

The PLTW STEM Teacher

Meet the Facilitators



Flora Gasca
PLTW Instructional Developer



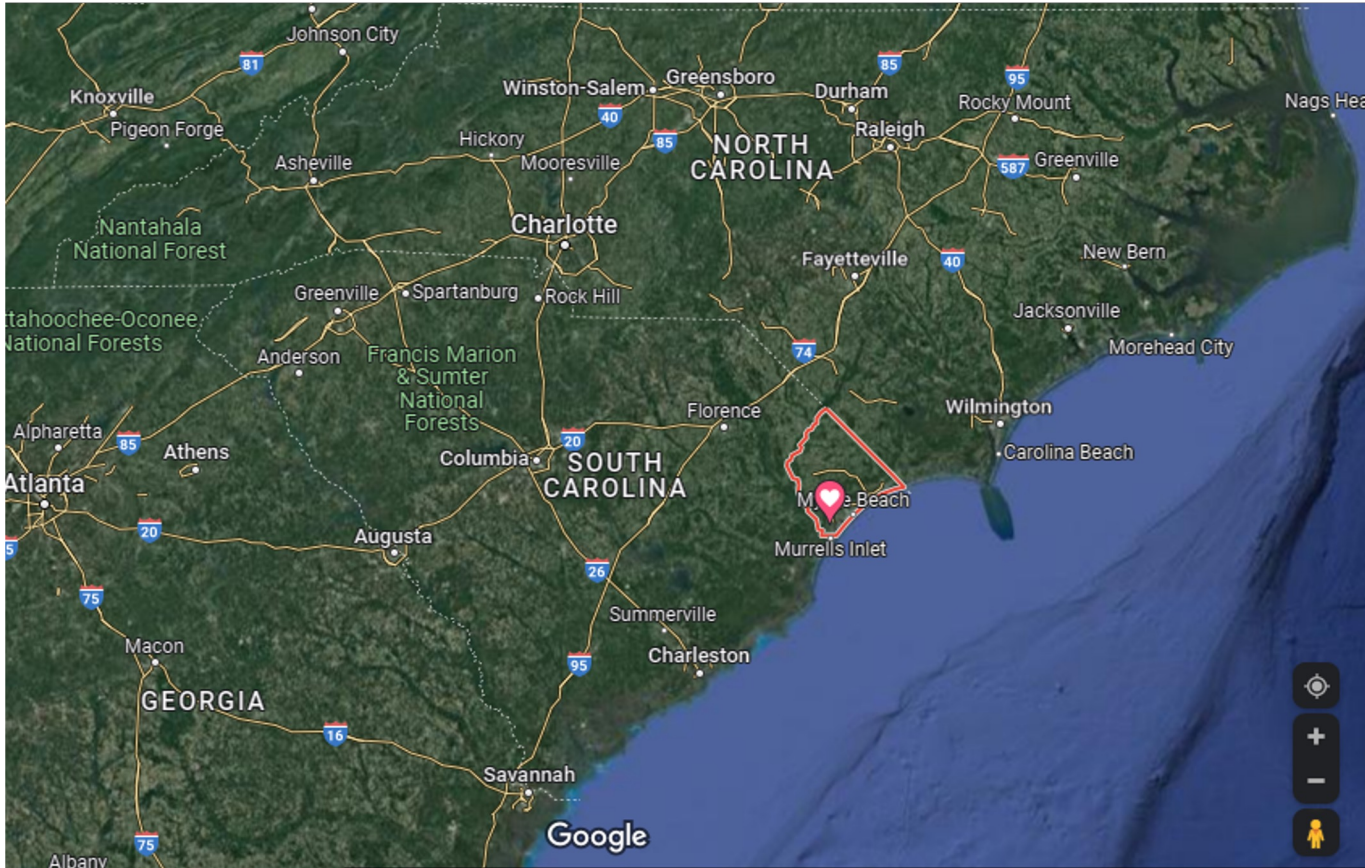
Christine Davenport
PLTW Launch Master Teacher

Our Agenda

- Welcome and Introduction of Presenters
- Overview of Session
- STEM Special Schedules
- Classroom Organization and Storage
- Exploring Strategies for Your Classroom
- Q/A



Horry County Schools District, SC



- 56 schools
- 9 attendance areas
- 28 elementary schools
- 45,000 students
- 3rd largest school district
 - PLTW Launch
 - PLTW Gateway
 - PLTW CS, ED, BS

