VEX IQ

Providing the **tools**
to inspire the
problem solvers
of tomorrow.

π

Simple. Flexible. Powerful.

Contents

WHY VEX IQ?

VEX IQ is a snap-together robotics system designed to offer young students a rich and exciting introductory platform to the areas of science, technology, engineering and math (STEM). By encouraging essential life skills such as teamwork, problem solving, and leadership, this system specializes in both preparing and challenging students ages 8 through 14.
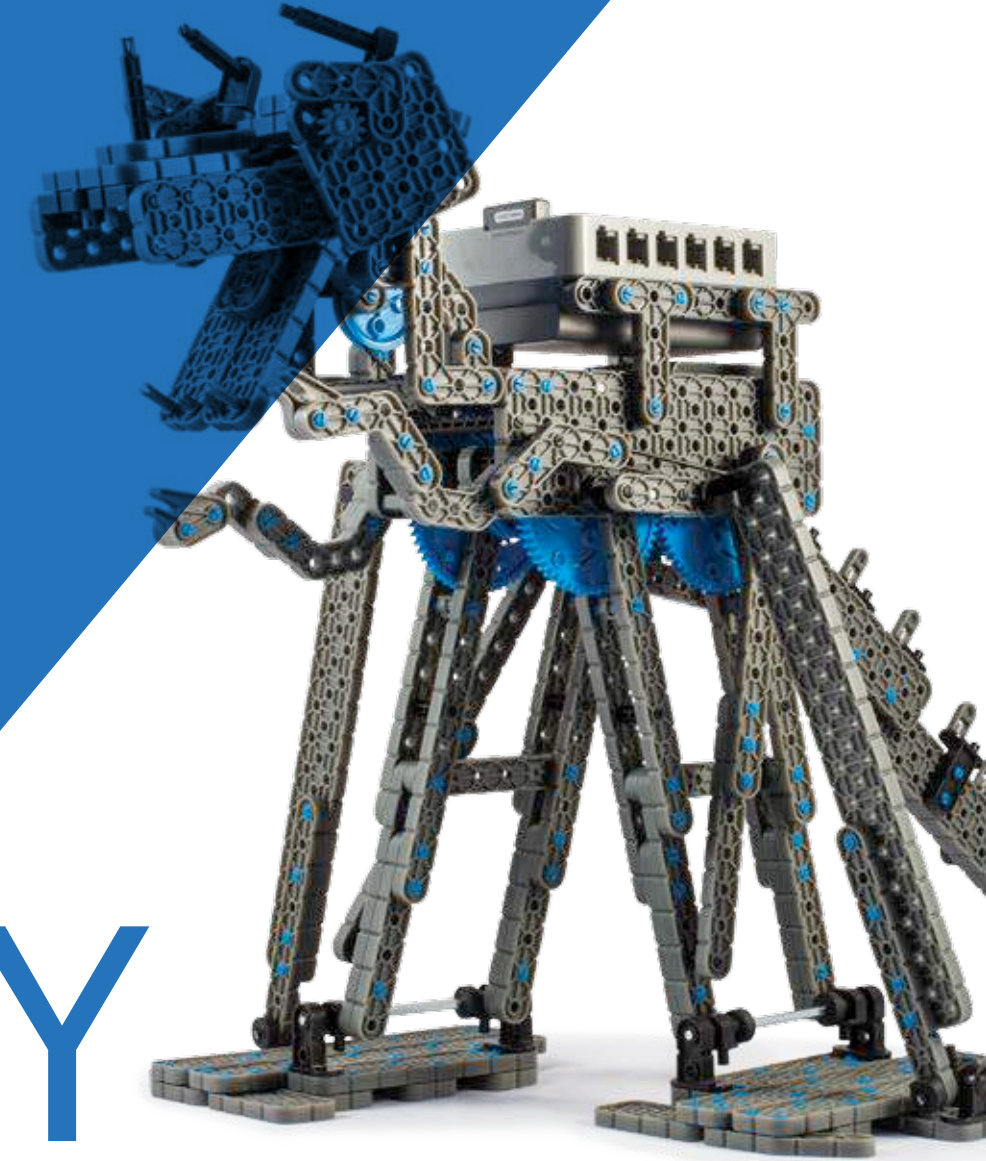
Simple. Flexible. Powerful.

VEX IQ
Kits & Bundles

Take the complications out of design and construction with tool less, snap-together pieces that allow students to **build, drive** and **program** robots in a matter of minutes.

With 850+ components and programming software included in each kit, the possibilities are endless as to what students can create!
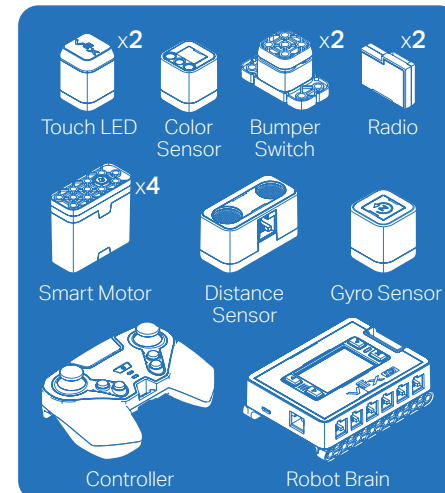
*Super Kit contents shown.

To configure the Kits & Bundles, please visit **www.vexiq.com**, or scan the quick shop QR code to be taken directly to the product overview page.

Super Kit

QUICK SHOP

Touch LED   Color Sensor   Bumper Switch   Radio

Smart Motor   Distance Sensor   Gyro Sensor

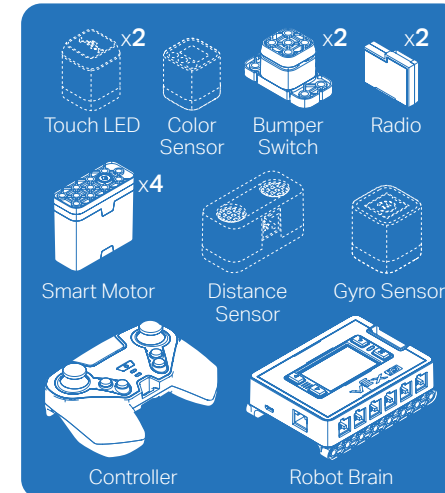Controller   Robot Brain

The Ultimate Robotics Kit

The Super Kit takes educational robotics to the next level. Students can use the familiar hand held Controller with the pre-programmed code to drive robots right out of the box, or program them to run autonomously using the additional Smart Sensors.

- Over 850 Structural and Motion Components
- Included graphical instructions to build the Clawbot IQ
- Storage Bin and Tray included for organization of all parts
- Includes robot programming software options

Super Kit   228-2500 $329.⁹⁹

Starter Kit with Controller

QUICK SHOP

Touch LED   Color Sensor   Bumper Switch   Radio

Smart Motor   Distance Sensor   Gyro Sensor

Controller   Robot Brain

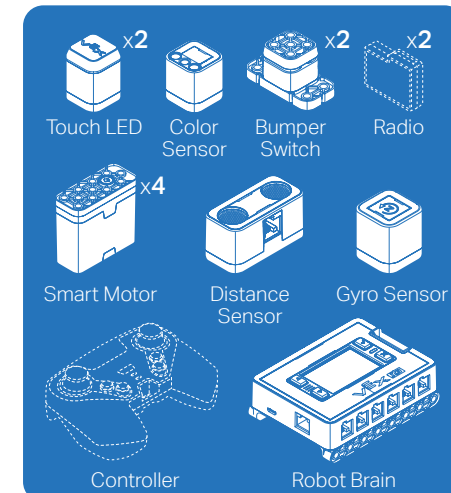### Build and drive your first robot

The Starter Kit with Controller is a focused introduction to STEM and robotics. Students can use the hand held Controller with the pre-programmed code to drive robots right out of the box.

- Over 850 Structural and Motion Components
- Included graphical instructions to build the Clawbot IQ
- Storage Bin and Tray included for organization of all parts
- Includes robot programming software options

Starter Kit with Controller   228-3060 $279.⁹⁹

Starter Kit with Sensors

QUICK SHOP

Touch LED   Color Sensor   Bumper Switch   Radio

Smart Motor   Distance Sensor   Gyro Sensor

Controller   Robot Brain

Build and program your first robot

The Starter Kit with Sensors is a focused introduction to STEM and sensor integration. Students can use the included Smart Sensors to program autonomous robots right out of the box.

- Over 850 Structural and Motion Components
- Included graphical instructions to build the Clawbot IQ
- Storage Bin and Tray included for organization of all parts
- Includes robot programming software options

Starter Kit with Sensors   228-3080 $279.⁹⁹

Classroom Bundle

Implement a 12-team STEM solution into your classroom

Images not to scale.

Perfect for a group of 24 students (working in pairs), this discounted bundle contains everything needed to start building robots in your classroom, after school club, or summer STEM camp.

- (12) Super Kits - Over 10,000 pieces total!
- (2) Cube Kits
- Includes robot programming software options

Classroom Bundle	228-4000	$3,849.99

Competition Add-On Kit

Images not to scale.

The best VEX IQ expansion bundle for competitive teams. Complements a Super Kit with the advanced motion components needed to gain a competitive edge.

- Omni-Directional Wheels allow for complex drives
- Chain & Sprocket Kit helps create more elaborate mechanisms
- Over 8 feet of tank tread and chain

Competition Add-On Kit	228-3600	$99.99

Foundation Add-On Kit

Images not to scale.

The ideal kit for expanding a VEX IQ collection. Allows for creation of new robot mechanisms and teaching of additional lessons.

- Contains over 1,000 VEX IQ components
- Structural and motion components included
- Includes Storage Bin and Tray

| *Foundation Add-On Kit*	228-2531	$79.99

Stay connected to VEX Robotics!

3D Printing

Engineers and designers at VEX Robotics often use 3D printing technology to prototype, test, refine, and iterate our products before they are released. 3D printing technology allows computer models to be quickly turned into real world prototypes. We are excited to support the VEX community's desire to customize and extend their VEX IQ experience through the use of custom 3D printed elements.
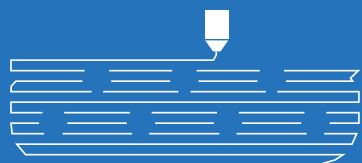
CAD

Many teams choose to use CAD to mock up their creation before the physical building begins. We are happy to offer teams with the official CAD library of VEX IQ solid models online. The files are in the universal STEP format, compatible with SolidWorks, Autodesk® Inventor™, and most other CAD software packages. Users can download files in individual packs by part type or as one large ZIP file.
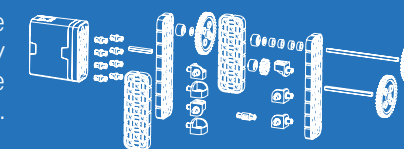
Unleash the full potential of VEX IQ with programming software!

Robots provide a **hands-on activity** that directly involves students in the learning process and allows them to take ownership of their STEM education. Robots built with VEX IQ sensors bring **code** to life and shows students how **math & engineering** can come together to form a solution to a real problem.
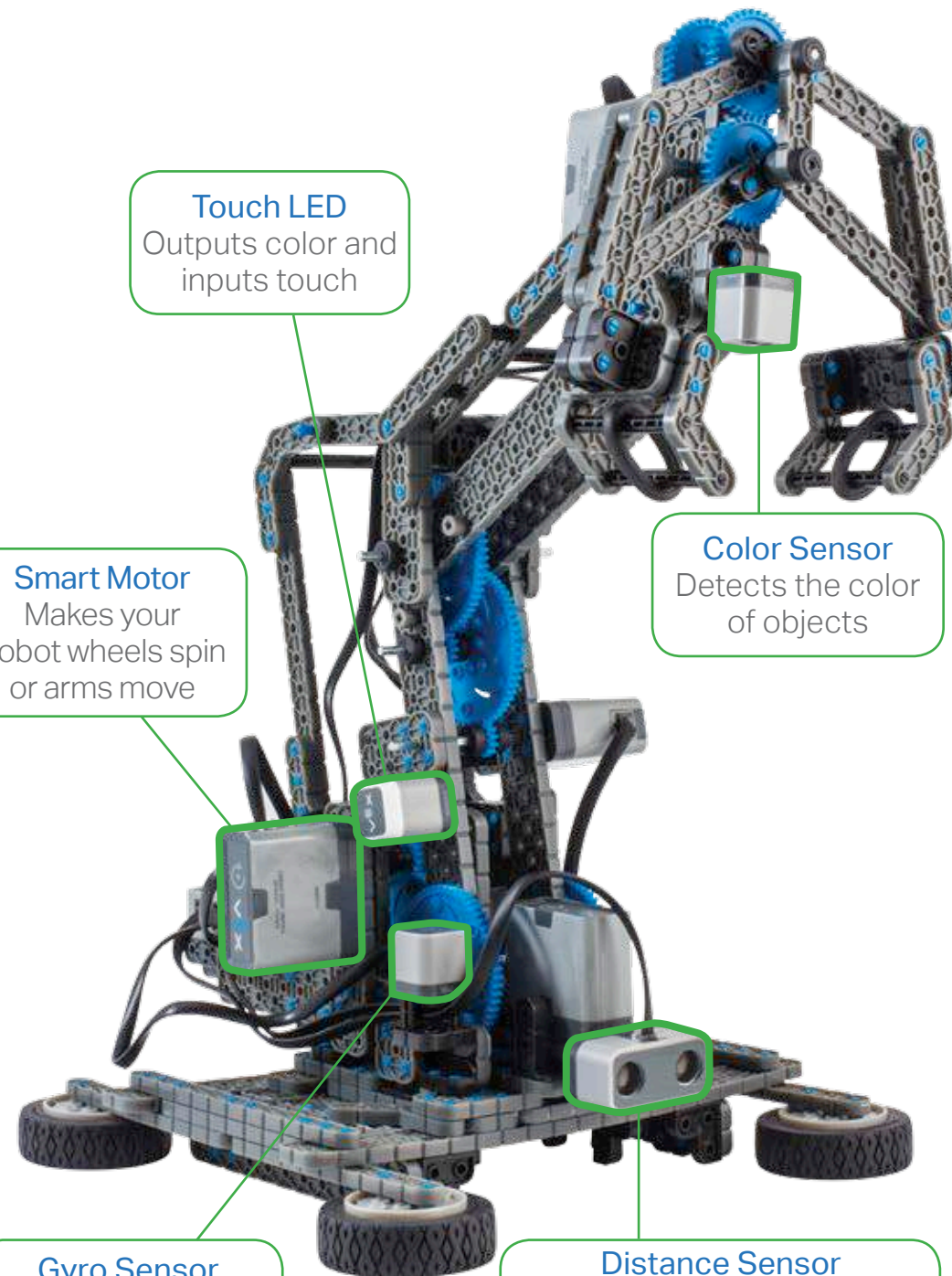
Touch LED
Outputs color and inputs touch

