

Origami – A gateway to project based learning

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I've been navigating the open waters of education in my origami boat for over 10 years now. As a bilingual curriculum teacher in Spain, I have taught Science and Arts classes as well as English classes to primary students in bilingual schools. During my first year of teaching I started to use the art of Origami in my Arts classes as a vehicle for language input. I figured that if I were to give instructions in English, almost as sort of a dictation, the students would develop oral comprehension through manipulative activity, thus removing some of the stress involved in writing down what they hear. This turned out to be quite a success. The origami figures themselves motivated the students and I had students engaged in a language rich communicative situation. Furthermore, students would readily ask their questions and converse in English as their engagement was at a peak.

I noticed very quickly how the mere activity of folding paper into 3-dimensional objects captured students attention and was a powerful way to generate input for second language acquisition. I should mention as well all the added benefits doing Origami possess such as building frustration tolerance, perseverance, developing fine motor skills, concentration and a long etc.

After some time, I started to think that more could be done with Origami than just have students listen to instructions and work with their hands. Playing around with some of the different figures, I realised that students could classify, describe and even decorate their figures so as to highlight curricular content from other subjects. So if we were talking about animals in Science class, we would make different Origami animals and then talk about if they were vertebrate, reptiles, mammals, carnivores...etc. And through this process of thinking, playing and digging deeper, I have arrived to the point where I use Origami figures as a gateway to transversal projects that include curricular content from multiple subjects.

Imagine what can be done with a paper airplane. Paper airplanes are a symbol of childhood, imagination, freedom, wonder and play. One cross-curricular project that I do with students each year is the paper airplane competition. You can imagine student's reactions when I let them know we will be making paper airplanes to be flown in class. Their motivation skyrockets and children show an immense desire to participate in class.

The project begins with students folding two different paper airplanes, one to be used in the distance competition and one to be used in the flight time competition. Once the paper airplanes are made, we decorate them with math content that can be highlighted on the airplanes themselves. Depending on the grade level, I have them measure the different sides of the airplanes, highlight different geometric figures that can be found amongst the folds,

measure the perimeters of those shapes, identify and measure different angles found within the airplane's folds...etc.



Once the paper planes are ready, it is time to head outside and fly them! This is the part of the project when children go wild. Each child flies both of their planes and writes down their distance and flight time. This won't take an entire class, but I usually let students continue playing with their planes due to the amount of positive emotion it generates.

After the competition is finished, it's back to the classroom where students create bar graphs to document the results and go on to analyse that information. It's a perfect way to get students to use superlatives and comparatives while processing data in what for them is a very meaningful process.

Some projects I develop with students involve creating 3-dimensional landscapes themed around the desert, the farm, the jungle...etc. With these landscapes children are opened up to a wide variety of concepts and ideas that can be constructed around the Origami figures.

One of my favourite projects is making stick puppets that can be used in multiple ways including doing shadow theatres. Students write plays or scripts for a theatre production they will do for their peers and even students from other grade levels using the Origami figures as props. Other projects involve creating their own games to be used as classroom material diving into what I call **Origamification**. Some of the activities include using the fortune-teller to do social investigations, or even to do tests! We might make dice games from cubes folded by students or even use the objects for games such as *1,2,3 now you see me* or as avatars for a gamification narrative.



I have discovered that once the students have their figures in hand is when the magic begins. Allowing students to play with their figures while providing challenges for them to meet vastly boosts student's creativity and engagement. Furthermore, because these projects stem from their own sweat and hard-work making the figures (yes, let's remember how demanding the activity of Origami can be) student's have a powerful feel of ownership over the final products. All in all, only our, teachers' and students', imagination bind the possibilities Origami figures generate when you combine them with play and creativity.