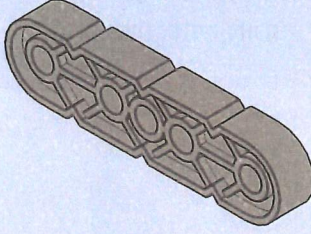

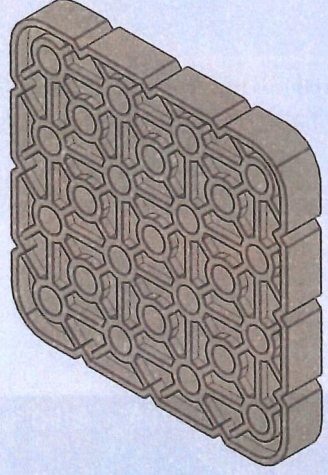



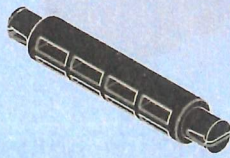
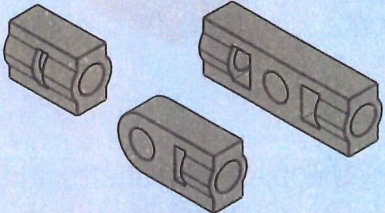
B.2

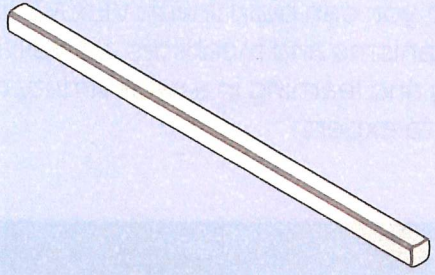
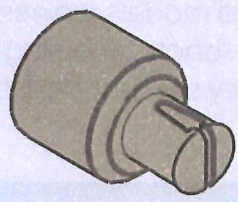
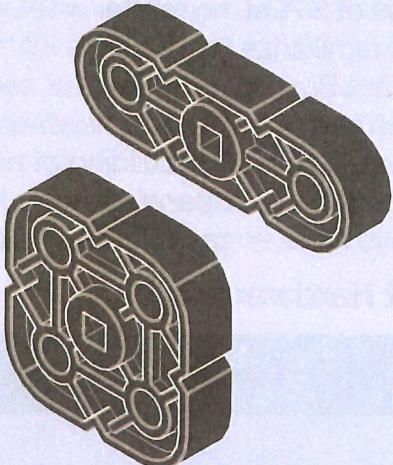
Using VEX IQ Hardware

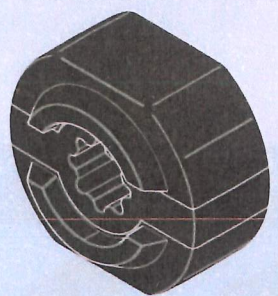
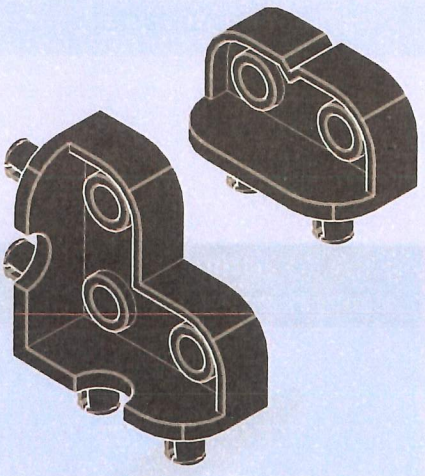
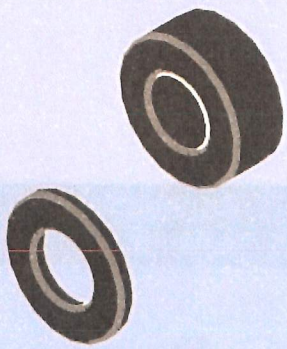
The VEX IQ platform kits provide easy, fun, and accessible tools to teach and learn about all four legs of STEM, no matter what your learning needs and desires may be. This curriculum unit lesson will familiarize you with the kit hardware. If you're looking for information on the VEX IQ Controller or 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.