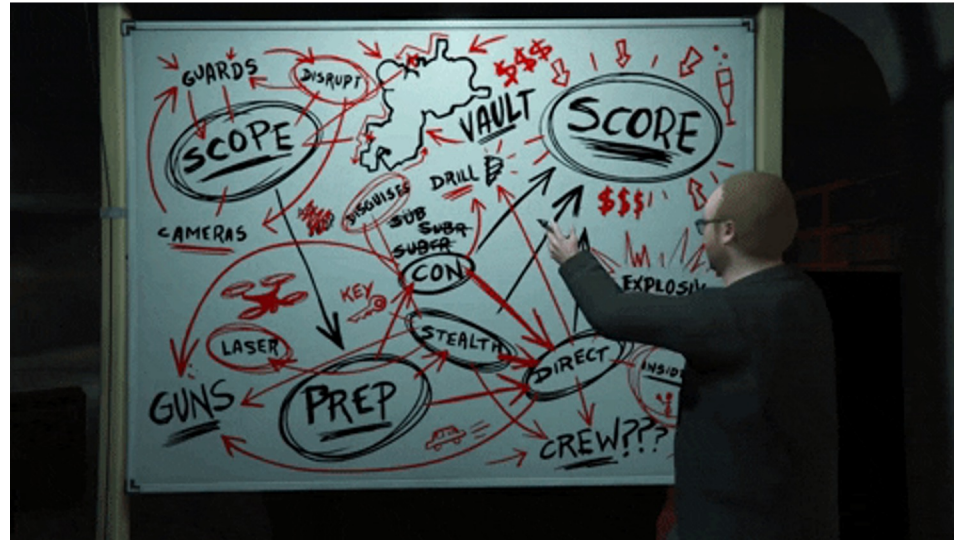
West Platte School District



- Located in Weston, Missouri
- Prek-12th grade school
- 400 students at the elementary level
- Serve all Prek-5 students in the district
- Launch, Gateway and Biomedical Science offered in our district

STEM Special Schedules

Keeping integrity of the APB approach with various scheduling needs



STEM Specials Scheduling

- 3 classes per grade level
- 55 minutes for 2-5
- 25 minutes for k-1

	A Day	B Day	C Day	D Day
8:20-9:15	5-Cobb	5-Black	PLAN	5-Webster
9:15-10:10	4-Key	PLAN	4-Norton	4-Litner
10:15-11:10	PLAN	3-Blue	3-White	PLAN
11:15-11:50	PREK/LD	PREK/LD	PREK/LD	PREK/LD
12:00-12:25	K-Hope	K-McConkey	K-Hope	K-McConkey
12:30-12:55	K-Colbern	LUNCH	K-Colbern	LUNCH
1:00-1:25	LUNCH	1-Grier	LUNCH	1-Grier
1:30-1:55	1-Northern	1-Johnson	1-Northern	1-Johnson
2:00-2:55	2-Jaster	2-Reynolds	2-Chapman	PLAN

Preschool/Lunch Duty Schedule
 Mon: Manka Tues: LD Wed: Conrad Thur: Lock Fri: LD



STEM Special Scheduling

- 4 classes per grade level

		Monday	Tuesday	Wednesday	Thursday	Friday
Planning 7:35 - 8:00						
5th Grade 8:00 - 8:45	PE	Cox	*Tutoring*	Shoe	Orabona	Floyd
	Art	Floyd	Cox	*Tutoring*	Shoe	Orabona
	Music	Orabona	Floyd	Cox	*Tutoring*	Shoe
	Library	Shoe	Orabona	Floyd	Cox	*Tutoring*
	STEM	*Tutoring*	Shoe	Orabona	Floyd	Cox
CD & Kindergarten 9:25 - 10:10	PE	Cannon	Johnson	Rogers	Roark	Richardson
	Art	Richardson	Cannon	Johnson	Rogers	Roark
	Music	Roark	Richardson	Cannon	Johnson	Rogers
	Library	Rogers	Roark	Richardson	Cannon	Johnson
	STEM	Johnson	Rogers	Roark	Richardson	Cannon
Lunch/Planning 10:10 - 10:45						
2nd Grade 10:45 - 11:30	PE	Presley	Robinson	Morton	Mogus	Porter
	Art	Porter	Presley	Robinson	Morton	Mogus
	Music	Mogus	Porter	Presley	Robinson	Morton
	Library	Morton	Mogus	Porter	Presley	Robinson
STEM	Robinson	Morton	Mogus	Porter	Presley	



