

Date

Week of April 22- May 1	Grade Level: 6
Directions: For this round you will work through a Project Based Learni	ng (PBL) experience. You will work through 3 tasks that will count for

all of your core classes (Language Arts, Math, Science, and Social Studies). In this PBL you will explore plants! You will learn how plants grow and where they come from. You will use this information to design a garden. Follow directions for each day. If you need assistance with your project reach out to your team of teachers through email or join a zoom call on your phone.

How to access ZOOM meetings:

For this round of work we would like to offer students with paper packets who have access to a phone to be able to access teachers through a zoom call. You can download the zoom app on your phone or you can call in using these steps:

- call: (415) 762-9988 or (646) 568-7788. AND follow the verbal instructions.
- Enter the meeting ID you wish to join followed by the # key.
- You will be asked to enter your participant ID. If you do not know your participant ID, simply press the # key.

PBL WORK PLAN :

WHAT ARE THE ORIGINS OF OUR FOOD AND WHAT IS ESSENTIAL FOR PLANTS TO GROW?

Part A- Read <u>Back and Forth Across the Atlantic in the Columbian Exchange</u> and answer the following questions using the RACE format on the <u>provided sheet</u>.

Scan the code to listen to the text.



- 1. Provide an example of an exchange that happened accidentally. What was the outcome of this accidental exchange? Provide text evidence to support your answer.
- 2. In your opinion, during Columbian Exchange what item was exchanged that had the most impact on the world? Why? Provide text evidence to support your claim.
- 3. Do you think the Columbian Exchange had a positive or negative impact on the world? Give at least two examples from the text to support your answer.

Part B- Study the <u>Map of the Columbian Exchange</u>. Choose one of the <u>three baskets</u> from the list below to grow in your garden. For each vegetable, identify the continent where that vegetable originated using the map below.



Zoom meeting times by team								
6.1	6.2	6.3						
Time: 10:30 AM Meeting ID: 952 6740 4789 Meeting Password: 6zFDEX	Time: 10:00 AM or 1:00 PM Meeting ID: 485-658-5056 Meeting Password: 924146	Time: 9:00 AM Meeting ID: 928-3098-0407 Meeting Password:3hGxsd						
Time: 2:00 PM Meeting ID: 934 7837 1158 Password: 3zsx0i		Time: 4:00 PM Meeting ID: 997-5792-1947 Meeting Password: 4hmEMv						

04/22

Science:

Read and learn about the different types of gardens (container, hydroponics, in ground, raised beds)

Reading 1 https://sites.google.com/rhschools.org/stmsgarden/introduction

Discover what six things does a plant need to live?

Reading 2 https://sites.google.com/rhschools.org/stmsgarden/what-do-plants-need

Listen to both readings by scanning code



Questions to answer

- 1) List the six things a plant needs to survive?
- 2) What would be important about temperature when planting a garden in South Carolina?

3) We have learned that all plants need nutrients, but can get those nutrients in different ways. Contrast how a soil garden gets its nutrients to how a hydroponic garden gets its nutrients.

4) If you were going to plan a garden where you live, which type of garden would you pick? Why?

While the answers to these questions do not have to be submitted to your teacher, they are needed for you to complete your final project! Write these answers down and save them.

		Zoom meeting times by team			
	6.1	6.2	6.3		
	Time: 10:30 AM Meeting ID: 952 6740 4789 Meeting Password: 6zFDEX	Time: 10:00am or 2:00pm Meeting ID: 985 8827 1921 Password: STMS2020	Time:10:00 am Meeting ID: 154 533 177 No password required		
	Time: 2:00 PM Meeting ID: 934 7837 1158 Password: 3zsx0i				
04/24	Math: Day 1 Step 1: After choosing your garden basket, loc Step 2: Fill in the information for seed price, g least one of every crop in the basket. Step 3. Calculate the amount of money spent s	ate the prices of your seeds on the <u>price list a</u> garden structure, and any additional material subtract from \$80.	<u>nd guide</u> . in purchase order form. You must buy at		
		Zoom meeting times by team			
	6.1	6.2	6.3		
	Time: 10:30 AM Meeting ID: 952 6740 4789 Meeting Password: 6zFDEX Time: 2:00 PM	Time: 10:00 AM or 1:00 PM Meeting ID: 485-658-5056 Meeting Password: 924146	Time: 11:00 am Meeting ID: 965-3988-7345 Meeting Password : 0MNnzN		
	Meeting ID: 934 7837 1158 Password: 3zsx0i				

Math: Students will continue working on the price guide.

