



Hands-on, minds-on learning with
LEGO® Education



FREE freight
on all orders over \$199*

*Conditions apply, see website for details

teaching.com.au
P 1800 251 497 F 1800 151 492

PROFESSIONAL LEARNING

Inspired through learning!

School Professional Learning is important for the growth of your staff and students.

Modern Teaching Aids offers Professional Development programs to ensure teachers get the most out of their investment in LEGO® Education resources. All MTA facilitators are experienced classroom users of LEGO Education products. Through hands-on workshops participants will learn how to apply LEGO Education resources in the classroom to meet curriculum objectives.

Modern Teaching Aids workshops are designed to enable teachers to better facilitate rather than direct student learning, thereby encouraging students to take a more active role in the learning process.

Workshops and information sessions on offer:

- LEGO MINDSTORMS® Education EV3
- LEGO Education WeDo 2.0

For further information on workshops in your area visit www.teaching.com.au/page/mta-lego

NESA Registered Professional Development

Modern Teaching Aids is endorsed to provide NESA Registered Professional Development for teachers accredited at Proficient Teacher in NSW for the “Introductory Robotics Workshop Coding Made Easy with LEGO Education EV3”.

Completing this Introductory LEGO Education EV3 workshop will contribute 5 hours of NESA Registered PD addressing 2.1.2,2.6.2,3.3.2,6.2.2 from the Australian Professional Standards for Teachers towards maintaining Proficient Teacher Accreditation in NSW.

‘/LESSONS’ – the new free resource page for lesson plans

Visit <https://education.lego.com/en-au/lessons> to easily find use, and share LEGO Education lesson plans. Select the Year level, subjects you want to teach, duration of the lesson, difficulty and/or the product you want to use, and all available lesson plans will be ready to be used!



Useful links

MTA Professional Development Workshops:
www.teaching.com.au/page/mta-lego

LEGO Education Resources:
www.teaching.com.au (Click on LEGO Education)

LEGO Education ‘/LESSONS’
<https://education.lego.com/en-au/lessons>

ACARA Curriculum Links for RoboCup Junior Australia (RCJA)
<http://www.robocupjunior.org.au/acara>

FIRST® LEGO League:
<http://firstaustralia.org/programs/first-lego-league/>

Useful LEGO Community:
<http://www.legoengineering.com/>

EV3 and NXT related resources:
www.damienkee.com

Free NXT & EV3 Tutorials:
www.drgraeme.org

MTA catalogues

Look out for our main MTA and LEGO Education Early Learning catalogues, or find all of our products online at teaching.com.au







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Valid until 31st December 2019.

Promotional value excludes GST. Offer excludes export & new projects.



PRIMARY	SECONDARY
<p>The hands-on learning tools in this developmental level channel students' creativity and jump-start their STEAM engagement. The Primary solutions are designed to introduce them to STEAM concepts while improving collaboration, communication, and problem-solving skills. Our lesson plans are aligned to national standards, and provide learning opportunities across grades and STEAM subjects.</p>	<p>Using smart bricks and digital tools, students at this developmental level can explore coding, programming, and engineering. The Secondary solutions help develop critical-thinking skills, expand creativity, and explore real-life STEAM themes. Each engaging lesson plan is aligned to national standards.</p>
WeDo 2.0	LEGO® MINDSTORMS® EDUCATION EV3
WeDo 2.0 Core Set	LEGO® MINDSTORMS® Education EV3 Core Set EV3 Science: Renewable Energy Add-On Set Temperature Sensor EV3 Space Challenge Set EV3 Expansion Set
  EARLY SIMPLE MACHINES SIMPLE MACHINES	  SIMPLE & POWERED MACHINES
Early Simple Machines Core Set Simple Machines Core Set	Simple & Powered Machines Core Set Renewable Energy Add-On Set Pneumatics Add-On Set

What is a solution?

When you invest in a LEGO® Education solution, you receive comprehensive unit plans, teacher support, opportunities for professional development, and endless possibilities for your classroom. To get even more learning out of your solution you can purchase add-on components or replacement parts. Graphics like the ones below will help you figure out what comes standard in each solution and what can be added to it.

SOLUTION INCLUDES	ADDITIONS
<p>CORE A tailored brick set for building engaging, meaningful, hands-on learning experiences.</p> <p>SOFTWARE Easy-to-use software and apps for a range of devices.</p> <p>UNIT PLAN Subject-specific lessons and activities aligned to national standards.</p> <p>TEACHER SUPPORT Tools, rubrics, and teacher guidance.</p> <p>TECHNICAL SUPPORT Online and phone support to address your inquiries or questions.</p>	<p>EXPANSION SETS & UNIT PLANS Additional unit plans and brick expansion sets to help take the LEGO® Education experience to the next level.</p> <p>PROFESSIONAL DEVELOPMENT Face-to-face training is available, as well as the opportunity to become a certified trainer.</p> <p>ACCESSORIES Additional accessories are available to build on core and expansion sets.</p> <p>REPLACEMENT PACKS Replacement bricks are available just in case some of your original bricks accidentally go home with a student.</p>

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The LEGO® Learning Solution

LEGO® Education believes that hands-on learning is an effective way to teach students of all levels skills like problem-solving, critical thinking, and more. Each solution is tailored to a specific grade level and designed to develop STEAM learning in a form that's both understandable and inspirational.

SKILLS ICONS

-  Recommended students per set
-  Total number of elements in a set
-  Storage box included
-  Suitable age range of set
-  Projects/activities/lessons in a unit plan
-  Duration of project/activity/lesson
-  Free website downloads
-  Free app available
-  Science, Technology, Engineering, Art, Math
-  Coding
-  Social & Emotional Development


**STEAM
CODING**

“STEM is important for a ton of reasons. Mostly having to do with the grit that it instills in kids who actually try.”

MARK McCOMBS
FOUNDER OF RENAISSANCE
JAX AND TEDx TALK SPEAKER,
JACKSONVILLE, FLORIDA

SYSTEM REQUIREMENTS

For LEGO MINDSTORMS Education EV3 we offer two software versions: EV3 Lab for desktop devices, and EV3 Programming for tablets and Chromebooks. To find out if your device is supported, please visit:

LEGOeducation.com/start

Inspired through learning with LEGO® MINDSTORMS® Education EV3!

LEGO® MINDSTORMS® Education EV3 is a hands-on, cross-curricular STEAM solution that combines LEGO Technic elements, classroom-friendly software, and standards-aligned lessons to spark creative confidence and critical thinking. This solution tackles subjects like engineering, coding, and physics with intuitive guides and smart bricks and puts real-life STEAM topics right at students’ fingertips.