STEM Special Scheduling

- 5 classes per grade level
- Classes rotate daily

Child Development - Grade 3	Day 1	Day 2	Day 3	Day 4	Day 5
	Monday	Tuesday	Wednesday	Thursday	Friday
Teacher 1	Music	PE	Media	STEM	Art
Teacher 2	Art	Music	PE	Media	STEM
Teacher 3	STEM	Art	Music	PE	Media
Teacher 4	Media	STEM	Art	Music	PE
Teacher 5	PE	Media	STEM	Art	Music



STEM Special Scheduling

- 6 classes per grade level
- Each class has STEM for a week

Grade 4	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15
	Monday	Tuesday	Wednesday	Thursday	Friday	Monday	Tuesday	Wednesday	Thursday	Friday	Monday	Tuesday	Wednesday	Thursday	Friday
Dame	STEM	STEM	STEM	STEM	STEM	Music	PE	Media	Service	Art	Music	PE	Media	Service	Art
Franks	Art	Music	PE	Media	Service	STEM	STEM	STEM	STEM	STEM	Art	Music	PE	Media	Service
Johnson	Service	Art	Music	PE	Media	Service	Art	Music	PE	Media	STEM	STEM	STEM	STEM	STEM
Ridgeway	Media	Service	Art	Music	PE	Media	Service	Art	Music	PE	Media	Service	Art	Music	PE
Willis	PE	Media	Service	Art	Music	PE	Media	Service	Art	Music	PE	Media	Service	Art	Music
Powley	Music	PE	Media	Service	Art	Art	Music	PE	Media	Service	Service	Art	Music	PE	Media

Grade 4	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30
	Monday	Tuesday	Wednesday	Thursday	Friday	Monday	Tuesday	Wednesday	Thursday	Friday	Monday	Tuesday	Wednesday	Thursday	Friday
Dame	Music	PE	Media	Service	Art	Music	PE	Media	Service	Art	Music	PE	Media	Service	Art
Franks	Art	Music	PE	Media	Service	Art	Music	PE	Media	Service	Art	Music	PE	Media	Service
Johnson	Service	Art	Music	PE	Media	Service	Art	Music	PE	Media	Service	Art	Music	PE	Media
Ridgeway	STEM	STEM	STEM	STEM	STEM	Media	Service	Art	Music	PE	Media	Service	Art	Music	PE
Willis	PE	Media	Service	Art	Music	STEM	STEM	STEM	STEM	STEM	PE	Media	Service	Art	Music
Powley	Media	Service	Art	Music	PE	PE	Media	Service	Art	Music	STEM	STEM	STEM	STEM	STEM

STEM Special Scheduling

- 13-14 classes per grade level
- 2 separate blocks per grade level
- 7 specials
- Weekly specials rotation

Time	Team	Teacher	8/15 - 8/18	8/22-8/26
7:45 - 8:30	Otters 4th Grade	Ludewig	PE Kline	Drama
		Wiggins	Library/Guidance	PE Kline
		DePetris	STEM	Library/Guidance
		Ledford	Music	STEM
		Carrano	PE Bell	Music
		McCaskill	Art	PE Bell
		Open	Drama	Art
8:30 - 9:15	Manta Rays 4th Grade	Brown	PE Kline	Drama
		Oliver	Library/Guidance	PE Kline
		Maeder	STEM	Library/Guidance
		Lineman	Music	STEM
		Malcolm	PE Bell	Music
		Lewis	Art	PE Bell
		Ciel	Drama	Art