Step 1: After choosing your garden basket, locate the prices of your seeds on the price list.

Step 2: Fill in the information for seed price, garden structure, and any additional material in purchase order form. You must buy at least one of every crop in the basket.

Step 3. Calculate the amount of money spent subtract from \$80.



How to video on adding, subtracting, and multiplying fractions. \square

Zoom meeting times by team								
6.1	6.2	6.3						
Time: 10:30 AM Meeting ID: 952 6740 4789 Meeting Password: 6zFDEX Time: 2:00 PM Meeting ID: 934 7837 1158 Password: 3zsx0i	Time: 10:00 AM or 2:00 PM Meeting ID: 485-658-5056 Meeting Password: 924146	Time: 11:00 AM Meeting ID: 913-6701-0016 Meeting Password:3CGiih						

Time to get your design on!

Wow! By now you have learned A LOT! You know where your food originated and how it got to South Carolina. You know there are many different types of gardens. You know the things a plant needs to survive, and you know how much it will cost you to actually complete this project!

Now we want to see your learning! What you create is up to you – poster, model, electronic presentation. What will it be?

04/28

This website can help you think through your model to design:

https://www.gardeners.com/on/demandware.store/Sites-Gardeners-Site/default/KGP-Design?SC=XNET0279 --

Things to include:

- Title with basket number and student name
- Type of garden, (in ground, raised bed, hydroponic, container)
- Measurements in inches or feet
- Plants growing and number of plants in the space
- A bulleted list of what plants need to grow and develop

Things to think about for your design:

- <u>Paper or Poster</u> The project must be neat and legible. Use a straight edge or ruler. Be sure to use color if possible and a size that is easy to share, at least a full size sheet of paper, 8x11inches
- <u>3D Make a Model</u> Using materials from around the house to create a garden. Choose things to represent the items from your basket. Arrange the items as they would be planted in the garden, no smaller than 8x11 or the size of a shoe box.
- <u>Electronic Version</u> Use Google Slides, Power Point, or movie maker to create a garden. Include all requirements in project description.

Zoom meeting times by team									
6.1	6.2	6.3							
Time: 10:30 AM Meeting ID: 952 6740 4789 Meeting Password: 6zFDEX	Time: 10:00am or 2:00pm Meeting ID: 985 8827 1921 Password: STMS2020	Time:10:00 am Meeting ID: 154 53 No password required							

	Password: 3zsx0i	
(loday is a workday! Make sure you are following the dii Check your <u>rubric</u>	rections and including the required elements!
	Remember that this project is your ORIGINAL work. There is n	no partner work in this. Please use the resources as support ONLY!
/29	Have you:	<u>. </u>
04	Task	Yes or No
	Completed the reading and submitted the 3 Questions	
	Completed the basket / continent T Chart	
	Completed the Math Price Guide	
	Started your model garden	
	Does it have a title?	
	Did you list which type of garden you planted?	
	Gave the measurements of your garden?	
	Name of plants included	
	Number of each plant included	
2	A list of plant needs	
	Were you creative?	
	Can you add color to your project or graphics?	
	If you are all complete, did you choose an extension activity?	

Take a video and show us your	. Plant a garden from seeds you	Listen to the book Westlandia
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personal garden at home. Take pictures and submit them to to social media using the hashtag #STMSgardens Calculate the area and perimeter of your garden.	already have in your house. (No need to go shopping during quarantine) Use this video to give you some ideas.	 - a short story about a boy who grew his own garden and how it changed his life. This is a very good story and for those of you who like history, see if you can see the connections to what you have learned this year Video to listen to Westlandia. 				
6.1	Zoom meeting times by team 6.2	6.3				
Time: 10:30 AM Meeting ID: 952 6740 4789 Meeting Password: 6zFDEX Time: 2:00 PM Meeting ID: 934 7837 1158 Password: 3zsx0i	Time: 10:00 AM or 1:00 PM Meeting ID: 485-658-5056 Meeting Password: 924146	Time:10:00 am Meeting ID: 154 53 No password required				