Smart Motor
Makes your Robot wheels spin or arms move

Color Sensor
Detects the color of objects

Gyro Sensor
Measures turn rate and calculates direction
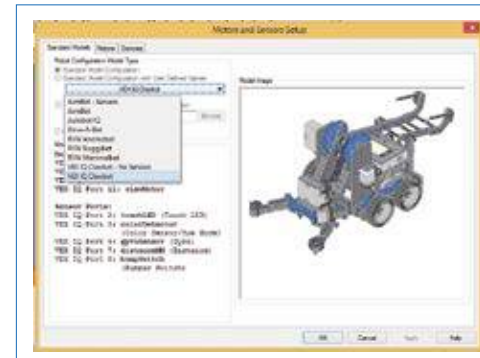
Distance Sensor
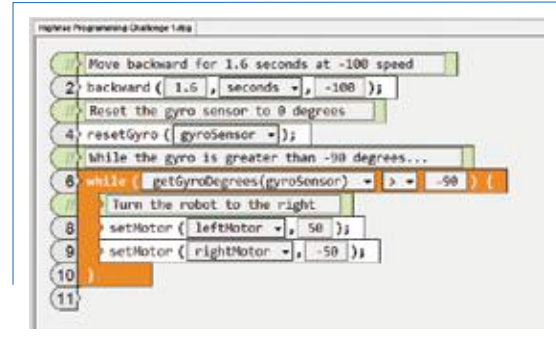Uses ultrasonic sound waves to measure distance

QUICK SHOP

ROBOTC for VEX Robotics 4.x (VEX EDR & VEX IQ)

ROBOTC for VEX Robotics 4.x by Robomatter Inc. allows users to program their VEX IQ robots using a brand new graphical drag-and-drop programming interface, or the popular industry standard C-based ROBOTC programming language – all in the same software!

For beginners, the new ROBOTC Graphical drag-and-drop interface allows users to get up and running quickly. ROBOTC also includes the fully featured C-Programming software for advanced coders.

In both graphical and text-based ROBOTC, users can learn key skills that easily transition to real world programming that is used by professional engineers and computer scientists every day.

Software Included!

Programming software options are available with VEX kits and bundles at no extra charge! Visit www.vexrobotics.com/software and log in to your account for more details and to choose your software.

Use the quick code to learn more info

QUICK SHOP

Modkit for VEX

Modkit for VEX is a graphical programming environment developed specifically for VEX IQ. Based on research from the Scratch project at the MIT Media Lab, Modkit for VEX is built around snap-together blocks which make programming truly accessible and fun for all ages and skill levels.

Designed to simplify mechanism control into a format intuitive for students, Modkit for VEX features the ability to virtually configure your robot inside the software.

Electronics

Robot Brain

QUICK SHOP

12 identical Smart Ports - connect any device to any port

Backlit LCD for simple operation

Images not to scale.

The VEX IQ Robot Brain is a revolution in robot control systems. The Robot Brain has 12 identical Smart Ports. Plug any VEX IQ device into any port and the device is automatically detected. Smart Port devices include: Smart Motor, Distance Sensor, Color Sensor, Gyro Sensor, Touch LED, and Bumper Switch.

- Built in programs make robot building fast, fun, and rewarding
- Programmable with Modkit for VEX or ROBOTC software solutions

Robot Brain	228-2540	$99.99

Controller

QUICK SHOP

2 Axis Joystick

8 Buttons

Images not to scale.

Pair the Controller with a Robot Brain and gain full control of your robot.

- Over 50 hours of battery life on a single charge
- Controller, Battery, and Radio each sold separately

Controller	228-2530	$39.99

Robot Battery

QUICK SHOP

Images not to scale.

Replacement rechargeable battery for the VEX IQ Robot Brain.

- Nickel Metal Hydride technology (NiMH)
- 7.2V
- 2000 mAh

Robot Battery	228-2604	$19.99

Controller Battery

QUICK SHOP

Images not to scale.

Replacement rechargeable battery for the VEX IQ Controller.

- Lithium Ion technology
- 3.7V
- 800 mAh

Controller Battery	228-2779	$9.99

Robot Battery Charger & Cord Options

QUICK SHOP

1

2

Images not to scale.

The Robot Battery Charger quickly recharges your Robot Battery.

- Recharges in 2-3 hours
- Convenient desktop cradle design
- Built-in international voltage and frequency compatibility circuits

|			
1	*Robot Battery Charger*	228-2743	$16.99
2	*Battery Charger Power Cord - North America (Type A)*	276-2520	$1.99

Smart Radio

QUICK SHOP

Images not to scale.

The Smart Radio expands the potential of the VEX IQ Robot Brain and Controller by enabling wireless communication with smartphones, tablets, and computers using Bluetooth® 4.0+ connections. When combined with apps designed to utilize the Smart Radio, this allows for wireless programming of robots, interaction with robots using smartphones or tablets running Bluetooth® 4.0 or higher, and other advanced features.

- Supports multiple connections (e.g. Robot Brain + Controller + Tablet)

Smart Radio	228-3530	$12.99
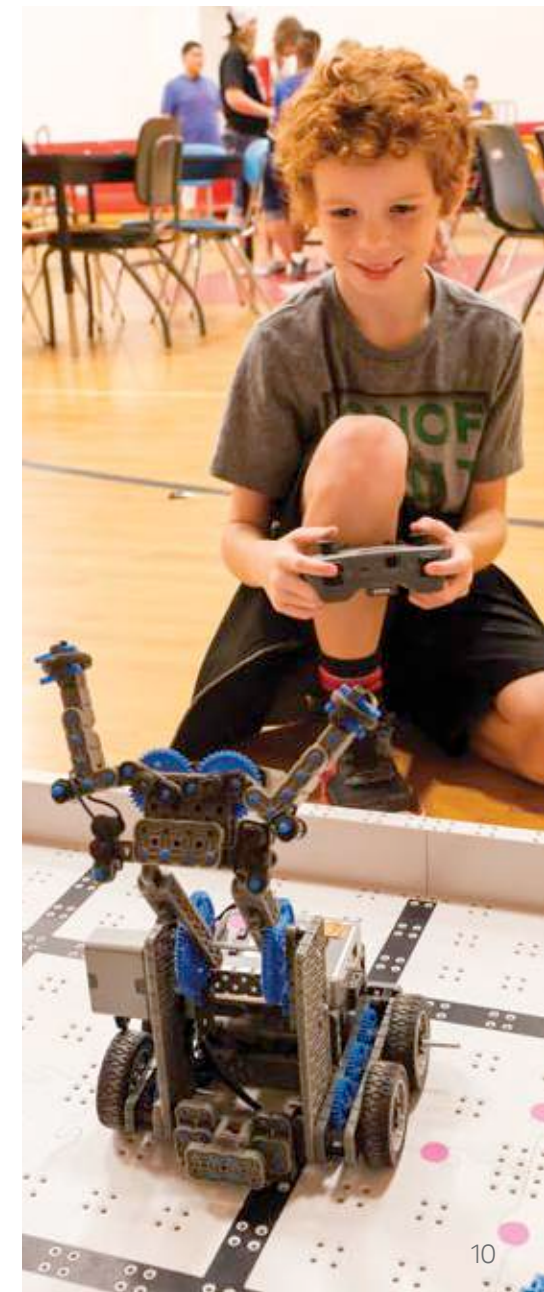
Bumper Switch

Images not to scale.

The Bumper Switch gives your robot the sense of touch.

- Low force switch can detect light touch
- Use to detect walls or limit an arm's motion

Bumper Switch	228-2677	$4.99

Gyro Sensor

Images not to scale.

The Gyro Sensor measures turn rate and calculates direction.

- Measures rotation rate up to 500 degrees per second
- Continuously calculates robot direction
- Measures angles up to 3,000 times per second

Gyro Sensor	228-3014	$24.99

Distance Sensor

Images not to scale.

The Distance Sensor uses ultrasonic sound waves to measure distance.

- Measures distance from 50mm to 1m
- Continuously measures distance to minimize delays during robot operation

Distance Sensor	228-3011	$24.99

Smart Motor Mount Add-On Pack

Images not to scale.

Plastic caps that slide onto the back of the VEX IQ Smart Motor. Use the Single Motor Support Cap's second set of mounting holes to attach your motors in new ways, or use the Dual Motor Support Mount to attach two Smart Motors back-to-back.

Smart Motor Add-On Pack	228-4034	$4.99

Tether Cable

Images not to scale.

The Tether Cable connects the Robot Brain to the Controller.

- Allows for wired operation of the robot instead of wireless
- Charges the Controller from the robot
- Allows the Controller to be re-calibrated via the Robot Brain's LCD
- Allows firmware updates to the Controller from a Computer

Tether Cable	228-2786	$4.99

USB Cable

Images not to scale.

Standard USB micro to USB type A cable.

- Connects the Robot Brain to a computer for programming
- Connects the Controller to a USB port for charging the Controller Battery
- Connects the Controller to a USB charge adapter for charging the Controller Battery

USB Cable	228-2785	$4.99

Smart Cable (6-pack)

1

2

3

4

Images not to scale.
A pack of (6) Smart Cables for VEX IQ Smart Motors and Sensors. Includes all parts listed.

Smart Cable (6-pack)	228-2780	$9.99
1 200mm Smart Cable (2)		
2 300mm Smart Cable (2)		
3 400mm Smart Cable (1)		
4 600mm Smart Cable (1)		

200mm Smart Cable (4-pack)

Images not to scale. .
A pack of (4) 200mm Smart Cables for VEX IQ Smart Motors and Sensors.

200mm Smart Cable (4-pack)	228-4423	$4.99

Long Smart Cable (8-pack)

1 2 3 4 5 6

Images not to scale.
A pack of (8) Long Smart Cables for VEX IQ Smart Motors and Sensors. Includes all parts listed.

Long Smart Cable (8-pack)	228-4422	$19.99
1 800mm Smart Cable (2)		
2 1.0m Smart Cable (2)		
3 1.2m Smart Cable (1)		
4 1.4m Smart Cable (1)		
5 1.6m Smart Cable (1)		
6 2.0m Smart Cable (1)		

SNAP CAD

Create, Share, & Teach with One Easy-to-Use Program.

SnapCAD is a community-built solution for designing virtual VEX IQ models and creating shareable instructions. Use SnapCAD to test out an idea in the virtual world before building it physically, or to share your creations in the form of step-by-step build instructions!

Use the quick code to learn more info

Color Sensor

Images not to scale.

The Color Sensor detects the color of objects.

- Measures simple colors
- Measures color hue
- Measures independent Red, Green, and Blue in 256 levels each
- Measures ambient light level

Color Sensor	228-3012	$24.99

Touch LED

Images not to scale.

The Touch LED outputs color and inputs touch.

- Smart sensor with internal processor and Red, Green, Blue LEDs
- Glows in up to 16 million color variations
- Constant on, off, or blink at any desired rate
- Touch sensor for student interaction with robot and software

Touch LED	228-3010	$9.99

Smart Motor

Images not to scale.

The Smart Motor does more than just make your wheels spin or arm move. The built in processor, quadrature encoder, and current monitor allow for advanced control and feedback through the Robot Brain.

- Command speed, direction, time, revolutions, and degrees
- Mounts directly to VEX IQ structural components with standard pin connectors
- Command motors up to 3,000 times/second
- Encoder resolution is 0.375 degrees

Smart Motor	228-2560	$19.99

Construct your robot with parts in 9 vibrant colors!

Many VEX IQ motion elements have the option to come in a different color.

In this catalog, the color wheel icon ⊙ is used to represent what items are available in these additional colors. The base color for each product is shown for all items that are available in additional colors.

Ike build instructions are available online!

To get the full color experience, please visit **www.vexiq.com** or scan the quick shop QR code to be taken directly to the individual product page. Prices vary for additional colors.

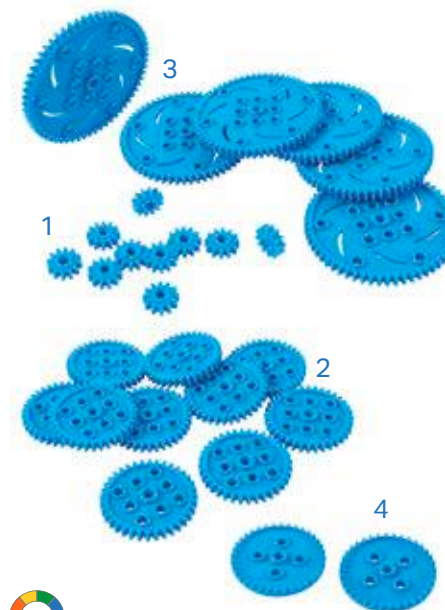QUICK SHOP — Basic Motion Accessory Pack

Images not to scale.

The Basic Motion Accessory Pack is included in all VEX IQ Starter Kits and Super Kit. Includes all parts listed.

Basic Motion Accessory Pack	228-3511	$3.99
1 Washer (20)		
2 0.5x Pitch Spacer (25)		
3 Shaft Bushing (4)		
4 2x2 Lock Plate (4)		
5 1x3 Center Lock Plate (4)		

QUICK SHOP — Gear Add-On Kit

Images not to scale.

This kit contains rack gears, worm gears, linear slider brackets, and VEX IQ gears in assorted tooth counts and sizes.

Gear Add-On Kit		228-2532	$14.99
1 36 Tooth Crown Gear (4)	5 Worm Bracket (6)		
2 Linear Slide Bracket (4)	6 60 Tooth Gear (6)		
3 12 Tooth Gear (10)	7 Worm Gear (2)		
4 36 Tooth Gear (10)	8 Rack Gear (8)		

QUICK SHOP — Gear Base Pack

Images not to scale.

