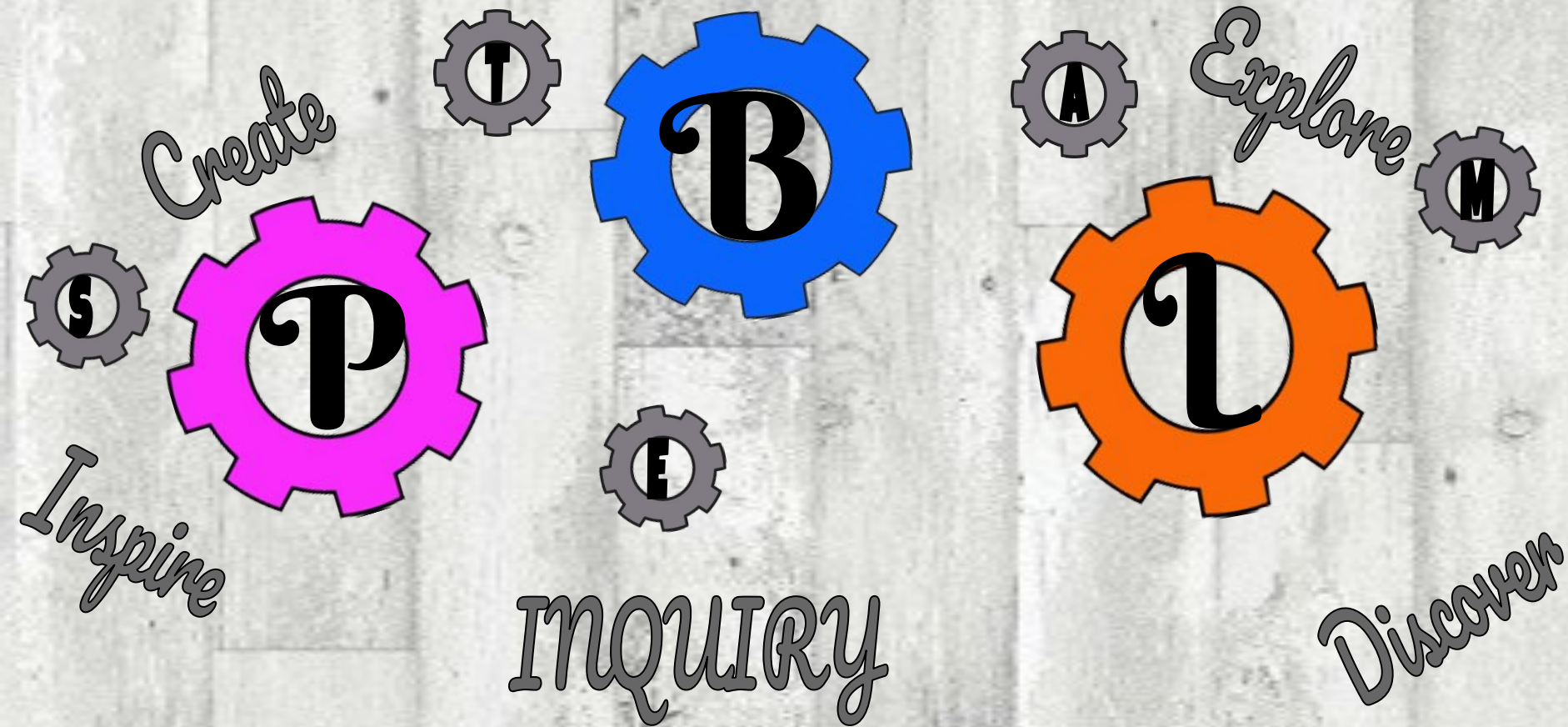


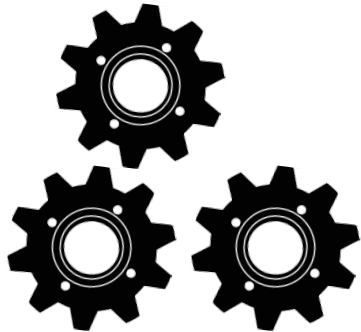
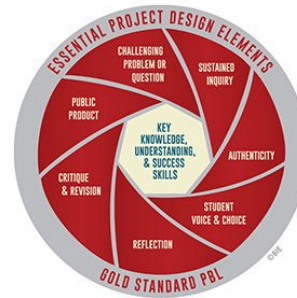
Clearwater STEAM PBL Showcases



What is PBL?