	Keep working:) We are so excited to see your final project! Reach out to use if you are confused!							
0	Try one or more of the extension activities from Wednesday if you finish early.							
04/3	Zoom meeting times by team							
	6.1	6.2	6.3					
	Time: 10:30 AM Meeting ID: 952 6740 4789 Meeting Password: 6zFDEXTime: 10:00 AM or 1:00 PM Meeting ID: 485-658-5056 Meeting Password: 924146Time: 9:00 AM or 4:00PM Meeting ID: 977-217-4826 Meeting Password: 924146Time: 2:00 PM Meeting ID: 934 7837 1158 Password: 3zsx0iTime: 3200 PM Meeting ID: 934 7837 1158 Password: 3zsx0iTime: 10:00 AM or 1:00 PM Meeting ID: 924146Time: 9:00 AM or 4:00PM Meeting ID: 977-217-4826 Meeting Password: 9uQsTi							
Ц	All done! You should submit your final project today. Try one or more of the extension activities from Wednesday if you finish early.							
05/0		Zoom meeting times by team						
	6.1	6.2	6.3					
	Time: 10:30 AM Meeting ID: 952 6740 4789 Meeting Password: 6zFDEX Time: 2:00 PM Meeting ID: 934 7837 1158 Password: 3zsx0i	Time: 10:00 AM or 1:00 PM Meeting ID: 485-658-5056 Meeting Password: 924146	Time: 9:00 AM or 4:00PM Meeting ID: 977-217-4826 Meeting Password: 9uQsTi					

7th Grade Course Selection Instructions for 2020-2021

In this packet, you will receive your Course Selection Card and descriptions for the 2020-2021 school year. Please review the descriptions for each course before you make your selections.

Please submit your selections no later than **Friday**, **May 1st**. You may submit your selection sheet in any of the following ways: 1) Take a screenshot and send an email to Ms. Johnson at: <u>qjohnson@rhmail.org</u> or 2) If you cannot send a screenshot, you can email your choices to Ms. Johnson.

Please complete the course selection card below. You will need to select your top 8 choices. 1 being your **TOP CHOICE** and 8 being your **LAST CHOICE**. All students are required to take 18 weeks (one semester) of PE/Health.

***Course offerings are contingent upon sufficient student enrollment and teacher availability

All *******Course offerin	students are required to take 18 weeks	s (one semester) of PE/Health. dent enrollment and teacher availability *******
	ALL STUDEN You will need to <u>number</u> your	ITS choices 1through 8.
Arts (Semester) Studio Art Journalism Beginning Digital Piano Continuing Digital Piano Drama	Technology (Semester) Digital Design Beginning Digital Photography Continuing Digital Photography Continuing Digital Photography Family & Consumer Science Robotics Robotics	World Language (Semester) Spanish 7 Semester y e- Part 1* earn oth parts)
Year-long Arts		
Band (woodwinds) Prefer	red instrument?	
Band (brass) Prefe	rred instrument?	
Chorus		
Strings *Dependent upon	number of student requests Preferred	string instrument?

Student Signature

Parent Signature

7th Grade Related Arts Course Descriptions 2020-2021

Arts (Semester 18 weeks)

Studio Art: Students will learn about artists and their art. They will use this knowledge as well as our world to inspire their own works of art based on the elements and principles of art. Students will explore a variety of art media, techniques, processes, and career opportunities.

Journalism: Students will develop skills in journalistic writing, editing, photography, layout and design. These students will publish articles online for our newspaper, The Paw Print.

Digital Piano: This course is designed to provide opportunities for students to develop their musical skill through the use of the piano. Students can achieve goals through performance, which they cannot achieve alone. This one semester course will culminate in a student recital at the end of the course. Students are taught to broaden their interests in music studies as well as pursue personal interest in piano. Playing, creating, and listening experiences are broadened to include a wide range of musical media, form, and style. Students will be able to learn note reading and other aspects of music theory and in turn apply all musical skills that are taught to performing pieces on the piano. (Beginning and Continuing options)

Drama: Students will study advanced techniques in acting. Students will complete several classroom projects with pantomime, improvisation, and monologues. The class will also participate in rehearsal and production of an ensemble play that will be presented for parents and community members at an evening performance.