SOLUTION INCLUDES

CORE & SOFTWARE

EDUCATION EV3 CORE SET
EV3 LAB & EV3 PROGRAMMING

UNIT PLANS

EV3 DESIGN ENGINEERING PROJECTS
EV3 CODING ACTIVITIES
EV3 MAKER ACTIVITIES

UNIT PLANS WITH ADDITIONAL PARTS REQUIRED

EV3 SPACE CHALLENGE
EV3 SCIENCE

SUPPORT

GETTING STARTED TUTORIALS
EV3 TEACHER GUIDES
PLUS: ASSESSMENT TOOLS & TECHNICAL SUPPORT

ADDITIONS

EXPANSION SETS

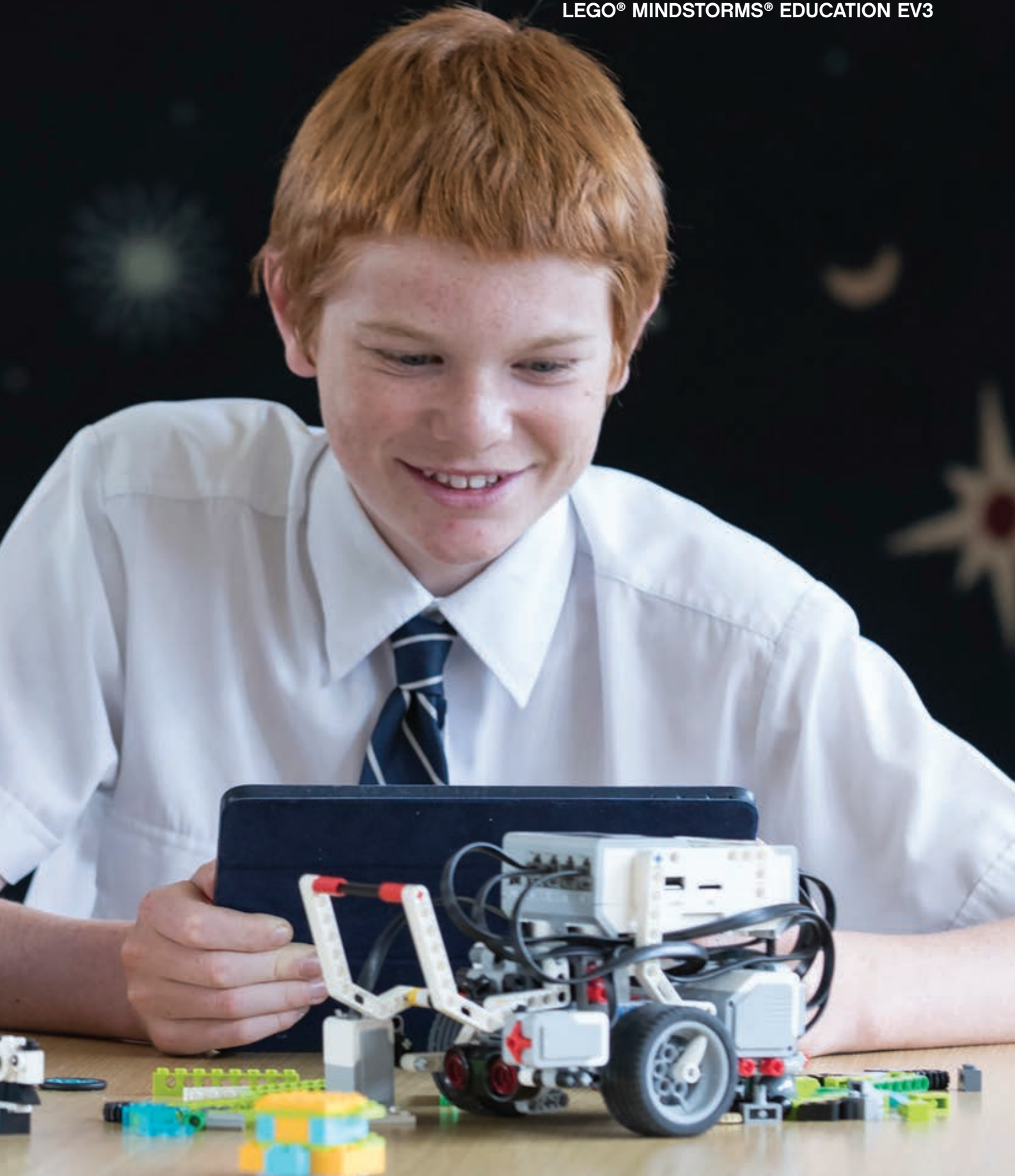
EV3 SPACE CHALLENGE SET
RENEWABLE ENERGY ADD-ON SET & TEMPERATURE SENSOR
EV3 EXPANSION SET

ACCESSORIES & REPLACEMENT PACKS

TRAINING & PROFESSIONAL DEVELOPMENT



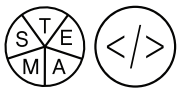
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STEAM
CODING

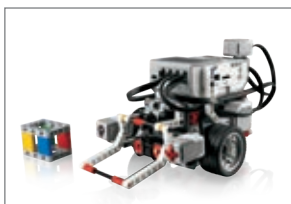
GETTING STARTED



Set up by installing software, unboxing and sorting bricks, and powering up the EV3 brick.



Learn the basics by connecting and building your first program.



Start creating and controlling your robot.

CORE

LEGO® MINDSTORMS®
Education EV3 Core Set

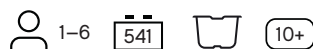
LEG45544-1

\$679.95

This set contains all the tools you need to start exploring STEAM and computer science using the LEGO® MINDSTORMS® Education EV3 concept. This system uses the Intelligent EV3 brick, a small, programmable computer that allows students to control motors and collect sensor feedback. When this brick meets icon-based programming and data-logging software, students get hands-on experience with simple engineering and coding.

KEY LEARNING VALUES

- Create, communicate, collaborate, and code
- Test, troubleshoot, evaluate, and revise designs
- Understand and use science and mathematical concepts
- Apply critical-thinking skills



Included with every purchase of the EV3 curriculum solution

UNIT PLAN

EV3 Coding Activities

This solution supports a computing or computer science unit plan. EV3 Coding activities also have cross-curricular opportunities within science, design, technology, and math. With EV3 Coding activities, students can develop their programming knowledge and discover coding in everyday life.



UNIT PLAN

EV3 Maker

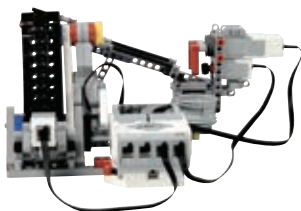
When you combine the building, coding, and learning power of LEGO MINDSTORMS Education EV3 with the creative freedom of Maker, there's no end to the possibilities of students' imaginations. This unit plan lets teachers guide their students through open-ended design challenges based on real-world scenarios. Students get hands-on experience sharing ideas, defining design criteria, and tinkering with advanced prototypes.



UNIT PLAN

EV3 Design Engineering Projects

This unit plan turns students into engineers through engaging problem-solving. Projects like building autonomous robots, experimenting with ultrasonic sensors, and constructing robotic systems help students learn STEAM topics in a fun, hands-on way. Each activity includes a design brief and culminates in a final project that can help hone students' presentation skills.



Robotic systems that perform complex tasks.



Measure distance and speed.



Robots that react to the environment.





Support for every STEM subject

Regardless of which STEM subject you want to teach EV3 provides everything you need to deliver an engaging learning experience, including Quick Start videos and guided Robot Educator tutorials.

Bringing Best-in-Class STEAM and Robotics Tools to the Classroom

Digital Technologies

Programming for real. Develop computational thinking skills through coding by enabling students to program simple and complex algorithms via an easy-to-use drag and drop interface.

Science

Learning by doing. Design, build and test robots that can record live data and respond to environmental changes.

Technologies

Real-world robotics. Actively engage students in the world of robotics in order to solve problems or challenges.

Engineering

From idea to working prototype. Engage your students in practical, open-ended engineering challenges and open-ended problem solving.

Maths

Complex numbers simplified. Explore applied mathematics, making abstract concepts tangible by integrating maths and science using physical constraints.



Program EV3 with 3rd party software*

The LEGO® MINDSTORMS® Education EV3 Core Set can, besides with the LEGO Education EV3 software, also be programmed with Apple Swift Playground, CoderZ and Roberta. This allows students and teachers to use both block-based and textbased programming languages.

Make Code



- MakeCode is an online, browser-based Microsoft block-based programming environment (www.MakeCode.com).
- Users can also program in JavaScript and convert this into block-based programming (and visa verse).
- In the MakeCode extension is the simulator, where the user can easily see the immediate effect of the coding
- Includes getting started activities and lessons developed by LEGO Education.

Scratch 3.0



- Online programming environment
- Based on Blockly (programming blocks with text labels)
- Large active online community with lesson plans and teacher ideas and inspiration
- Free download from <https://scratch.mit.edu/>

Apple Swift Playground



- Apple's playful learn to code language
- Text based programming, using Swift programming
- Free to download, with a great free tutorial
- Only compatible with iPads
- Download from <https://www.apple.com/au/swift/playgrounds/>

CoderZ



- Online learning environment where students worldwide learn STEM by coding virtual 3D robots
- Block-based language and text-based programming
- Browser based platform
- Visual programming interface: see the Java code behind the blocks. More experienced students can program directly in Java
- Download from <http://gocoderz.com/>

Roberta



- Cloud-based integrated programming environment that requires no registration and is completely open source
- Requires USB WiFi Dongle and a micro SD card
- Implementation languages are Java, JavaScript and html (NEPO)

CODE CONFIDENTLY EV3 LAB & PROGRAMMING

Take complete control of your robot and sensors with the intuitive drag-and-drop programming interface.



