B

Let's Get Started

B.1

Let's Get Started

Unit Overview:

In this unit you will learn about the VEX IQ kit contents, the VEX IQ Controller, the VEX IQ Robot Brain, and all other important parts. You may also learn how pair the Controller with the Robot Brain and how to use a protractor to identify Angle Beam types.

Unit Content:

- Using VEX IQ Hardware
- Using the VEX IQ Controller & Robot Brain

Unit Activities:

- Matching Exercise
- Pairing the Controller with the Robot Brain (see VEX IQ Kit Documentation for procedure)
- Optional: Identifying Angle Beam types with the use of a protractor (see teacher for details)

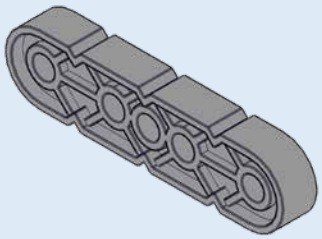
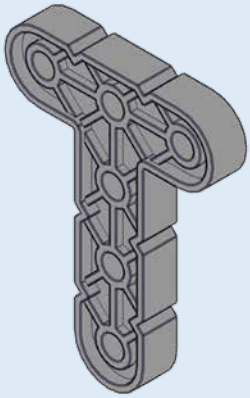
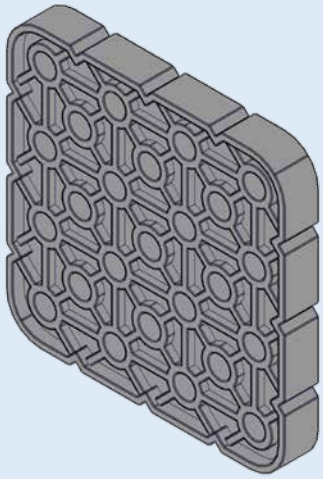
Note: Separate copies and/or printouts of activities may be used for student work. Please see your teacher BEFORE writing in this guide. Visit www.vexiq.com/curriculum to download and print PDFs of all exercises!

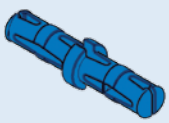
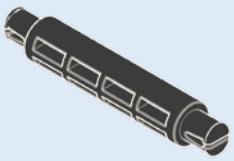
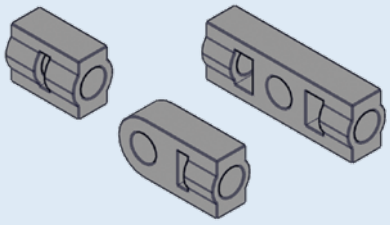
B.2

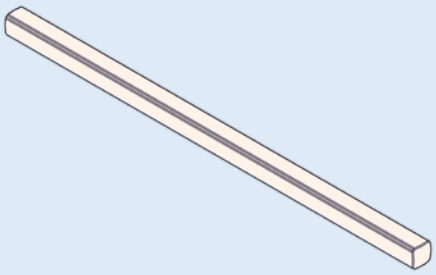
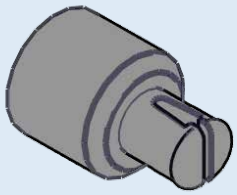
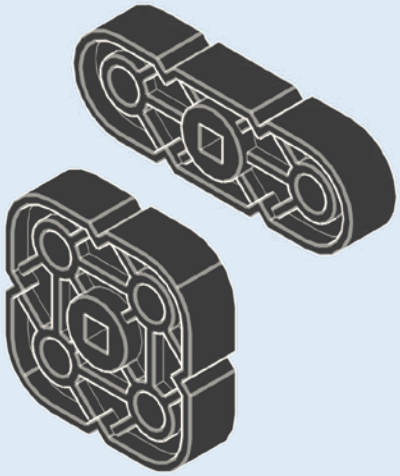
Using VEX IQ Hardware