Arts (Year Long 36 weeks)

Band: Seventh grade band is an intermediate level band class. This class is designed for first and second year band students who wish to continue studying their chosen instrument. **Beginning seventh grade students may still join the class**. Skills and concepts from the previous year are developed and expanded. Students will perform in at least two concerts a year and will have other performance opportunities during the school year. Students must supply an instrument and purchase a method book in order to participate in this class. School instruments include: oboe, bassoon, bass clarinet, French horn, baritone and tuba. Technology used in this class may include: Sibelius music notation software, Smartmusic software, Essentials of Music Theory software, and music websites.

Chorus: This course is designed to provide beginning vocal instruction and general musicianship skills for all choral students. Instruction will include beginning music literacy and music theory, and will emphasize differences in musical styles as they relate to the history of music and the interpretation of specific pieces. Emphasis will be placed on basic ensemble singing skills such as pitch matching, tone production, reading rhythms, and ear training. Course requirements include performing in a minimum of two evening concerts and one festival per year. Students will perform unison, two part, and three part songs.

Strings: This course is designed as a beginning class, no experience necessary. Students will have instruction in basic skills of playing an instrument, basic music theory, music vocabulary, and care of the musical instrument. Students will perform in concerts and for other events throughout the school year.

Technology (Semester 18 weeks)

Digital Design: In 7th grade Digital Design, students will be introduced to the field of various designs using technology. This course helps you gain the necessary skills for today's newest technology in digital printing. In this class, students will design and create character animations, cartoons, comic books, advertisements, and other multimedia designs

Digital Photography: Students will acquire an understanding of the principles of good composition and the application of photographic principles involved in taking various kinds of photographs and producing finished results. They will also be responsible for using their knowledge of different angles and applying this to perform different projects. Students will also learn about various camera settings.

(Beginning and Continuing options)

Family & Consumer Science: This semester course is strategically designed to assist students discover their own creative talents and interests while learning to apply the elements and principles of design to a variety of career choices. Throughout the semester students will be exposed to a variety of learning experiences including guest speakers, virtual classes, computer-based learning and hands-on projects. Students will use the design cycle to explore a variety of careers, basic skills and education needed to be successful. Fashion, interior design, automotive design, packaging and marketing sciences, landscape and architectural design are a few examples.

Robotics: This course is designed to introduce the basics of the NXT (robot model) as it teaches science, technology, engineering, and mathematics. Students will learn how to program basic robot behaviors using motors and rotation, sound, light, touch, and ultrasonic sensors. Lessons are based on real world robots.

Engineering: This course introduces students to the fun and powerful tools of designing and problem solving through hands-on projects. 7th Grade projects may include but are not limited to flight, robotics, rocketry, Computer Assisted Drafting, 3D printing, and bridge design.

Multimedia Design: This course continues with all of the programs learned (or for new students, an introduction to programs that will be used throughout your time at STMS) and allows students the flexibility to apply these programs to projects in and out of the classroom. Students have worked on National History Day Projects, Science Fair, PBL Projects, projects for our school's annual play (including DVD design, promotional videos, cast introduction video), extracurricular activities (sports highlight videos, Academic Challenge videos, Robotics). We want students to promote their work by making creative, quality digital projects that can be posted on our school's social media pages to show the community our accomplishments!

<u>Video Production:</u> Students will collaborate with others to produce short films, commercials, TV Broadcasts, and a final film project. Students will use flip cameras and computer film editing software.

World Languages (18 weeks)

Spanish 7th Semester: The objective of this course is to introduce the students to a modern language class in which the students have the opportunity to interact in a variety of situations and tasks such as: hands on activities, games, songs, use of authentic material, and technology. This course strives for the development of the listening, speaking, writing, reading and communicative skills required to master a foreign language. This course contains Unit 1 and 2 of the Level 1 Spanish Curriculum.

PE/Health (Semester 18 weeks)

PE/Health: Students will participate in team and individual sports as well as fitness testing in alignment with the Physical Education and Health Standards. Health is built into the Physical Education curriculum and will teach students the importance of physical activity, good nutrition, self-esteem, and hygiene among other topics. In Physical Education, students will participate in games and activities that will give them the skills necessary to participate in physical activity for their lifetime.