**What schedule fits your
needs?**



Classroom Organization and Storage



Organization by Consumable Items



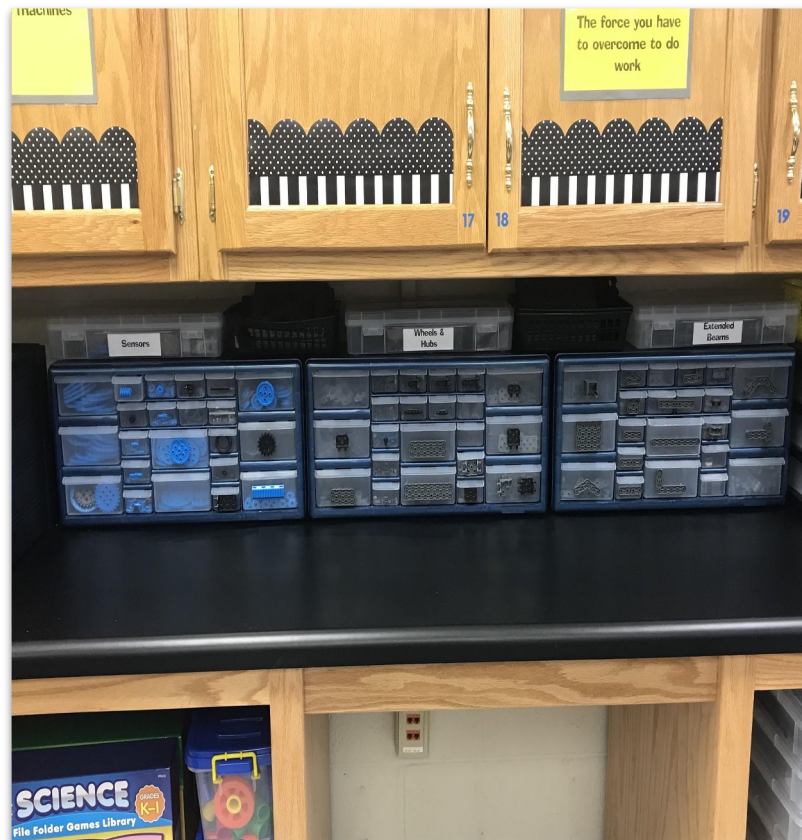
Organization by Kits or Modules



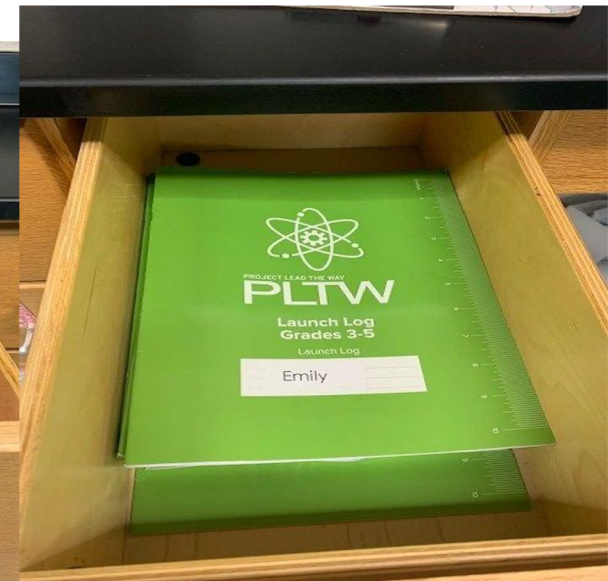
VEX IQ Kits



VEX IQ Kits



Launch Logs Storage



Unfinished Projects



Agenda, Standards, Objectives, Lesson Goals

Kindergarten

- How can plants and animals impact their natural environment to meet their needs?
- How can humans lessen their negative impact on the natural environment?
- How can a step-by-step process help you design or improve a solution to a problem?

First Grade

- Why do animals communicate as they do?
- How can nature inspire solutions to human problems?
- How can a step-by-step process help you design or improve a solution to a problem?

Second Grade

- How do scientists learn about the world?
- How do diverse habitats meet the needs of organisms?
- How can a step-by-step process help you design or improve a solution to a problem?

Third Grade

- In what ways do forces impact your daily life?
 - How do machines make life easier?
- How can a step-by-step process help you design or improve a solution to a problem?

Fourth Grade

- In what ways do human interactions impact Earth?
 - How do natural hazards impact Earth?
- How can a step-by-step process help you design or improve a solution to a problem?

Fifth Grade

- How can automation and robotics be used to protect the Earth's resources and environment?
- How can the engineering design process be applied in daily life?

STANDARD K-ESS3-1
Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.

STANDARD K-ESS2-2
Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.

STANDARD 1-LS1-2
Obtain information from multiple sources to determine patterns in parent and offspring behavior that help offspring survive.

STANDARD 1-ESS1-2
Make observations at different times of year to measure the amount of daylight to the time of year.

STANDARD 2-PS1-3
Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.

