

Blenderizing 3rd Grade Ocean Science'

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For this assignment, I was tasked to adopt a blended learning approach and then apply it in my current teaching environment. However, for the first time in 9 years, I do not have a classroom of my own as I am teaching on call in a new district. In order to approach this project from this unique position, I decided to take a closer look at the website Pamela Harris and I created for our final project in the Instructional Design course. We developed a website that would incorporate a blended learning experience throughout our Ocean Science Unit for third graders. We have included both the flipped classroom model, as well as a station rotation model for students who need extra support.

This assignment gave me the opportunity to plan out exactly how this unit would look, how it would operate, and overall, I was able to reflect and share why these blended learning models are an excellent use of instructional time.

My original starting learning environment

Lacking a classroom of my own, I'm going to virtually place myself back into one I've had a fair amount of experience teaching – Grade 3 (one of my favourites). This grade level is unique in that it's their last primary year, they begin to become more independent, their comprehension skills really start to take off, and they begin to make more connections and inferences about the world around them – and they just love to share!

This Blended Ocean Science Unit would take place over 4 weeks with alternating 40-minute blocks of time, two or three times a week. For example, we would start our first week off with three science blocks, then the second week with two science blocks, the third week would be three, and the final week with two. In the first week, students will be introduced to the unit, we will make a class KWL chart (Know-Wonder-Learn) and they will be watching the short video 'Why the Plastic Pollution Problem is So Much Worse Than You Think.' By the end of the first week, students will have developed their inquiry questions. For the remainder of the 3 weeks of class time, students will be working on their inquiry projects. They will spend in-class time investigating their topic, researching and reading, and putting together presentations for the end of the unit.

What problems am I addressing by making this change?

Effective and appropriate use of class time and teacher time

Too often have I found myself in the position of not having enough time to get to all of the subjects in a week- especially at the elementary levels. There have been so many times I have blocked off entire mornings or afternoons to dedicate to science and social studies in order to get to the content but to also find the time to dedicate to projects, experiments,

hands-on activities, and assignments. By creating a website that shares the content I want to cover with students, we can then use more class time to have engaging class discussions each week, and students can have more time to collaborate with their classmates on their inquiry projects. Teachers and the classroom educational assistant can rotate through groups of students and facilitate while the research is being done. Teachers have the opportunity to work individually with students, guiding them along in how to properly sift through and gather information.

Differentiated instruction

The website itself offers differentiated instruction. Students have the ability to work at their own pace. They can decide when they want to sit down and read an article, complete a quiz, draw a picture or watch a video. I've also included a station rotation model for students who do not have the technology or support needed to complete the 'at-home' learning component of this unit. The station rotation model is meant to be an inclusive feature to make sure that no one student feels left out. Those students can work on the online portion during class time, and they can work on their inquiry project at home if they're able to. They can do website activities in class, they will get F2F instruction, and can also work on their project. I have also found that the inquiry project portion of the unit provides differentiation for students because they all have their own individual knowledge base. By allowing them to select an inquiry question of their own, they are more engaged because their project plays to their own interests, their abilities, and their strengths.

Including families in the conversation

When students get home from school, oftentimes parents or guardians will ask "What did you do at school today?" The response is more often than not, "nothing" or something broad like "science", or they'll talk about what happened at recess. I'm sure some students go into detail with their parents but by intentionally incorporating a discussion piece at home, you know that you're helping to spark some conversations. In week 2, I laid out a few important vocabulary words that I want students to be familiar with. I have not specifically asked them to Google them, or ask Siri, I've asked them to look at their definitions and discuss them with family members at home. In week 3, I have asked students to find out from someone at home what an ecosystem is, what a habitat is, and what biodiversity means. It's always fun to have students come back and share what their people at home had to say.

What would I like students to control? (Time, place, path or pace?)

They have control over a little bit of each!

Time- Students can decide when they participate in the website activities. They have a full school week to complete website assignments and activities. They understand that it is not up

to parents to remind them or make them sit down and complete their activities. That this flipped classroom experience is each student's individual responsibility.

Place- Students can choose to complete online tasks at home, on the way to soccer practice, after-dinner homework, or at school for the station rotation option.

Path- Students have some control over the direction of their inquiry project. They can formulate their own question, and they can be creative with how they want to present their project.

Pace- Students can work at the pace at which they feel comfortable. All students absorb knowledge at a different pace and by having the content available to them online, they can work through it without feeling rushed and overwhelmed.

What is my role as the teacher?

Throughout this unit, my role as the teacher is to facilitate classroom discussions, guide them along in their research, and support them throughout the process of their inquiry project. I would be logging into the 'back office' to see how students performed with website tasks (Quizizz, formative, digital escape room). It's also my job to check in with families at home. How are they finding this blended learning experience? What are they noticing? Are students self-motivated to complete tasks independently? One of the benefits of the flipped classroom model and the station rotation model is that I can spend more time working individually with my students. It's an excellent way to get to know their unique learning profiles.

What changes to the physical environment will I make?