Project Based Learning (PBL) is a teaching method in which students learn by actively engaging in real-world and personally meaningful projects.

Project-based learning is a student-centered pedagogy that involves a dynamic classroom approach in which it is believed that students acquire a deeper knowledge through active exploration of real-world challenges and problems



Project Component	Standard(s)	Description	Score
Water Conservation Notes	Historical & Cultural Literacy Life Science Earth Science RI.6.1, RI.6.2 RI.6.4, RI.6.7 RI.6.8, L.6.4	Students will conduct research on water use and its effects in the environment.	_____/20 (McCann)
Informative Letter	Historical & Cultural Literacy W.6.2, W.6.4, W.6.5, W.6.6, W.6.7, W.6.8, W.6.9, RI.6.2, RI.6.7	Students will research credible sources to write an informative letter that informs others of the importance of having portable water in Africa.	_____/20 (Macias/Nance) Rubric
Flip Grid Video/Slide Presentation	SL.6.2 SL.6.5	Students will present their findings on typical water use using multimedia tools.	_____/10 (McCann)
Website Creation Template	RST.6.3 RST.6.9 Life Science Technology	Students will create a multifaceted website stating the mission of their philanthropic organization.	_____/20 (McCann)
Water Filtration Activity	Life Science Investigation	Students will use the engineering method to create an effective water filter.	_____/10 (McCann)
Water Use Calculations	6.SP.4 6.NS.2 6.NS.3 6.NS.5	Students will calculate their total weekly water consumption and display the data using appropriate graphs.	_____/20 (Martinez)

Water Conservation Notes



How can we, as philanthropists, create a fundraising campaign to raise money and awareness of water conservation on a global scale?

1. "Freshwater on Earth" Reaction

2. Vocabulary

	Definition	Use it in a sentence
Potable		
Desalinization		
Scarcity		

3. Quicksearch: Go to the [Infographic](#)

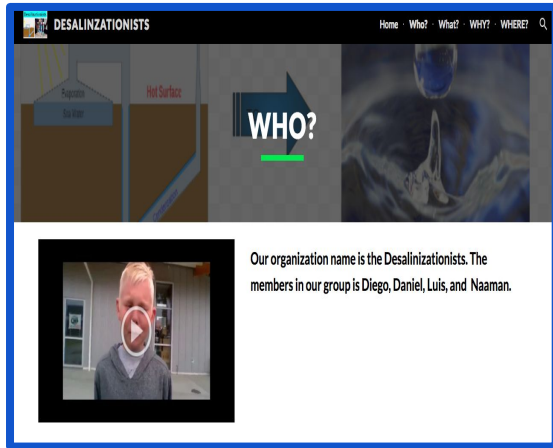
What are 3 interesting or surprising facts that you were able to learn from the infographic?