The Gear Base Pack features an assortment of tooth counts and sizes and is included in all VEX IQ Starter Kits and Super Kit. Includes all parts listed.

Gear Base Pack	228-3502	$5.99
1 12 Tooth Gear (10)		
2 36 Tooth Gear (10)		
3 60 Tooth Gear (6)		
4 36 Tooth Crown Gear (2)		

QUICK SHOP — Differential & Bevel Gear Pack
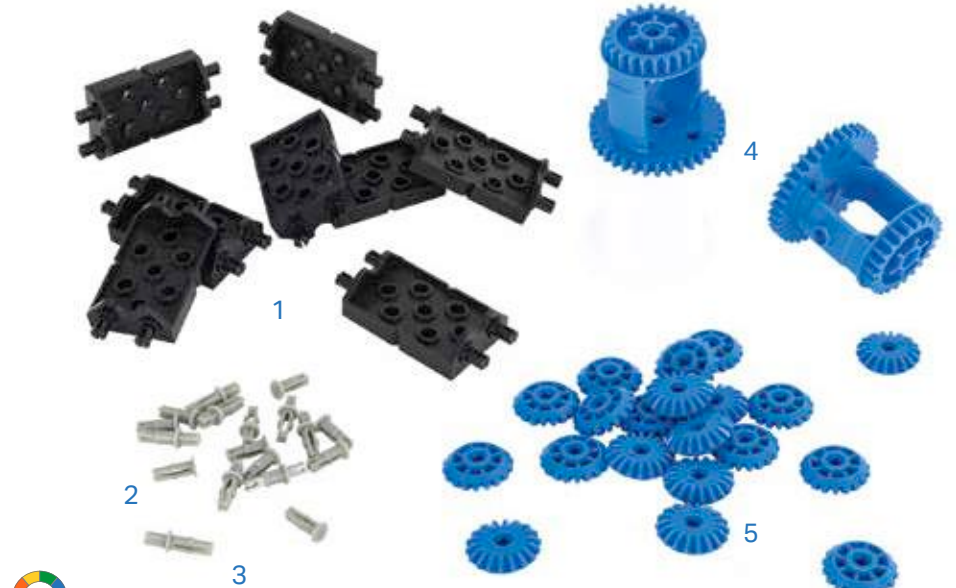

Images not to scale.

This kit has motion components for the creation of advanced mechanisms. Transfer motion 90-degrees "around corners" using bevel gears, or add a differential to your drivetrain. Includes structural elements to enable your build! Includes all parts listed.

Differential & Bevel Gear Pack	228-4418	$9.99
1 Double 2x Wide, 2x2 Double Offset Corner Connectors (8)		
2 0x2 Idler Pins (9)		
3 1x2 Idler Pins (9)		
4 Differential Gears (2)		
5 18-tooth Bevel Gears (20)		

24 & 48 Tooth Gear Pack
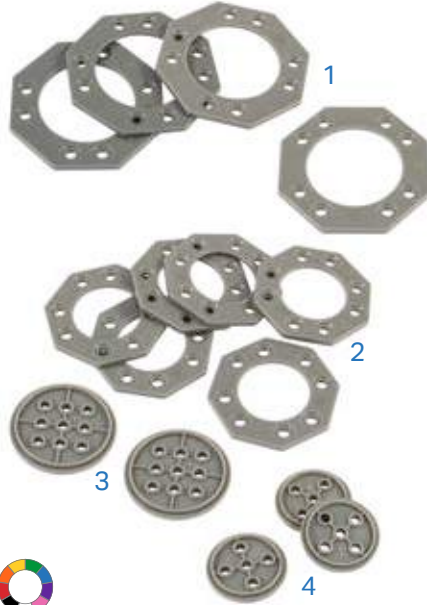
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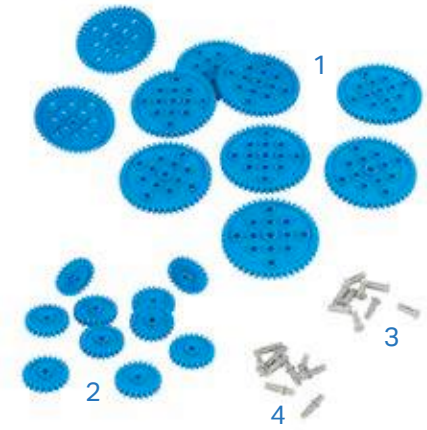
Includes 24 & 48 tooth spur gears to allow for additional gear ratio options not found in the VEX IQ Starter & Super Kit. One great application of this pack is the ability to create compact gearboxes by placing your motors side by side! Includes all parts listed.

24 & 48 Tooth Gear Pack		228-4127	$5.⁹⁹
1	48-tooth gears (10)		
2	24-tooth gears (10)		
3	0x2 Idler Pins (8)		
4	1x2 Idler Pins (8)		

Pulley Base Pack

Images not to scale.

The Pulley Base Pack contains pulleys of different sizes and assorted rubber belt sizes, and is included in all VEX IQ Starter Kits and Super Kit. Includes all parts listed.

Pulley Base Pack			228-3508	$5.⁹⁹
1	Tire (100mm Travel) (2)	6	20mm Pulley (2)	
2	10mm Pulley (2)	7	40mm Rubber Belt (2)	
3	30mm Pulley (2)	8	40mm Pulley (2)	
4	50mm Rubber Belt (2)	9	60mm Rubber Belt (2)	
5	30mm Rubber Belt (2)			

Wheel Base Pack

Images not to scale.

The Wheel Base Pack contains plastic hubs and rubber tires and is included in all VEX IQ Starter Kits and Super Kit. Includes all parts listed.

Wheel Base Pack	228-3505	$10.⁹⁹
44mm Wheel Hub (4)		
200mm Rubber Tire (4)		

Chain & Sprocket Kit

Images not to scale.

Use chains and sprockets for additional reductions and to drive mechanisms. Includes all parts listed.

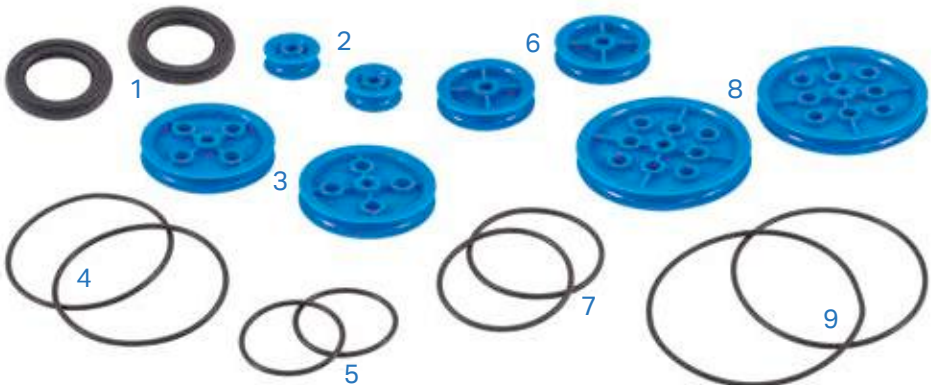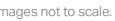| Chain & Sprocket Kit		228-2534	$19.⁹⁹
1	Chain Link (200 links)		
2	32 Tooth Sprocket (4)		
3	16 Tooth Sprocket (8)		
4	24 Tooth Sprocket (4)		
5	40 Tooth Sprocket (4)		
6	8 Tooth Sprocket (8)		

Turntable Base Pack

Images not to scale.

The Turntable Base Pack is included in the Foundation Add-On Kit. Ideal for building rotational joints. Includes all parts listed.

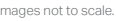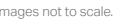| Turntable Base Pack		228-3507	$4.⁹⁹
1	Large Thrust Bearing Housing (4)		
2	Thrust Bearing Housing (6)		
3	Large Thrust Bearing Smooth Bushing (2)		
4	Thrust Bearing Smooth Bushing (3)		

Wheel Add-On Kit

Images not to scale.

Four different size tire diameters and two different size wheel hubs are included in this add-on kit. Tire size is printed on tires for easy reference. Includes all parts listed.

Wheel Add-On Kit			228-2523	$19.⁹⁹
1	Large Wheel Hub (4)	5	160mm Travel Rubber Tire (4)	
2	Small Wheel Hub (6)	6	100mm Travel Rubber Tire (4)	
3	250mm Travel Rubber Tire (4)	7	200mm Travel Rubber Tire (4)	
4	20mm Diameter Pulleys (4)			

200mm Travel Omni Wheel (2-pack)
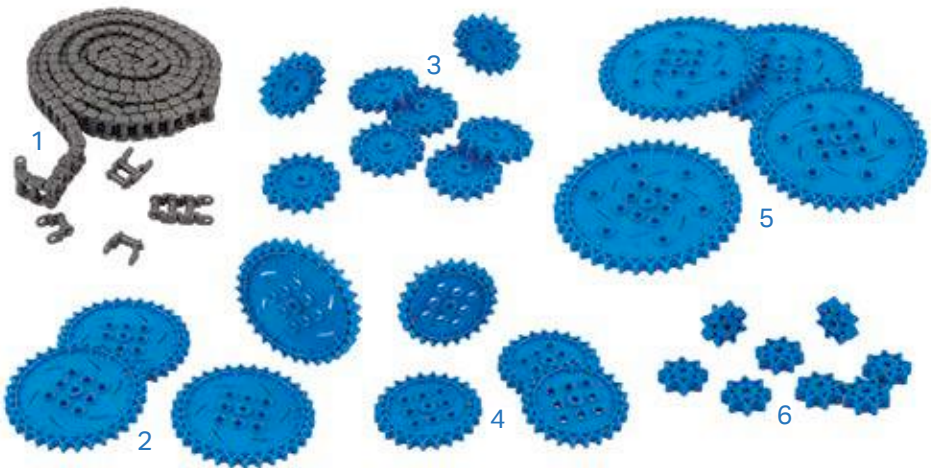
Images not to scale.

Omni-Directional wheels roll forward like normal wheels, but slide sideways with almost no friction (no skidding during turns). Use these wheels to make your robot turn smoothly or build a holonomic drivetrain. Includes all parts listed.

200mm Travel Omni Wheel (2 pack)	228-2536	$9.⁹⁹

Tank Tread & Intake Kit
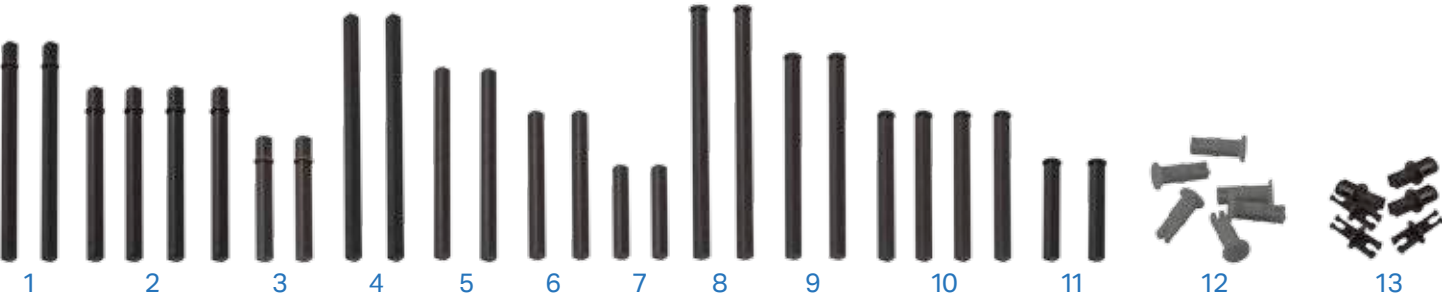
Images not to scale.

Use this kit to create intake mechanisms, tank tread drivetrains and more! Includes all parts listed.

Tank Tread & Intake Kit		228-2878	$24.⁹⁹
1	Tread / Attachment Link (200 links)		
2	24 Tooth Sprocket (4)		
3	Traction Link (40 links)		
4	Short Intake Flap (20 flaps)		
5	Medium Intake Flap (20 flaps)		
6	Long Intake Flap (20 flaps)		

Plastic Shaft Base Pack

Images not to scale.

The Plastic Shaft Base Pack contains various length shafts for different purposes and pitches your design may require. It is included in all VEX IQ Starter Kits and Super Kit. Includes all parts listed.

Plastic Shaft Base Pack	228-3620	$7.⁹⁹	
1 4x Pitch Plastic Motor Shaft (2)		8 5x Pitch Plastic Capped Shaft (2)	
2 3x Pitch Plastic Motor Shaft (4)		9 4x Pitch Plastic Capped Shaft (2)	
3 2x Pitch Plastic Motor Shaft (2)		10 3x Pitch Plastic Capped Shaft (4)	
4 5x Pitch Plastic Shaft (2)		11 2x Pitch Plastic Capped Shaft (2)	
5 4x Pitch Plastic Shaft (2)		12 0x2 Idler Pin (6)	
6 3x Pitch Plastic Shaft (2)		13 1x1 Idler Pin (6)	
7 2x Pitch Plastic Shaft (2)			

Rubber Shaft Collar (30-pack)

Images not to scale.

The Rubber Shaft Collars slide onto VEX 0.125" shafts. Friction between the rubber collar and steel shaft keeps wheels and gears from sliding in place during assembly and operation.

| Rubber Shaft Collar (30-pack)	228-3510	$5.⁹⁹

Universal Joint Pack

Images not to scale.

This flexible U-joint accepts square drive shafts and can transfer motion between non-aligned shafts. Contains structural elements to ensure that you are ready to build! Includes all parts listed.