FLOW BLOCKS

These blocks help the program start, stop, pause, or repeat.



OUTPUT BLOCKS

These are blocks that define the outcome - like motor action, sound, light, or display.



INPUT BLOCKS

These blocks define the input, such as sensor, sound, or text.

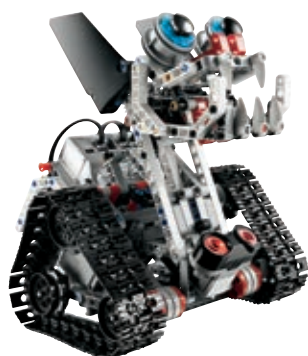


LEGO® MINDSTORMS® EDUCATION EV3

**BUILD MORE COMPLEX
AND ADVANCED MODELS**



Stair Climber Robot



Znapp Robot



Tank Bot Robot

EXPANSION SET

EV3 Expansion Set Add-on

LEG45560

\$189.95

This set contains a wide range of supplementary elements like fun advanced building activities and additional mechanical elements to help students deepen their robotics experience and engage their creative instincts. **EV3 LAB ONLY TO GET THE FULL EXPERIENCE.**

REQUIRES ADDITIONAL PRODUCTS

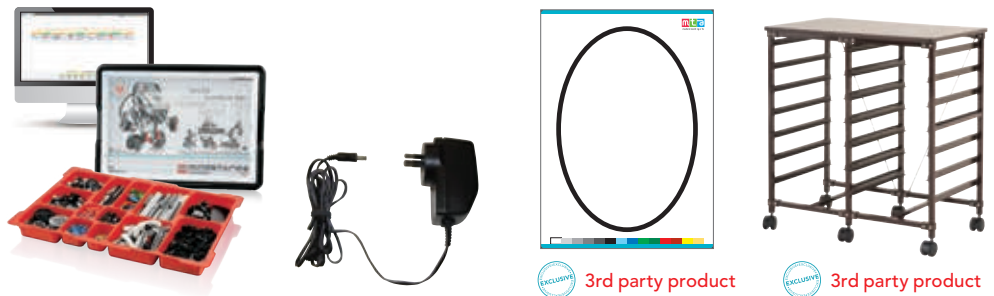
LEGO® MINDSTORMS® Education EV3 Core Set (LEG45544-1), see page 4





Classroom Solutions

EV3 Curriculum Solution Packs



3rd party product

3rd party product

		LEGO Education EV3 Curriculum Solution LEG45544-1	Battery Charger LEG8887	Robotics Traing Mat ROB014	MTA Storage System Double SUN8327
LEG45544-1K 2-3 students	\$729.95 SAVE \$9.95	1	1		
LEG45544-4 8 students	\$2,919.95 SAVE \$149.60	4	4	1	
LEG45544-4S 8 students	\$3,119.95 SAVE \$210.55	4	4	1	1
LEG45544-5 10 students	\$3,639.95 SAVE \$169.50	5	5	1	
LEG45544-5S 10 students	\$3,799.95 SAVE \$270.45	5	5	1	1
LEG45544-6 12 students	\$4,359.95 SAVE \$189.40	6	6	1	
LEG45544-6S 12 students	\$4,519.95 SAVE \$290.35	6	6	1	1

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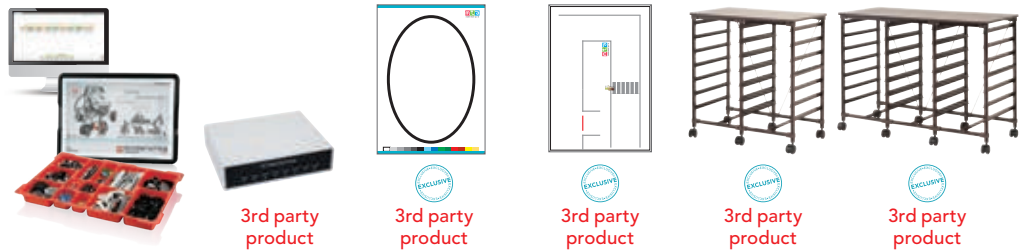
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LEGO® MINDSTORMS® EDUCATION EV3



Classroom Solutions

EV3 Curriculum Solution Packs

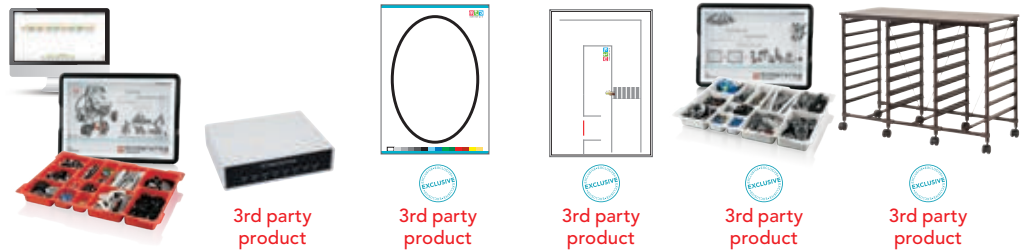


	LEGO® Education EV3 Curriculum Solution LEG45544-1	Battery Multi-Charger WLMC01	Robotics Training Mat ROB014	Robotics Challenge Mat ROB15	MTA Storage System Double SUN8327	MTA Storage System Triple SUN8337
LEG45544-8 16 students SAVE \$319.55	8	1	1			
LEG45544-8S 16 students SAVE \$411.00	8	1	1			1
LEG45544-10 20 students SAVE \$459.45	10	1		1		
LEG45544-10S 20 students SAVE \$481.35	10	1		1	2	
LEG45544-12 24 students SAVE \$729.30	12	2		1		
LEG45544-12S 24 students SAVE \$861.20	12	2		1	2	
LEG45544-15 30 students SAVE \$1,009.15	15	2		1		
LEG45544-15S 30 students SAVE \$1,272.05	15	2		1		2



Classroom Solutions

EV3 Curriculum Solution Packs



	LEGO Education EV3 Curriculum Solution LEG45544-1	Battery Multi-Charger WLMC01	Robotics Training Mat ROB014	Robotics Challenge Mat ROB15	EV3 Expansion Set LEG45560	MTA Storage System Triple SUN8337
LEG45544-8C 16 students SAVE \$429.35	8	1		1	4	
LEG45544-8CS 16 students SAVE \$672.25	8	1		1	4	2
LEG45544-10C 20 students SAVE \$469.20	10	1		1	5	
LEG45544-10CS 20 students SAVE \$632.10	10	1		1	5	2
LEG45544-12C 24 students SAVE \$968.95	12	2	1	1	6	
LEG45544-12CS 24 students SAVE \$1,181.85	12	2	1	1	6	2
LEG45544-15C 30 students SAVE \$1,338.70	15	2	1	1	8	
LEG45544-15CS 30 students SAVE \$1,633.05	15	2	1	1	8	3



Explore renewable energy and build and conduct science experiments with LEGO® MINDSTORMS® Education

LEGO® MINDSTORMS® Education EV3 Science lessons are designed to fit within your class time and bring real-world scenarios to life. Students conduct science experiments which explore physical science concepts. LEGO MINDSTORMS Education EV3 Science curriculum challenges students through experiments focused on energy, forces and motion, light and heat and temperature.



Classroom Solutions

Science Activity Add-on Packs



	LEGO Education EV3 Curriculum Solution LEG45544-1	Temperature Sensor LEG9749	Renewable Energy Add-on Set LEG9688	Battery Charger LEG8887
LEG9688-T1 \$289.95 SAVE \$27.95		1	1	
LEG9688-T4 \$1,099.95 SAVE \$171.65		4	4	
LEG9688-T8 \$2,149.95 SAVE \$393.25		8	8	
LEG45544-RE4 8 students \$3,929.95 SAVE \$301.25	4	4	4	4
LEG45544-RE8 8 students \$7,649.95 SAVE \$812.45	8	8	8	8

EXPANSION SET

LEGO® MINDSTORMS® Renewable Energy Add-on Set

LEG9688

\$249.95

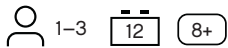
Part of preparing students for the world of tomorrow is teaching them about renewable energy. This add-on set allows students to explore and understand energy sources like solar cells, wind turbines, and hydro-electric power plants. The Renewable Energy Add-On Set can be used with the Simple & Powered Machines Core Set and LEGO MINDSTORMS Education EV3.