4. Presentation Notes

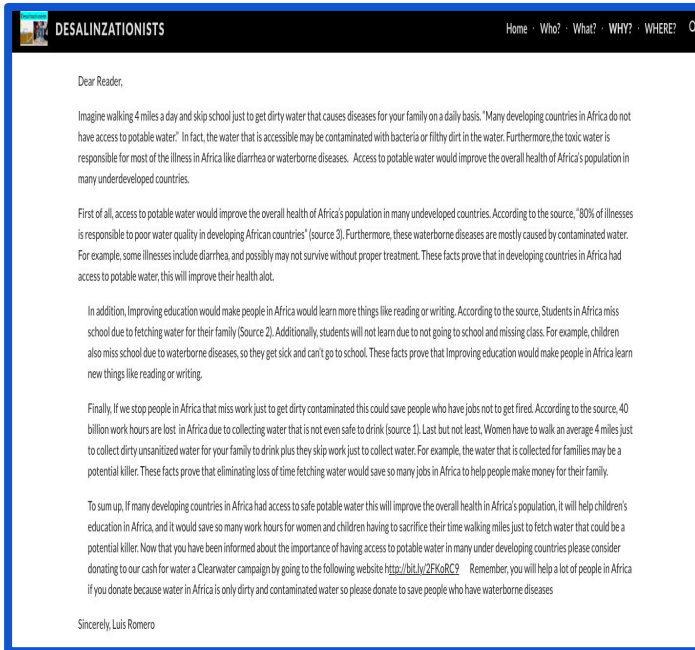


Major Products and Making it Public

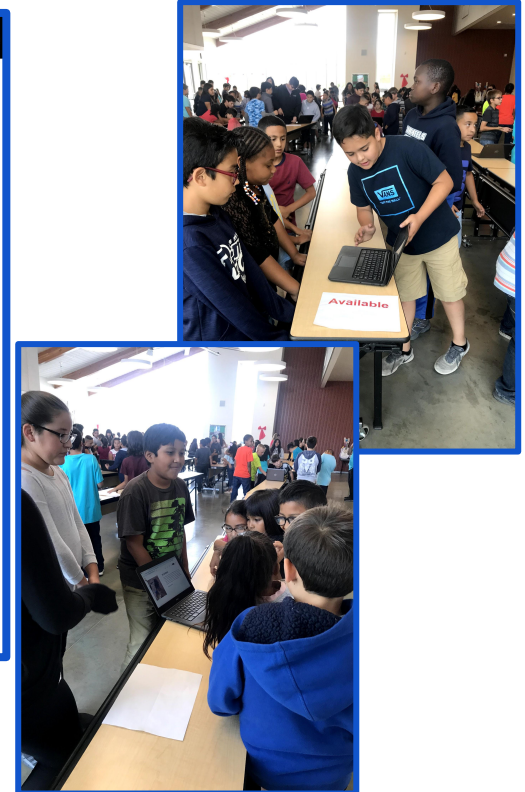
Student Campaign Websites



Informative Letter



PBL Showcase



6th Grade

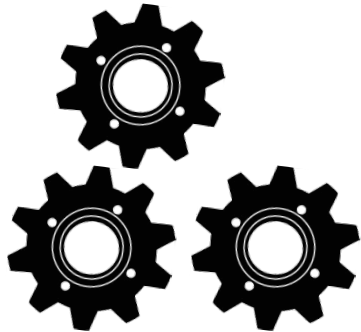
GBL #2: Garden Based Learning



Project Idea: Students will create a 6th grade food garden in order to grow ingredients they will later use in a recipe.



IDQ: How can we, as botanists, plan and grow a 6th grade garden with the most cost effective and useful plants to make our own recipe?



Project Component	Standard(s)	Description
Plant Research	W6.6 W6.7	Gather research about best plants to grow in garden
Argumentative Essay	W6.1 W6.4 W6.5 W6.9	Write an argumentative essay convincing Mrs. Velez to allow us to plant a 6th grade garden at Clearwater
Seed Life Cycle Notes	MS-LS1-6 MS-LS4-5 RI.6.4 RI.6.7 Life Science Investigation	Notes and background info on seed life cycles. Students will germinate seeds in classroom.
Plan Growth Guide	RST.6.3 RST.6.9 Life Science	Students will create a step by step guide on how to grow and maintain a plant in our garden.
Unit Rates and Unit Pricing	6.RP.3b Economic Literacy	Students will calculate unit rates to determine pricing and costs to plant a garden.
Measurements	6.EE.2a 6.G.1	Students will take measurements and use them to calculate the perimeter and area of the part assigned for their garden. Students will use formulas to calculate the area and perimeter of their class section of the garden.

Seeds and Plant Life Cycle



Quicksearch #1: What do you notice about the plant growth in the video?