Universal Joint Pack	228-4419	$4.⁹⁹
1 Universal Joints (10)		
2 Double 1x Wide, 1x1 Corner Connectors (8)		
3 Double 1x Wide, 2x1 Corner Connectors (8)		

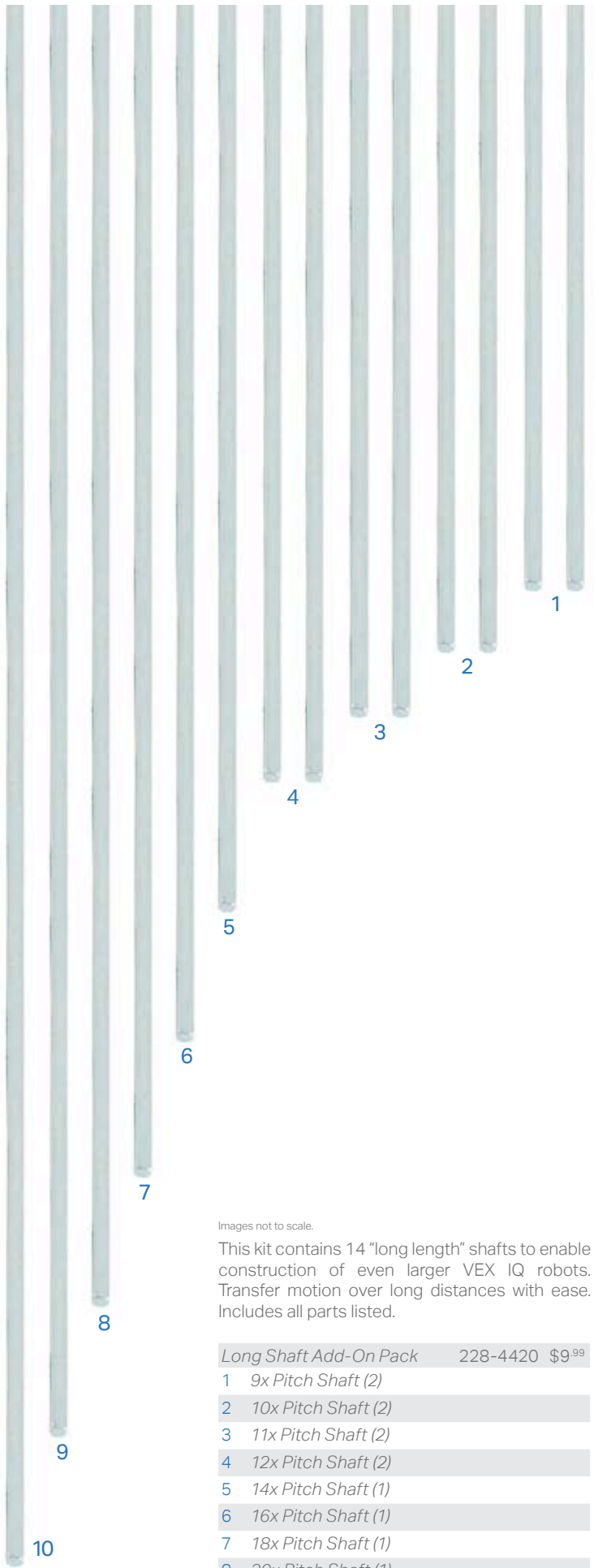## Shaft Base Pack

Images not to scale.
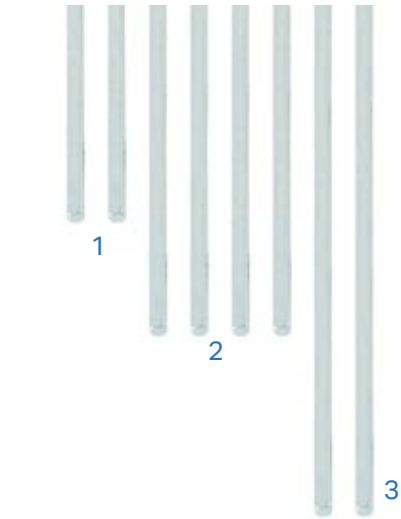
The Shaft Base Pack contains various length steel shafts and is included in all VEX IQ Starter Kits and Super Kit. Includes all parts listed.

Shaft Base Pack	228-3506	$3.⁹⁹
1 4x Pitch Shaft (2)		
2 6x Pitch Shaft (4)		
3 8x Pitch Shaft (2)		

Long Shaft Add-On Pack

Images not to scale.

This kit contains 14 "long length" shafts to enable construction of even larger VEX IQ robots. Transfer motion over long distances with ease. Includes all parts listed.

Long Shaft Add-On Pack	228-4420	$9.⁹⁹
1 9x Pitch Shaft (2)		
2 10x Pitch Shaft (2)		
3 11x Pitch Shaft (2)		
4 12x Pitch Shaft (2)		
5 14x Pitch Shaft (1)		
6 16x Pitch Shaft (1)		
7 18x Pitch Shaft (1)		
8 20x Pitch Shaft (1)		
9 22x Pitch Shaft (1)		
10 24x Pitch Shaft (1)		

Shaft Add-On Kit

Images not to scale.

Additional shafts in shorter lengths. Includes all parts listed.

Shaft Add-On Kit	228-3057	$9.⁹⁹
1 2x Pitch Shaft (4)		
2 4x Pitch Shaft (8)		
3 6x Pitch Shaft (8)		
4 8x Pitch Shaft (4)		

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1x Beam Base Pack

QUICK SHOP

Images not to scale.

The 1x Beam Base Pack contains various beam lengths and is included in all VEX IQ Starter Kits and Super Kit. Includes all parts listed.

1x Beam Base Pack	228-3503 $4.99
1	1x3 Beam (2)
2	1x4 Beam (6)
3	1x6 Beam (6)
4	1x8 Beam (8)
5	1x10 Beam (6)
6	1x12 Beam (4)

1x Beam Odd Length Pack

QUICK SHOP

Images not to scale.

The 1x Beam Odd Length Pack contains additional "odd number" length beams for use in building robot structure. Includes all parts listed.

1x Beam Odd Length Pack	228-4412 $4.99
1	1x3 Beam (8)
2	1x5 Beam (8)
3	1x7 Beam (8)
4	1x9 Beam (8)
5	1x11 Beam (6)
6	1x13 Beam (6)

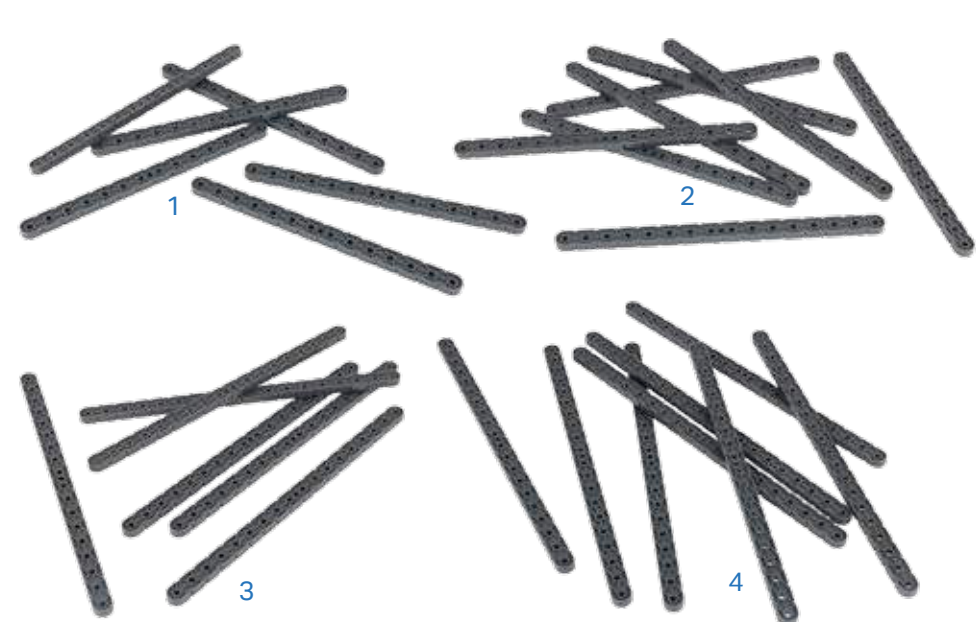## 1x Beam Foundation Add-On Pack

QUICK SHOP
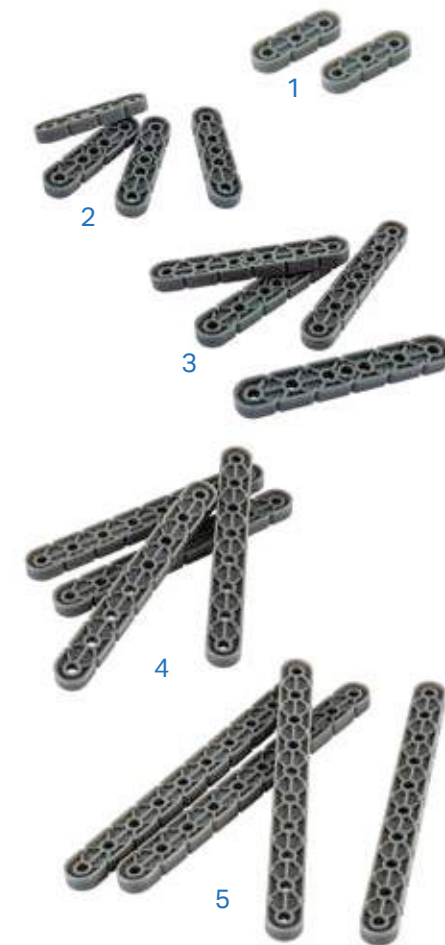
Images not to scale.

The 1x Beam Foundation Add-On Pack includes additional 1x beams, great for adding structural support to VEX IQ robots. Includes all parts listed.

1x Beam Foundation Add-On Pack	228-3519 $3.99
1	1x3 Beam (2)
2	1x4 Beam (4)
3	1x6 Beam (4)
4	1x8 Beam (4)
5	1x10 Beam (4)
6	1x12 Beam (4)

1x Beam Long Pack

QUICK SHOP

Images not to scale.

The 1x Beam Long Pack contains additional long length beams for use in building robot structure and linkages. Includes all parts listed.

1x Beam Long Pack	228-4416 $7.99		
1	1x14 Beam (6)	3	1x18 Beam (6)
2	1x16 Beam (8)	4	1x20 Beam (8)

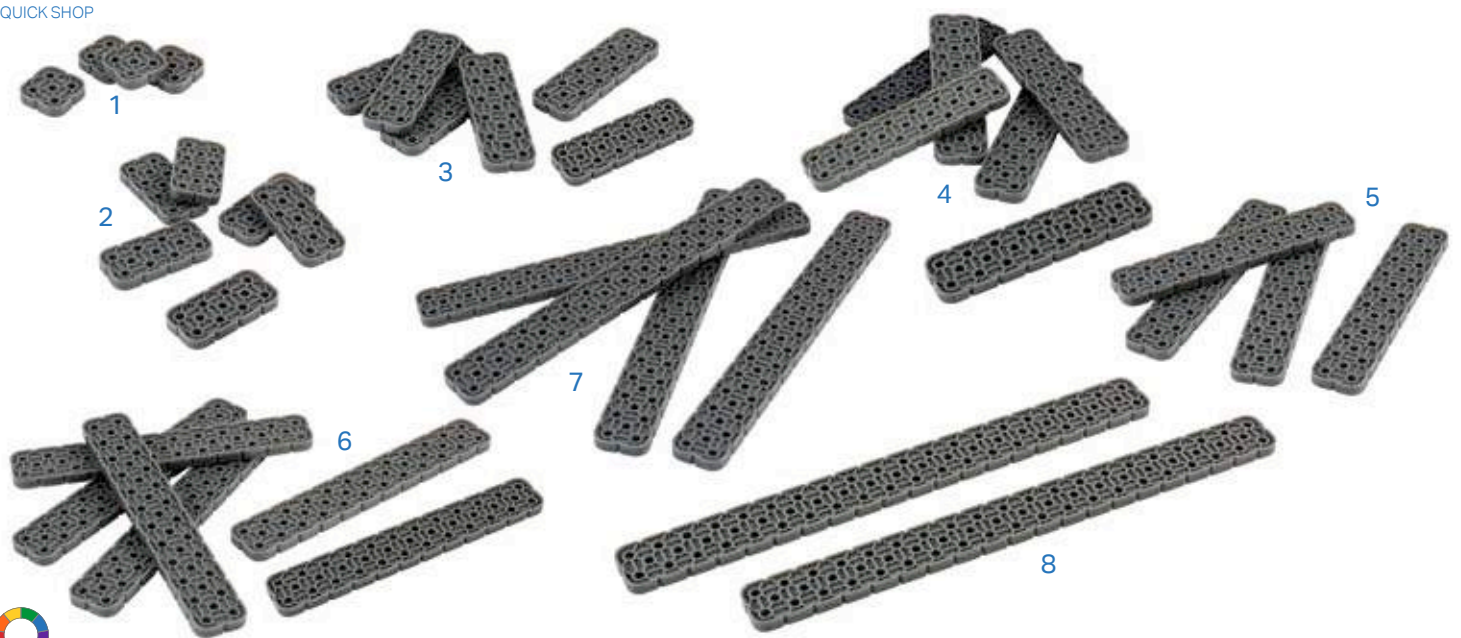## 2x Beam Odd Length Pack

QUICK SHOP

Images not to scale.

The 2x Beam Odd Length Pack contains additional "odd number" length beams. One great application for this pack is to make your robot more structurally sound by creating right triangles! Includes all parts listed.

2x Beam Odd Length Pack	228-4413 $7.99
1	2x3 Beam (8)
2	2x5 Beam (8)
3	2x7 Beam (8)
4	2x9 Beam (8)

2x Beam Base Pack

Images not to scale.

The 2x Beam Base Pack contains various length beams and is included in all VEX IQ Starter Kits and Super Kit. Includes all parts listed.

2x Beam Base Pack		228-3509	$9.⁹⁹
1 2x2 Beam (4)		5 2x10 Beam (4)	
2 2x4 Beam (6)		6 2x12 Beam (6)	
3 2x6 Beam (6)		7 2x16 Beam (4)	
4 2x8 Beam (6)		8 2x20 Beam (2)	

1x2 Beam (20-pack)

Images not to scale.

This kit includes (20) 1x2 length beams each with center holes.