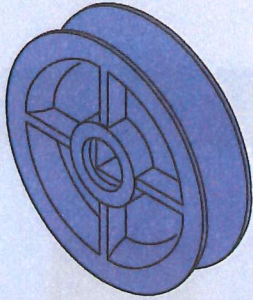
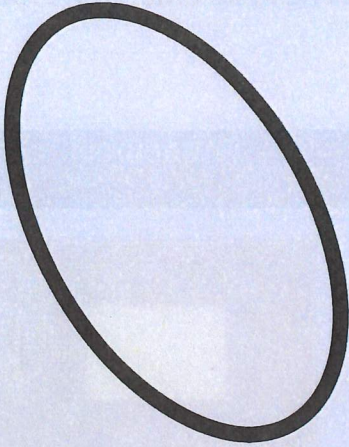
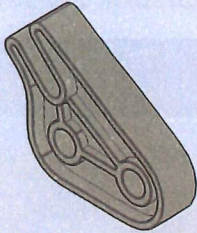
Kit Hardware Overview

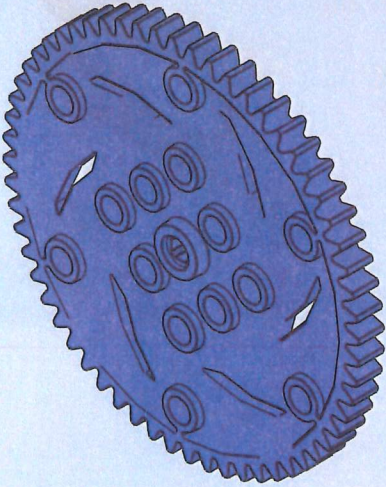
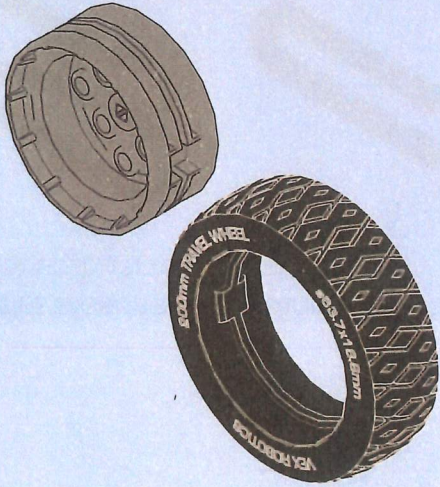
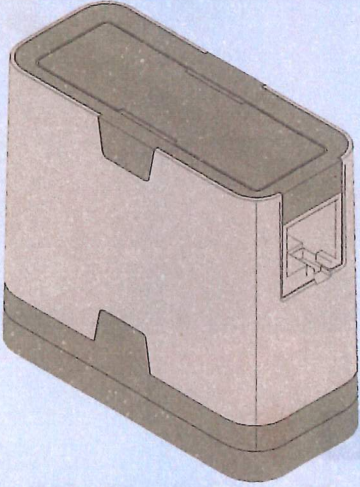
Beams various sizes	Specialty Beams angle, tee, right-angle beams	Plates various sizes
		
Structural parts.	Structural parts.	Structural parts.

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
		
<p>Transmit power to, or allow rotation of, wheels, pulleys, gears, and more.</p>	<p>Interfaces shafts with beams and plates, allowing the shaft to spin and be held in desired location.</p>	<p>Plates that lock onto shafts allowing design components to spin with the shaft.</p>

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

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.

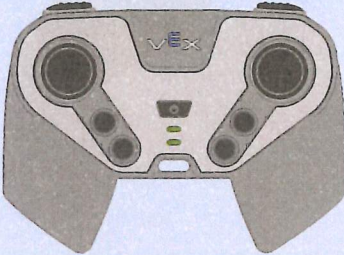

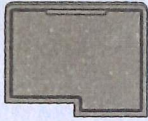
Gears several lengths	Wheel Hubs and Tires several size options	Smart Motor
		
Transmit power to another gear and/or mechanism.	Rolling and powering movement.	Creates rotary motion.

B.3

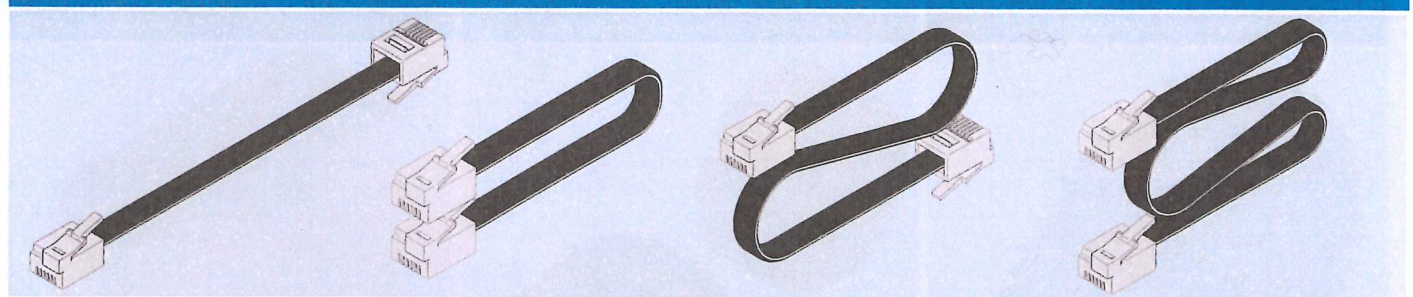
Using the VEX IQ Controller and Robot Brain

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

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.