Information	Source

Vocabulary

	Definition	Image
Sow		
Germination		
Harvest		

Practice (Write the goal of our GBL using all 3 vocabulary words)

Seed Video Notes

Companion Planting Guide

It's helpful to think of building good plant communities when planning your garden. This is the most important concept behind companion planting. Time-tested garden wisdom holds that certain plants grow close together



Major Products and Making it Public



Plant Research Guide



Argumentative Letter and Infographic



Presentation to Mrs. Velez

Plant Research Guide

You will use this guide to gather your research about the best plants to grow in our garden. Remember to cite your sources.


Sources

1. [Vegetable Planting Guide](#)
2. [Crop History](#)
3. [National Gardening Association](#)
4. [OC Master Gardeners](#)
5. [Riverside Sweet Corn Growers](#)
6. [Farmers Almanac](#)
7. [Gardening Basics](#)

Plant #1:

Cornish Ynga Hybrid

Question Researched	Answer <u>Complete Sentences</u>	Source(s) * Link to website
1) Describe the plant you would like to grow in our garden?	1) Crispy and juicy, very sweet and low maintenance.	https://www.burpee.com/vegetal/44/cornish-ynga-hybrid-gar
2) What will make this plant the best one to grow? Consider factors such as: Seed/plant cost Space needed Growth Season Required maintenance	1) It will be the best to grow because it doesn't need much space. It grows best during Feb-Mar and it doesn't cost much. (\$19 per 1000 seeds)	https://www.burpee.com/vegetal/44/cornish-ynga-hybrid-gar
3) How will Clearwater benefit from growing this plant?	1) Growing this plant will benefit Clearwater by giving it a sweet DELICIOUS carrot to snack on.	https://www.burpee.com/vegetal/44/cornish-ynga-hybrid-gar



Date: 1-23-19

Dear Mrs. Velez and Mrs. Livingood,

Imagine a beautiful campus with healthy vegetables and students. Many schools in the nation have planted their own school gardens. Gardens have healthy and educational benefits. Without doubt, we as 6th grade students should make a garden based on the following reasons: school gardening improves test scores, increases student's teamwork, and attendance.

Improves Test Scores

First of all, school gardening improves test scores. Source 1 states that students who grow their own gardens perform much better on standardized tests. Furthermore, students get higher scores because they have to measure the space between other plants. For example, if I wanted to plant seeds I would need to measure the space between the plants. This would help with math. The need for science and math teaching in gardening is the reason students score higher on tests than students that don't participate in school gardening.

Increases Teamwork

Another reason is that it increases students' teamwork. According to source 2, "Students learn focus, patience, cooperation, teamwork, and social skills." In fact, if a student isn't good at teamwork they could work on a school garden and they become better at it. For instance, if I wasn't good at teamwork I would work on a school garden and learn more teamwork. Students learn more teamwork because they learn to plant with others and help other people.

Improves Attendance

Last but not least, working on school gardens increases attendance. Source 1 mentions, that kids who grow a plant feel proud and improves school spirit and attitudes towards school. This illustrates that students that participate in school gardening would want to go to school more. For example, if a student doesn't want to go to school they could participate in school gardening and would want to go to school. Children that participate in school gardening increase their attitudes towards school.

Expenses VS. Benefits

Many believe it can be too expensive. It may be expensive, but it is worth it when the campus becomes beautiful and has engaged students. In fact, when a campus has a garden, the campus is beautiful and has students that are happy and engaged. For example, the garden has beautiful colors that make a campus beautiful as well.



We should have a 6th grade garden!

WE SHOULD MAKE OUR OWN 6TH GRADE GARDEN.

WE COULD LEARN STUDENTS GARDEN HAVE MORE ENGAGED STUDENTS AND IMPROVE KIDS ATTITUDE AND PERFORMANCE TOWARDS SCHOOL.



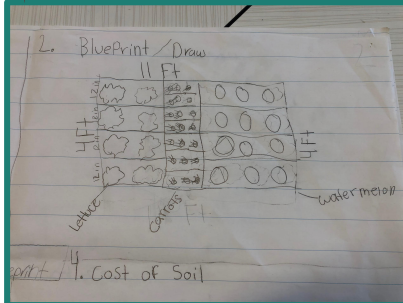
Blueprint Calculations



Planting Seeds



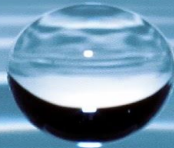
6th Grade Garden Beds!