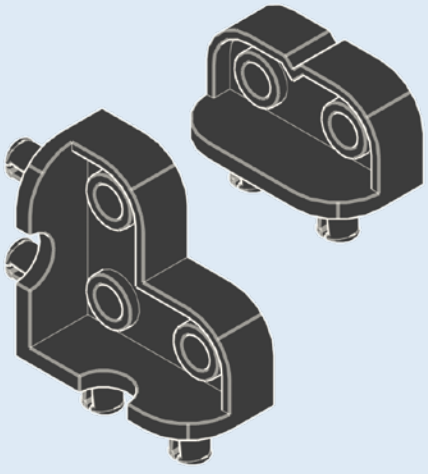
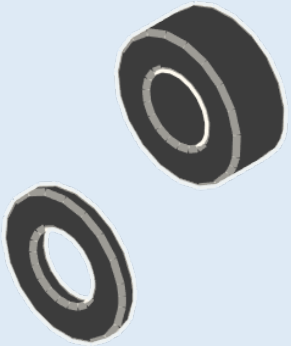
The VEX IQ platform kits provide easy, fun, and accessible tools to teach and learn about all four legs of STEM, no matter what your learning needs and desires may be. This curriculum unit lesson will familiarize you with the kit hardware. If you're looking for information on the VEX IQ Controller or Robot Brain, please see our second lesson (B.2) that covers those topics. One of the best overall features of the VEX IQ hardware is its flexibility. If you can imagine it, you can build it with VEX IQ. The system allows for building of non-powered models, powered mechanisms and machines, as well as full-blown teleoperated and autonomous robots, enabling teaching and learning in a wide variety of ways while engaging and challenging every student from beginner to expert.

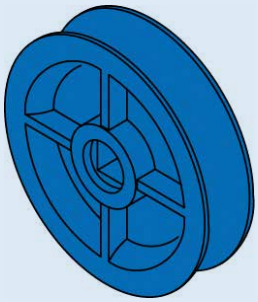
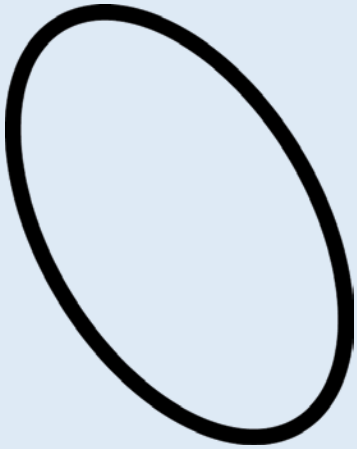
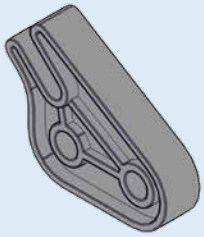
Kit Hardware Overview

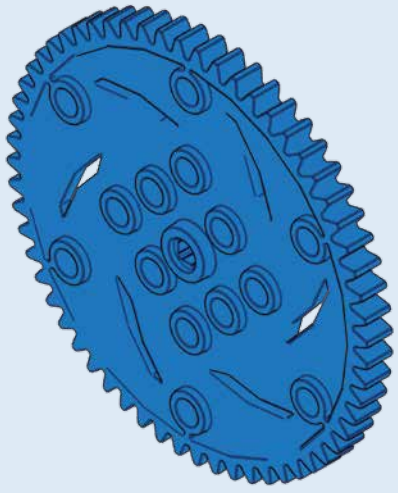
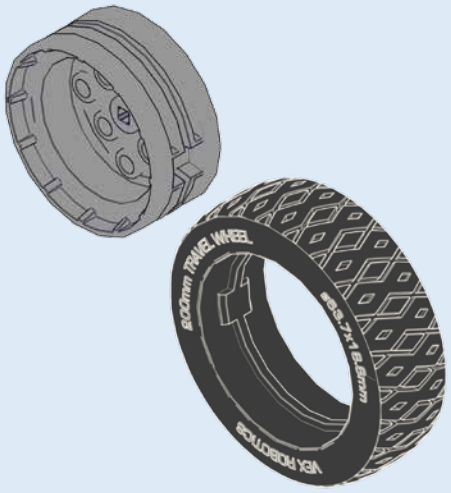
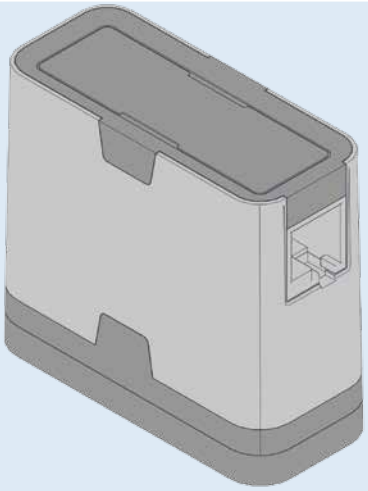
Beams various sizes	Specialty Beams angle, tee, right-angle beams	Plates various sizes
		
Structural parts.	Structural parts.	Structural parts.

