



TEACH-IN EDUCATION

CAPACITAÇÃO E TREINAMENTO DE PROFESSORES
NAS ÁREAS LINGÜÍSTICAS E METODOLÓGICA

BOOKLET

A STEPPING STONE TO PROJECT-BASED LEARNING

APPLYING PBL TO THE PRIMARY CLASSROOM

ABOUT THE AUTHORS



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INTRODUCTION

The idea of this booklet is to offer input that will help you begin working with PBL in the primary classroom. If you are thinking about the challenges involved, we know there are plenty. However, there is nothing more fulfilling than working with an audience who is willing to ask all kinds of questions, is naturally curious and easily fascinated by the new and unknown. This is probably the greatest advantage of doing PBL with the young ones: they are eager to learn and will consume everything you bring to them.

You will also notice throughout this journey that not everything we hear and read about PBL will be suitable for younger audiences. In short, your work will consist of listening to students' questions and ideas so that they know they matter. You may also need to help students translate their thoughts and ideas into questions, and from them, begin the research that will lead to the final product. In this age group, the possibilities for a final product are endless: albums, plays, public presentations, school exhibits, videos, art interventions, a class book, etc. Never underestimate their ability to transform information into knowledge. Remember that there is no limit to their imagination, and your most important job is to provide them with enough input and resources. The rest is up to them.

PBL AND PROJECTS – WHAT IS THE DIFFERENCE?

Let us begin by bearing in mind that working with Project-Based Learning is quite different from simply getting students to work on an end-of-unit project. The latter consists of a wrap-up activity, in which students present a sample of whatever they have learned. Usually these projects are posters, videos, or presentations that combine some visual resource with a brief oral presentation on what students have learned.

PBL provides us with a much more structured, embracing approach to learning, as the project *is* the unit, as well as the channel through which learning takes place. It is an approach in which students have a voice to choose the questions they want answered and have the chance to actively participate in the community by designing solutions and proposing real change. Starting with a question that will guide them, students are bound to follow different ways, and that is part of the fun. When students have the freedom to choose what to focus on, learning becomes more meaningful.

Another main feature of PBL, one that makes it different from simply working with projects, is its length. PBL takes longer, as it requires different steps. It is important to come up with an interesting and engaging "entry event" that will introduce the topic and the driving question in a way that grabs students' attention. With such activity, the teacher triggers curiosity and encourages students to ask relevant questions.



Finally, as we have previously stated, PBL is lengthy, complex, and more often than not, unpredictable. It is paced by the students, which means that we as teachers must get used to being out of the spotlight. Above all, PBL tackles real-life issues while presenting content that is relevant. That in itself is what makes learning truly memorable.

DRIVING QUESTION AND INQUIRY-BASED LEARNING

One can definitely say that curious children are destined for success. They ask questions, seek answers and are constantly discovering and sharing new things. That is what drives PBL – curiosity and questions.

That is why the core of any project in PBL is the Driving Question. This is one of the main differences between a “dessert” project and a “main dish project”, a metaphor coined by Larmer, J. & Mergendoller (2011) when describing the main differences between projects and PBL. The driving question (DQ) is what will “drive” students and teachers through the whole project. The inquiry, the final product, the assessment will all be based on this DQ. For this reason, one of the most challenging aspects of any project is to identify the best driving question that will engage students, motivate them to act upon it and do further research in order to not only answer the question, but also to find a solution for the problem/question and propose a real change in their own community. Driving questions can be of two types: the first, students would have to come up with a product, have a problem to be solved or a specific task to be done (ex: *how can you create a picture book of the animals’ food chain, how can you invent a new toy which is cheap and engaging?*). The second type involves more complex thinking and cannot come to a simple “yes” or “no”, as in *should the canteen offer different foods? Should our school have a bigger playground?*

You might assume that only older students have the cognitive skills for working on PBL, for primary students are not yet able to tackle higher order thinking skills. Indeed, younger students will probably not be able to come up with the driving question themselves (many older students are not able to either). Within the school curriculum, the teacher will be the one who will determine a driving question (DQ) according to their age and maturity. It might not even come to be a question that demands action or a product, but something that will simply trigger students’ ability to wonder and hypothesize.

How do we launch a project for primary students? What does a driving question look like? As this booklet is designed for younger learners, we will focus our attention on DQs that will work for this audience: in this particular work, we have designed projects for primary students, ranging from 7 to 10 years old.

The first and most important aspect of a DQ is that it cannot be answered by simply looking it up somewhere, or by having students ask their parents for the answer. The teacher will not find the answer on the web either. This question will drive students and teachers to ask more questions, leading the students to go deep into



research. In this case, as we are dealing with primary students, they will be using not only the internet as a resource, but other resources and supplies brought in by the teacher: images, storytelling, experiments, books, videos, songs, *realia*, and others.

To begin, we should have in mind the syllabus we have to cover in our curriculum and begin with the end in mind. What could work as a final product taking into consideration the profile of the group we are working with? How can the topic we want to cover involve the community? What is in the common curriculum of the country (BNCC for Brazilian schools, PYP for international schools)?