STANDARD 2-PS1-2
Analyze data obtained from tests to determine which materials have the best properties for an intended purpose.

The Pieces of STEM

Science
The study of the natural world

Technology
A product created to solve a problem

8:00-8:30 4th Grade
11:40-12:20 3rd Grade
1:40-2:20 5th Grade

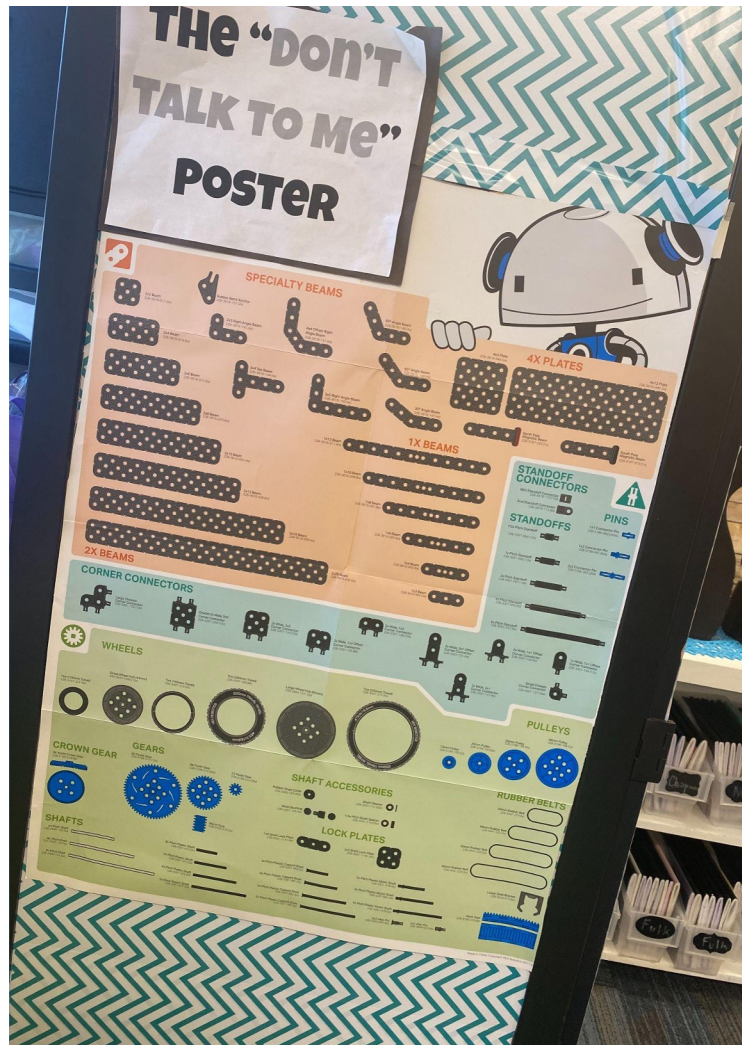
A. Vogel D-Strandbeck
B. English S. Schaefer
C. Bryant S. A. Brown

Guiding Questions:

- How do plants and animals adapt to their environments?
- What is the difference between invention and innovation?
- How does technology impact our lives?
- What is the difference between hardware and software? How does a computer process text and images?

K: How does the structure of an object impact its function?

Pre-K: What are some direction words?





The Don't Talk to Me Poster






- Used for VEX
- Same size, shape, and color
- Available in each Vex IQ kit


How do you organize your STEM classroom?

STEM Collaborative Planning


Elementary STEM Curriculum








STEM Teaching Resources

Planning	Module Examples	Additional Resources
<p>Click the grade level icon below for quick access to the module resources. You will find the module overview, materials needed, vocabulary cards, and module examples connected to each module.</p> <div style="display: flex; justify-content: center; gap: 10px;"> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;">CD</div> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;">K</div> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;">1st</div> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;">2nd</div> </div> <div style="display: flex; justify-content: center; gap: 10px; margin-top: 5px;"> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;">3rd</div> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;">4th</div> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;">5th</div> </div>	<p>Click here for examples of activities and projects for each of the modules. This will help in your planning to see what student samples may look like from each module. This is a live document that will continue to be built as examples are shared.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;">  </div> <p>If you would like to add examples, please email them to kinman@horrycountyschools.net.</p>	<p>STEM Safety</p>  <p>Standards: Digital Literacy Science Social Studies ELA Math</p>
<p>Science Practices</p> 	<p>Crosscutting Concepts</p> 	<p>Engineering Design Process</p> 