KEY LEARNING VALUES

Explore energy supply, transfer, accumulation, conversion and consumption
Understand and use energy variables, volts, amps, watts, and joules

REQUIRES ADDITIONAL PRODUCTS

LEGO® MINDSTORMS® Education EV3 Core Set (45544), see page 4



EXPLORE PHYSICAL SCIENCE EXPERIMENTS



FORCE & MOTION

Explore mechanical and kinetic phenomena, including gears, friction, inclined planes, and free fall.



LIGHT

Investigate the phenomena of light and light intensity.



ENERGY

Explore energy—from simple manual energy transfer to wind energy, solar energy, and electric vehicles.



HEAT & TEMPERATURE

Study the phenomena of insulation and heat transfer through heat and temperature experiments.

LEGO® MINDSTORMS® EDUCATION EV3

Teach STEM with a Mission to Mars using LEGO® MINDSTORMS® Education EV3 Space Challenges

This curriculum conforms to national curriculum standards and contains challenge and learning missions based around the theme of space. Three research projects, co-developed with space experts, providing rich opportunities for students to explore and create innovative solutions to current space exploration topics. The EV3 Space Challenge Set* includes three learning mats, a challenge mat, dual lock tape and all of the LEGO® elements required to build the challenge models*. The accompanying digital content provides student-ready materials, teacher notes and Building Instructions.

*Not included and sold separately.



The EV3 Space Challenge Curriculum is only available for desktops with EV3 Lab. It requires the LEG45570 EV3 Space Challenge Set.

Classroom Solutions

Space Challenge Packs



		LEGO® Education EV3 Curriculum Solution LEG45544-1	EV3 Space Challenge Set LEG45570	Battery Charger LEG8887
LEG45570-3	\$1,079.95 SAVE \$59.90		3	
LEG45570-6	\$2,139.95 SAVE \$139.75		6	
LEG45544-SP4 8 students	\$3,579.95 SAVE \$139.55	4	2	4
LEG45544-SP8 16 students	\$6,999.95 SAVE \$439.05	8	4	8

UNIT PLAN WITH ADDITIONAL PARTS REQUIRED

EV3 Space Challenge Set

LEG45570

\$379.95

Take STEAM learning into the stratosphere with this expansion set co-developed with leading space experts. This set conforms to national standards and puts students to work on three space-themed research projects. The EV3 Space Challenge set includes three learning mats, a challenge mat, dual lock tape, and all the LEGO elements required to build challenge models. The accompanying digital content helps teachers and students blast off to hands-on learning. **EV3 LAB ONLY**

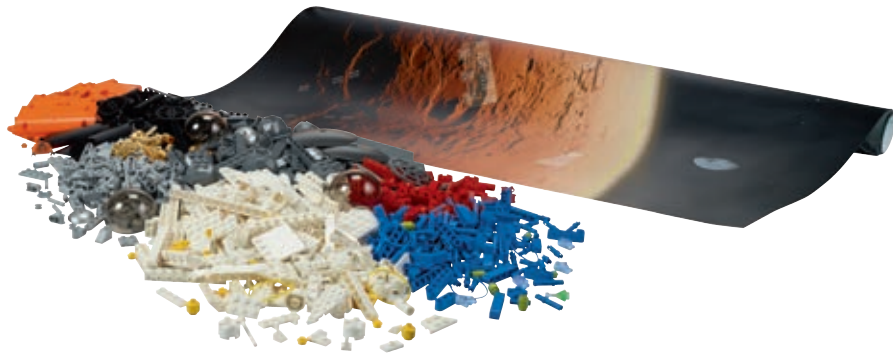
KEY LEARNING VALUES

- Get started with STEAM and robotics
- Discover real-world applications using problem-solving skills
- Develop solutions through teamwork skills
- Learn to build, test, and evaluate robots
- Gain hands-on experience with programming, sensors, motors, and intelligent units

REQUIRES ADDITIONAL PRODUCTS

LEGO MINDSTORMS® Education EV3 Core Set (LEG45544-1), see page 4

1-6
 1418
 10+
 20
 45-180



BEYOND THE MOON

If 50+ years of space exploration has taught us anything, it's that there's nothing truly final about the final frontier. In collaboration with space experts, LEGO Education brings Mars rover simulations and more to your classroom with expansion packs and space-themed unit plans. Sparking students' curiosity in space today may just mean igniting the innovations of tomorrow.



Space Challenger Launcher



Space Challenger Mars Outpost



Space Challenger Rocket and Launcher

Main Components

Transformer 10V DC

LEG8887 **\$59.95**

Allows you to recharge your LEG9693 Rechargeable Battery DC, EV3 rechargeable battery LEG45501 or LEG8878 Power Functions Rechargeable Battery Box. *Only compatible with the white Rechargeable Battery LEG9693.



EV3 Intelligent Brick

LEG45500 **\$439.95**

It features an illuminated 6 button interface, a high-resolution black and white display, built-in speaker, USB port, a mini SD card reader, 4 input ports and 4 output ports. Also supports USB, Bluetooth and WiFi communication.



EV3 Rechargeable DC Battery

LEG45501 **\$154.95**

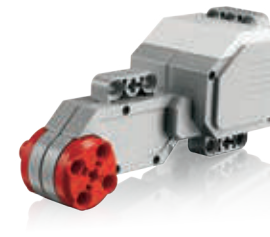
Designed for use with the EV3 Intelligent Brick. The charge time is around 3 to 4 hours. It requires the LEG8887 DC Charger, sold separately.



EV3 Large Servo Motor

LEG45502 **\$60.95**

Comes with built-in rotation sensor and has a 1 degree accuracy.



EV3 Medium Servo Motor

LEG45503 **\$49.95**

Comes with built-in rotation sensor and has a 1 degree accuracy. Great for lower load, higher speed applications.



EV3 Cable Pack

LEG45514 **\$32.95**

Contains the same 7x RJ12 Connector Cables as included in the LEG45544-1 EV3 Core Set & Software. The pack contains: 4x 25cm, 2x 35 cm, 1 x 50cm



Sensor Elements

Temperature Sensor

LEG9749 **\$67.95**

The temperature sensor is a digital sensor powered by the EV3 brick. It can be calibrated to measure both Celsius and Fahrenheit (-20 °C to +120 °C/-4 °F to +248 °F).



EV3 Ultrasonic Sensor

LEG45504 **\$60.95**

Measures distance and detect objects around the EV3.



EV3 Gyro Sensor

LEG45505 **\$61.95**

Measures angles and measures degrees per second of rotation.



EV3 Colour Sensor

LEG45506 **\$61.95**

Detects colours and measures light intensity, ambient and reflected light. Auto ID is built into EV3 software.



EV3 Touch Sensor

LEG45507 **\$39.95**

Has 3 different modes: It can be pressed, released or it counts the number of presses.



EV3 Infrared Beacon

LEG45508 **\$59.95**

For use with the EV3 Infrared Seeker Sensor. The beacon emits an infrared signal which the sensor can track. The beacon can also be used as a remote control for the EV3.



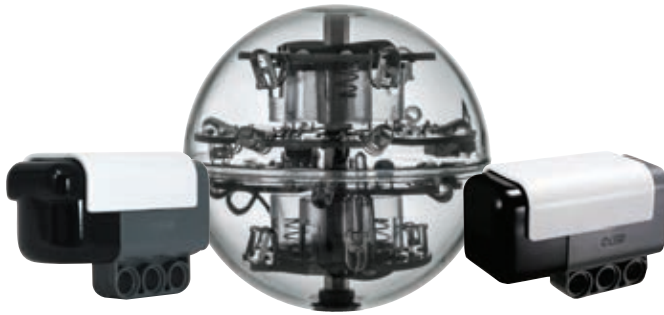
EV3 Infrared Sensor

LEG45509 **\$59.95**

Detects proximity to the robot and reads signals emitted by the EV3 Infrared Beacon. Can create remote controlled robots and learn how infrared technology is used.



