

**PIEPIXELZ**

Partner of VEX Robotics International

# ROBOTICS

## UNDERSTAND TECHNOLOGY BY PLAYING



**Piepixelz**

Robotics solutions, STEM programs,  
training, and implementation support

[www.piepixelz.com](http://www.piepixelz.com) | [speak2mrpie@gmail.com](mailto:speak2mrpie@gmail.com)

VEX 123

# VEX 123

## Coding as Easy as 123!

VEX 123 is an interactive, programmable robot that takes Computer Science and Computational Thinking off of the screen and brings them to life.



### 3 Ways to Code a VEX 123 Robot

- 1 The 123 robot can learn sequences by simple touch. Control movements and sounds to learn basic logic and problem solving.

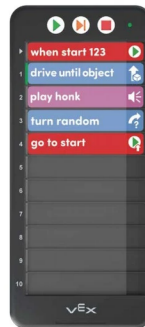


- 3 Powered by Scratch Blocks VEXcode 123 - available for tablets, Chromebooks, Mac and Windows devices - allows you to unlock the full power and capabilities of your 123 robot.



Ages 4+

- 2 No Devices? No Problem! The 123 robot is programmable without a computer. Using the VEX Coder and physical cards, you can learn real programming away from screens.



[www.piepixelz.com](http://www.piepixelz.com)

VEX 123

## Clutter-Free Classroom

Classroom organisation starts with having the **right storage solutions**. The VEX 123 Classroom Bundle comes with custom carry bags, bins, and a 6-Port USB charge case giving teachers the mobility to teach from class to class without having to add clutter to their space.

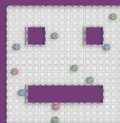


## Robot Play Spaces Reinvented

Developed with your classroom in mind, the VEX 123 Fields allow for easy implementation. From floor to table, set up the 123 field in any area for maximum engagement and controlled play spaces.

Fun and Durable Field Tiles

Configure into Any Size or Shape



### VEX 123 Kits



#### Includes:

- (1) 123 Robot
- (1) 123 Coder
- (1) 123 Robot Arts & Crafts Attachment
- (1) USB Cable (A to C, 1m)
- (1) 123 Programming Cards (50-pack)

### VEX 123 Classroom Bundles

Bundle Size	Small Classroom	Classroom	Large Classroom
# of Students	12	24	36
Robots	6	12	18
Coders with Batteries	6	12	18
Coder Cards (50-pack)	7	14	21
Fields (12 tiles, 24 walls)	3	6	9
Carrying Cases for everything	1	2	3
Charging Stations, AC Adapters	1	2	3
Coder Card Storage Boxes	1	2	3
Robot Arts & Crafts Rings	6	12	18
Coding Posters	1	2	3

VEX GO



Ages 8+

VEX GO

An affordable construction system that teaches the fundamentals of STEM through fun, hands-on activities that help young students experience coding and engineering in a fun and positive way!

## Empower Your Primary Students by Building a Robot within Minutes!



### Inspiring

Includes fun, collaborative, hands-on, minds-on activities that encourage all students to participate



### Creative

With VEX GO, kids can imagine new ways to create while identifying unique patterns and relationships



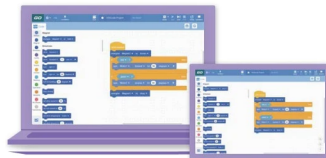
### Approachable

Minimal instructions needed before students can open VEX GO and begin.



## VEX GO Features

- Standards-aligned, 40 minute lessons
- Colour-coded pieces so students can easily identify build parts
- Simplified builds so teachers can focus more on the lessons and not on the clean up



### Build it



### Power it



### Code it



VEX GO Classroom Bundles

## Free with Every GO Kit

- Professional Development
- Educational Content
- Coding & Classroom APP
- Online Knowledge Base

### VEX GO Kit With Storage



Includes:

- (1) Brain & Rechargeable Battery
- (3) Motors, Eye Sensor, LED Button
- (1) Electromagnet with (3) Game Disks
- (280) Construction Pieces & (1) Pin Tool
- (1) Field Tile
- (2) Stackable Storage Cases
- (6) Jewel Cases for Small Parts
- (2) Part Locator Sheets

Single Kit  
269-6705  
1-2 Students

### VEX GO Classroom Bundle

Bundle Size	Small Classroom 269-7781	Classroom 269-7783	Large Classroom 269-7782
# of Students	10	20	30
Carrying Cases	1	2	3
Go Kits, Storage, Field Tile	5	10	15
Spare Parts Bin+extra parts	1	2	3
Charger for all 5 batteries	1	2	3
Carrying case for fields, walls	1	2	3
Walls for the classroom Field	12	24	36
Extra Pin Tools	5	10	15
Parts Posters	1	2	3

# VEX CODE VR

From Classroom to Remote Learning, VEXcode VR brings Computer Science to Your Students any time, any place.