1x2 Beam (20-pack)	228-4414	$4.⁹⁹

2x Beam Foundation Add-On Pack
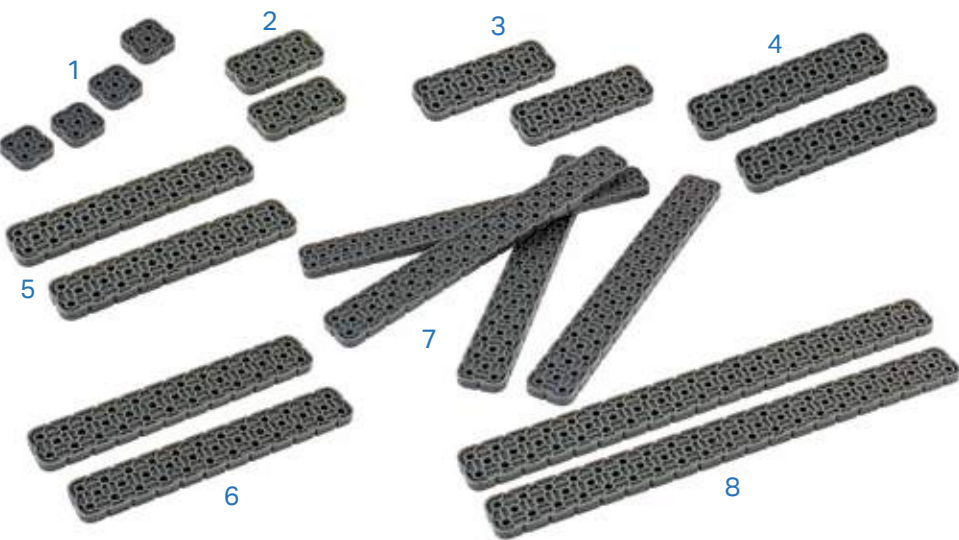
Images not to scale.

The 2x Beam Foundation Add-On Pack includes additional 2x beams of various lengths. Includes all parts listed.

2x Beam Foundation Add-On Pack	228-3518 $5.⁹⁹
1 2x2 Beam (4)	
2 2x4 Beam (4)	
3 2x6 Beam (2)	
4 2x8 Beam (2)	
5 2x10 Beam (2)	
6 2x12 Beam (2)	
7 2x16 Beam (4)	
8 2x20 Beam (2)	

4x Plate Base Pack

Images not to scale.

The 4x Plate Base Pack is included in all VEX IQ Starter Kits and Super Kit. Includes all parts listed.

4x Plate Base Pack	228-3504 $4.⁹⁹
1 4x4 Plate (4)	
2 4x12 Plate (2)	

4x Plate Foundation Add-On Pack

Images not to scale.

The 4x Plate Foundation Add-On Pack includes additional 4x plates, great for adding structural support to VEX IQ robots. Includes all parts listed.

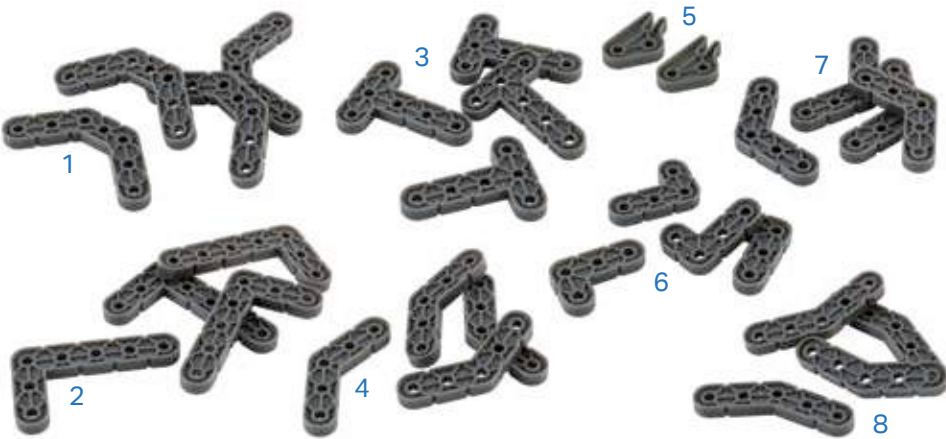| 4x Plate Foundation Add-On Pack	228-3515 $5.⁹⁹
1 4x6 Plate (4)	
2 4x8 Plate (4)	
3 4x12 Plate (2)	

Large Plate Add-On Pack

Images not to scale.

Larger structural plates are useful for robot bases or construction of large scale projects. Includes all parts listed.

Large Plate Add-On Pack	228-4415 $7.⁹⁹
1 6x12 Plate (2)	
2 12x12 Plate (2)	

Specialty Beam Base Pack

Images not to scale.

The Specialty Beam Base Pack contains uniquely shaped and angled beams, and is included in all VEX IQ Starter Kits and Super Kit. Includes all parts listed.

Specialty Beam Base Pack	228-3512	$4.99
1	4x4 Right Angle Offset Beam (4)	
2	3x5 Right Angle Beam (4)	
3	3x4 Tee Beam (4)	
4	3x3 45 Degree Angle Beam (4)	
5	Elastic Band Anchor Plate (2)	
6	2x3 Right Angle Beam (4)	
7	3x3 30 Degree Angle Beam (4)	
8	3x3 60 Degree Angle Beam (4)	

Corner Connector Base Pack

Images not to scale.

The Corner Connector Base Pack contains various offset and chassis corner connectors and is included in all VEX IQ Starter Kits and Super Kit. Includes all parts listed.

Corner Connector Base Pack		228-3513	$8.99
1	2x Wide, 2x1 Offset Corner Connector (4)	6	Worm Bracket (4)
2	1x Wide, 1x1 Offset Corner Connector (12)	7	Small Chassis Corner Connector (18)
3	2x Wide, 2x1 Corner Connector (4)	8	2x Wide, 1x1 Offset Corner Connector (4)
4	Large Chassis Corner Connector (10)	9	2x Wide, 1x2 Offset Corner Connector (8)
5	2x Wide, 1x2 Corner Connector (10)	10	2x Wide, 2x2 Corner Connector (10)

Corner Connector Foundation Add-On Pack

Images not to scale.

The Corner Connector Foundation Add-On Pack contains an assortment of corner connectors, useful for creating rigid connections in any VEX IQ application. Includes all parts listed.

Corner Connector Foundation Add-On Pack	228-3517	$6.99
1	Large Chassis Corner Connector (6)	
2	2x Wide, 1x2 Offset Corner Connector (12)	
3	2x Wide, 2x2 Corner Connector (10)	
4	2x Wide, 2x1 Corner Connector (6)	
5	2x Wide, 1x1 Offset Corner Connector (6)	
6	2x Wide, 2x1 Offset Corner Connector (4)	
7	2x Wide, 1x2 Corner Connector (6)	
8	Worm Bracket (4)	

Standoff Base Pack

Images not to scale. .

The Standoff Base Pack is included in all VEX IQ Starter Kits and Super Kit. Includes all parts listed.

| Standoff Base Pack	228-3514	$5.99
1	2x Standoff (14)	
2	1x Standoff (12)	
3	Mini Standoff Connector (12)	
4	6x Standoff (6)	
5	0.5x Standoff (12)	
6	4x Standoff (6)	
7	End Standoff Connector (6)	

Standoff Foundation Add-On Pack

Images not to scale.

The Standoff Foundation Add-On Pack contains additional standoffs to help create trusses and other stiff structures. Includes all parts listed.

Standoff Foundation Add-On Pack	228-3516	$3.99
1	Straight Standoff Connector (12)	
2	1x Standoff (6)	
3	Mini Standoff Connector (6)	
4	4x Standoff (2)	
5	End Standoff Connector (4)	
6	0.5x Standoff (6)	
7	6x Standoff (2)	

Connector Pin Pack
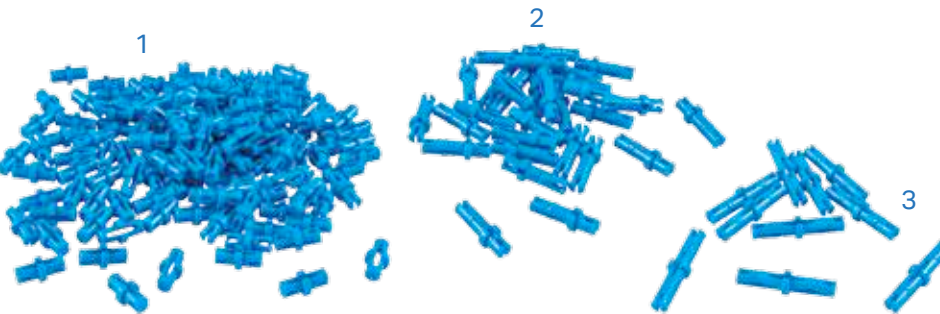
Images not to scale.

The Connector Pin Pack is included in all VEX IQ Starter Kits and Super Kit. Includes all parts listed.

Connector Pin Pack	228-3058	$9.99
1	1x1 Connector Pin (120)	
2	1x2 Connector Pin (30)	
3	2x2 Connector Pin (10)	

Thin Sheet Attachment Pin Pack

Images not to scale.

Attaches a thin sheet (up to 0.25mm / 0.010" thick paper, cardstock, or plastic) to standard VEX IQ structure. Use a 6.35 mm / 0.25" drill or hole punch to incorporate ramps, custom curves, or other personalized elements into your VEX IQ creations.

Thin Sheet Attachment Pin Pack (50)	228-4417	$4.99

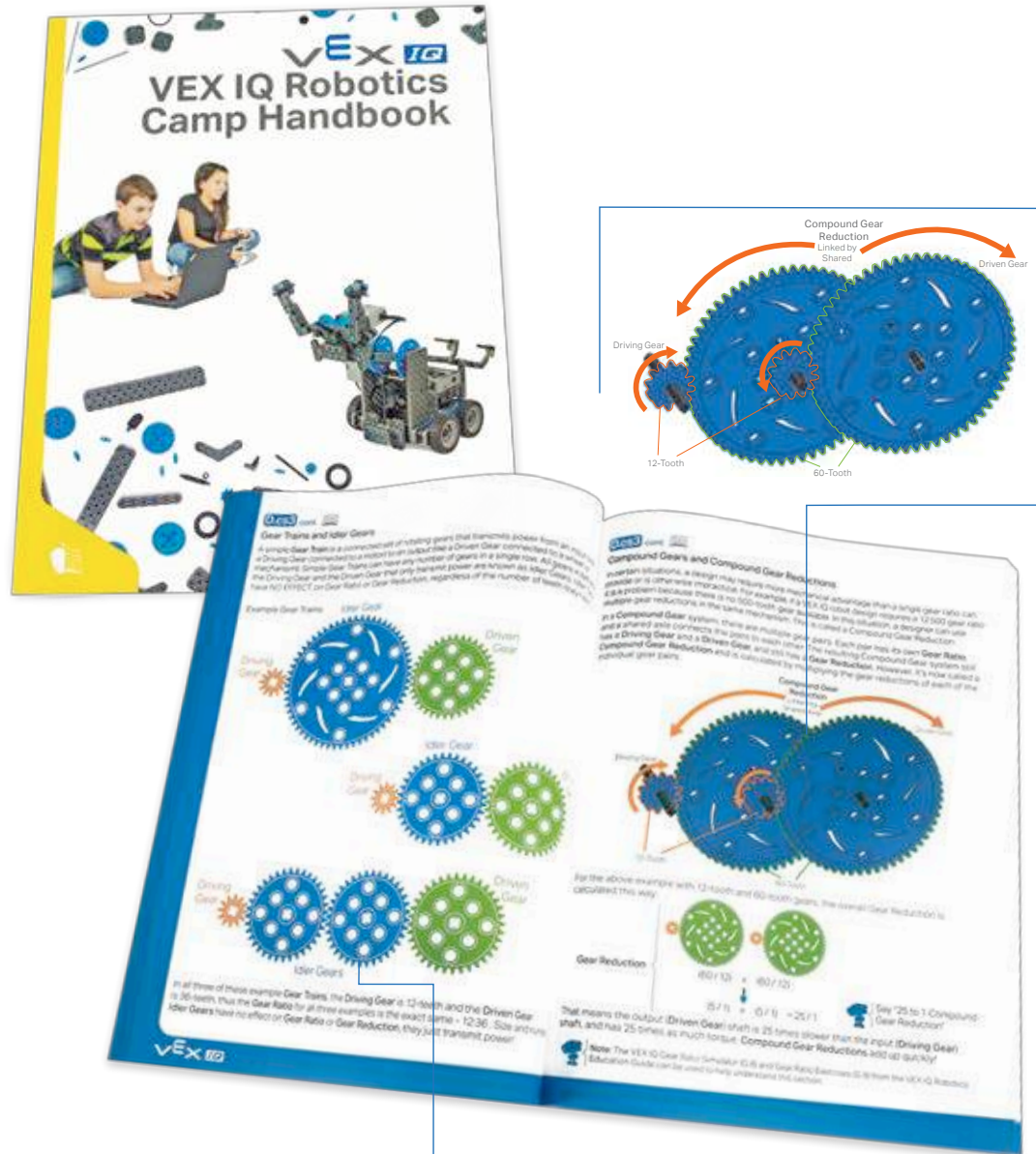## Follow @VEXRobotics on Twitter!

Supplemental Resources

VEX IQ Robotics Camp Handbook

Examples are shown to help explain key principles

Compound Gear Reduction Linked by Shared

Driven Gear

Driving Gear

12-Tooth

60-Tooth

Idler Gear

Driving Gear

Driven Gear
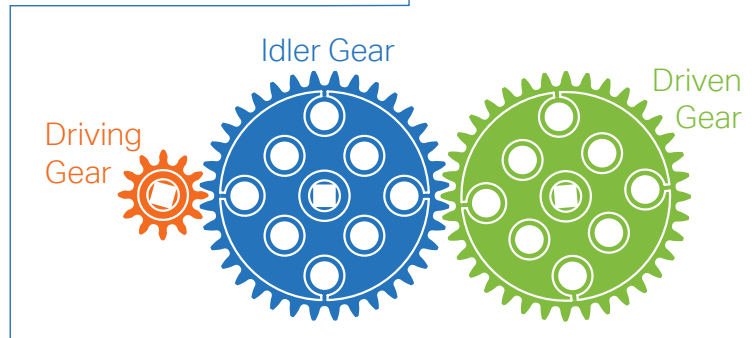
Images not to scale.

The VEX IQ Robotics Camp Handbook enables you to hold a robotics camp regardless of your experience level.