Curriculum Documents

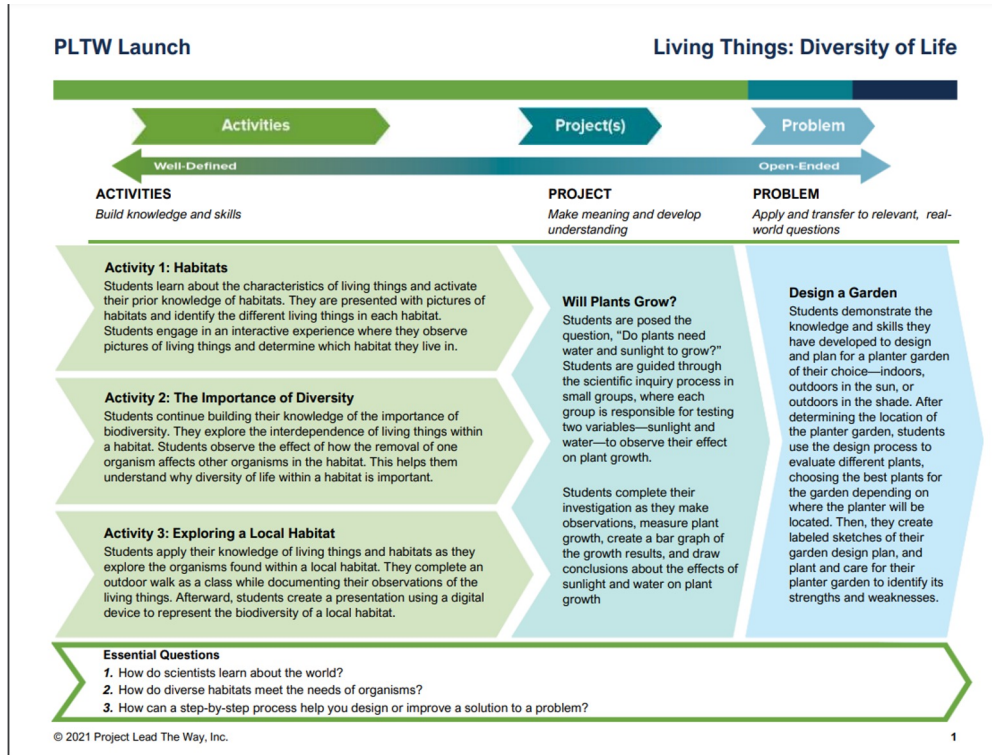
Kindergarten

<div style="border: 2px solid green; padding: 10px; width: 80px; margin: 0 auto;"> <div style="text-align: center; font-weight: bold; color: green;">K</div>  <div style="text-align: center; font-weight: bold; color: green;">TEACHER</div> </div>	<p>Animals and Algorithms</p> <p>Module Overview Materials Vocabulary Examples</p>	<div style="border: 2px solid green; padding: 10px; width: 80px; margin: 0 auto;"> <div style="text-align: center; font-weight: bold; color: green;">K</div>  <div style="text-align: center; font-weight: bold; color: green;">TEACHER</div> </div>	<p>Living Things: Needs and Impacts</p> <p>Module Overview Materials Vocabulary Examples</p>	<div style="border: 2px solid green; padding: 10px; width: 80px; margin: 0 auto;"> <div style="text-align: center; font-weight: bold; color: green;">K</div>  <div style="text-align: center; font-weight: bold; color: green;">TEACHER</div> </div>	<p>Pushes and Pulls</p> <p>Module Overview Materials Vocabulary Examples</p>
<div style="border: 2px solid green; padding: 10px; width: 80px; margin: 0 auto;"> <div style="text-align: center; font-weight: bold; color: green;">K</div>  <div style="text-align: center; font-weight: bold; color: green;">TEACHER</div> </div>	<p>Structure and Function: Exploring Design</p> <p>Module Overview Materials Vocabulary Examples</p>	<div style="border: 2px solid green; padding: 10px; width: 80px; margin: 0 auto;"> <div style="text-align: center; font-weight: bold; color: green;">K</div>  <div style="text-align: center; font-weight: bold; color: green;">TEACHER</div> </div>	<p>Structure and Function: Human Body</p> <p>Module Overview Materials Vocabulary Examples</p>	<div style="border: 2px solid green; padding: 10px; width: 80px; margin: 0 auto;"> <div style="text-align: center; font-weight: bold; color: green;">K</div>  <div style="text-align: center; font-weight: bold; color: green;">TEACHER</div> </div>	<p>Sunlight and Weather</p> <p>Module Overview Materials Vocabulary Examples</p>

But what if I am alone, an island?