[cs.vex.com](https://cs.vex.com)



**1,000,000+**

Unique Users

**4.5M+**

Coding Sessions

**55M+**

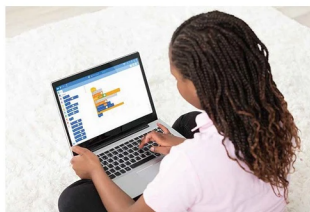
Projects Run

**168+**

Countries with Active Users

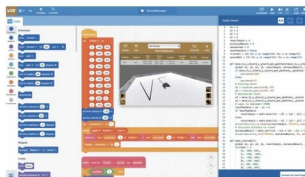
## Computer Science + Robotics

VEXcode VR lets you code a virtual robot using a block based coding environment powered by Scratch Blocks and a text based coding powered by Python. VEXcode VR is based on VEXcode, the same coding environment used for VEX 123, GO, IQ and V5 robots. We all know that robots make Computer Science (CS) come to life with real world applications. Now STEM learning can continue while at home for students, teachers and mentors with no access to their VEX robots.



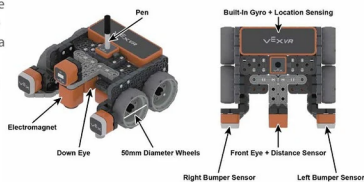
## VEXcode VR Features

- **Web Based:** No software installations required. VEXcode VR works in all major desktop and tablet browsers.

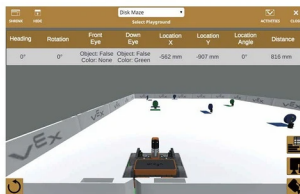


## VEX CODE VR

• **Bring Computer Science to life:** The VEXcode VR Robot is equipped with multiple sensors to help the robot solve challenges. Real-time data on the Dashboard provides important sensor information and that feedback helps students iterate their code to improve their robot's performance.



• **Encourage Experimentation and Play:** The **Virtual 3D Playgrounds** contextualizes STEM learning. Code the virtual robot to complete different challenges. Use the pen feature on the art canvases to code a creative drawing, use the electromagnet sensor to transport disks, use the eye sensors to detect colors or lines, or create an algorithm to solve a dynamic maze!



### Advanced

#### Cross Every Number

01	02	03	04	05	06	07	08	09	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

#### Playground: Numbered Grid Map

##### Challenges:

- Level 1:** Program the VR Robot to cross off each number from 1-100 in any order. Use the Pen to mark each number as the VR Robot passes through.
- Level 2:** Program the VR Robot to cross off each number from 1-100 in numerical order. Use the Pen to mark each odd number red and each even number blue as the VR Robot passes through.
- Level 3:** Program the VR Robot to cross off each number from 1-100 in alternating colors. Use the Pen to mark each odd number red and each even number blue as the VR Robot passes through.

##### Helpful Hints:

- Each square in the Numbered Grid Map measures 200mm by 200mm.
- Want to use less blocks? Try including blocks from the Control category like the Repeat block.



vex.com/vr

#### • Challenges and Activities:

Access a library of easy to follow coding activities. Available in Google Docs for your customization.

#### • Computer Science Fundamentals Course:

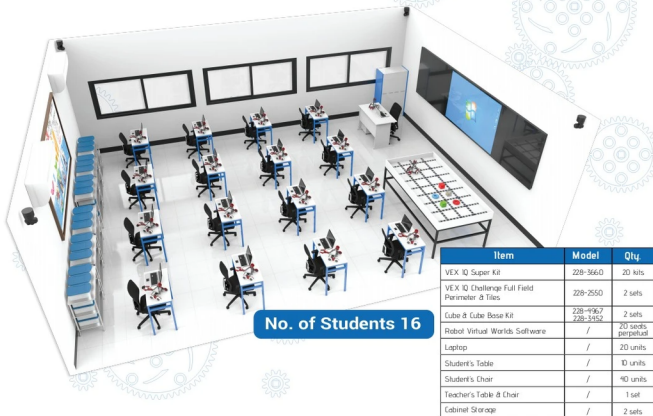
Begin the journey into learning Computer Science with our 100% web-based resources. Support self-directed learning without the need for logins or accounts.