As a starting point for the teacher, we suggest using mind maps. As an example, let us say the transdisciplinary topic to be covered is *identity*. You may want to begin with *FAMILY*. As a driving question, you could come up with *how different are families in my school?* As the main word in the middle of the mind map, you could have the word *FAMILY* and then branch out to all the aspects you would like to cover (vocabulary, cross-curricular subjects, reading, visual resources, listening activities, social skills etc.). It would look like this:

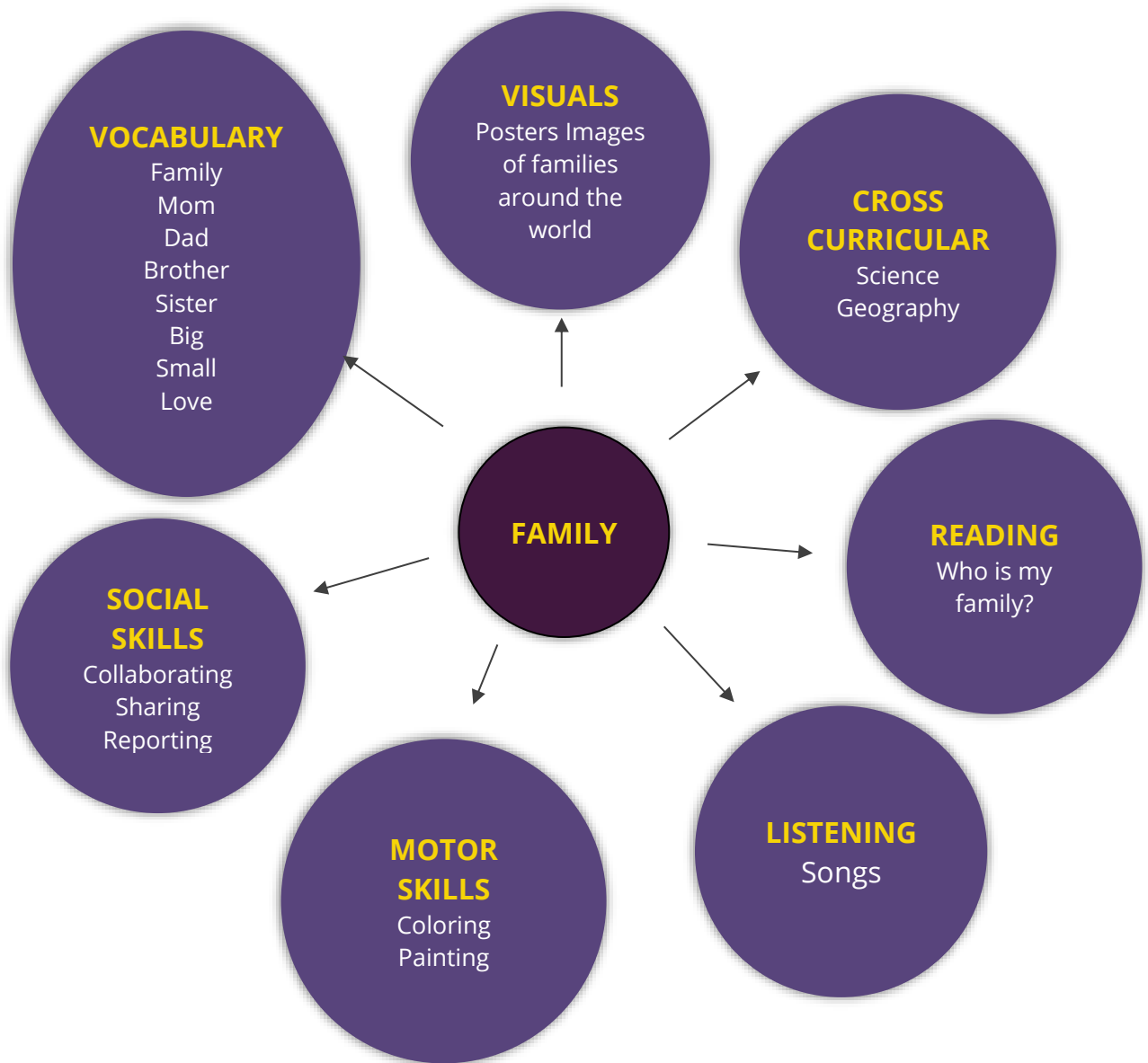


Fig. 1 – Example of a mind map

One of the goals in PBL is to teach students to find their voice and, at the same time, have teachers listen to it. As in the Reggio Emilia approach, students are taught to observe the world around them and are encouraged to be creative and help create the curriculum with the teacher. Teachers sit aside, observe, and take notes. Their main role is to monitor the learning process. Children learn through an active process of exploring their world together, exchanging ideas, and learning from and with each other. Nevertheless, teachers need to know what they want to reach within the syllabus, accomplishing that hand in hand with the students. As explained by Dr. Alan Edmunds, “The key to inquiry-based learning is to teach students how to ask their own questions, and to discern good questions from ineffective questions.”¹

¹ From: <https://www.oxfordlearning.com/engaging-young-learners-through-inquiry-based-learning/>
Access on March 8, 2019.



Crucial points for teachers of primary classes are:

- Establish a culture in which students are encouraged to express their thoughts;
- Although we are working on a student-centered approach, its success depends on the guidance provided by teachers;
- Keep an open-mind and be willing to build on spontaneous questions.

Having discussed a little about how the teacher should get on board with PBL, we can shift to how we can get the students involved. Graphic organizers are always welcome when we are working with students, as they are visual tools. KWL charts and visual thinking routines such as THINK - PAIR - SHARE, are a good beginning to get students into a “need to know” mood.