- For beginner to intermediate users
- Flexible one-, three-, and five-day camp options
- Instruction through open-ended challenges
- Options for both mechanical & programming focus

VEX IQ Robotics Camp Handbook 228-4411 $9.⁹⁹
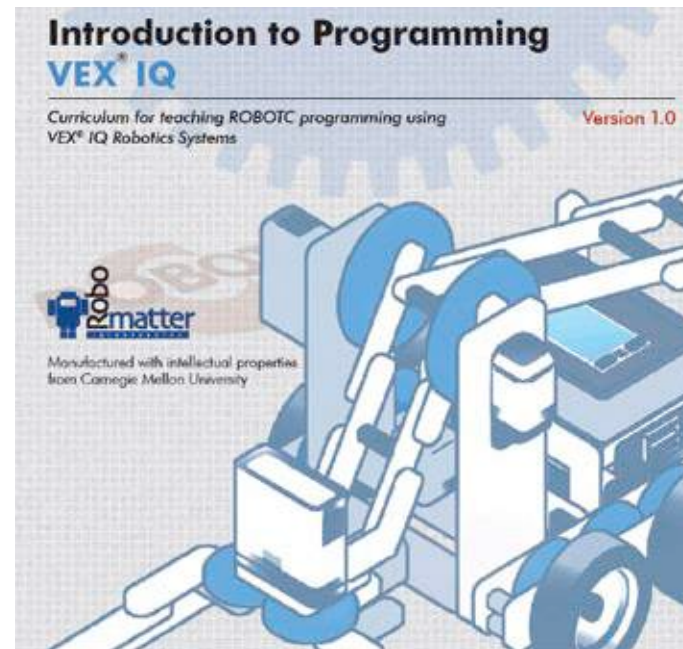

Robot Virtual Worlds
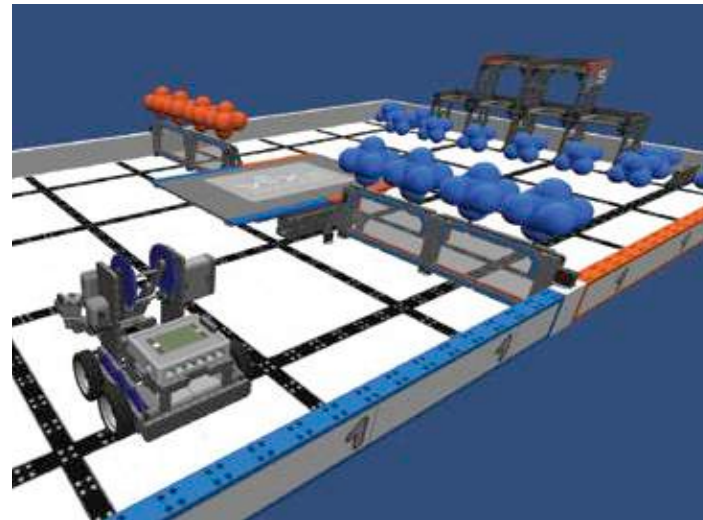
Images not to scale.

Robot Virtual Worlds, developed by Robomatter, is a high-end simulation environment that enables students to take robotic programming experience to the next level with virtual trial-and-error before programming your final robot! Robot Virtual Worlds simulates VEX EDR and VEX IQ robots in 3D environments which can be programmed using the same language as physical robots, ROBOTC. The Robot Virtual Worlds environment is perfect for home, classroom, and competition environments!

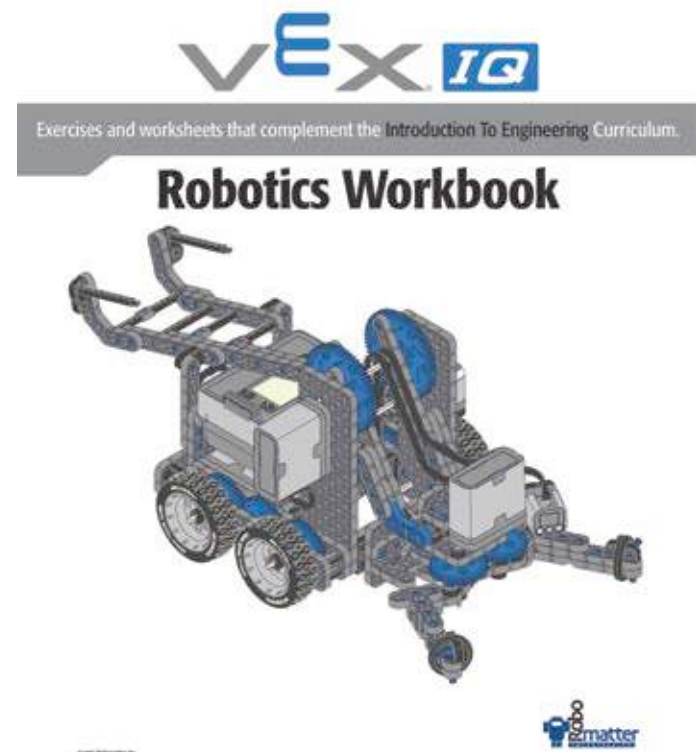|		
Annual Licenses		
Robot Virtual Worlds *VEX 4.X - Annual License (1-seat)*	210-5503	$49.⁹⁹
Robot Virtual Worlds *VEX 4.X - Annual Team License (6-seat)*	210-5505	$149.⁹⁹
Robot Virtual Worlds *VEX 4.X - Annual Classroom License (6-seat)*	210-5507	$299.⁹⁹
Non-Expiring Licenses		
Robot Virtual Worlds *VEX 4.X - Non-Expiring License (1-seat)*	210-5504	$79.⁹⁹
Robot Virtual Worlds *VEX 4.X - Non-Expiring Team License (6-seat)*	210-5506	$299.⁹⁹
Robot Virtual Worlds *VEX 4.X - Non-Expiring Classroom License (6-seat)*	210-5508	$599.⁹⁹
Site Licenses		
Robot Virtual Worlds *VEX 4.X - Annual Site License (One-Classroom)*	210-5509	$599.⁹⁹
Robot Virtual Worlds *VEX 4.X - Annual Site License (Unlimited Use)*	210-5510	$999.⁹⁹
Homework Packs		
Robot Virtual Worlds *VEX 4.X - Homework Pack (180-day)*	210-5511	$8.⁹⁹
Robot Virtual Worlds *VEX 4.X - Homework Pack (365-day)*	210-5512	$14.⁹⁹

Introduction to Programming VEX IQ

Images not to scale.

The Introduction to Programming VEX IQ includes videos, animations, and step-by-step lessons designed to help beginners learn behavior-based programing using the VEX IQ hardware and ROBOTC Graphical for VEX Robotics. The tutorials are designed to encourage independent learning and problem solving in pursuit of a goal. All are self-contained, require a minimum of instructor supervision, and include many built-in opportunities to self-assess progress. Prior robotics experience not required or assumed!

Introduction to Programming   276-5513   ~~$599.⁹⁹~~
$499.⁹⁹

STEM CAD Workbook Bundle with SnapCAD

Images not to scale.

The STEM CAD Workbook Bundle with SnapCAD is an excellent classroom resource that promotes theory, challenges, and activities in a printable feature-rich resource. The STEM CAD Workbook takes advantage of robotics as a way to teach math and engineering concepts and provides hours of in-class activity for students. It works as a stand-alone workbook or can be used to complement the Introduction to Programming VEX IQ video trainer.

Introduction to Programming   276-5514   ~~$599.⁹⁹~~
$499.⁹⁹

VEX IQ Robotics Education Guide & Teacher Supplement

1
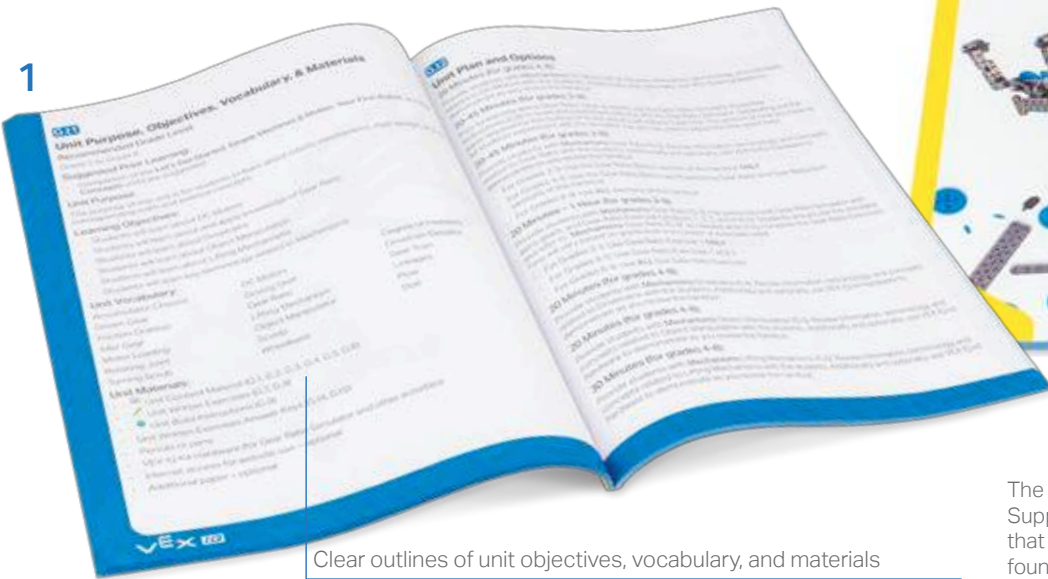
Clear outlines of unit objectives, vocabulary, and materials

Unit Materials:
- 📖 Unit Content Material (G.1, G.2, G.3, G.4, G.5, G.6)
- ✏️ Unit Written Exercises (G.7, G.9)
- ✳️ Unit Build Instructions (G.8)

The VEX IQ Robotics Education Guide: Teacher Supplement provides all of the teacher materials that go along with the 12 units of instruction found in the VEX IQ Robotics Education Guide. For each unit there is an education standards map, lesson plans complete with materials lists and time constraints, answer keys, and a notes page for the educator's use. This supplement was created to be a tool for enabling elementary and middle school teachers to meet varied and diverse STEM classroom learning goals.

2

Illustrations aid in the explanation of core concepts

Input   Input   Input
Output   Output   Output

Speed ⟵———⟶ Torque
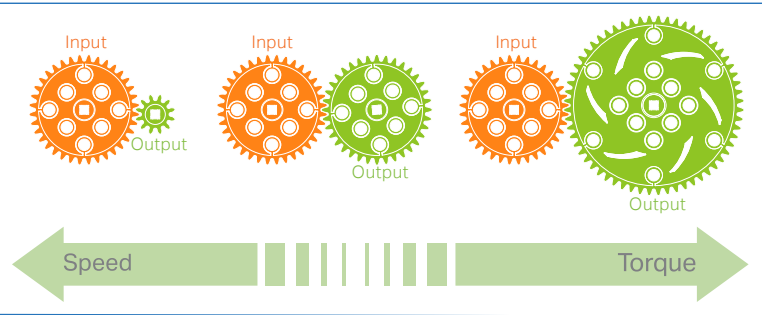
The VEX IQ Robotics Education Guide is a companion to the VEX IQ online curriculum (vexiq.com/curriculum) and provides 12 flexible, standards-matched units of STEM instruction for elementary and middle school students. When paired with the VEX IQ platform it brings accessible, affordable, and powerful STEM lessons to life. Hands-on activities, instructions, assessments, and rubrics are all included.

- Mapped to National Standards (STL, NGSS & Common Core)
- 12 Flexible Units of STEM Instruction
- Designed for Elementary & Middle School Levels

Guide & Supplement

1	Education Guide Teacher's Supplement	228-4339	$9.99
2	Education Guide	228-3319	$9.99

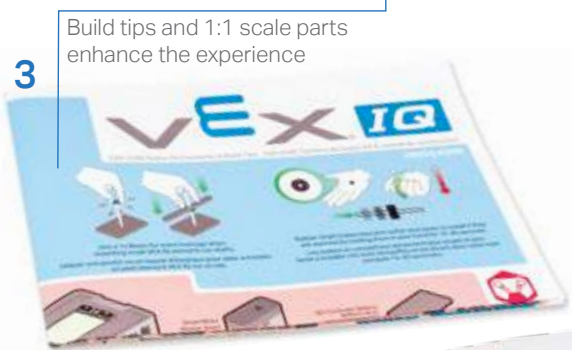# VEX IQ User Guide, Build Instructions & Build Tips Poster

1

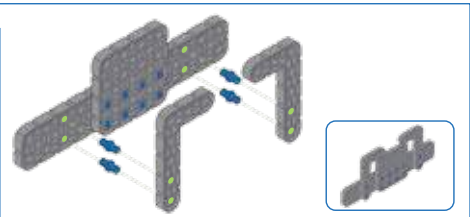Clear easy-to-follow illustrations accompany examples

2

3

Build tips and 1:1 scale parts enhance the experience

Step-by-step instructions with augmented online resources provided

Images not to scale.

These printed documents were all created to be learning tools for the VEX IQ system. Use these materials as guides for building your VEX IQ robots!

Note: All of these materials are included when you purchase a Starter Kit or Super Kit.

User Guide, Instructions, & Poster

1	Control System User Guide	228-3427	$2.99
2	Clawbot IQ Build Instructions	228-3428	$2.99
3	Super Kit Contents & Build Tips Poster	228-3991	$2.99

25mm Ball (50-pack)

QUICK SHOP
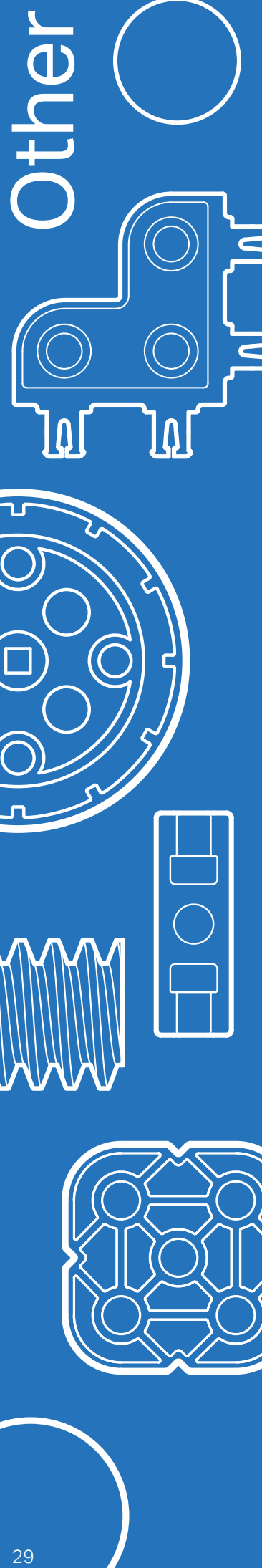
Images not to scale.

