

Phase 2- DreamIT Project

Section 1- Identify Desired Results

The big idea of my project is; Science is everything, everything is Science. With that being said I want my students to really understand what the means. I am looking to blur the lines between our classroom walls and the world around us. With this project, my hope is that my students' learning does not stop at 3:30pm when the bell rings, but rather they take the responsibility in crafting opportunities to explore, create and share science learning.

Our science Curriculum is designed in two to three week units where students are experiencing a particular content everyday. Students also have a Science class once a week built into our schedule. This is where students will engage in hands-on investigations that apply our science content. With all the structure in our designed science units, I want to take our learning further by integrating our learning of science content, our investigations of science content, and our questioning of science content into more aspects of our day. By doing this, I believe students will have a well-rounded understanding of our science content and will be able to make more meaningful connections to their daily lives.

Desired results of this project would be authentic learning about science. I want students to question without the structure of an assignment. I want them to wonder about their observations without a question being posed. I want students to witness science in their everyday lives and not only be able to make the connection to our science content but also be able to explain some phenomenon they observe.

Another aspect of this project is the use of technology. My students have not had the opportunity to learn using devices before. However, with some efforts I have managed to attain 15 iPads to be used in our classroom this year. The addition of these devices brings endless opportunities for learning. I know that creating an environment where technology is used seamlessly doesn't happen in a day. Another desired result during this project is getting my students comfortable using these devices. Most importantly, I want to implement this technology as tools in their education, not toys. By carefully scaffolding my students experience with the iPads, I will be able to integrate technology organically into this project in a meaningful way.

Section 2- Performance of Understanding

Within my classroom I use a wide variety of authentic assessments and opportunities for my students to demonstrate their understanding. These assessments help bridge our classroom to the real world, allows students to continue to question and are unique enough that my students do not encounter paper and pencil tests to show their mastery. I have provided examples that give you some insight into what these

performances of understandings look like in my class and how I would like to implement them to create more authentic learning around our science content.

- ❖ Morning Meeting: Share question- allow students to share a connection, observation, explanation of something that happened in their lives that connects to science content.
- ❖ Big idea question to start our day: students will have a central question that they will complete for bellwork. This could be a poll displayed on the Smartboard, a questioning activity, inferring about a particular topic based on what we have learned so far, or simply a recap question where students will illustrate or write their thinking. I want students to be able to articulate their understanding of science concepts through their writing. I want student to be able to make a claim based off of something they learned and be able to back their claim up with evidence.
- ❖ Socrative: I will use this as group work using the iPads in my classroom. This will help create friendly competition while also giving me real time data about student understanding. This form of assessment will be used mostly as exit slips to help assess student understanding from a lesson just taught or to remind students of a lesson taught the previous day. Also, students will use the app as a form of a review at the end of a unit.
- ❖ Educreations: This technology will be used for summative assessments as my students create projects through video, photographs, and audio explanations around our Science content. Each finished project will looked different based on what has been learned in each unit, however each project will be structured with a rubric for students to follow in order to be successful. I want students to be able to demonstrate their understanding of our Science content and how it connects to their everyday live through observation or explanation of a particular phenomenon they witness. This technology will also allow students to pull other core subject areas to make a solid, integrated project to end a Science unit.
- ❖ Teacher Time in school: Several times throughout the week, my students take the lead on instruction. This might be in a small group setting help facilitate an investigation or small discussion. Other times students conduct a read aloud about our topic, and they ask comprehension and discussion questions as they read to the whole class. This helps clear up misconceptions, it gives me a good indication based on their questions and also how they respond to their classmates' answers. There are also times where students discover something through reading or a life experience and they give a mini-presentation about their discovery. Most teacher time moments are spontaneous based on what students discover, what they are eager to share, and what things they have explored outside of school. Examples of when students could have the opportunity to present are if students discover something about the weather in their real life. Also, if students reading about a particular animal and they want to share the book to their classmates they will get to have a read aloud time and ask questions about connections to what we are learning in Science. Another example could be if students discover a helpful way to use magnets in their lives or they discover something that they have

always used is indeed a magnet. Students can share their experience through a mini-presentation to their classmates using vocabulary words from our unit.

- ❖ **Teacher Time at home:** When students learn something new that they are very enthusiastic about they can't wait to teach anyone and everyone who will listen. This strategy helps reinforce the concept by verbal or visually teaching someone the content again but putting it into their own words. I have created teacher time moments at home, where students will go home and teach someone at home about the content we learned in class. The parents will sign a slip saying they did so, and the student returns it back to class the next day. Following this, we talk about how the experience was, what hiccups they had and correct any questions or misconceptions. Best of all, the parents love it and it creates more connection from home and school.