Topic: _____ Name: _____

K What I Know	W What I Wonder	L What I Learned

Fig. 2 – KWL chart²

Students can reflect upon three main questions:

1. What do I already know about the subject?
 2. What do I want to know about the subject?
- And later:
3. What have I learned about the subject?

Giving students some minutes and asking them to think about the subject proposed, then sharing with a friend, and finally sharing as a whole class is a thinking routine largely used as a starting point in some PBL classes. (THINK - PAIR - SHARE). We are then not only working on cognitive skills but also on other social skills.

After analyzing your school curriculum and syllabus, the next step is to come up with a driving question and then begin the project by asking students what they know about the topic. You can do this activity in pairs, small groups, or even as a whole

² From: <https://www.teacherspayteachers.com/Product/KWL-Chart-595724> Access on March 8, 2019.



class activity. The goal is for students to draw from their previous experiences and bring these to the classroom. Before sharing the driving question, you can come up with an engaging “entry event” that will strike our students’ attention to the topic. As an example, you could bring in a guest speaker (a professional related to the topic they will study), take students on a field trip, bring in a surprise box with objects to prompt their curiosity, or anything to get them excited about the topic. Having done an entry event and introduced the driving question, students can build their repertoire using various activities they draw upon their previous experiences: drawings, reports, books, videos, dramatizing etc. As we are talking about the learning of an additional language, students will fall back on their mother tongue, and that is obviously no problem at all, as they still do not have enough language skills to proceed in English. You can also introduce the vocabulary students need by using their drawing as input. As students move on, their productivity in the target language will increase.

Our next step would be to ask them what they *want* to know regarding the topic. As we have stated above, children are naturally curious, and this step is crucial. All questions should be considered, no matter how absurd they might seem to us.

Having finished this phase, we enter the inquiry phase. This is where the teacher must provide the resources and supplies they will need for their discovery path. Texts, recordings, videos, realia, objects, magazines, everything that might aid students through their inquiry. Field trips and interviews are also great sources for students to deepen their inquiry. During this stage, vocabulary words and chunks of language are introduced and practiced so that students relate the subject to the language. You could set up a PBL corner in your classroom, where supplies are always available.

We must always remember that this is a cross-curricular approach. All subjects are related to the main PBL project. While working on the transdisciplinary topics *identity* and *family*, you can use charts, songs, videos depicting families around the world, families living in different climates and many different matters might come up while discussing the topic FAMILY. It goes way beyond members of the family. When working with PBL, we go beyond the walls of the classroom and connect our students to the real world issues and happenings.

We must also remember that children learn through play. When they are playing, they are also speaking, drawing, sculpting, role-playing, building, watching, imagining, and always learning. PBL with young learners takes all these elements into account for students to discover the way they best learn.

ASSESSMENT

The assessment happens during the whole project. Tools such as rubrics designed by the teacher and by the students are crucial to scaffold students’ learning strategies. One very important aspect during the assessment is the reflection stage providing opportunities for students to reflect upon what and how they are learning.



To make it possible, it is essential that students are an active part of the process. Together, you can make decisions regarding what, when and how to assess, so that students are aware of what is expected from them.

The idea of assessment in PBL reflects the basis on which the approach was built upon: students have voice and choice, are active participants and are aware of what is expected from them.

RUBRICS AS A TOOL FOR ASSESSMENT

In order to successfully assess students in PBL, rubrics come as a useful and practical resource, once you can build the criteria and the descriptions for each step. They are also one of the best ways to build a collaborative tool to assess the socio-emotional skills that are extremely important to develop in younger learners. For example, suppose you want to build rubrics for students to self-assess their behavior when working in groups: what are the items you want to assess? What would be a description for poor, good, and excellent behavior for each item? From that you can build your rubrics with the students' help. The example below shows us rubrics for student self-assessment:

Self-assessment




	 I did very well	 I did "ok"	 I need to do better
I took part in all group activities.			
I respected my friends when it was their turn to speak.			
I stopped talking to listen to my teacher.			
I helped my friends when they needed it and was nice to them.			
I used my inside voice.			

Table 1 – Student self-assessment behavior rubrics

As you may have noticed, the example provides students with a clear description of ideal behavior and invites them to reflect upon their performance on each criterion described. Successful group work depends greatly on good attitude on the part of the students. Considering that some students may not yet read in English, you will probably need to help them by adding pictures and symbols that will help them better understand the table. You will notice that they are quite honest when grading themselves, and you should encourage this behavior by making sure they



understand that this exercise is to help them get better, rather than to bring punishment.

The following rubrics, on the other hand, shed light on the aspects the teacher should assess:

Student assessment – teacher’s version

	Excellent	Good	Needs Improvement
Student overall participation and engagement	Student participated actively in every activity, showing engagement and motivation.	Student participated actively in the events and activities of his/ her interest.	Student showed little engagement and motivation in the activities proposed.
Student overall behavior	Student showed excellent behavior, listening skills, and respect towards the teacher and classmates.	Student showed good behavior. There was some acting out, but it was easily controlled.	Student showed poor behavior during most activities. Student lacks social skills to work collaboratively.
Student’s effort to use the target language	Student tried to use the target language most of the time and was not afraid to take risks.	Student showed some hesitation in using the target language, but makes an effort when asked.	Student showed little or no effort both to use the target language, not even when asked by teacher.
Student’s level of comprehension in the target language	Student understood most or everything the teacher says.	Student did not understand everything, but used strategies for clarification.	Student understood nearly nothing or very little and did not use strategies for clarification.