Weeks 1-4 Flipped Classroom Model

In the first week of this unit, nothing in the F2F classroom environment will change. Students will be working as a class on the KWL chart, they'll be watching the video together, and creating an art piece together made of recycled materials to showcase to the school what we're going to be learning about in the third grade. Throughout the rest of the unit, all weekly activities will be completed at home on the Waste in Our World Website.

Weeks 2-4 Station Rotation Model

In weeks 2, 3, and 4, students will work individually or in partner pairs on their projects. They will have access to a class set of MacBook Airs which will be booked during our science block time. Students who do not have access to the internet at home will be able to use class time to work through website activities. Stations will consist of a reading and research station, a project station (where they can use the time to record presentations, work on a poster board and practice presentations), and last but not least a website activities station- for those who need extra support.


What Software or Hardware will I use?

Hardware	Software
<ul style="list-style-type: none">• Personal Device for at home (iPad, desktop, tablet)• Desktop iMac• Class set of MacBook Airs (or Chromebooks)• Document Camera• LCD Projector	<ul style="list-style-type: none">• iMovie (onsite at school) A web browser with access to the following sites: <ul style="list-style-type: none">• Google Sites (Waste in our World)• Quizizz• FlipGrid• Padlet• National Geographic for Kids• Time for Kids• Formative• Youtube• https://sites.google.com/gsuite.viu.ca/waste-in-our-world-plastic-pol/home?authuser=0

How will I mix/balance online and F2F modalities?

This blended learning unit consists of ten 40-minute science blocks over 4 weeks. I like to take advantage of F2F time at the school by having engaging classroom discussions, demonstrating to students how to brainstorm a solid inquiry question, rotating through small working groups, and making sure students have what they need to complete tasks at home or complete their projects at school. The online component was carefully designed keeping in mind that it was going to be used by third-grade students. In other words, the online tasks and activities are doable. Weekly tasks should take no longer than 1 hour each week.

The table chart on the next page summarizes weekly tasks and activities that will be done at home and at school.

	In-Class (Intro and Inquiry)	At Home (Waste in our World Website)
Week 1 3 Blocks	<ul style="list-style-type: none"> • Introduction/Class KWL • Watch Video ' Why the Plastic Pollution Problem is So Much Worse Than You Think' By BeSmart • Recycled Plastic Art Display • Class Discussion and Inquiry Project Brainstorm 	Week 1: The Problem with Plastics <ul style="list-style-type: none"> • Read or listen to the <i>Time for Kids</i> Article • Complete the Quizizz online quiz game Extra and Optional: <ul style="list-style-type: none"> • Check out the short video link- Kids VS. Plastic!
Week 2 2 Blocks	<ul style="list-style-type: none"> • Looking at our online KWL chart • Going over Inquiry Project Expectations • Begin research, investigation, reading, collecting, and properly sifting through information 	Week 2: The Great Pacific Garbage Patch <ul style="list-style-type: none"> • Add to online class KWL Chart (2 things they know and 1 thing they wonder) • Draw a prediction picture of what the GPGP might look like using the 'formative' online drawing board, then watch a video of what the GPGP actually looks like • Read and discuss vocabulary words and their definitions with members at home
Week 3 3 Blocks	<ul style="list-style-type: none"> • Deciding on how to present inquiry projects • Gathering materials needed • Working on projects and presentations 	Week 3: Animals in Trouble <ul style="list-style-type: none"> • Watch short video clips on sea birds and sea turtles • Complete both Quizizz's • Visit the National Geographic for Kids Website, go through 10 pictures and select any one that stood out • Read and discuss vocabulary words and their definitions with members at home
Week 4 2 Blocks	<ul style="list-style-type: none"> • Project Presentations • Field trip to a local beach to do some beach combing and a garbage clean up 	Week 4: What Can We Do? <ul style="list-style-type: none"> • Create short Flipgrid video • Complete digital escape room 'Escape from Dr. Plastik's' Extra and Optional: <ul style="list-style-type: none"> • Check out short video of how some kids in Hawaii are making a difference

How will the different modalities provide an integrated learning experience?

There are a couple of key factors that allow for an integrated learning experience throughout this unit. The most significant one for me has been in my ability to design a science unit in a flipped classroom where students have control over the pace at which they learn. If my students are rushed through content, they tend to struggle with knowledge retention, and on the other end of the spectrum, if they're bored, they're not engaged. I find that students are more engaged when working under this model because they feel more confident and are more successful when they can go at their own pace. No one is hovering over their shoulders, the teacher isn't telling them that time is running out, and they can try as many times as they need in order to understand and absorb the content. I also find that in the flipped classroom, students learn a considerable amount from each other when they're working together. In this model, I am not at the front of the class lecturing or handing out worksheets. They are collaborating with each other, socializing, and dare I say, having fun working on their inquiry projects. The second key factor lies in my ability to be flexible and to circulate around the classroom providing differentiated instruction and support to students. I get to watch and observe how they are using class time, how they work together, what information excites them, and how they learn best.