ROBOTICS RESOURCES & ACCESSORIES



Soccer Kit

LEGIB1005K **\$294.95** **SAVE \$14.90**

The kit includes: Elekit IR Ball (LEGIB1005), HiTechnic IRSeeker V2 (LEGNX1042) to locate and provide the direction to the IRBall, HiTechnic Compass Sensor (LEGNX1034) to determine the orientation of the playing field and the heading to the goal.



Enquire about our Professional Learning workshops in your region

HiTechnic Sensors

Angle Sensor

LEGNX1030 **\$95.95**

Measure axle rotation position and rotation speed with the HiTechnic Angle Sensor. The Angle Sensor enables you to measure 3 rotation properties: 1. Absolute Angle 2. Accumulated angle 3. Rotation Speed - Perfect for building a distance measuring wheel or a weather station wind vane.



IR Seeker v2

LEGNX1042 **\$99.95**

With this sensor's ability to work in both DC and AC (pulsed) modes it can detect both the new and old RobocupJunior IR Balls.



Force Sensor

LEGNX1074 **\$99.95**

The Force Sensor will enable you to build robots that can measure a physical force applied through a LEGO® cross axle. The sensor has a LEGO cross axle receptacle and the value represents the force that is applied to an axle going into the sensor. Note that the force measured is the linear force going into the sensor.



Compass Sensor

LEGNX1034 **\$99.95**

The Compass Sensor is a digital compass for more accurate navigation.



Barometric Sensor

LEGNX1036 **\$99.95**

Track your environment with the HiTechnic Barometric Sensor. The sensor measures atmospheric pressure and temperature.



Colour Sensor v2

LEGNX1038 **\$99.95**

This colour sensor can detect an extended range of more than 15 target colours.



Flexi-Cables for NXT-EV3



- MIND020** 20cm – Set of 3 **\$22.95**
- MIND010** 10cm – Set of 3 **\$24.95**

Thin and flexible cables, compatible with both NXT and EV3. Supplied in a pack of 3 either 10 or 20cm long.



3 3rd party product

EVShield with Arduino Uno Bundle

MIND002 **\$129.95**

The Force Sensor will enable you to build robots that can measure a physical force applied through a LEGO cross axle. The sensor has a LEGO cross axle receptacle and the value represents the force that is applied to an axle going into the sensor. Note that the force measured is the linear force going into the sensor.



1 3rd party product

6-AA Battery Holder with EV3 Mount

MIND004 **\$17.95**

6-AA Battery Holder with NXT/EV3 Mounts - This battery holder is designed to hold 6 AA batteries. It has NXT and EV3 compatible mounting.



1 3rd party product

UI module for EVShield or Arduino

MIND003 **\$49.95**

This 2.2 inch 320x240 TFT Colour Display attaches to the EVShield for easy user interaction. It has a 5 Position Navigation Switch and has been integrated with the EVShield library for easy programming. It also works with just Arduino (without the EVShield).



1 3rd party product

EV3 Sensor Multiplexer for EV3 or NXT

MIND005 **\$89.95**

Need more Sensors? Connect up to 3 LEGO sensors on a single port. Works with NXT or EV3. It does not work with third party sensors. Supported Sensors: EV3 Ultrasonic, Gyro, Infrared, Colour and Touch sensor.

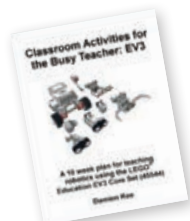


1 3rd party product

Classroom Activities for the Busy Teacher: EV3

LPLEG8 **\$76.95**

Need more Sensors? Connect up to 3 LEGO sensors on a single port. Works with NXT or EV3. It does not work with third party sensors. Supported Sensors: EV3 Ultrasonic, Gyro, Infrared, Colour and Touch sensor.



1 3rd party product

Multi-Charger Designed for EV3, NXT & WeDo 2.0 Batteries

WLMC01 **\$349.95**

Charge up to 8 EV3, NXT and WeDo 2.0 batteries simultaneously. It comes standard with 8 leads.

1 3rd party product



WLMC03 **\$44.95**

50cm cables (if extra length required). Set of 8.

8 3rd party product



WLMC04 **\$369.95**

Charge up to 10 EV3, NXT and WeDo 2.0 batteries simultaneously. It comes standard with 10 leads.

1 3rd party product



Rotacasters



ROT5435 **\$19.95**

ROT5460 **\$19.95**

Multi-directional wheels with LEGO compatible hub. Ideal for use in RobocupJunior events. ROT5435 – Dual 50mm Rotacaster - 35A - LEGO Hub - Each
ROT8465 – Dual 50mm Rotacaster - 60A - LEGO Hub - Each.



1 3rd party product



Omniwheel

LEG2051 **\$20.95**

These linear actuators are self contained units and include electric motors. They connect to the EV3 & NXT motor ports and can push loads up to 25N. FIR12-50 – 50mm length. FIR12-100 – 100mm length.



1 3rd party product

Actuator

FIR12-50 **\$94.95**

FIR12-100 **\$94.95**

This 2.2 inch 320x240 TFT Colour Display attaches to the EVShield for easy user interaction. It has a 5 Position Navigation Switch and has been integrated with the EVShield library for easy programming. It also works with just Arduino (without the EVShield).

1 3rd party product



STEM by Design Teaching with LEGO Mindstorms EV3

CO1001 **\$119.95**

STEM by Design contains a full range of classroom-tested activities for using the LEGO® Mindstorms EV3 Education Set.

1 3rd party product



Replacement packs for EV3 & NXT

LEGO® Education Replacement Packs are the ideal way to replace key elements for your LEGO Education products.



Replacement Pack 1
– LEGO® Education EV3

LEG2700 \$11.75

This pack includes elements for the EV3 Curriculum Solution (LEG45544-1) and the EV3 Expansion Set (LEG45560).



Replacement Pack 2
– LEGO® Education EV3

LEG2701 \$11.75

This pack includes elements for the EV3 Expansion Set (LEG45560).



Replacement Pack 3
– Ball & Ball Joint for EV3

LEG2702 \$14.50

This pack features a ball and ball joint for the EV3 Curriculum Solution (LEG45544-1).



Replacement Pack 4
– Green City Challenge

LEG2703 \$14.50

This pack includes elements for the Green City Challenge Set (LEG9594).



Replacement Pack 5
– Space Challenge

LEG2704 \$14.50

This pack includes elements for the EV3 Space Challenge Set (LEG45570).



Replacement Pack 6
– LEGO Education EV3

LEG2705 \$14.50

This pack features elements for the EV3 Expansion Set (LEG45560) and the EV3 Curriculum Solution (LEG45544-1).



Replacement Pack 7
– LEGO Education EV3

LEG2706 \$14.50

This pack features elements for the EV3 Expansion Set (LEG45560), EV3 Curriculum Solution (LEG45544-1) and NXT (LEG9797-2).



Replacement Pack 8
– Rubber Bands

LEG2707 \$14.50

This pack features four rubber bands in white, red, blue and yellow for the EV3 Expansion Set (LEG45560) and the Simple & Powered Machines Set (LEG9686).

MTA Storage Systems suitable for EV3



MTA Storage Systems & Trays

SUN8317	\$159.95
SUN8327	\$239.95
SUN8337	\$299.95
SUN832S	\$10.50
SUN831L	\$13.50

These MTA exclusive storage systems have been designed to organise your LEGO Education Storage tubs. The storage system also houses its own storage containers in two sizes. Each unit comes with the option of castors or adjustable feet for static storage*.

- SUN8317 – Single Storage. Holds 3 EV3 trays
- SUN8327 – Double Storage. Holds 6 EV3 trays
- SUN8337 – Triple Storage. Holds 9 EV3 trays
- SUN832S – Small Tray. SUN831L – Large Tray.

*Assembly required 3rd party product

Compatible with LEGO Education Storage Tub



Participate in *FIRST*® LEGO® League with LEGO Mindstorm® Education EV3

SUCCESS STORY

More Engaged Students One Robot at a Time

A wise woman once said, "Even failure with robots can be engaging." That woman is Caroline Hanson, the Ascent Enrichment and Robotics teacher at Aspen Middle School who uses LEGO Education tools to inspire students every day. Her 6th–8th grade students work on projects inspired by real-world science, engineering, and space challenges. With LEGO® Education, Hanson's students "get to see the concepts outside of controlled experiments and pieces of paper." Sometimes they are so engrossed that they come in after school—like the student who spent days designing and building a robotic chairlift. There's something in LEGO® Education for every student, according to Hanson, who says she loves how each project also hones skills like problemsolving and critical thinking. "Different strengths emerge in robotics," Hanson says, "and students have a chance to shine apart from their academic work."