Table 2 – Teacher’s assessment rubrics for individual students

FINAL PRODUCT

Although primary students are very curious and creative, they still need scaffolding throughout the process of inquiry and production. That is why formative assessment, self-assessment, and critical feedback are necessary. Our main role is to refine their thinking and ideas for their final product. The final product must always refer to the driving question, and there should be a performance or presentation to a public audience, demonstrating what they learned while working on the project. Deciding on the product can be just as challenging as choosing the driving question. Again, the product must be of the students’ interest. Final products can range from bumper stickers to art galleries; cartoons and infographics for the local public to poems and dance routines; a letter to the local paper to fossil exhibitions; a rap song demonstration to a puppet show or radio program. The sky’s the limit. As mentioned before, the idea of the final product must be something that originates from the students’ will, and the teacher should guide the students by using formative assessment and critical feedback when necessary.



GETTING THE SCHOOL INVOLVED

Doing PBL involves much more than the classroom boundaries or books. Therefore, the school as a whole must be supportive, and work alongside the teachers towards a successful outcome. The key to this is to have careful planning, communication, and alignment with the school's philosophy.

Above all, we must have in mind that working with PBL involves a major shift in paradigm, which is not always a smooth process. That is why, with a little patience, persistence, and good modeling, you will be able to get everyone in your school onboard.

GETTING PARENTS INVOLVED

Because PBL resorts to real life issues in order to create relevant “need to know”, involving parents in the process from the beginning is extremely important. The reason for this is the fact that young children's most experiences, beliefs, and references are still limited to their household. In that sense, parents can be extremely helpful in working together with the school and the teachers. Here are some ways they can contribute to your project work:

- Ask them to come to the classroom to talk about their jobs and be interviewed by the children;
- Organize field trips and ask them to help you chaperone.
- Assign activities that will be a part of the project and that should be made by the children at home, with the help of the parents.
- Ask parents to record moments in which their children are working on a project-related activity.

Most importantly, inform parents of what you are doing. Chances are they are not familiar with the principles of PBL, and therefore will have many questions. Show them you are on their side, and you will have their full support.



CONCLUSION

Just like any other teaching approach, you can read everything you find on PBL and you still won't be able to know what it is truly about until you try it in your classroom. We should probably mention that you won't know the benefits of working with PBL after the first or second project you do. Chances are that the first attempts will overwhelm you and make you want to give up. That is why the most important advice we have for you is to stay strong. We promise it will be worth all the while when you realize how much students can grow if we let them take the lead.

The projects we have designed for this booklet will (hopefully!) help you get started in your first attempts. Remember that everything here can be adapted and easily changed or even suppressed, if that is the case. Most importantly, they are only for inspiration, as we can never say for sure what is going to happen the moment we walk into a primary classroom!

Have fun!



PROJECTS FOR 2nd graders

Title	Exploring the Wonders of Color
Main theme	Discovering the wonders and science of colors.
Learning goals	Develop a project in which students appreciate different forms of art and the role of color in each form. They will understand the science of color and how it affects our daily lives and develop critical thinking and observation skills through hands-on activities and investigations. While exploring the wonders of color, we can enhance vocabulary related to color, light, and art, develop students' speaking skills through group discussions and presentations, and improve writing skills through journaling and written reports.
Bloom's taxonomy levels	Investigate, list, compare, reflect, analyze and create.
Possible driving questions	<i>How does color play a role in both art and science, and how does it affect our daily lives?</i> <i>How do colors work and what can we learn about them?</i> <i>How can we discover the science and wonders of colors?''.</i>
Vocabulary goals	Colors, vocabulary related to effects of light and reflection, primary and secondary colors, vocabulary related to art and artists.
Cross-curricular possibilities	<p>Language Arts: Reading books about colors and writing reports on color research.</p> <p>Math: Measuring and mixing paint in correct ratios.</p> <p>Science: Conducting experiments with color and light</p> <p>Art: Creating color wheel artwork and warm/cool color artwork, researching various artists and how they use colors and visiting museums.</p>
Resources	<ul style="list-style-type: none"> • Paint and brushes • Color wheel materials • Light sources • Camera or smartphone for taking pictures • Art museum brochures and books related to different artists. • Art supplies such as pencils, paper, and markers
Final Product	<ul style="list-style-type: none"> • A classroom exhibit showcasing different color experiments and projects. • A class color wheel with different color combinations and their meanings. • A collaborative mural made with different shades and hues of colors. • A collection of student-made color poems or stories. • A collection of artists that use the same colors. • Demonstrate how color and light are related by showcasing an experiment.
Reflection	Students will write a reflection on what they have learned during the project and how they can use art, science.



PROCEDURES

ENTRY EVENT AND DRIVING QUESTION

As we have said before, the entry event is extremely important, and many times determines students' engagement throughout the project. It is easy if we think about the entry event as the beginning of a book, or a movie. If it does not entice you, it is likely your enthusiasm won't be as high as before the movie/ play started.

Begin the project by showing a video or a book about colors, and have a class discussion about their favorite colors and why they like them. You can also take students on a field trip to a museum to explore different colors artists use. Then, introduce the driving question for the project: "How can we discover the science and wonders of colors?". Invite the students to participate in a color mixing activity where they will create their own color wheel using primary colors. After they have made their color wheels, ask the students what they know about colors and what they want to learn during the project.