* One semester-required for all students

Back and Forth Across the Atlantic in the Columbian Exchange

In 1492, Christopher Columbus sailed the ocean blue. His voyage connected Europe and the Americas. It began a new era in human history.

Plants and animals could now move back and forth across the Atlantic Ocean. Historians call this the Columbian Exchange. It was named after Columbus.

I want to understand the consequences of the Columbian Exchange. I want to see how plants, animals, and people moved across the Atlantic between 1492 and 1850. My goal is to see what impact these movements had.

Humans were creating new global networks. What effect did these networks have on people around the world?

What was exchanged between 1492 and 1850?

First, I want to answer some basic questions. What was exchanged between Europe and the Americas?

What moved east? What moved west?

To answer these questions, I'll need to gather information from some history and science books. I used two books by historian Alfred W. Crosby to create the map and chart below.



They show what items moved back and forth across the Atlantic in the Columbian Exchange.

Plant and animal exchange surprises

The Europeans who came to the Americas brought many things with them. They were completely new to the American continents.Some of them surprised me: horses, sheep, honeybees, earthworms, sugarcane, wheat, fruits, coffee plants, and diseases.

These things have been common in the Americas for a long time. I thought they had always been here! Can you imagine North America without horses, cattle, honeybees, earthworms, or coffee?

Many items made the reverse trip from the Americas to Europe after 1492. They included corn, potatoes, turkeys, tomatoes, chili peppers, and cocoa.

Before that, none of these items were found in Europe, Africa, or Asia. Today, I can't imagine Italian food without tomatoes or food from India without chili peppers.

Plants and Animals that Moved Across the Atlantic, 1500 - 1650

Things that moved east: From the Americas to Afro-Eurasia	Things that moved west: From Afro-Eurasia to the Americas
Maize (corn)	Wheat
Potatoes	Barley, oats
Sweet potatoes	Rice
Cassava (manioc)	Sugarcane
Vanilla	Olives
Peanuts	Peaches, pears, grapes
Tobacco	Okra, cabbage, spinach, turnips
Beans (several types)	Cabbage
Squash	Spinach
Tomatoes	Turnips
Chili peppers	Mustard
Сосоа	Coffee
Pineapple	Cattle
Turkeys	Pigs
	Sheep
	Horses
	Goats
	Chickens
	Dogs (bigger and fiercer than American)
	Honeybees
	Earthworms
	Smallpox
	Measles
-	Influenza
•	Malaria

Some of the exchanges happened on purpose. Europeans planned to introduce some new plants and animals into the Americas. For example, Spanish explorers brought olive trees over on their ships so they could plant them in the New World.

Europeans also brought over crops such as sugar, coffee, cotton, and ginger. They hoped these would grow well in the Americas. Then they could be sold for a profit back in Europe.

Those crops did grow very well in Brazil, the Caribbean, and North America. Sugar, coffee and many spices became important products that Europeans traded around the world.

In their book, *The Human Web*, historians J.R. McNeill and William McNeill explain that people were able to make money bringing plants to new places.

Moving certain plants was often organized by the kings and queens of Europe, the McNeills said. The royals wanted to make large profits or increase scientific knowledge.

However, some exchange happened by accident. Seeds sometimes traveled as "secret passengers" in foods. Historian Luis Martin tells a story from 1535 about how wheat was introduced to Peru in this way.

Ines Munoz was related to the famous explorer and conqueror Francisco Pizarro. She was one of the few European women who lived in Lima, Peru, at the time.

Munoz received a barrel of rice from Spain. In the barrel, she found a few grains of wheat. She wondered if the wheat would grow in Peru. She planted the grains of wheat in a flowerpot, and soon wheat plants appeared. Munoz began to replant the wheat in the soil of Peru. According to Martin, the wheat crop grew so well that within three or four years, people were able to make bread in Peru.

The Europeans didn't just introduce new plants to the Americas. They brought animals like horses, pigs, goals, sheep, and cattle across the Atlantic.

Some historians believe the animals were more important to the Native Americans than the new plants.

Horses must have been important for transportation and working. Riding a horse would make it easier to herd cattle or sheep.