Use 25mm Balls to create your own fun challenges and complex mechanisms; or manipulate these objects in your own creative game. Eight different colored balls enable sorting with a Color Sensor.

25mm Ball (50-pack)	228-4421	$4.99
1 Orange Balls (5)		
2 Red Balls (5)		
3 White Balls (10)		
4 Yellow Balls (5)		
5 Green Balls (5)		
6 Blue Balls (5)		
7 Purple Balls (5)		
8 Black Balls (10)		

Magnetic Beam Pair

QUICK SHOP

Images not to scale.

Use Magnetic Beams to teach students how magnets work by comparing how they interact with ferrous metals (or other Magnetic Beams) vs non-magnetic items. Attach them to VEX IQ robots to create new object manipulation tools.

- Contains one North and one South Pole
- Responds to any ferrous metal or standard magnet
- Color-coded for easy sorting

Magnetic Beam Pair	228-3167	$7.99

Robotics Engineering Notebook

QUICK SHOP

Images not to scale.

Use the Robotics Engineering Notebook to document the design, construction and iteration of a classroom or competitive robot.

- (130) Blank Entry pages
- 3-hole drilled for binder storage
- Commonly used formulas and rulers available for easy reference

Robotics Engineering Notebook	276-3023	$9.99

Storage Bins & Trays

QUICK SHOP

Images not to scale.

Convenient storage bins and trays for VEX IQ items.

- Bin dimensions: 21in x 13in x 6.5in
- Tray subdivides parts into 13 sections of varying size
- Bin also functions as the correct size for VEX EDR components

Storage Bin, Lid & Tray	228-3036	$29.99
Storage Tray	228-2930	$9.99

Rubber Bands

QUICK SHOP

Images not to scale.

VEX synthetic rubber bands have dozens of uses on a robot. The spring-like properties make them perfect for latches, triggers, and return mechanisms.

- #32 Rubber Bands 3" x ⅛" (76mm x 3mm)
- #64 Rubber Bands 3.5" x ¼" (89mm x 6mm)

Rubber Bands		
1 Rubber Band #64 (10-pack)	276-3990	$2.99
Rubber Band #32 (20-pack)	275-1089	$1.49

Merchandise Store

The VEX Merchandise Store is the one and only place to purchase VEX-branded apparel and accessories online. With more than 200 unique products already available, there is sure to be something for everyone!

Be sure to check back often, as new products are added all the time!

vexrobotics.com/merchandise

VEX IQ Challenge Trophies & Award Plates

QUICK SHOP

Images not to scale.

Trophies and award plates are available for Event Partners looking to add additional awards to their event or for schools and teams needing spare trophies for awards they have won.

VEX IQ Challenge Trophies & Award Plates		
VEX IQ Challenge Large Trophy	228-3143	$19.⁹⁹
VEX IQ Challenge Small Trophy	228-3171	$14.⁹⁹
Award Plate "Excellence"	228-3296	$1.⁹⁹
Award Plate "Teamwork Champion"	228-3178	$1.⁹⁹
Award Plate "Teamwork Finalist"	228-3179	$1.⁹⁹
Award Plate "Robot Skills Champion"	228-3181	$1.⁹⁹
Award Plate "Robot Skills 2nd Place"	228-3182	$1.⁹⁹
Award Plate "Design"	228-3297	$1.⁹⁹
Award Plate "Energy"	228-3185	$1.⁹⁹
Award Plate "Sportsmanship"	228-3186	$1.⁹⁹
Award Plate "Judges"	228-3187	$1.⁹⁹
Award Plate "Build"	228-3188	$1.⁹⁹
Award Plate "Create"	228-3189	$1.⁹⁹
Award Plate "Think"	228-3190	$1.⁹⁹
Award Plate "Amaze"	228-3191	$1.⁹⁹
Award Plate "Inspire"	228-3298	$1.⁹⁹
Award Plate "STEM Research Project"	228-3184	$1.⁹⁹
Award Plate "Teacher of the Year"	228-4057	$1.⁹⁹
Award Plate "Mentor of the Year"	228-4058	$1.⁹⁹
Award Plate "Volunteer of the Year"	228-3243	$1.⁹⁹
Award Plate "Student Achievement"	228-4059	$1.⁹⁹
Award Date Plate "2016-2017"	228-5234	$1.⁹⁹

Cube Base Kit

QUICK SHOP

1
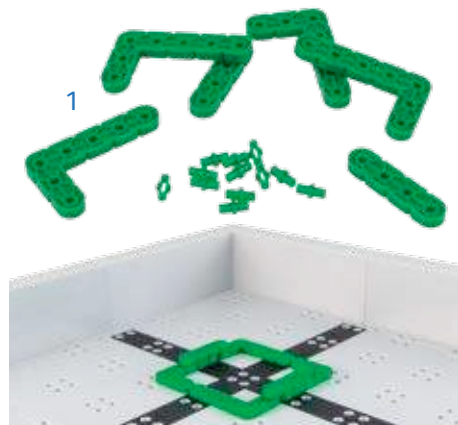
Images not to scale.

These cube-base components were used in the 2014-2015 VEX IQ Challenge game, Highrise. The cubes and bases are now used as the standard game element for the VEX IQ Curriculum. Includes all parts listed.

Cube Base Kit	228-3452 $7.⁹⁹
1 Green Set of Parts (1)	
Blue Set of Parts (1)	
Red Set of Parts (1)	

VEX IQ Challenge Blank Team Number Plate

QUICK SHOP

Plates can be customized.

Images not to scale.

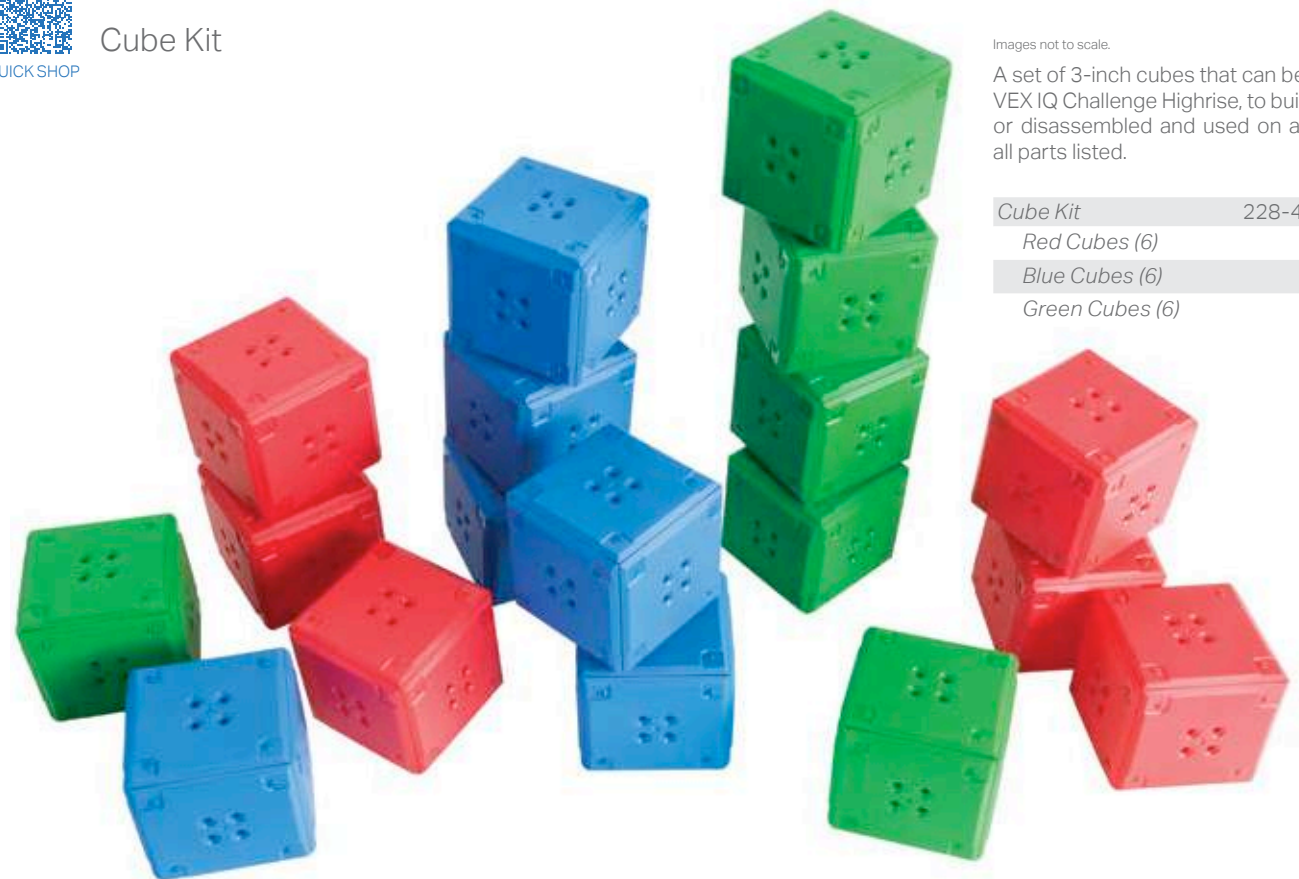Blank Team Number Plate for teams competing in the VEX IQ Challenge.
- Customizable plate allows teams to personalize their robot
- Attaches to robot using standard VEX IQ pins or connectors (not included)

| VEX IQ Challenge Blank Team Number Plate		
1 Blank Team Number Plate (1)	228-3193	$1.⁹⁹

Cube Kit

QUICK SHOP

Images not to scale.

A set of 3-inch cubes that can be used as part of VEX IQ Challenge Highrise, to build a color-sorter, or disassembled and used on a robot. Includes all parts listed.

Cube Kit	228-4967	$29.⁹⁹
Red Cubes (6)		
Blue Cubes (6)		
Green Cubes (6)		

VEX IQ Challenge Field Perimeter & Tiles

QUICK SHOP

1

4

2

3

5
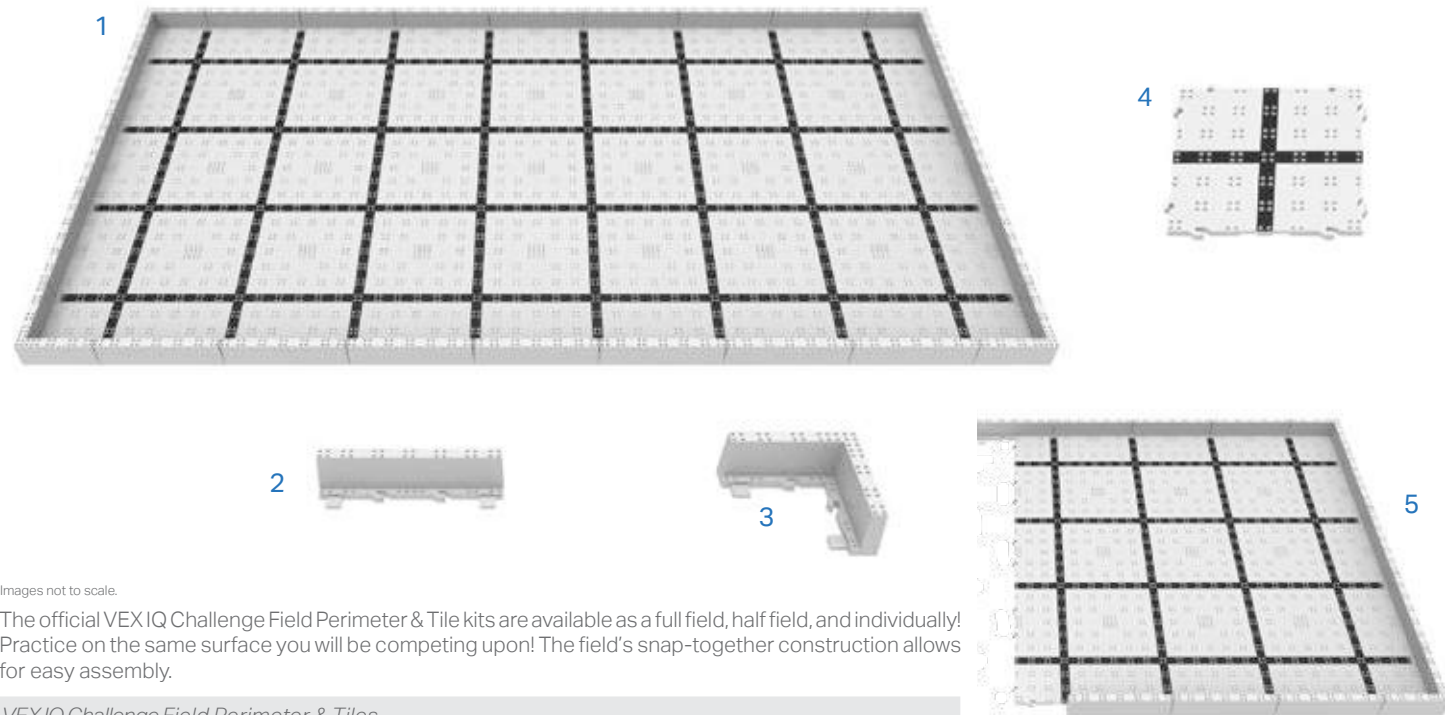
Images not to scale.

The official VEX IQ Challenge Field Perimeter & Tile kits are available as a full field, half field, and individually! Practice on the same surface you will be competing upon! The field's snap-together construction allows for easy assembly.

VEX IQ Challenge Field Perimeter & Tiles		
1 VEX IQ Challenge Full Field Perimeter & Tiles	228-2550	$199.⁹⁸
2 VEX IQ Field Perimeter Wall	228-4833	$4.⁹⁹
3 VEX IQ Field Corner Wall	228-4834	$4.⁹⁹
4 VEX IQ Field Tile	228-4832	$9.⁹⁹
5 VEX IQ Challenge Half Field Perimeter & Tiles	228-3051	$99.⁹⁹

Start a VEX IQ
Challenge team

Build, test, and
program the robot

Compete on the
national level

The possibilities are
endless

Research this
years' challenge

Compete at local, state,
and regional events

Go to the VEX Robotics
World Championship

The VEX IQ Challenge, presented by the Robotics Education & Competition Foundation, provides elementary and middle school students ages 8 through 14 with exciting, open-ended robotics and research project challenges that enhance their STEM skills through hands-on, student-centered learning.