**FIRST
LEGO
LEAGUE**

Ages 9-14 (Grades 4-8)

PROVEN, VERIFIABLE IMPACT FOR PARTICIPANTS IN *FIRST*® LEGO® LEAGUE**



98%

IMPROVED PROBLEM-SOLVING SKILLS



95%

INCREASED TIME MANAGEMENT SKILLS



93%

INCREASED CONFLICT RESOLUTION SKILLS



OVER 76%

STRENGTHENED COMMUNICATION SKILLS

***FIRST*® LEGO® League Jr. Evaluation Study (2014), The Research Group, Lawrence Hall of Science, University of California, Berkeley and Brandeis University, 2013 *FIRST*® LEGO® League Evaluation





RobocupJunior

In 2019 Modern Teaching Aids celebrate 12 years of sponsorship with RobocupJunior in Australia and New Zealand.

The RobocupJunior competition extends coding and computational thinking from the classroom with comprehensive relevant links to the Australian Curriculum - Digital Technology as well as encompassing STEM skills.

The RobocupJunior competition supports local, regional and international robotics events and has experienced exponential growth with over 1000 teams taking part in Australia and New Zealand and played in over 40 countries in the world.

RoboCupJunior encompasses not only engineering and science and technology skills, but extends right across a school curriculum to maths, literacy, music and art. It also addresses social development by encouraging sportsmanship, sharing, teamwork, understanding differences, cooperation and organisational skills.

The competition has been developed with 3 levels of increasing complexity with students programming their robots to compete in OnStage, Rescue and Soccer Competitions.

Australian Curriculum - Digital Technology encompassing STEM skills

RobocupJunior:

Competitive in an encouraging & supportive environment extending coding and computational thinking from the classroom

Competition Details

Australian Open:

Friday October 11th- Sunday October 13th
Melbourne Showgrounds Victoria

New Zealand Nationals:

Please visit www.robocupjunior.org.nz for 2019 competition dates and locations.

Robocup 2019 including RobocupJunior International :

Tuesday July 2nd – Monday July 8th
Sydney International Convention Centre



Want to get involved?

Let your students gain an interest in science and technology by competing in one of the many regional competitions, while expanding their social, intellectual and problem solving skills and help them to develop into creative and independent adults.

Contact us for one of the many training sessions and for your nearest regional competitions.

www.robocupjunior.org.au or www.robocupjunior.org.nz

RobocupJunior Challenges

RCJ OnStage

There are 3 divisions in On-Stage. Novice, Experienced and Open. All divisions will have Primary and Secondary school students competing against one another.

RoboCupJunior OnStage Performance is a stunning integration of Science, Technology and the Arts. Participants challenge themselves to design, build and program their robots to move to music. This performance may be in the form of a dance in time with the beat of the music, story-telling or even a theatrical presentation.

Competitors are encouraged to decorate their entries and motorise robot limb movements, to give their robots real personality and the performance real appeal. The OnStage Performance Challenge is a real team effort with each student playing their role to design, program, create and perform.



RCJ Rescue

Artificial intelligence at its best! The Rescue competition mirrors the real-life use of robots that rescue people from life-threatening situations. A disaster has occurred, and it is too dangerous for human to enter. A rescue mission is necessary.

Rescue Line

There are 3 divisions in Rescue Line Primary, Secondary and Open Rescue. Robots compete by following a winding line on a series of tiles to a designated rescue area. On the way the robot could encounter obstacles and while the clock is still ticking the robot must find “the victim” before pushing them out of the chemical spill to safety or be required to find and lift the victim to safety.



Rescue Maze

The Rescue Maze challenge is open to all RoboCup Junior age groups. A fully autonomous robot needs to be sent into the hazardous maze to locate heated victims so that the humans know where they are. A rescue package needs to be dropped for the humans that will locate them and keep them alive, ‘water’ etc (note: simulated).

RCJ Soccer

There are 3 divisions in Soccer with addition of Simple Simon Soccer at some State and Regional events. The divisions are Standard League (LEGO-only robots) Lightweight League and Open League.

Students are required to design, build, and program two robots to compete in a dynamic game of robot soccer against an opposing pair of robots. Teams have a choice of using 2 attacking robots or an attacker teamed with a goalie.



Suggested RobocupJunior resources using the EV3 Robot

For more details on the competition and rules go to robocupjunior.org.au

For more RobocupJunior Packs go to the RobocupJunior page at teaching.com.au

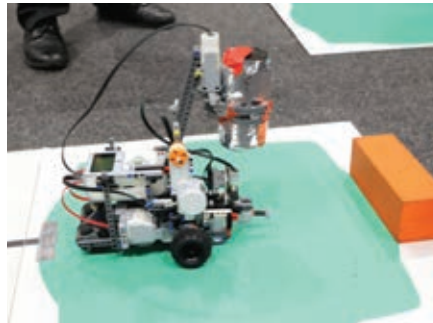


Dance Pack (2 Robots)

RCJ45544-D **\$1,461.95 SAVE \$76.05**

The kit consists of:

- 2x LEG45544-1 EV3 Core Set & Software
- 1x ROB001 Art & Craft
- 2x LEG8887 Battery Charger

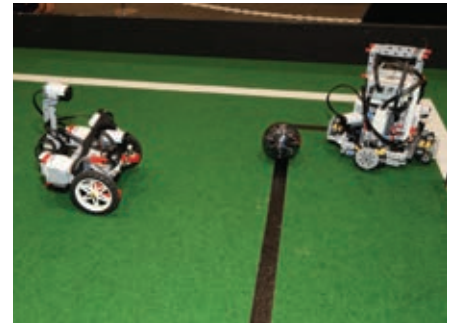


Rescue (1 Robot)

RCJ45544-R **\$926.95 SAVE \$47.80**

The kit consists of:

- 1x LEG45544-1 EV3 Core Set & Software
- 1x ROB009 Rescue Field
- 1x LEG45506 EV3 Colour/Light Sensor (+colour/light in set)
- 2x ROT5435 Rotocaster wheel
- 1x LEG8887 Battery Charger

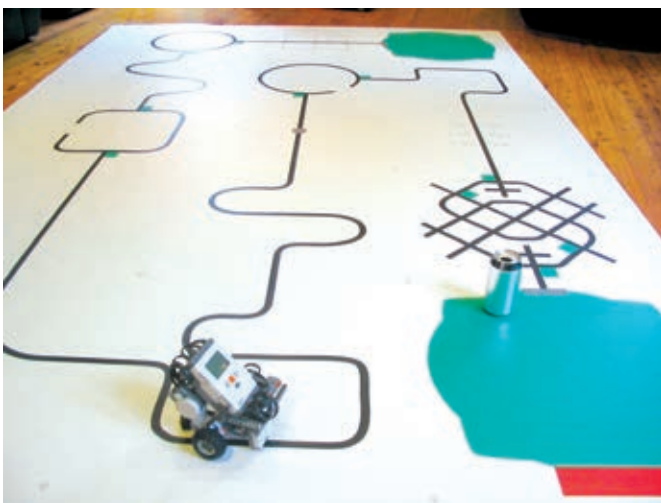


Standard Soccer (2 Robots)

RCJ45544-SN **\$2,070.95 SAVE \$108.55**

The kit consists of:

- 2x LEG45544-1 EV3 Core Set & Software
- 1x LEGIB1005K Soccer Kit (includes Soccer ball)
- 2x LEGNX1042 Hi Technic IR Seeker Sensor
- 2x LEGNX1034 Hi Technic Compass Sensor
- 1x LEG45560 EV3 Expansion Set
- 2x LEG8887 Battery Charger