New diseases also traveled to America. Europeans unintentionally carried smallpox, measles, and malaria with them. The natives had never been exposed to the diseases.

I learned that the spread of these new diseases was terrible for the native peoples, causing many, many deaths.

Now we know what crossed back and forth between Europe and America. We can begin to look at the consequences of these new plants, animals, and diseases on people in different parts of the world.

Analyzing the exchanges

Many plants from the Americas grew well in Europe, Asia, and Africa. Maize (corn), cassava (manioc) and potatoes improved people's diets all over the world.

These crops grew fast. They survived droughts — times with no rain. They were easy to store, and provided a large number of calories. People in Europe, Africa, and Asia now had more foods to choose from.

Maize, cassava, potatoes, and other American plants such as peanuts, tomatoes, and beans, soon spread throughout the world.

Conclusion

So, what were the consequences of the Columbian Exchange? The world's separate regions were truly connected for the first time in history. This happened because goods were being exchanged across the oceans.

The historians J.R. and William McNeill believe these are some of the main consequences of the exchange:

—It made the world slightly richer overall. There were more goods being traded. More money was changing hands.

-More crops were spread over larger areas of the globe.

—More and more people were exposed to the same diseases and developed new resistance to them.

—It made the world more unequal. Some populations were better able to take advantage of the new connections than others.

Still, change happened slowly. It took a month to cross the Atlantic Ocean by ship. It took over a year for people, goods, and information to spread over the Earth. The networks were global, but things were still moving slowly.

Name	<u>. </u>				 т	eam	 				
Part 1	I										
		-	 	-	 		 -	-	 _	-	

Read "Back and Forth Across the Atlantic in the Columbian Exchange" Answer the following questions using the RACE method.

1. Provide an example of an exchange that happened accidentally. What was the outcome of this accidental exchange? Provide text evidence to support your answer.

2. In your opinion, during Columbian Exchange what item was exchanged that had the most impact on the world? Why? Provide text evidence to support your claim.

3. Do you think the Columbian Exchange had a positive or negative impact on the world? Give at least two examples from the text to support your answer.

Part 2

Pick a <u>basket</u> and complete the T-Chart using the <u>Columbian Exchange Map</u> as a reference.

<u>Basket 1</u>	<u>Basket 2</u>	<u>Basket 3</u>			
Celery	Peas	Lima Beans			
Cucumber	Okra	Corn			
Pumpkin	Artichoke	Turnip			
Peppers	Squash	Lettuce			
Beets	Cabbage	Asparagus			
Spinach	Sweet Potato	Yam			
Carrot	Onion	Radish			

Basket # and basket items	Continent of Origin
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.

Choose what vegetable basket appeals to you





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<u>Basket 1</u> Celery **Cucumber** Pumpkin Peppers **Beets** Spinach Carrot



<u>Basket 2</u> Peas **Okra Artichoke** Squash Cabbage **Sweet Potato** Onion



<u>Basket 3</u> Lima Beans Corn Turnip Lettuce Asparagus Yam Radish





ORIGIN OF OUR COMMON VEGETABLES

Continents and Oceans of the World



Science : Use the attached documents to answer the questions below:

• Read and learn about the different types of gardens (container, hydroponics, in ground, raised beds)

• Discover what six things does a plant need to live?

Questions to answer:

1) List the six things a plant needs to survive?

2) What would be important about temperature when planting a garden in South Carolina?

3) We have learned that all plants need nutrients, but can get those nutrients in different ways. Contrast how a soil garden gets its nutrients to how a hydroponic garden gets its nutrients.

4) If you were going to plan a garden where you live, which type of garden would you pick? Why?

While the answers to these questions do not have to be submitted to your teacher, they are needed for you to complete your final project! Write these answers down and save them.

Reading 1 Types of Gardens

Common Vegetable Garden:



A plot of land used to grow vegetables. They vary in size from small to very large. Commercial gardens cover hundreds of acres!



Container Garden:

If space is limited, one can plant a container garden! It takes 1.76 acres of land to grow the fruits and vegetables needed to feed a family of four for one year - closer to two if you include wheat and corn.

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Raised Gardens:



A raised bed garden is created when a garden sits on top of your original ground. These are useful when your soil isn't fertile enough for growing vegetables. When planting a raised bed garden, remember not to plant deep-rooted plants (potatoes, tomatoes, fruit trees) they need more soil than a shallow bed.