#### • Educator Certification Course:

A self-paced, online course designed for educators looking to implement Computer Science and VEXcode VR into any learning environment.

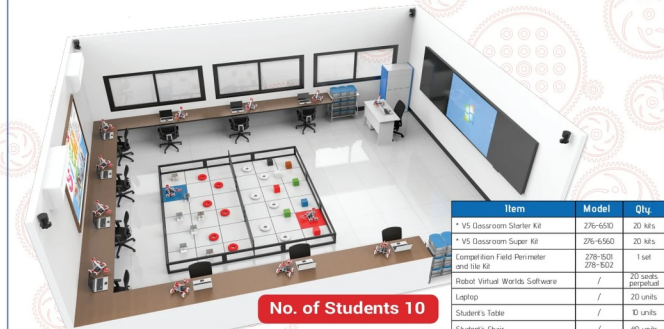
## 21<sup>st</sup> Robotics Laboratory Set up

### VEX IQ (Elementary/Middle School)



Item	Model	Qty.
VEX IQ Super Kit	Z8-3660	20 kits
VEX IQ Challenge Full Field Perimeter & Start	Z8-2550	2 sets
Cube & Cube Base Kit	Z8-1967 Z8-1952	2 sets 20 sets per/total
Robot Virtual Worlds Software	/	/
Laptop	/	20 units
Student's Table	/	10 units
Student's Chair	/	40 units
Teacher's Table & Chair	/	1 set
Cabinet Storage	/	2 sets

### VEX VS (Middle School/High School/ University)



Item	Model	Qty.
* VS Classroom Starter Kit	Z76-6630	20 kits
* VS Classroom Super Kit	Z76-6560	20 kits
Competition Field Perimeter and Start Kit	Z78-501 Z78-502	1 set
Robot Virtual Worlds Software	/	20 seats per/total
Laptop	/	20 units
Student's Table	/	10 units
Student's Chair	/	40 units

VEX IQ

VEX IQ

Ages 11+

The World Leader in STEM Education

VEX IQ enables classroom and competitive robotics that inspire students with a complete STEM experience, developing creativity & innovation.



### IQ Robotics Construction System

- Designed to teach STEM
- Snap together parts are perfect for young builders
- Classroom robots are quick to build and learn
- Competition robots are more robust and exciting
- Prior robotics experience not required

#### Robotics is STEM

- Learn Computational Thinking
- Learn Computer Science
- Learn from Failure
- Learn to Iterate

### IQ Kits Have Everything You Need

- The Super Kit keeps groups of 2-4 students highly engaged
- The Competition Super Kit will kickstart any new team

#### Free with Every Robot

- Professional Development
- Educational Content
- Coding Software
- Online Knowledge Base

### IQ Components are the Essentials of STEM

- Electronics to program robots and drive wirelessly
- Motors and wheels to get your robot moving
- Structural parts to bring your creation together
- Sensors allow your robot to react to the real world

## Super Kit

Recommended for Robotics Students

- IQ Control System
- 4 Smart Motors
- 7 Sensors
- 4 Wheels
- 800+ Robot Parts
- 1 Storage Bin & Tray



**Single Kit**  
228-3660  
2-4 Students

**Bundle of 12**  
plus 2 Cube Kits  
228-7399  
15-30 Students

## Competition Super Kit

Recommended for Competition Teams

- IQ Control System
- 6 Smart Motors
- 7 Sensors
- 16 Wheels
- 1,900+ Robot Parts
- 2 Storage Bins & Trays



**Single Kit**  
228-7670  
One Team



### Professional Development - VEX Certified Educator Program

[certifications.vex.com](https://certifications.vex.com)

*14,000 teachers and mentors successfully trained in teaching educational robotics.*

Educators are lifelong learners. VEX offers free, online training that helps educators at all different ability levels.

Experience fun and engaging lessons while supporting students as they become proficient with the VEX Robotics system. By the end of the VEX Certified Educator program, you will be fully prepared to implement educational robotics and become a technology and innovation leader within your school and community.