APB Overview, Planning Tools, PD Suite



Supplements and Additions



Awards

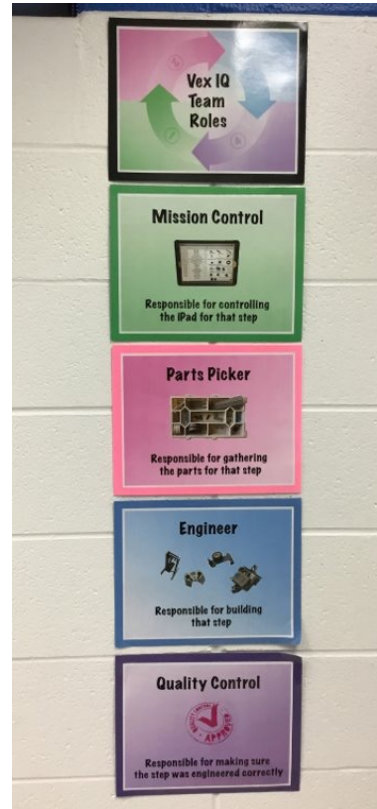
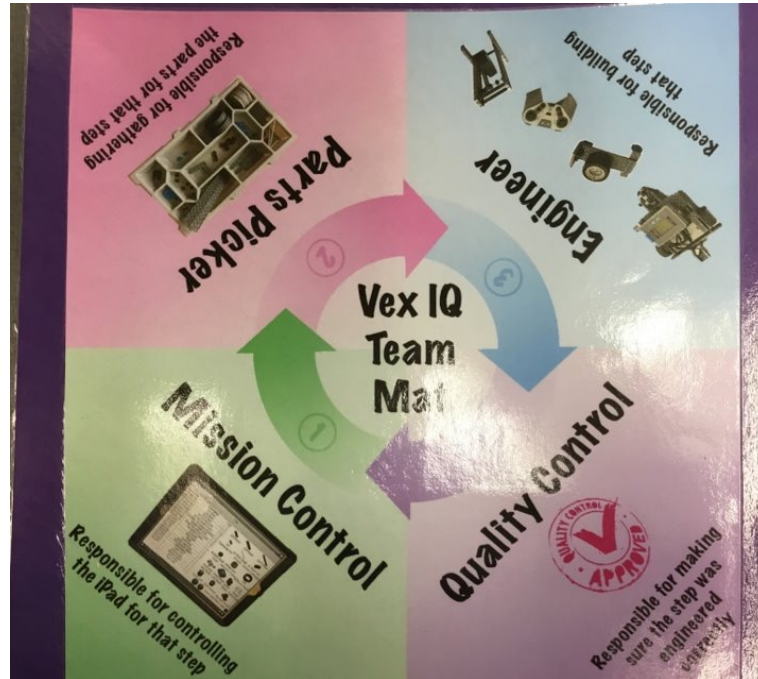


- Success/failure
- Turn to...
- What if we had...
- I wish I would have...
- 5th grade redo

Grouping Strategies

- When to group?
- Why to group?
- How to group?

VEX IQ Team Roles



vex Kit Jobs

***After each cycle remember to rotate roles within your group. Ex.: Builder becomes Quality Control, Quality Control becomes Parts, Parts becomes Preview. Every time a step is completed you move down the list. Continue this pattern until your build is complete! Good luck!

1. What do I do if I'm the **builder**? I get to build or put the pieces together for the step we are on.
2. What do I do if I'm **quality control**? I am the person responsible for making sure that the step was assembled correctly.
3. What do I do if I'm the **parts person**? I am responsible for getting the parts out of the kit for the next step.
4. What do I do if I'm in charge of **preview**? I am responsible for informing the parts person of the pieces that are needed from the kit.
5. What do I do if I'm the **ipad keeper**? I am responsible for making sure that the iPad is being used correctly and I am helping out with other jobs as needed.

Questions?

Contact Us



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