LANGUAGE WORK AND INQUIRY

After presenting students with the driving question, allow time for them to think about other questions to which they might need answers in order to design their final product. Here are a few questions that should come up and a few ideas on how to work with them:

- *What are primary colors?*
- *How do you make secondary colors?*
- *What are warm and cool colors?*
- *How do colors affect our mood and emotions?*
- *How do animals use color for survival?*
- *What are the properties of light and how do they relate to color?*
- *How do artists choose their colors?*
- *How do different cultures use color?*

Suggestion for a Step-by-Step

Week 1-2: Introduction to Colors

- Students will create their own color wheels using primary colors.
- Read books about colors and color theory.
- Discuss the inquiry questions and set up research groups.



Week 3-4: Mixing Colors

- Students will learn how to mix secondary colors.
- Conduct experiments with paint and colored water to understand color mixing.
- Research how different artists use color in their artwork.

Week 5-6: Warm and Cool Colors

- Students will learn about warm and cool colors.
- Create artwork using warm and cool color schemes.
- Research different artists and observe what colors they use.
- Research how colors affect our mood and emotions.

Week 7-8: The Science of Light and Color

- Students will learn about the properties of light and how they relate to color by conducting experiments to observe the effects of light on different objects.
- Conduct experiments with prisms and mirrors to explore light and color.
- Extra: Research how animals use color for survival.

Last week

Prepare and present the final product.

Below are some extra activities that can be carried out during the week.

- Exploring Color in Art: Students will visit an art museum, learn about different artists and their use of color, and create their own art projects inspired by what they learned.
- The Color of Our Lives: Students will go on a scavenger hunt around their school and community to observe how color affects our daily lives, taking photographs and writing about their observations.

SCAFFOLDING LANGUAGE

The teacher's main role is to guide students' projects and scaffold not only their learning regarding the topic of the project, but in our case, scaffold their language learning. In order to do this, your goals towards the target language must be clear as much as they can be unpredictable, in the sense that they may change depending on the way the project goes. Below are some ideas of how to scaffold their language learning:

- Create and maintain a vocabulary wall for the language associated with the project.
- Use graphic organizers throughout the project.



- Provide varied opportunities for students to practice speaking and listening (relay races, flashcard relays, think-pair-share, role-plays, etc.).
- Provide sentence frames and drill them using games.
- Provide language models for their final products and presentations.

ASSESSMENT

- Have students keep a journal of their research and experiments.
- Have them present their work and reflect on what they learned.
- Assess their individual projects and artwork using rubrics.
- Have a class discussion on what they learned and how they can apply it to their lives.

FINAL PRODUCT

- A class color wheel
- Individual color wheels with descriptions of primary and secondary colors
- A warm and cool color artwork
- A science experiment report on light and color
- A presentation on how different cultures use color
- A reflection on what they learned during the project

REFLECTION

Students will write a reflection on what they have learned during the project and how they can use art, science, and geography to continue exploring and learning about the world's wonders.

USEFUL LINKS

The science of light and color for kids

<https://www.youtube.com/watch?v=9Vsl0lom3S0>

How do we see color?

<https://www.youtube.com/watch?v=4WpYsi1klyc>

Without light, there is no color.

<https://kids.britannica.com/kids/article/color/399408>

Light and color

<https://www.natgeokids.com/uk/primary-resource/light-and-colour-primary-resource/>

How do we see color?

<https://mocomi.com/how-do-we-see-color/>



PROJECTS FOR 3rd graders

Title	Games from around the world
Main theme	Investigating how kids around the world play and have fun
Learning goals	<p>Develop speaking and writing skills in English.</p> <p>Increase repertoire to express ideas related to play, games, and rules.</p> <p>Develop vocabulary related to art, science, and social studies. Build knowledge and awareness of cultural differences through the investigation of games and traditional play in different parts of the world.</p> <p>Create a game inspired by what was learned during investigation.</p>
Bloom's taxonomy levels	Investigate, list, compare, reflect, analyze, and create.
Possible driving questions	<i>How are children's games around the world the same as or different from our games?</i>
Language goals	<p>Vocabulary related to games and play.</p> <p>Countries and nationalities.</p> <p>Action verbs used in games.</p> <p>Imperatives.</p> <p>Can and Can't to describe rules.</p>
Cross-curricular possibilities	<p>Social Studies and English: understanding how games and children's playtime may differ and be very similar around the world. Exploring the culture and traditions in different places around the world.</p> <p>Art and English: understanding how play has been portrayed in paintings and sculptures. Fashioning props that are used in different child's games.</p> <p>Physical Education and English: creating the rules to a game; building bonds by engaging peers in play.</p>
Resources	<p>Investigation sources: art books, story books, internet videos and sites.</p> <p>Flashcards, worksheets, board games, maps.</p> <p>Students can also interview people from other parts of the world they have access to.</p>
Final Product	<p>A showcase displaying the different games students' investigations have discovered.</p> <p>A game created by students inspired by different games they learned about.</p>
Reflection	Students will talk about their favorite game and what the most interesting facts they found out during the project.



PROCEDURES

ENTRY EVENT AND DRIVING QUESTION

Entry events are key to the project outcome and development, as their objective is to prompt students' interest in the topic of the project. Through the entry event, the teacher presents the topic to the students in a way that instigates their thoughts and inspires them to look for the answers to the questions that will surface.

For this project, you can use the internet to search for images of children playing during recess or at home. It is important that the pictures reflect ethnic and cultural diversity, which will raise students' interest and curiosity.