5th Grade

Making it Public:

Students will present components of the PBL in groups as parents/visitors come in for a gallery walk.



PBL 1 Quick Video

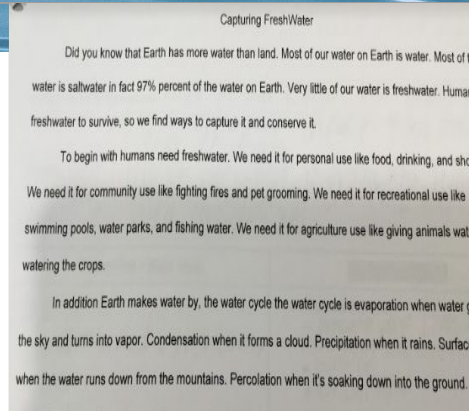
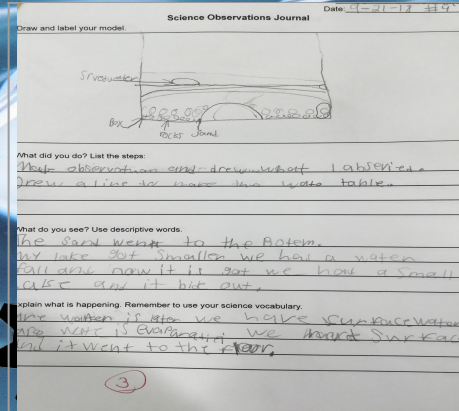
Assigned groups will present on:

1. Observation Log

2. Slide Presentation

3. Informative Paper

4. Hydrological Cycle Model



5th Grade

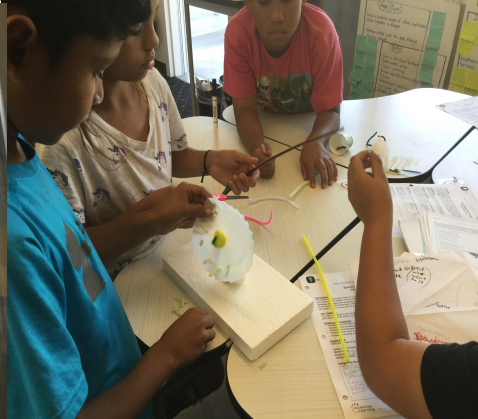
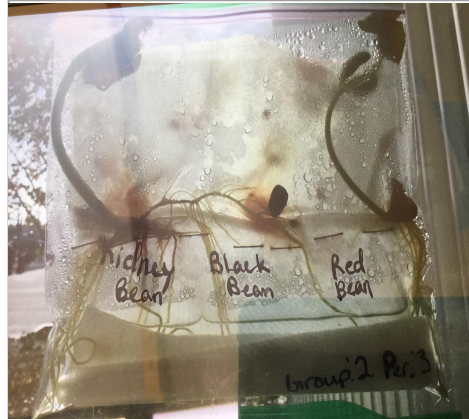
Making it Public:

Students will present components of the PBL in groups as parents/visitors come in for a gallery walk.

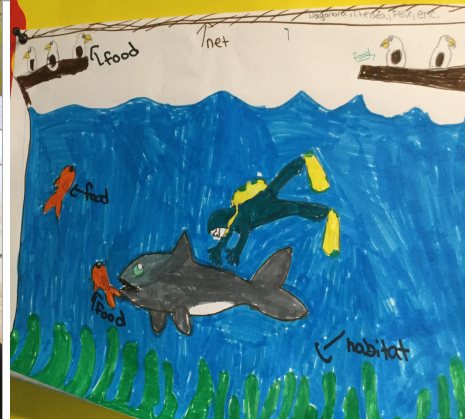
PBL 2 Quick Video

Assigned groups will present on:

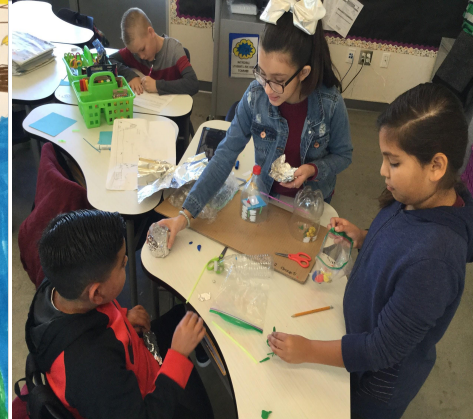
1. Hydroponic Garden 2. Arctic Plant



3. Zoo Enclosure



4. Martian Habitat



Classroom Instruction

ELA - Wonders

People Who Fought for Change

Name	Action	Results
Martin Luther King, Jr. "I Have a Dream"	<ul style="list-style-type: none"> traveled; lectured organized groups taught "passive resistance"; seek peace fought for Civil Rights for all races and creeds 	<ul style="list-style-type: none"> Civil Rights Act Integration Voter support at pol
Susan B. Anthony "Fighting for Change"	<ul style="list-style-type: none"> traveled; lectured organized a group funded a newspaper to support women's rights 	1920 - Women receive the right to vote "Susan B. Anthony Amendment" - 19 th Amendment
Fredrick Douglass "Freedom's Voice"	<ul style="list-style-type: none"> Learned to read Escaped slavery traveled; lectured Spoke against slavery in Britain Started a newspaper wrote about anti-slavery and women's rights 	His actions brought awareness to the atrocities of slave and promoted the abolitionist movement to create the 14 th 15 th amendments
Rosa Parks "Rosa"	<ul style="list-style-type: none"> refused to give up her seat on the bus organized bus boycott marched in protest of unequal rights and segregation 	<ul style="list-style-type: none"> November 13, 1956 The Supreme Court ruled segregation on busses was illegal. Civil Rights Act

Science -STEMscopes

STEMscopedia

Cause

Effect

humans figured out how to grow crops
discovered medicine
ways to keep living spaces clean and free of germs

humans lived longer and population began to grow

population growth

changes in the environment

Humans drain wetlands and cut down forest to build
turn fields into landfills

helps humans find shelter and get rid of waste
harms other living things in the environment

Humans take too much freshwater and dump trash and chemicals into our water sources

dries up rivers and streams which kills organisms
makes environments unfit for survival

Cars, buses, trains use fuel
Factories burn chemicals and release gas

pollute the air

Human Footprint

Human activity can have both a positive and negative impact on the environment

Discussion Frames:

Even though _____ is harmful, it is the best choice because _____

_____ is not a good idea because _____

Even though it is harmful to the environment, _____ is the best choice because _____

The worst choice is _____ because _____

Math

Clearwater Garden Using Recycled Tires

Clearwater 5th grade students will be making a garden using recycled tires. The following chart shows how much soil is needed to fill each tire.

Tires	Pounds of Dirt Needed
Small Tire	2 1/2
Medium Tire	1 1/2
Large Tire	3 3/4
Extra Large Tire	4 1/2
Truck Tire	3/4

1) Which tire needs the most dirt?

2) How much more dirt, in pounds, is needed to fill a large tire than a small tire?

3) Some students want to use a set of 6 tiny tires. The bags of soil only come in 4-pound bags.

What is the least number of bags of dirt needed to fill 6 tiny tires?

Explain how you figured out your answer. What students thought recycled dirt from each bag can be combined together and used.

4) Clearwater has 12 pounds of dirt and would like to use all of it. Every tire is 4 lbs. How many tires would they need to use all the dirt?

Describe a plan to use 12 pounds of dirt from the chart. Show how you use the chart to find the answer.

5) Students are making a plan to use 12 pounds of dirt. They only want to use 4-pound bags. How many bags of dirt do they need to use 12 pounds of dirt?

Use the chart to find the answer. If you need a smaller bag of dirt, explain how you figured out your answer.

6) A student has 12 pounds of dirt and would like to use all of it. Every tire is 4 lbs. How many tires would they need to use all the dirt?

Describe a plan to use 12 pounds of dirt from the chart. Show how you use the chart to find the answer.