Hydroponic Gardens

Simply put, hydroponic gardening is a method of growing plants without soil. ... In a traditional garden, plant roots have to seek out nutrients in the soil. In hydroponic gardens, nutrients are dissolved in the water that surrounds the roots, so plants have even easier access to the nutrition they need. This method can be used for both commercial gardening and the home gardener. These gardens also work well in a greenhouse.

Reading 2 What Does a Plant Need to Live?

ALL plants must have their needs met to survive. ALL plants need **water, nutrients, space, light, air, and temperature**. The amounts may change, but they all must have these things. Read below to learn more.

Water

Do you know what part of the plant absorbs water? The ROOTS! Yes! Water travels to the roots through the stem. Once in the roots, water helps move nutrients from the soil into the plant. If a plant receives too much water, the roots will rot and the plant will die. If a plant receives too little water, the plant will wilt and die. So the plant has to have just the right amount of water to keep it alive.



Air

Plants need air just like we do; only in a different way. Plant leaves use carbon dioxide out of the air to make sugar and starch for the plant to stay alive through the process of photosynthesis. Photosynthesis is a plant's primary source of energy. Since it makes it's own food, it is autotrophic.



Light

You probably know plants need light to grow. However, did you know that different plants need different amounts of light? Some plants like full sun, while others like shade. Some plants need morning sun and some need a mixture of sun and shade. They use light to create chemical energy which turns carbon dioxide into glucose. This process is

known as photosynthesis. If plants do not get the correct amount of light, they will grow very slow or dry out eventually dying.

Nutrients

Nutrients are to plants as vitamins are to people! Plants need **nitrogen**, **phosphorus**, **potassium., magnesium, sulfur, and calcium** which they usually get from the type of soil in which they are planted. These nutrients can be found naturally in soil, or they can be added with fertilize. Nutrients are dissolved in the soil and absorbed through the roots and help the plant grow. However, hydroponic gardens, there is no soil. These nutrients must be added back into the water-based on what you are trying to grow.

Space to Grow

I need space, you need space, plants need space, all organisms need space to live and grow! The roots need room to spread out to find nutrients and water, while the leaves need space to spread out for sunlight. Without enough space to grow, plants must compete for resources they need to grow. Without enough light, water, air, and nutrients, the plant will die.



Temperature

Are you "in the zone"? Of course you are! The USDA (United States Department of Agriculture) divides the United States into 11 zones. Each zone is approximately 10 Fahrenheit warmer (or colder) than the zone next to it. These zones help to decide when to plant fruits and vegetables. This is important because many plants cannot be set out prior to the last frost. Likewise, if it is too hot/cold the plant 's growth will slow down. Some zones even have multiple growing seasons! Knowing your zone helps you get the most from your fruits and vegetables. So see - plants need their temperature regulated too.

Fun fact Rock Hill, SC is on the border of Zone 7b and 8a.

Can you plant your garden while staying in budget?

Step 1: After choosing your garden basket, locate the prices of your seeds on the price list and guide

Step 2: Fill in the information for seed price, garden structure, and any additional material in <u>purchase order form</u>. You must buy <u>at least</u> one packet of every crop in the basket.

Step 3. Calculate the amount of money spent subtract from \$80.

Cost Sheet for Seed Packages and Garden Structures

Chose only one Basket that you want for your budget: Your BUDGET is \$80.00

Basket 1	Cost per package
Celery	\$2.95
Cucumber	\$3.95
Pumpkin	\$3.95
Peppers	\$2.95
Beets	\$2.95
Spinach	\$1.95
Carrot	\$2.95

Basket 2	Cost per package
Peas	\$3.95
Okra	\$3.95
Artichoke	\$2.95
Squash	\$2.95
Cabbage	\$2.95
Sweet Potato	\$3.95
Onion	\$2.95

Basket 3	Cost per package
Lima Beans	\$1.95
Corn	\$4.95
Turnip	\$3.95
Lettuce	\$3.95
Asparagus	\$2.95
Yarn	\$3.95
Radish	\$2.95

Garden Structures: Chose <u>Only One</u> Structure in your budget:



Square Garden with Soil \$28.50



Rectangular Garden with Soil \$34.75



Hydroponic Garden \$39.95

Other items for Garden: Sprinkler \$10.25 Fertilizer \$14.95 Watering Can \$6.99 Garden Tools (Shovel \$5.99, Rake \$5.00, Gloves \$2.99)

Sales Receipt

Saluda Trail Wildcats Garden Project

Date: _____

Name: _____

Amount	ltem	Description	Unit Price		Line Total
*Example					
3	Celery	3 packages of celery seeds	\$2.95	\$2.95 x 3 packages	\$8.85

Final Total

Remember to purchase enough seeds for all your crops!