Show them videos of children playing different games and ask students what they think the children are playing.

Begin a conversation with them. Ask them questions such as: "what is your favorite recess game? What do you like to play at home with your family? Do you think everyone around the world plays the same games?"

If possible, bring people from different backgrounds (someone from another country, someone from a different ethnic group, an older adult, etc.) to talk to the students about games and play from their culture, childhood, or country.

LANGUAGE WORK AND INQUIRY

If the entry event takes up a whole lesson, make sure you recall it before moving on to the inquiry stage. Ask students what they remember from the previous class and engage them in a conversation about their favorite games. Ask them if they think that children everywhere in the world play the same games as they play. Listen to their answers and then present them with the driving question: How are children's games around the world the same as or different from our games?

Allow them to come up with hypotheses and to discuss their ideas for some time. You can write some notes on the board as they speak, to show them their thoughts matter and can help them during the investigation process.

After presenting students with the driving question, divide them into small groups which will remain the same throughout the project. In their groups, students should think about the questions they have about the topic and write them down.

During this stage, students will naturally need support and will probably resort to their first language if they are not yet comfortable with English. The idea is to promote thinking about the topic, which will bring questions. The questions below can be good prompts for their research, so you might want to throw them in, in case they don't show up.



- **Does the weather change the way children play?** – encourage students to look at maps and think about how children in countries with different weather conditions might have different games and play routines.
- **What countries do we want to investigate?** – This selection is important if you have limited time, but it is also useful to bring more focus to the activities to be developed.
- **What do kids like to play at school?** – This question can help students create a game they can play in school, with the help of the PE teacher.
- **How can we ask children from around the world about their games?** – This question can prompt ideas on how to interview children from other countries.
- **What games can we teach children from other countries?** – This question can help students think about their own games, as well their rules, objectives, and roles of each player.

SCAFFOLDING LANGUAGE

Students should be given the opportunity to work on different kinds of activities that will help them build their vocabulary and practice their communication skills. Here are some ideas:

- Create and maintain a word wall for new words they come across during the project.
- Use graphic organizers to help students organize new information and relevant content for their project.
- Create worksheets that provide further language practice and enable students to use the target language expected at the end of the project.
- Offer opportunities for students to practice speaking and listening - (interviews, surveys, flashcard relays, think-pair-share, role-plays, etc.).
- Provide sentence frames and drill them using games.
- Provide language models for their final products and presentations.
- Use videos to expose students to language used in presentations.

ASSESSMENT

Be sure to observe how students use the language they are introduced to and how much comprehension strategies they are able to incorporate as they move along. It is also important to assess their creativity and ability to make connections between what they do in the classroom and their real life. Rubrics are a useful resource when assessing students' final product – how much were they able to incorporate from the process into the game they created?

Self-assessment can be used for behavior and attempts in using the target language.



FINAL PRODUCT

As you move on and students' productions get bigger, make sure you keep their work organized for public display at the end of the project. As we have suggested earlier, the final product can be a display of posters, picture walls, or videos portraying the games students have discovered in their inquiry.

They should also come up with a new game, inspired by what they have learned. For this part of the project, it would be great to have a Game Day, in which students present their games and teach their classmates how to play them.

REFLECTION

How much awareness of cultural differences has this project raised? Was it a meaningful channel through which other interesting subjects came about? What would you do differently?

USEFUL LINKS

Games that school children play around the world

<https://theirworld.org/news/games-that-school-children-play-around-the-world/>

Children around the world

<https://www.educatall.com/page/432/Children-around-the-world.html>

Games from around the world

<https://www.edenprojectcommunities.com/make-it-happen/games-from-across-the-world>



PROJECTS FOR 4th graders

Title	Natural and man-made wonders
Main theme	Discovering the wonders of the world
Learning goals	Develop a project in which students investigate the world's natural and man-made wonders and understand how art, science, and geography can be used to explore and learn about these wonders. We also plan to develop an appreciation for different cultures and the unique features of each wonder. Students will develop speaking and writing skills in English and increase their vocabulary related to art, science, and geography and develop their critical thinking and problem-solving skills in English.
Bloom's taxonomy levels	Investigate, list, compare, reflect, analyze and create.
Possible driving questions	<i>How can we use art, science, and geography to explore and learn about the world's natural and man-made wonders?</i>
Vocabulary goals	Culture, names and country location, man-made wonders and world's natural wonders
Cross-curricular possibilities	Art and English: creating a model of their assigned wonder using various materials such as clay, paper mache, or cardboard. Science and English: reflecting upon different materials and how the climate affects the different natural wonders of the world. Geography and English: studying different countries and wonders around the world. Social Studies and English: understanding how man-made wonders affect society and cities.
Resources	Students will use a variety of sources such as books, internet, videos, etc. to gather information and create a poster showcasing their wonder.
Final Product	A created model. A replica of a natural wonder. A video explaining the man made or natural wonder.
Reflection	Students will write a reflection on what they have learned during the project and how they can use art, science, and geography to continue exploring and learning about the world's wonders.



PROCEDURES

ENTRY EVENT AND DRIVING QUESTION

As we have said before, the entry event is extremely important, and many times determines students' engagement throughout the project. It is easy if we think about the entry event as the beginning of a book, or a movie. If it does not entice you, it is likely your enthusiasm won't be as high as before the movie/ play started.

For this project in particular, you may want to begin by asking students to identify/talk about the most beautiful places they have seen in their own community. Have them identify whether they are natural or man-made and they can rank them in order of beauty.

