(ESL\)/Comparatives and superlatives/Superheroes - Comparative and Superlative nk260721sl](https://es.liveworksheets.com/worksheets/en/English+as+a+Second+Language+(ESL)/Comparatives+and+superlatives/Superheroes+-+Comparative+and+Superlative+nk260721sl)

### COMPARATIVE AND SUPERLATIVE

#### PAPER 1

#### GET TO KNOW ME!



#### SUPERMAN

Age: 15 years old.

Height (cm):

Intelligence:

Speed: 19

#### BLACK WIDOW

Age: 36 years old.

Height (cm):

Intelligence: 60.

Speed:

#### IRON MAN

Age:

Height (cm): 1.74 cm.

Intelligence:

Speed: 15

#### WONDERWOMAN

Age:

Height (cm): 1, 78 cm.

Intelligence: 75

Speed:

1. Ironman is \_\_\_\_\_ (AGE) than Black Widow.
2. Superman is \_\_\_\_\_ (HEIGHT) than Ironman.
3. Wonderwoman is \_\_\_\_\_ (INTELLIGENCE) than Superman.
4. Wonderwoman is \_\_\_\_\_ (AGE) than Superman.
5. Black Widow is \_\_\_\_\_ (INTELLIGENCE) than Ironman.
6. Black Widow is \_\_\_\_\_ (HEIGHT) than Ironman.
7. Superman is \_\_\_\_\_ (SPEED) than Wonderwoman.
8. Ironman is the \_\_\_\_\_ (INTELLIGENCE)
9. Ironman is the \_\_\_\_\_ (AGE). And Wonderwoman is the \_\_\_\_\_ (AGE)
10. Superman is the \_\_\_\_\_ (HEIGHT). And Black Widow is the \_\_\_\_\_ (HEIGHT).
11. Black Widow is \_\_\_\_\_ (SPEED) than Ironman.

## COMPARATIVE AND SUPERLATIVE

### PAPER 2

#### GET TO KNOW ME!



#### SUPERMAN

Age:

Height (cm): 1.92 cm

Intelligence: 70

Speed:

#### BLACK WIDOW

Age:

Height (cm): 1, 65 cm

Intelligence:

Speed: 13

#### IRON MAN

Age: 42 years old.

Height (cm):

Intelligence: 90

Speed:

#### WONDERWOMAN

Age: 12 years old.

Height (cm):

Intelligence:

Speed: 18

1. Ironman is \_\_\_\_\_ (AGE) than Black Widow.
2. Superman is \_\_\_\_\_ (HEIGHT) than Ironman.
3. Wonderwoman is \_\_\_\_\_ (INTELLIGENCE) than Superman.
4. Wonderwoman is \_\_\_\_\_ (AGE) than Superman.
5. Black Widow is \_\_\_\_\_ (INTELLIGENCE) than Ironman.
6. Black Widow is \_\_\_\_\_ (HEIGHT) than Ironman.
7. Superman is \_\_\_\_\_ (SPEED) than Wonderwoman.
8. Ironman is the \_\_\_\_\_ (INTELLIGENCE)
9. Ironman is the \_\_\_\_\_ (AGE). And Wonderwoman is the \_\_\_\_\_ (AGE)
10. Superman is the \_\_\_\_\_ (HEIGHT). And Black Widow is the \_\_\_\_\_ (HEIGHT).
11. Black Widow is \_\_\_\_\_ (SPEED) than Ironman.

## ANNEX 15: LOGIC BLOCKS

Source: <http://mundodegeometria.blogspot.com/2017/06/logical-blocks.html>



## ANNEX 16: ADJECTIVES QUESTIONNAIRE AND DIPLOMA EXAMPLE.

### Questionnaire

[https://docs.google.com/forms/d/1xQomKXvtlllNUn31tM7CGJcRk\\_VcagFu78zHJNFysKI/edit](https://docs.google.com/forms/d/1xQomKXvtlllNUn31tM7CGJcRk_VcagFu78zHJNFysKI/edit)

Diploma examples (Source: Own elaboration)







FUNNIEST

*Ruy Arroyo Ramos*

5°A 2020-2021

PICTURE OF THE  
SCHOOL LOGO

DATE

TEACHER

**ANNEX 17: FOOD FLASHCARDS.**

Source: <https://emojiflashcards.com/english/food/all/printable-flashcards?lv=uk-english>