7) A student has 12 pounds of dirt and would like to use all of it. Every tire is 4 lbs. How many tires would they need to use all the dirt?

Describe a plan to use 12 pounds of dirt from the chart. Show how you use the chart to find the answer.

Math Performance Task

CW Garden Using Recycled Tires

Notes: Task: Students will make/design a garden, using tires filled with dirt/soil

Look at the visual/chart

I notice...

I wonder...

there are different types and sizes (tires)

the amount used to fill a tire depends on its size

fractions and mixed numbers are used

the extra tire needs the most amount of dirt.

3 3/4 - large tire

1 1/2 - small tire

difference (how much more)

Key Information:

bags of dirt are 4 lbs of soil

if a tiny tire will be used, soil sold in 1 lb bags

ok to combine leftover soil, buy least amount of bags

will the tires be stacked up on top of one another?

do we have to use all of the numbers or some of them?

what operations (+, -, x, ÷) do we have to use?

2 2/2 = 2

3 3/4 = 3 3/4

1 1/2 = 1 1/2

2 2/2 = 2

3 3/4 = 3 3/4

1 1/2 = 1 1/2

2 2/2 = 2

3 3/4 = 3 3/4

1 1/2 = 1 1/2

2 2/2 = 2

3 3/4 = 3 3/4

1 1/2 = 1 1/2

Study Trips

Marion Ashley Education Center at Lamb Canyon



Perris City Gardens



Student Products

PBL Hyperdoc

TAKING ACTION TO HELP OTHERS
A 5TH GRADE PROJECT BASED LESSON

MY NAME: _____ **TEAM NAME:** _____

NOTES:
Hello! I am a 5th Grade Student. I have been chosen for a very important challenge. In this challenge, you will find out that communities get together to help protect our world and environment. You and three super friends will form a group to research and design a system to help others. You will then present your solution to the Clearwater Community in the form of a recorded public service announcement (PSA).

HELLO 5TH GRADERS! YOU HAVE BEEN CHOSEN FOR A VERY IMPORTANT CHALLENGE. IN THIS CHALLENGE, YOU WILL FIND OUT THAT COMMUNITIES GET TOGETHER TO HELP PROTECT OUR WORLD AND ENVIRONMENT. YOU AND THREE SUPER FRIENDS WILL FORM A GROUP TO RESEARCH AND DESIGN A SYSTEM TO HELP OTHERS. YOU WILL THEN PRESENT YOUR SOLUTION TO THE CLEARWATER COMMUNITY IN THE FORM OF A RECORDED PUBLIC SERVICE ANNOUNCEMENT (PSA).

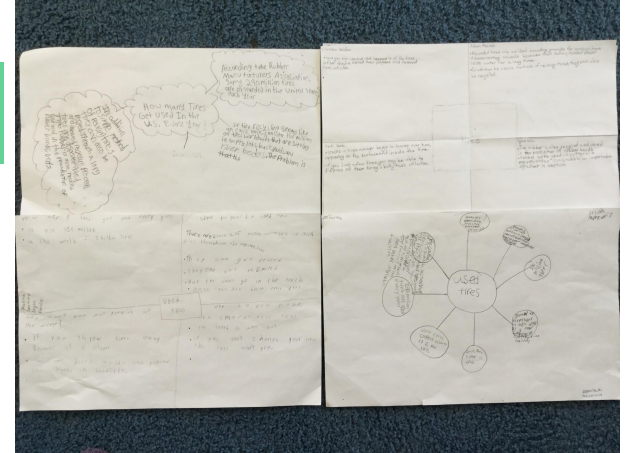
WHAT ABOUT A STORY THAT SHOWS YOU HOW TO MAKE A PSA?

THIS IS YOUR DRIVING QUESTION.....
HOW CAN WE TAKE ACTION AS A CLEARWATER COMMUNITY TO PROTECT OUR ENVIRONMENT?

BRAINSTORM.....What are some things we need to do at Clearwater?

WHAT ABOUT OUR WASTE? WHERE DOES IT GO?
Take notes while we watch the video.