You may also want to bring in an engineer and a biologist, and these two professionals can give students an overview of the different natural and man-made wonders they will be exploring during the project. You can introduce them to the 7 wonders of the ancient world. (<https://www.travelchannel.com/interests/outdoors-and-adventure/photos/7-new-wonders-of-the-world>)

If by any chance you live close to a famous landmark (not necessarily one of the natural or man-made wonders) you can invite your students to go on a field trip to explore the reason this landmark is so famous, why it is located in this specific place, what it is made of etc.

Whichever event you choose to have, make sure that students can actively participate by interacting with people and asking questions.

After the entry event, students should be ready to work. Begin by recalling the entry event, asking students what they liked about it, what they learned, what they would like to learn with their project, etc. From here on, every class will present moments in which you work with language at the same time students engage in different activities designed to help them answer their questions.

LANGUAGE WORK AND INQUIRY

Students will be divided into smaller groups and allow them time to research natural and man-made wonders of the world. They will use a variety of sources such as books, internet, videos, etc. to gather information. Encourage students to make a list of all the natural and man-made wonders and categorize them in Natural Wonders, Man-Made Wonders, and Ancient Wonders. Encourage them to discuss the characteristics that differentiate the three categories. Having finished, ask them to choose a specific wonder to research further. Encourage them to come up with a list of their own regarding the wonders of the world.



Present the driving question to them or come up with one of your own: How can we use art, science, and geography to explore and learn about the world's natural and man-made wonders?

After presenting students with the driving question, allow time for them to think about other questions to which they might need answers in order to design their final product. Here are a few questions that should come up and a few ideas on how to work with them:

- **Is it a man-made or natural wonder?** Have students differentiate one from another.
- **Where is the natural or man-made wonder located?** – Use a world map to have students identify the different places, the culture of that specific place and the language spoken. Have them investigate further about the culture and people who live there.
- **How did this wonder come about or how/why was it built?** –Have students research on computers, books, and any other source you find suitable.
- **What are the unique features of this wonder?** – have students investigate the unique features of each wonder, how art, science, and geography are used to explore and learn more about these wonders.
- **Why is it considered a natural or man-made wonder?** Again, have students research the reason this wonder is so famous.
- **How important is the geographical position of this wonder?** – Students should research if the geographical position of this wonder favored its appearance.

Encourage students to create a poster showcasing their wonder before creating their final product.

SCAFFOLDING LANGUAGE

The teacher's main role is to guide students' projects and scaffold not only their learning regarding the topic of the project, but in our case, scaffold their language learning. In order to do this, your goals towards the target language must be clear as much as they can be unpredictable, in the sense that they may change depending on the way the project goes. Below are some ideas of how to scaffold their language learning:

- Create and maintain a vocabulary wall for the language associated with the project.
- Use graphic organizers throughout the project.
- Provide varied opportunities for students to practice speaking and listening (relay races, flashcard relays, think-pair-share, role-plays, etc.).
- Provide sentence frames and drill them using games.
- Provide language models for their final products and presentations.



ASSESSMENT

Assess their learning by having daily self-assessments and daily presentations of what they have found out. Ask them how they would like to present their findings to the group. A crucial aspect to assess, apart from their cognitive skills, is their social skills. How are they working in pairs? Are they cooperating with their peers? Do they listen to their peers? All these aspects must also be taken into consideration. Use weekly rubrics and share them with your students so students understand how they will be assessed.

FINAL PRODUCT

Students will use the information they have gathered to create a model of their assigned wonder using various materials such as clay, papier mâché, or cardboard. They can also create a video using 3d to share their work. Each group will present their model to the class, and a discussion will be held about the similarities and differences between the wonders and how they relate to art, science, and geography.

REFLECTION

Students will write a reflection on what they have learned during the project and how they can use art, science, and geography to continue exploring and learning about the world's wonders.

USEFUL LINKS

Seven new wonders of the world.

<https://www.travelchannel.com/interests/outdoors-and-adventure/photos/7-new-wonders-of-the-world>

Seven wonders of the modern world

<https://geojango.com/blogs/explore-your-world/seven-wonders-modern-world>

New seven wonders of the world

<https://www.britannica.com/list/new-seven-wonders-of-the-world>

A guide to the seven natural wonders of the world

<https://www.planetware.com/magic-travel-a-guide-to-the-seven-natural-wonders-of-the-world.htm#:~:text=These%20%20natural%20wonders%20of,the%20vastness%20of%20each%20phenomenon.>



What are the seven natural wonders of the world?

<https://www.culturalworld.org/what-are-the-seven-natural-wonders-of-the-modern-world.htm>

Google maps

https://www.google.com.br/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwiOnMqh48n9AhU1LLkGHVCqAmkQFnoECBAQAQ&url=https%3A%2F%2Fwww.google.com.br%2Fmaps&usg=AOvVaw3cFx2-7_OaqMQ-d44zdcXo