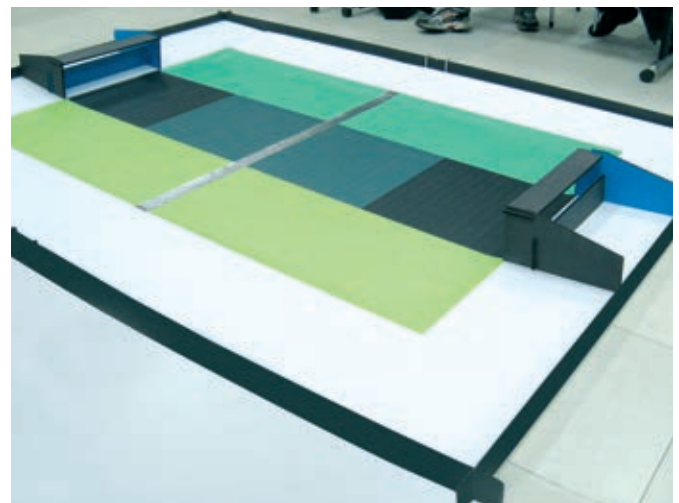
Official RobocupJunior Rescue Practice Field

ROB009

\$129.95

The Rescue Practice Field is a durable and waterproof vinyl resource that has been designed for use in the RobocupJunior Australia competition. The field includes the Premier tiles and can be cut into 15 separate tiles or used as one complete field. 297.8cm(W) x 311.2cm(L). Individual tile size: 594mm x 594mm. In 2019 MTA will be offering a kit including pre-cut and printed rescue tiles, obstacles and platform risers. This very exciting solution will enable schools to create RCJA competition fields almost straight out of the box. ROB016 – RCJA Complete Rescue Kit (Coming in 2019: check our website for more information).

3rd party product



Robot Soccer Field

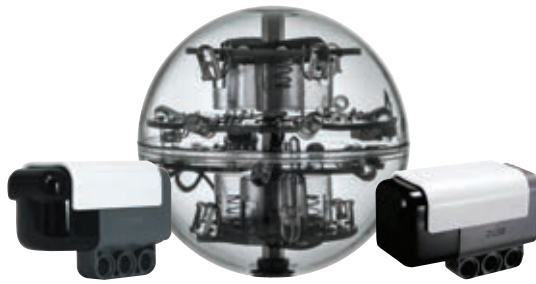
ROB010

\$129.95

The Robot Soccer Field can be used as an educational activity in the classroom as an introduction to coding and the use of sensors broadening the appeal of robotics to encouraging a wider range of students to explore STEM subjects and careers. The RoboCupJunior Australia Simple Simon Soccer Game could be used with this mat which is an introductory league. Please refer to Simple Simon rules listed under Soccer on the RobocupJunior website.

3rd party product

RobocupJunior Resources



Sumo Mat



TEB6229 **\$149.95**

This Sumo robotics mat is a perfect mat to practise for sumo robotics competitions. The mat measures 1m in diameter, with the outer white circle measuring 5cm.

3rd party product



RobocupJunior Soccer Kit

LEGIB1005K **\$294.95** **SAVE \$14.90**

The kit includes: Elekit IR Ball (LEGIB1005), HiTechnic IRSeeker V2 (LEGNX1042) to locate and provide the direction to the IRBall, HiTechnic Compass Sensor (LEGNX1034) to determine the orientation of the playing field and the heading to the goal.



Art & Craft Pack RobocupJunior Dance

ROB001 **\$55.95** **SAVE \$2.25**

This Art & Craft Pack is perfect for the Dance competition

Pack includes (contents may vary to image shown):

CL5770 – Large Glue On Eyes 1.5cm

CL1970 – Fancy Pipe Cleaner Lengths Pk 200

EC209 – Foam Sheets 30 x 30cm

CL6227 – Feathers 100

TH013 – Coloured Petit Fours Cases 100

PH20 – Pom Poms

TEB0200 – Sticky Tack

3rd party product

IR Temperature Sensor for EV3 or NXT

MIND001 **\$99.95**

Measure ambient temperature as well as temperature of surrounding devices.

- Non-contact
- Resolution: 0.1 degrees
- Returns values in Celsius and Fahrenheit
- EV3/NXT Compatible Connector
- Programming blocks available for EV3 or NXT

3rd party product



Pulsed IR RoboBall

LEGIB1005 **\$109.95**

This Elekit IR ball contains 20 infrared LEDs giving full signal coverage. The ball can run in un-modulated (no pulse) mode to be compatible with existing RoboCup Jr requirements or there are 3 other pulsed modes allowing detection ranges up to 5 metres. Uses 4 AAA batteries (not included).



HiTechnic Colour Sensor v2

LEGNX1038 **\$99.95**

This colour sensor can detect an extended range of more than 15 target colours.



HiTechnic Compass Sensor

LEGNX1034 **\$99.95**

The Compass Sensor is a digital compass for more accurate navigation.

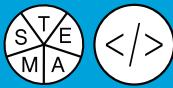


HiTechnic IR Seeker v2

LEGNX1042 **\$99.95**

With this sensor's ability to work in both DC and AC (pulsed) modes it can detect both the new and old RoboCup IR Balls.





STEAM
CODING

BLUETOOTH® LOW ENERGY

WeDo 2.0 integrates the latest Bluetooth® technology to let students take “live” control of the models they create for near-instantaneous responses. To ensure the best possible WeDo 2.0 experience, desktops, laptops, and tablet devices must meet a minimum set of system requirements.

SYSTEM REQUIREMENTS

WeDo 2.0 supports a range of devices on Windows, Mac, Chromebook, iOS, and Android. To find out if your device is supported, please visit:

LEGOeducation.com/start

Making STEAM come to life with WeDo 2.0

At its core, science isn’t about lab coats and research papers. It’s about asking questions and investigating the answers. It’s about wonder.

WeDo 2.0 encourages students to put those aspects of scientific discovery to work by solving real STEAM problems. Using LEGO® bricks, sensors, and motors, students can use this solution to ignite creativity, develop critical-thinking skills, explore career possibilities, and just get hands-on STEAM experience. This set helps make abstract engineering and science concepts concrete and improves collaboration, problem-solving, and computational thinking.

SOLUTION INCLUDES

CORE & SOFTWARE

WeDo 2.0 CORE SET
WeDo 2.0 SOFTWARE

UNIT PLANS

WeDo 2.0 SCIENCE & ENGINEERING
WeDo 2.0 COMPUTATIONAL THINKING
WeDo 2.0 MAKER

SUPPORT

WeDo 2.0 TEACHER GUIDES
GETTING STARTED TUTORIALS
PLUS: ASSESSMENT TOOLS & TECHNICAL SUPPORT

ADDITIONS

ACCESSORIES & REPLACEMENT PACKS
TRAINING & PROFESSIONAL DEVELOPMENT





LEGO® EDUCATION WeDo 2.0



GETTING STARTED



Get started with four quick-and-easy activities.



Build your LEGO® model and connect it to your device.



Build your own code by putting programming blocks together.



Press the play block to bring your model to life.

CORE & SOFTWARE

WeDo 2.0 Core Set

LEG45300

\$294.95

The LEGO® Education WeDo 2.0 Core Set is the hands-on solution that helps teach STEAM concepts in an engaging, discovery-based way. Designed with collaboration in mind, each set combines LEGO bricks with classroom-friendly software to introduce students to science, engineering, and computational principles.

KEY LEARNING VALUES

- Investigating, modeling, and designing solutions
- Engaging students in science by making it real and relevant
- Basic programming skills, critical thinking, and problem-solving
- Collaboration and presentation skills



LEGO® Education WeDo 2.0. Make science come to life

With real-world science projects, including engineering, technology and coding, students experience how science comes to life. WeDo 2.0 builds students' confidence to ask questions, define problems and design their own solutions, by putting discovery in their hands and their minds.



...enable teaching across science topics

Life Science

Investigate life cycles, habitats, traits, environmental changes and more.

Engineering

Design projects involving constraints, prototype and test models. Example project: Create a solution to assist with the rescue of animals in dangerous situations.

Physical Science

Explore forces and motion, cause and effect, and more. Example project: Investigate the factors that make a car go faster, to help predict future motion.

Earth and Space Science

Discover the various climates, research of weather patterns and examine weather-related hazards. Example project: Design an automatic LEGO floodgate to control the water level of a stream according to various precipitation patterns.