The VEX IQ Challenge fosters student development of the teamwork, critical thinking, project management, and communication skills required to prepare them to become the next generation of innovators and problem solvers.

The VEX Robotics World Championship is an annual gathering of the top robotics teams from around the world that come together to celebrate their accomplishments and compete with and against the best of the best!

Recognized by the Guinness Book of World Records as the World's Largest Robotics Competition, The VEX Robotics World Championship is a one-of-a-kind robotics experience for over 1000 teams from 30+ countries as they compete to become the next World Champions.

VEX IQ CHALLENGE

VEX ROBOTICS WORLD CHAMPIONSHIP

Robot Builds

Built Using a Super Kit

Only have a VEX IQ Starter or Super Kit? You're in luck - these fun robots can be built using the 850+ parts found in any of the VEX IQ Starter or Super Kits! They're even designed to be controlled using the built-in Driver Control program; no code needed!

Advanced Robots

These robots may require additional parts or programming beyond a single Super Kit, but don't worry - the helpful instructions and downloadable code will get you up and running in no time!
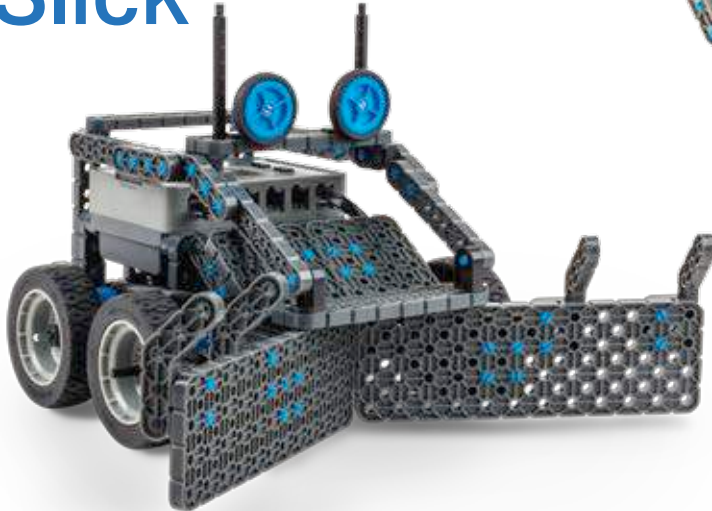
Kiwi Drive Bot

Build instructions are available online!
vexiq.com/explore

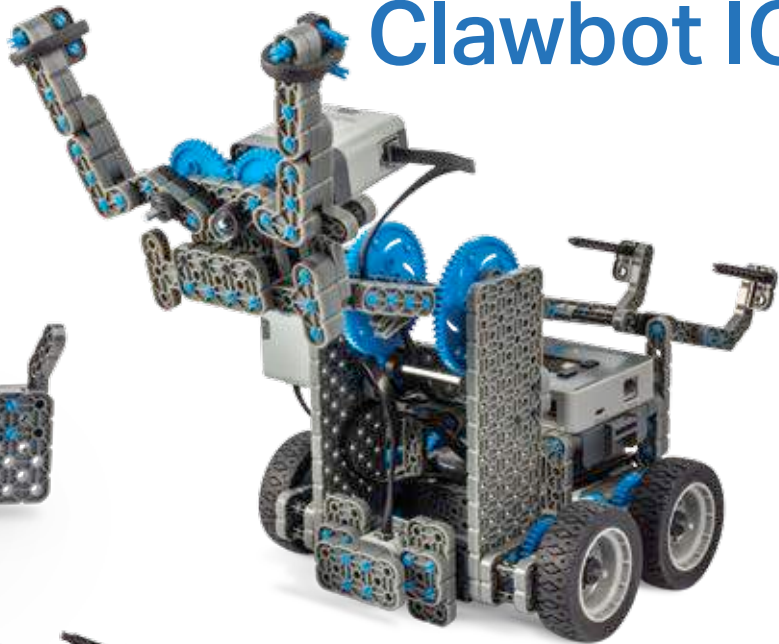**Ike**
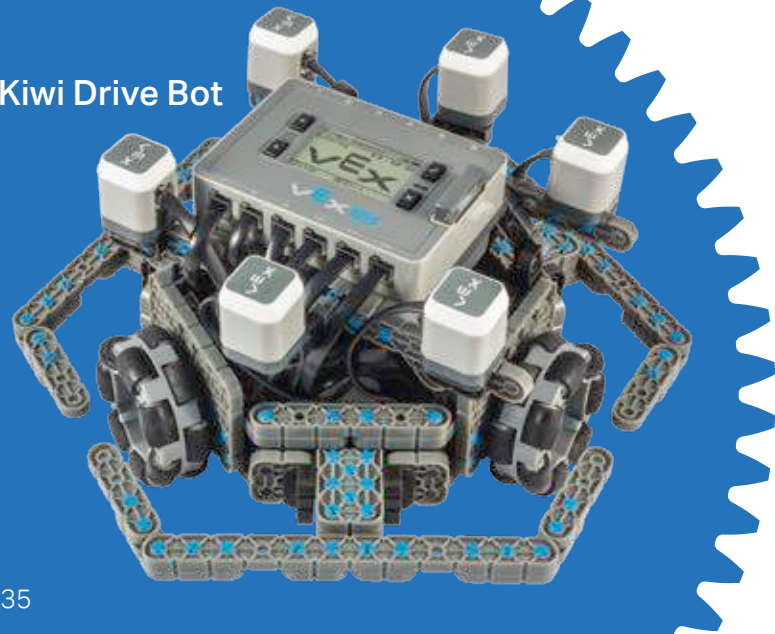
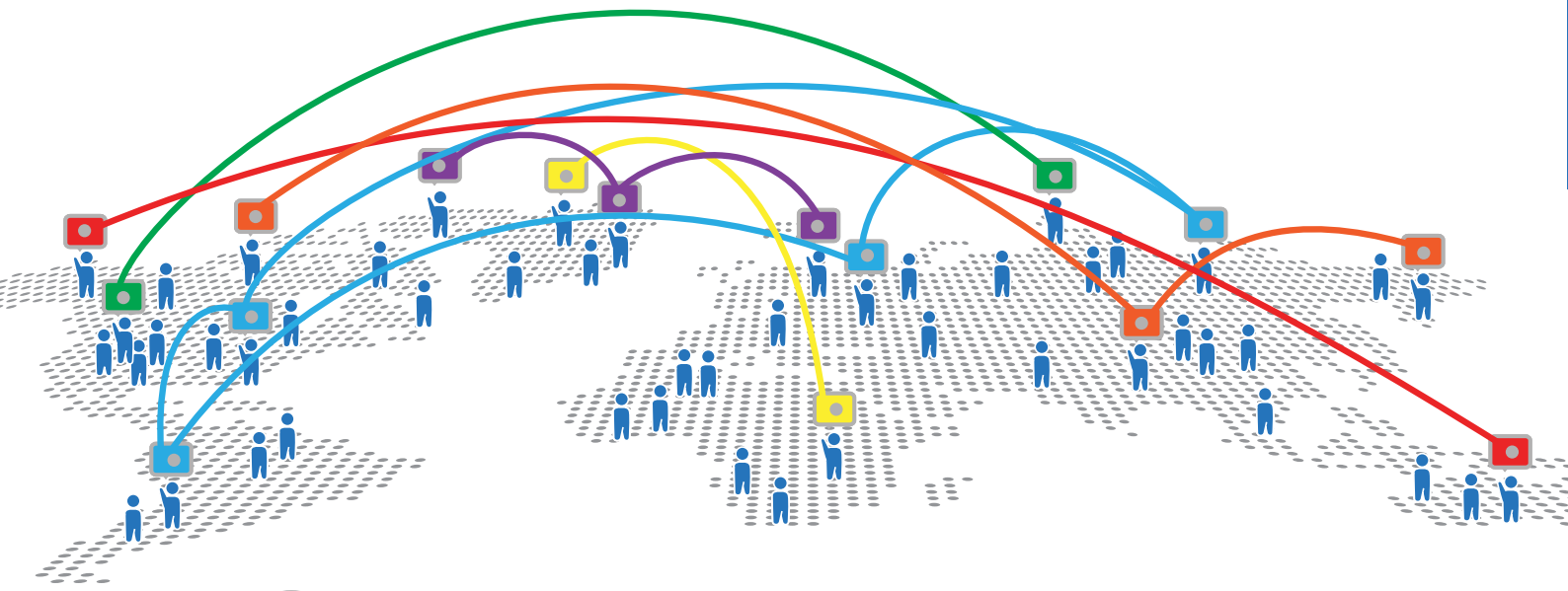**Linq**

Allie
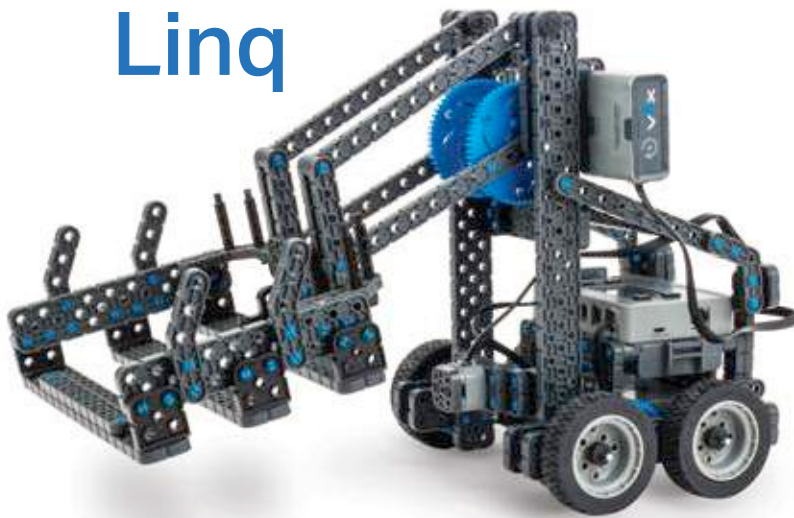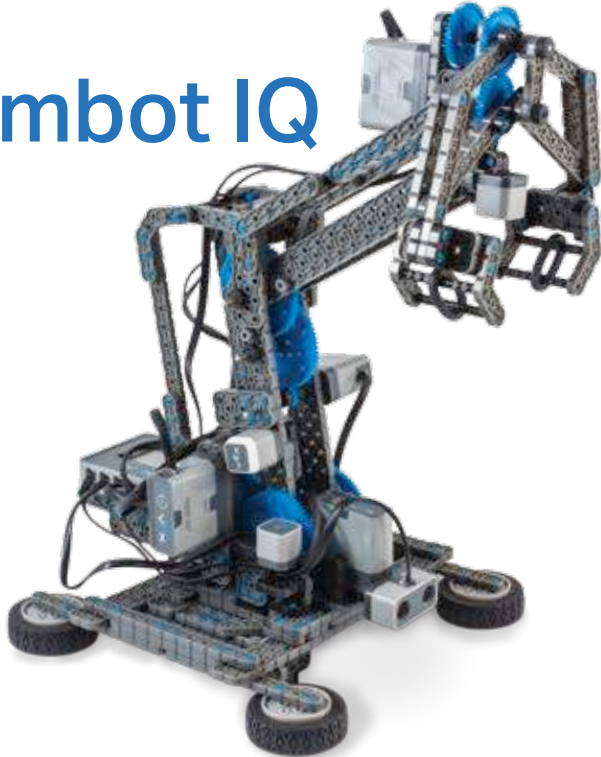
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Clawbot IQ

Armbot IQ

V-Rex

Questions?
We've got answers!

The VEX IQ Forum is the go-to place for any VEX related question. Have a question about a specific game rule or situation? Ask it in the Official VEX IQ Challenge Q&A channel! Or, if you're having problems with your code or a specific part, post your question in a Technical Support channel for nearly instantaneous help from VEX staff or members of the community. Feel free to share your creations in the Robot Showcase channel or on VEX Social Media!

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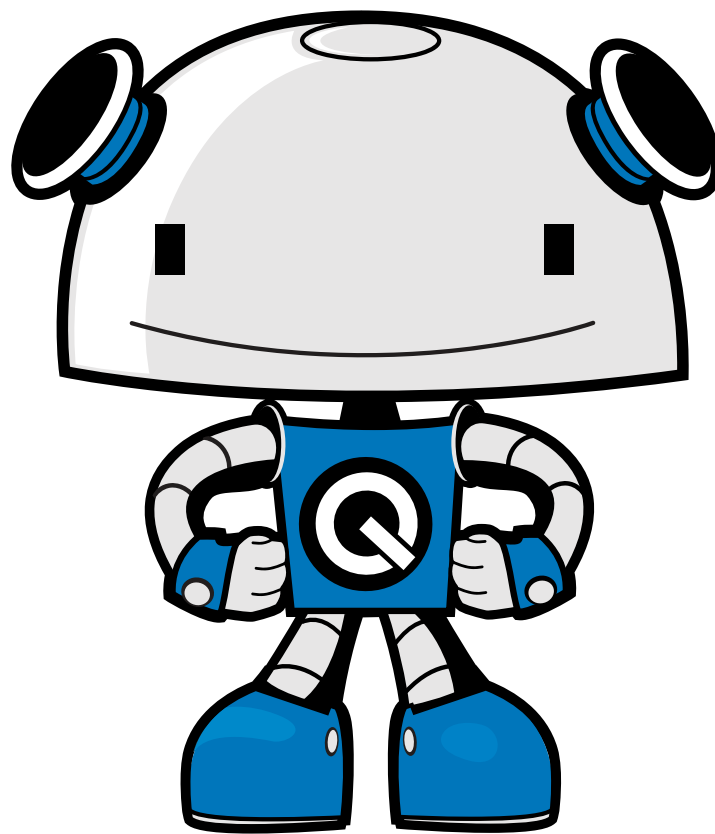
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