### Educational Content - STEM Labs

[education.vex.com](https://education.vex.com)

*Our educational materials are used by millions of students worldwide, in 22,000 institutions.*

VEX Robotics created STEM Labs as a supplemental educational resource, to support educators with free, easy to follow STEM lessons that align with educational standards. Each STEM Lab contains fun, hands-on lessons with guided explorations that encourage teamwork and collaboration. The Teacher Portal contains instructional planning and support that includes assessments, lesson planning, daily guidance for instruction, strategies for differentiating instruction, answer keys, and integrated teacher notes.



### Programming Software - VEXcode

[code.vex.com](https://code.vex.com)

*Our programming software for robotics has over 1.6 million installations worldwide.*

From primary through university, VEXcode is an intuitive coding environment that meets students at their level. VEXcode is consistent across all VEX hardware platforms. As students progress they never have to learn a different blocks, code, or toolbar interface. As a result, students can focus on having fun while creating with technology, without having to learn a new coding environment.



### Support - Online Knowledge Base (Email, Chat, and Phone too)

[help.vex.com](https://help.vex.com)

*We listened. When you need assistance, you need it now.*

The Knowledge Base contains hundreds of helpful articles, answers to common questions, engineering know-how, tips and tricks. Everything you ever wanted to know about VEX: Getting started, hardware, robot building, software, education, and competition. All online at [help.vex.com](https://help.vex.com), no phone call needed.

### VEX Competitions

[competitions.vex.com](https://competitions.vex.com)

*Guinness World Records® holder for the World's Largest Robotics Competition*

VEX Robotics competitions combine the natural hook of educational robotics with the fun and excitement of collaborating and competing with friends and peers. While competing either in primary, secondary, college or university students will create memories and friends for a lifetime. They will also learn skills and concepts that will carry with them long after they are done competing.



**24,000**  
Participating  
Teams



**1,000,000**  
Students  
Reached  
Annually



**60+**  
Countries  
Represented



**22,000**  
Participating  
Schools



VEX V5

VEX V5

Ages 14+

The World Leader in STEM Education  
**VEX V5** for ages 13-18, enables engaging classroom & competitive robotics that inspires students with a complete STEM experience, ensuring workforce & university preparedness.



### Teaching with V5 Robotics Construction System

- Designed to teach advanced STEM
- Metal parts are perfect for older builders
- Classroom robots are fun to build and learn
- Competition robots are more robust and exciting

### V5 Control System Provides Advanced Learning Options

- Robot Brain has interactive colour touch screen
- Wireless driving and programming
- Smart Motors are more precise and powerful

### V5 Components are the Essentials of STEM

- Multiple wheels, chains, and tread options for advanced robots
- Steel structural parts are cost effective for classrooms
- Aluminium structural parts are lightweight for competitions

### Robotics is STEM

- Learn Computational Thinking
- Learn Computer Science
- Learn from Failure
- Learn to Iterate

### Free with Every Robot

- Professional Development
- Educational Content
- Coding Software
- Online Knowledge Base

## Classroom

Recommended for Students New to Robotics

- V5 Control System
- 4 Smart Motors
- 2 Sensors

**Single Kit**  
 276-7110  
 2-4 Students

**Bundle of 6**  
 276-7176  
 12-24 Students



## Competition

Recommended for New Competition Teams

- V5 Control System
- 4 Smart Motors
- 2 Sensors

**One New Team**  
 276-7130



Starter Kits

Recommended for Students with Experience in Robotics

- V5 Control System
- 1 Vision Sensor
- 6 Smart Motors
- 7 Sensors

**Single Kit**  
 276-7100  
 2-4 Students

**Bundle of 6**  
 276-7186  
 12-24 Students



Recommended for Advanced Competition Teams

- V5 Control System
- 1 Vision Sensor
- 8 Smart Motors

Does not include V5 Claw Kit

**One Advanced Team**  
 276-7140



Super Kits

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[certifications.vex.com](https://certifications.vex.com)

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**22,000**  
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Schools



VEX V5

VEX V5

Grades 9+

### The World Leader in STEM Education

VEX Robotics and the REC Foundation are bridging the gap between classroom and workforce while fueling industry 4.0 technology and tomorrow's innovators. VEX provides proven robotics technology, and REC Foundation created the Factory Automation Competition.