PROJECTS FOR 5th graders

Title	Teaching our community about the three Rs
Main theme	Recycling, the 3Rs, sustainability
Learning goals	Develop a project in which students investigate topics related to sustainability to teach the community around them how to practice the 3Rs. Students will develop speaking and writing skills in English and increase their vocabulary related to art, science, and geography and develop their critical thinking and problem-solving skills in English.
Bloom's taxonomy levels	Investigate, list, compare, reflect, analyze, and create.
Possible driving questions	<i>How can we help our community practice the 3Rs?</i> <i>How can we help our school be more sustainable?</i> <i>How can our class contribute to a more sustainable school?</i>
Language goals	Vocabulary related to sustainable practices: resources, reduce, reuse, recycle, plastic, glass, paper, organic, waste, save,) Modal verbs: can / can't, must, should/ shouldn't
Cross-curricular possibilities	Art and English: researching about artists who use sustainable resources in their work. Looking into the work of Vik Muniz and other artists who turn waste into art. Science and English: investigating the effects of plastic in the ocean and how it affects the health of ecosystems and living beings. Geography and English: researching how different cities around the world have come up with solutions to waste. Math and English: making estimates and calculating the cost of making the school a more sustainable environment.
Resources	Internet (videos, podcasts, and websites), local recycling cooperatives, people who collect recyclable waste for a living.
Final Products	Videos showing how the community can be more committed to sustainable practices. A manual teaching students how to practice the 3Rs at home and at school. An action involving local recycling cooperatives and the school.
Reflection	How much impact can we have in our community? How can schools help create a more sustainable environment and how can these ideas be spread so that more people can get involved?



PROCEDURES

ENTRY EVENT AND DRIVING QUESTION

The entry event is a special lesson or part of a lesson where the topic of the project is presented to the students in a way that sparkles their interest and curiosity.

There are many different activities you can put together to organize a fun entry event about sustainability. You can find videos online showing artists who use recycled materials in their work; you can also bring professionals who live out of waste: why not bring a person who collects recyclable items on the street to talk to students about their work? If possible, organize a visit to a cooperative so students can see the process of selecting materials. Another idea is to bring a professional who can talk to them about the use of technology to help humans make the best use out of recycled waste.

You can go in a different direction and focus on the “reuse” part of the 3Rs. In this case, students can visit thrift shops and places where furniture and other objects are upcycled.

After the entry event, students should be motivated and eager to start working. Asking students what they learned and what they would like to learn next. Take some time to build the driving question with the whole class, but allow some small variations for each group. Divide students into the groups they will be in throughout the project.

LANGUAGE WORK AND INQUIRY

Use one class to work on students’ questions and ideas based on the driving question decided in the previous class.

It is always a good idea to begin by resorting to students’ knowledge of the subject: what do they know about recycling? Do they recycle at home? What do they know about the 3Rs? What do they stand for?

From there you will have an idea how to help them come up with the questions they will need to answer during their inquiry.

In their groups, allow students enough time to think about other questions related to the topic and that will help them create their final product. Here are a few questions that should come up and a few ideas on how to work with them:



- **How much do we recycle in our country?** Students research the efficiency of recycling in the country and compare it to what is done in their city.
- **Can everything be recycled?** – Use the internet to find Q&A videos about recycling. Have students watch them and collect relevant information.
- **What do each of the Rs stand for?** – Have students research the meaning of the 3Rs. Help them classify objects under one of the three categories.
- **How can people make a living out of recycling and reusing things?** –have students investigate jobs involving sustainable practices.
- **Can we say our school is a sustainable place?** – Students reflect and investigate to find out whether their school promotes sustainable practices, such as recycling, saving water.

SCAFFOLDING LANGUAGE

Our most important role during the project is that of guidance. We should be ready to scaffold not only their learning about the content of the project, or the information and knowledge they acquire, but also scaffold their language learning. Therefore, our goals for language content must be clear, at the same time we bear in mind they can be unpredictable, as they may change depending on the direction the project may take. The important thing is to have a variety of activities and learning experiences at hand, so that you can move according to students' needs. Below are some ideas of how to scaffold their language learning:

- Keep a word wall for the language associated with the project and encourage students to add words every lesson.
- Use graphic organizers throughout the project – there is one for each purpose and stage of the project.
- Provide varied opportunities for students to practice speaking and listening (relay races, flashcard relays, think-pair-share, role-plays, etc.).
- Keep useful and relevant sources at hand: texts, books, videos, and websites students can feed from.
- Provide language models for their final products and presentations, as well as plenty of opportunities for them to practice before presenting.

ASSESSMENT

Some questions to have in mind when assessing students: How well can they talk about the 3Rs? How well were they able to make a connection between the topic and the community? How much change has the project made in their lives? How committed are they with changing their habits? How well are they able to talk about the project in English?



FINAL PRODUCT

As stated before, there are many possibilities for the final project. Students can create something highly interactive, such as a campaign, an educational event, or a blog to teach about sustainability. They can also choose to make a manual or a video, or even present an idea to save water and energy, or to promote sustainability inside the school.

REFLECTION

Was the project meaningful for students? Were they able to promote change? Did they experience memorable moments of learning and sharing knowledge?

USEFUL LINKS

29 Ideas, Big and Small, to Bring Recycling Into the Classroom

<https://www.weareteachers.com/21-ideas-big-and-small-to-bring-recycling-into-the-classroom/>

Earth Day Recycling Project-Based Lesson

<https://www.teachervision.com/lesson-planning-forms-resources/earth-day-recycling-lesson-plan>

Preparing Students for PBL Presentations

<https://www.edutopia.org/article/how-prepare-students-pbl-presentations>

Recycling as a Focus for Project-Based Learning

<https://archive.nytimes.com/learning.blogs.nytimes.com/2013/01/23/guest-lesson-recycling-as-a-focus-for-project-based-learning/>