Connector Pins several lengths	Standoffs several lengths	Standoff Connectors several types
		
Use with beams, plates, corner connectors, and more.	Maintain desired spacing between beams and plates.	Connect standoffs and connector pins.

Shaft several lengths	Shaft Bushing	Shaft Lock Plates multiple sizes
		
Transmit power to, or allow rotation of, wheels, pulleys, gears, and more.	Interfaces shafts with beams and plates, allowing the shaft to spin and be held in desired location.	Plates that lock onto shafts allowing design components to spin with the shaft.

Rubber Shaft Collars	Corner Connectors several types	Washers & Spacers
		
Holds objects on shafts and/or the shaft itself in place.	Create corner connections between beams, plates, or other VEX IQ parts.	Use with shafts, reduces friction and maintains desired spacing.

Pulleys several options	Rubber Belts several size options	Rubber Band Anchor
		
Drive belts or make rollers and small wheels.	Use with pulleys, as a form of stored energy, and/or as a fastener.	Use with rubber belts and bands.

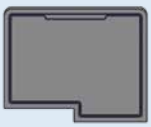
Gears several lengths	Wheel Hubs and Tires several size options	Smart Motor
		
Transmit power to another gear and/or mechanism.	Rolling and powering movement.	Creates rotary motion.

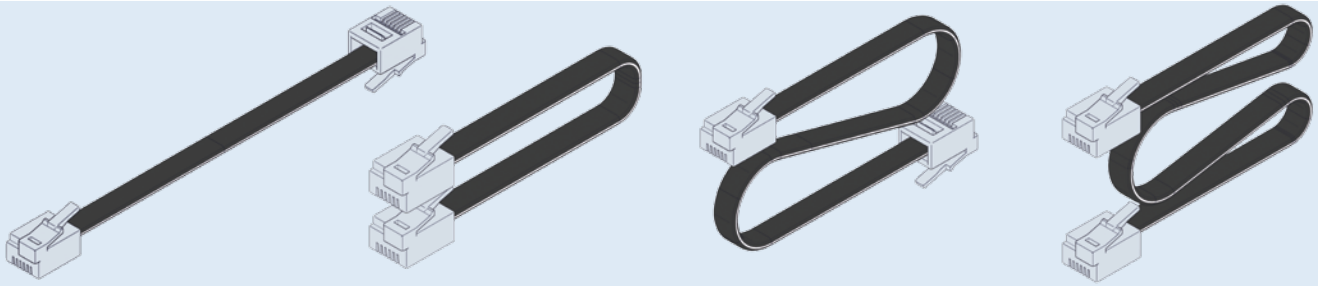
B.3

Using the VEX IQ Controller and Robot Brain

The VEX IQ Controller and Robot Brain are easy to use. This lesson will introduce their key components and get you up and running in no time. Don't forget to see your kit documentation for more useful information.

Component Overview

Controller	Robot Brain	Radio
		
Pair the Controller with a Robot Brain and gain full control of your robot. Over 50 hours of battery life on a single charge.	Use the twelve identical smart ports to connect any device to any port. Built in programs make robot building fast and fun. Programmable.	Connects the Controller with the Robot Brain. Both 900 MHz and 2.4 GHz options to accommodate worldwide use.

Smart Cables

Cables of different lengths to connect your Smart Motors and sensors to the Robot Brain.

B.4

Optional Activities

Pairing the VEX IQ Controller with the Robot Brain: Your teacher may choose to pair the Controller and Robot Brain for you or have you do it. Please see your teacher and your kit documentation for details.

Identifying Angle Beam Types: Your teacher may choose to teach you different ways to identify Angle Beam types, including using a protractor to measure angles. Please see your teacher for details.

B.5

Let's Get Started Matching Exercise

Student Name(s): _____

Teacher/Class: _____ Date: _____

Instructions:

Match terms from the word bank and label correctly below each picture (pictures are NOT to scale).

Word Bank:

Specialty Beam	Beam	Connector Pin	Controller
Corner Connector	Gear	Plate	Pulley
Radio	Robot Brain	Rubber Band Anchor	Rubber Belt
Rubber Shaft Collar	Shaft	Shaft Bushing	Smart Motor
Standoff	Standoff Connector	Tire	Wheel Hub