### Workforce Development

- Improves workforce education globally
- Provides a clear path for student careers
- Closes the manufacturing skills gap

### Career and Technical Education

- Career training for high school and 2-year colleges
- The VEX Workcell Kit provides everything needed
- Includes hardware, software, curriculum, teacher training, and support

### How it Works

- STEM Labs guide students to design, build, and code a manufacturing workcell
- Teams of 4 students compete in the classroom for global competition ranking
- Students gain valuable skills in communication, problem-solving, and teamwork



VEX Robotics students earn manufacturing industry certifications 50% faster than other students

Source: (NATEC, 2019)

### Classroom

VEX Robotics has leveraged our 5th generation robotics platform, VEX V5, to the task of Automation Robotics. Using the wealth of robotics electronics, motors, sensors, mechanical and motion components, we developed the Workcell specifically for Career and Technical Education. Tied in with our successful VEXcode programming software, students can learn Factory Automation concepts in an approachable manner.



V5 Workcell Kit  
276-7900

Optional Storage  
Solution

### Includes a complete kit for the Workcell, STEM Labs, and the Factory Automation Competition

- VEXcode programming software
- Competition registration for the first year
- Designed for groups of 4 students

### Kit Includes

- (1) V5 Brain & Battery
- (4) V5 Smart Motors (11W)
- (8) V5 Smart Motors (5.5W)
- (18) V5 Sensors
- (1) V5 Electromagnet
- (36) Weighted Discs
- (3500) Construction Components

### Professional Development - VEX Certified Educator Program

[certifications.vex.com](http://certifications.vex.com)

14,000 teachers and mentors successfully trained in teaching educational robotics. At VEX, we are proud that we have certified thousands of educators all over the world. The VEX Certified Educators program is online, allowing you to learn how, when, and where you want. The VEX Workcell Certified Educator program is a free, self-paced online learning experience that you can access from anywhere. You'll learn specifics about the V5 Workcell, the sensors it utilizes, and how to utilize the STEM Labs within your classroom. When completed, you'll earn a certificate that you can then share with the world.

Coming March 2021



### Educational Content - STEM Labs

[education.vex.com](http://education.vex.com)

Our educational materials are used by millions of students worldwide, in 22,000 institutions. Our educator resources include high-quality instructional materials, professional development, and the VEX Knowledge Base to give you everything you need to become a STEM leader. Our STEM Labs foster engagement within the classroom, providing a complete STEM experience, ensuring workforce development and college preparedness.

### Programming Software - VEXcode

[code.vex.com](http://code.vex.com)

Our programming software for robotics has over 1.6 million installations worldwide. From elementary school through college, VEXcode is a coding environment that meets students at their level. The intuitive layout of VEXcode allows students to get started quickly and easily. VEXcode's Block-based interface is the perfect platform for those new to coding or the VEX V5 Workcell. Each block's purpose can easily be identified using the visual cues like its shape, color, and label. Students use a simple drag and drop interface to perform tasks and solve challenges with the V5 Workcell.



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### Factory Automation Competition

[roboticseducation.org/fac](http://roboticseducation.org/fac)

The FAC program is a classroom-based competition that provides students with the skills needed for today's advanced technical workforce. This unique new robotics competition provides curriculum and educator resources while students develop technical and problem solving skills by designing and building a simulated manufacturing workcell with five axis robots.



Manufacturing Skills



STEM Principles



Communication



Teamwork



# PIEPIXELZ

VEX Robotics partner edition catalog

## About Piepixelz

Piepixelz is a technology company delivering robotics, STEM learning, education technology, and digital innovation solutions.

We support schools, institutions, and programs with hands-on robotics experiences, training, and implementation support.

This edition presents VEX Robotics solutions through Piepixelz for education, training, and program delivery.

## Contact

### Website

[www.piepixelz.com](http://www.piepixelz.com)

### Email

[speak2mrpie@gmail.com](mailto:speak2mrpie@gmail.com)

## Partnership Note

Piepixelz helps institutions adopt VEX Robotics solutions for STEM learning, coding, robotics programs, and competition readiness.

## What We Support

- Robotics programs for classrooms, labs, and training centers
- STEM activation, coding initiatives, and competition support
- Education technology and digital learning solutions
- Consulting, deployment, and partner-led implementation