Remember to purchase any structures needed to help build your garden!

DECIMAL REFERENCE GUIDE

ADDING AND SUBTRACTING

PROCEDURES

+

- 1. Write numbers vertical (up and down)
- 2. Put zeroes in place holders (places with no numbers)
- 3. Start from right and add/subtract
- 4. Bring the decimal straight down!!!!



Multiplying Decimals

Procedures	Example #1 Multiplying	Example #2 Multiplying			
1. Multiply like whole numbers	3.77 × 2.8 = ?	63 24 (2 decimal place)			
2. Count Decimals places in problem	3.77 (2 decimal places)	x 3.1 (1 decimal place)			
 Put the same numbers of places behind the decimals in the answer 	$\times \frac{2.8}{3016}$ (1 decimal place)	6324 18972			
	+754 10.556 (3 decimal places)	196.044 (3 decimal place)			

Checklist/Rubric for Grading Your Garden Model

Use this checklist to ensure that you have done all of the requirements for a complete grade on your

model garden.

Student –	
Check When Complete	Items That Must Be Included for Full Credit
	Students will produce a model of their garden
	Student has included his/her name.
	The title of the garden and the basket number are displayed.
	The measurements in inches or feet are labeled on the model.
	There is a key or a list of plants growing and number of plants in the space and the area marked.
	Write which type of garden you chose in the key or the top of the list.(in ground, raised bed, hydroponic)
Indicate which model	
you have created.	Paper or Poster - The project must be neat and legible. Use a straight edge or ruler. Be sure to use color if
	possible and a size that is easy to share, at least a full size sheet of paper, 8x11inches.
	3D Make a Model - Using materials from around the house to create a garden. Choose things to represent the
	items from your basket. Arrange the items as they would be planted in the garden, no smaller than 8x11 or the
	size of a shoe box.
	Electronic Version - Use Google Slides, Power Point, or movie maker to create a garden. Include all
	On a separate paper or page or slide there is bulleted list of what plants need to grow and develop. (6)

Design and Build a Garden

Criteria	Met	Not Met	Comments
Interpret Research Identify the 6 factors necessary for plant growth and development			
Design and build Complete a model to represent a garden Must include • the type of garden • layout of vegetables			

	Sun		Shade		Partial Sun			
Tomatoes	1 per square foot	Spinach	9 per square foot	Carrots	16 per square foot			
Cucumber	2 per square foot	Celery	1 per square foot	Radishes	16 per square foot			
Pepper	1 per square foot	Kale	1 per square foot	Beets	9 per square foot			
Peas	8 per square foot	Lettuce	1 per square foot	Yams	4 per square foot			
Beans	9 per square foot	Cabbage	1 per square foot	Turnips	8 per square foot			
Corn	per square foot			Sweet poto	itoes 1 per square foot			
Squash	1 per square foot							
Oinions	4 per square foot							
Okra	1 per square foot							
Artichoke	2 per square foot							
Pumpkin	1 per square foot							

1 cm Graph Paper

One line per centimeter. Black lines.

Optional Extensions

Extend your thinking.

You may try one of these if you finish your project early.

- Take a video and show us your personal garden at home.
- Take pictures and submit them to to social media using the hashtag #STMSgardens
- Calculate the area and perimeter of your garden.
- Plant a garden from seeds you already have in your house. (No need to go shopping during quarantine)

Use this video to give you some ideas.



• Listen to the book <u>Westlandia</u>

a short story about a boy who grew his own garden and how it changed his life. This is a very good story and for those of you who like history, see if you can see the connections to what you have learned this year Video to listen to <u>Westlandia</u>.