Section 3- Plan Learning Experience and Instruction

Project Outline:

Weather unit: 9/29-10/10

Solar System unit: 10/27-11/7

Forces and Motion unit: 12/1-12/19

Matter unit: 1/19-2/6

Type of Animals unit: 3/2-3/13

Insect unit: 3/30-4/17

Conservation unit: 4/20-5/9

Plant unit: 5/19-5/30

On-going projects and activities:

 Morning meeting (daily)

 Science careers (monthly)

 Science scavenger hunts (monthly)

**See below for detailed project ideas during each unit

Technology	Pedagogy	Content Knowledge
Digital maps, Smartboard	Project-based learning	Weather vocabulary, weather patterns, weather conditions
Recycling center machinery	Group field trip (collaborative learning)	The process of recycling
Video clips	Discussion/debate (small group or whole class)	Argument/ opinion speaking about various science topics- students using facts learned

		in science units to support their claim
Video recording and/or pictures on camera/Flipcam/iPads	Individual exploration project around community	Real-world examples of states of matter
Computer lab, videos, digital text	Research presentations (peer lecture based instruction)	Careers in Science
Digital graph paper	Individual exploration/ independent study	Applying perimeter and area by creating feasible animal captivity spaces based on animal needs
Video-pictures- voice recording: camera/Flipcam/iPads	Discovery learning / debate	Cause and effect of insects on our environment (positive and negative) persuasive writing/speech
Draw/paint software	Service learning	Community gardening
Blog	Writer's workshop/ peer editing	Real-world science examples and explanations (found in the news, articles, or newspaper)

- ❖ **Meteorology reports for our weather unit-** Students will develop a weather map on the iPad using weather terms and patterns. They will present the weather map on the Smartboard as if they were a meteorologist doing a weather report on the news with a green screen. Students will take turns videotaping their classmates during each news report and we will put together a full movie of all the clips.
- ❖ **The science behind recycling-** we will visit a recycling plant that allows students to see the machinery behind recycling.
- ❖ **Science discussion that have an argumentative side-** short video clips will be shown on the Smartboard introducing various topics that are related to our science unit. An open-ended question will be posed that then will be discussed linking science content that students will use to support their claims.
- ❖ **Exploring states of matter in our community-** students will use devices such as camera, camera phone, Flipcam or iPads to create either a picture slideshow or video of states of matter
- ❖ **Science careers-** students will do research in the computer lab about a career of their choice that they are interested in learning more about that incorporates STEM.
- ❖ **Animal habitats converted into zoo captivity spaces-** students will use virtual graph paper on tablets and computers to design their captivity space for their animals
- ❖ **The effects (positive and negative) insects have on our lives-** students will capture through picture and video of these effects in our school garden. They will take it to the next level by writing a persuasive speech and creating a debate among their classmates to defend their position.

- ❖ **Community service project around gardening during our plant unit.**- students will design informational signs for our community garden that explain the types of plants, the care needed, and the parts of each plant.
- ❖ **Real-World scavenger hunt for science examples and explanations**- students will have the opportunity to contribute to a class blog by posting about something they heard on the news, read in a newspaper, or experienced in real life that are examples of science.

Teaching Demonstration:

I chose to focus my demonstration on our Morning Meeting because this is an element of our day that is something that is consistent every day and is consistent among classrooms. With the goal being to share this project and experience with colleagues, I wanted to focus on something that is common in all our classrooms.

Bellwork and Morning Meeting

Time Allotted: 45 minutes

Objective: Students will apply the vocabulary learned in our weather unit to observations they make in their everyday lives.

Greeting: Making weather noise: Students will sit in a circle on the carpet. As we go around the circle, students will pick a sound and/or gesture to demonstrate the weather they think they would experience. Another student will raise their hand and say, "Good morning (weather term) that they think the other student is demonstrating. We will do this around the circle until everyone is greeted.

Message: When students walk into the classroom at the start of the day, students will have a question to consider on the Smartboard. The question will read: If you were wearing this on your way to school: (picture of a rain coat) what kind of weather would you experience? Use as many weather terms as you can to explain your answer. As bellwork, students will write in their journal answering the question.

Share: Turn and Talk: students will discuss in pairs about their writing and what weather condition they would discover while wearing a raincoat. Students will not share out during this time. The share out will occur during the Activity.

Activity: In the pairs students created during the share portion, students will work together to create a drawing on the iPad that demonstrates them experiencing the weather condition discussed. This activity can be differentiated based on student comfort level with the technology. Students could simply use the paint app and draw, they could take pictures of themselves and important them into a program, they could use Educreations and add an audio component explaining their drawing, etc. Their projects will be displayed on the Smartboard where students will do a quick presentation. Students will be asked to use weather terms learned during their presentation.

The idea is allowing students to think about the weather terms that they have learned through text, vocabulary lessons, and personal experiences. The hope is that multiple weather conditions are discussed. Wearing a raincoat doesn't mean just rain, students could have discussed temperature, types of clouds, different precipitations, etc. We will end the lesson by discussing weather predictions and dressing for the weather by considering all weather conditions and elements.

This lesson will also help students understand that on a particular day, many elements are involved in describing the weather condition. These elements are not in isolation but rather affect one another. This will be an introduction lesson into our Meteorology project, where students will report on a fictitious day including weather conditions, weather map, and weather vocabulary and concepts learned throughout the unit.