SOLE Lesson



Garden Design



PSA



Butterfly and Plant Life Cycle

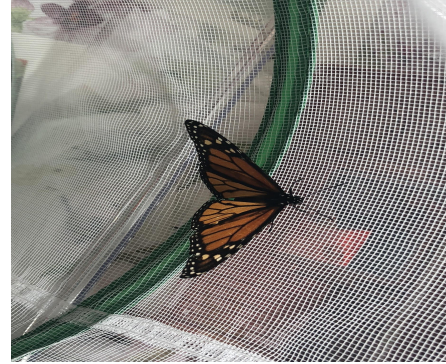
1. Egg.Larva Stage



2. Pupa Stage



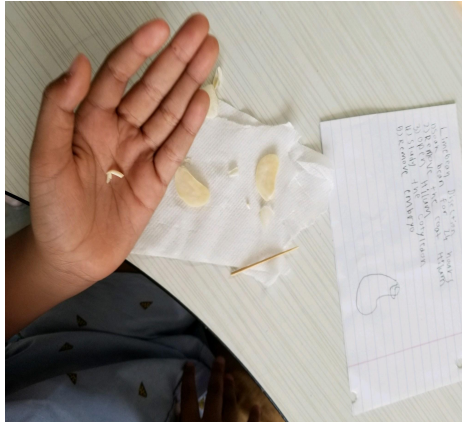
3. Butterfly



4. Butterfly Release Day



1. Bean Dissection



2. Grow seedlings



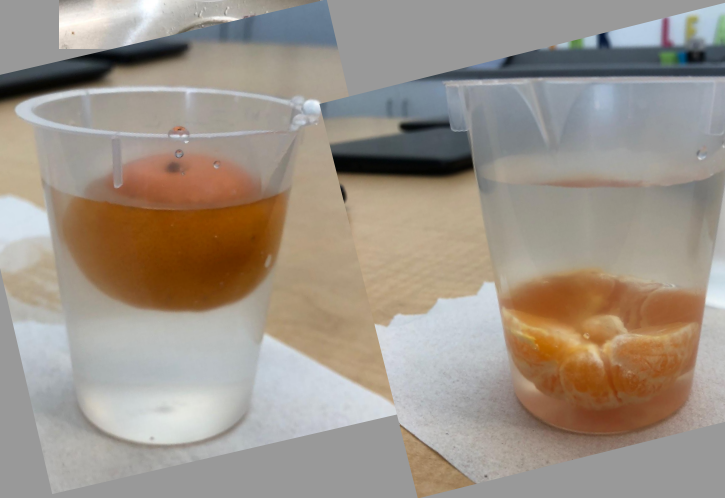
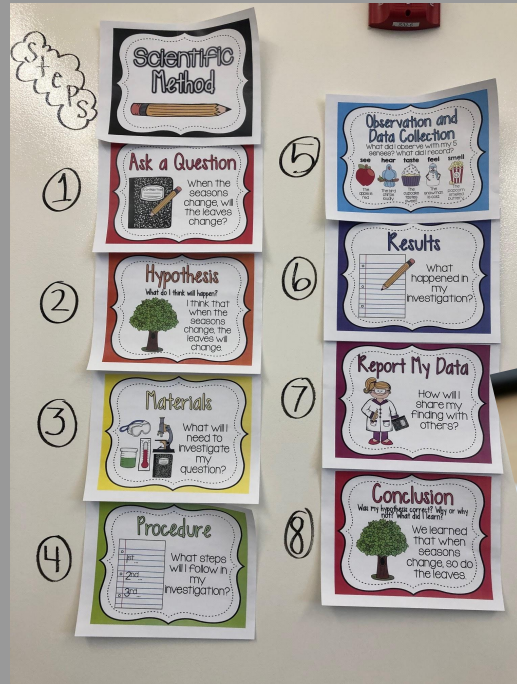
3. Plant sprouts



4. Plant in garden



Scientific Method



Title: Sink or Float?

Question: Will a rubberband ball sink or float in water?

Hypothesis: I think the rubberband ball will sink/float because...

Results: The rubberband ball sank in the water.

Conclusion: It sank because it was heavy. An experiment can be short it doesn't have to be complicated.