CODE CONFIDENTLY

Build your own code by putting programming blocks together. Different shapes and colors have different actions that help teach students how to build behaviors into their own models.



FLOW BLOCKS

These blocks help the program start, stop, pause, or repeat.



OUTPUT BLOCKS

These are blocks that define the outcome - like motor action, sound, light, or display.



INPUT BLOCKS

These blocks define the input, such as sensor, sound, or text.



Included with each purchase of the WeDo 2.0 curriculum solution

UNIT PLAN

WeDo 2.0 Science & Engineering

Built on the latest science standards, this unit plan promotes investigation and experimentation in life, physical, earth, and space sciences. This unit plan gives teachers an engaging, hands-on way to introduce engineering, technology, and computing projects.

24 30-120

WeDo 2.0 Computational Thinking

Computational thinking is a way of solving problems computationally. This unit plan promotes skills such as distilling problems into smaller tasks, organizing actions in the right order, evaluating solutions, and communicating ideas in simple and creative ways.

8 90-120

WeDo 2.0 Maker

This unit plan combines the STEAM elements of WeDo 2.0 with the creative freedom of Maker. These open-ended activities invite students to question, create, tinker, make, innovate, and remake again while exploring early coding and more.

4 45-90

THEME

WeDo 2.0 allows students to explore and develop solutions to real-life problems.

CODE

Block-based coding helps students understand how to combine the digital and physical aspects of the world.

MOTION

By experimenting with gears and motors, students can explore the science behind motion.

Program WeDo 2.0 with 3rd party software*

The WeDo 2.0 Core Set can, besides with the LEGO® WeDo 2.0 software, also be programmed with Scratch and Tynker. This allows students and teachers to use both block-based and text-based programming languages.



Scratch 3.0

- Online programming environment
- Based on Blockly (programming blocks with text labels)
- Large active online community with lesson plans and teacher ideas and inspiration
- Free download from <https://scratch.mit.edu/>



Tynker

- Similar to blockly
- Combine WeDo sensors with the tablet's own sensors
- Start with visual blocks and progress to JavaScript and Python
- Subscription based, download from <https://www.tynker.com/>

*Please note: 3rd party software is not developed, approved or endorsed by LEGO Education.



Classroom Solutions

WeDo 2.0 Curriculum Solution Packs



3rd party product

3rd party product

		WeDo 2.0 Curriculum Solution LEG45300	WeDo 2.0 Add-On Power Pack LEG54838	MTA Storage System Single SUN8316	MTA Storage System Double SUN8326
LEG45300-2K 4 students	\$560.95 SAVE \$28.95	2			
LEG45300-2KP 4 students	\$864.95 SAVE \$44.75	2	2		
LEG45300-3K 6 students	\$839.95 SAVE \$44.90	3			
LEG45300-3KP 6 students	\$1,279.95 SAVE \$84.60	3	3		
LEG45300-5K 10 students	\$1,379.95 SAVE \$94.80	5			
LEG45300-5KP 10 students	\$2,089.95 SAVE \$184.30	5	5		
LEG45300-5KS 10 students	\$1,509.95 SAVE \$124.75	5		1	
LEG45300-5KPS 10 students	\$2,239.95 SAVE \$194.25	5	5	1	
LEG45300-8K 16 students	\$2,179.95 SAVE \$179.65	8			
LEG45300-8KP 16 students	\$3,319.95 SAVE \$318.85	8	8		
LEG45300-8KS 16 students	\$2,329.95 SAVE \$259.60	8			1
LEG45300-8KPS 16 students	\$3,459.95 SAVE \$408.80	8	8		1
LEG45300-12K 24 students	\$3,229.95 SAVE \$309.45	12			
LEG45300-12KP 24 students	\$4,889.95 SAVE \$568.25	12	12		



Classroom Solutions



3rd party product

3rd party product

WeDo 2.0 Curriculum Solution Packs

		WeDo 2.0 Curriculum Solution LEG45300	WeDo 2.0 Add-On Power Pack LEG54838	MTA Storage System Single SUN8316	MTA Storage System Double SUN8326
LEG45300-12KS 24 students SAVE \$369.40	\$3,399.95	12		1	
LEG45300-12KPS 24 students SAVE \$628.20	\$5,059.95	12	12	1	
LEG45300-15K 30 students SAVE \$424.30	\$3,999.95	15			
LEG45300-15KP 30 students SAVE \$682.80	\$6,139.95	15	15		
LEG45300-15KS 30 students SAVE \$554.25	\$4,159.95	15			1
LEG45300-15KPS 30 students SAVE \$872.75	\$6,239.95	15	15		1

Classroom Solutions



3rd party product

3rd party product

WeDo 2.0 Curriculum Solution Packs

		WeDo 2.0 Curriculum Solution LEG45300	WeDo 2.0 Multi-Charger WLMC01 or WCMC04	MTA Storage SUN8316 or SUN8326	LEGO Transformer 10V DC - Battery Charger LEG8887	Smarthub Rechargeable Battery LEG45302
LEG45300-8C 16 students SAVE \$289.20	\$3,219.95	8	1x 8-port charger			8
LEG45300-8CS 16 students SAVE \$339.15	\$3,399.95	8	1x 8-port charger	1x double storage unit		8
LEG45300-10C 20 students SAVE \$436.95	\$3,899.95	10	1x 10-port charger			10
LEG45300-10CS 20 students SAVE \$548.95	\$3,999.95	10	1x 10-port charger	1x double storage unit		10
LEG45300-12C 24 students SAVE \$788.70	\$4,439.95	12	1x 10-port charger		2	12
LEG45300-12CS 24 students SAVE \$958.65	\$4,499.95	12	1x 10-port charger	1x double storage unit	2	12
LEG45300-15C 30 students SAVE \$1,123.45	\$5,499.95	15	2x 8-port charger			15
LEG45300-15CS 30 students SAVE \$1,363.40	\$5,549.95	15	2x 8-port charger	1x triple storage unit		15

Sensors & Motors

LEGO® Education WeDo 2.0 Smarthub 2 I/O

LEG45301 **\$99.95**

The two-port Smarthub brings WeDo 2.0 sensors and motors to life. Using WeDo 2.0 Software and Bluetooth Low Energy (BLE), the Smarthub transmits data between a tablet or computer and the WeDo 2.0 Construction Set. Require two AA batteries or a Smarthub Rechargeable Battery.



LEGO Education WeDo 2.0 Smarthub Rechargeable Battery

LEG45302 **\$99.95**

Rechargeable lithium ion battery for the WeDo 2.0 Smarthub. Includes a built-in LED to indicate charge status.



LEGO Education WeDo 2.0 Medium Motor

LEG45303 **\$39.95**

Get things moving with the Medium Motor. Slotting between three modules, this medium-size, medium-power motor has 2x2 studs on top and a snap interface on the front to allow easy and optimized integration with TECHNIC and WeDo 2.0 constructions. No set-up is required. Simply connect the Medium Motor and it will be identified automatically by the WeDo 2.0 Software.



LEGO Education WeDo 2.0 Motion Sensor

LEG45304 **\$39.95**

Attach a Tilt Sensor to the WeDo 2.0 Smarthub and detect seven different types of orientation: Tilt This Way, Tilt That Way, Tilt Up, Tilt Down, No Tilt, Any Tilt and Shake. No set-up is required. Simply connect the Tilt Sensor and it will be identified automatically by the WeDo 2.0 Software.



LEGO Education WeDo 2.0 Tilt Sensor

LEG45305 **\$39.95**

Attach a Tilt Sensor to the WeDo 2.0 Smarthub and detect seven different types of orientation: Tilt This Way, Tilt That Way, Tilt Up, Tilt Down, No Tilt, Any Tilt and Shake. No set-up is required. Simply connect the Tilt Sensor and it will be identified automatically by the WeDo 2.0 Software.



LEGO Education WeDo 2.0 Add-On Power Pack

LEG54838 **\$147.95** **SAVE \$11.95**

Avoid the loss of valuable teaching time caused by dead or missing batteries with the Add-On Power Pack, a rechargeable battery and charger designed exclusively for use with the Smarthub. It provides longer run time than AA batteries and has a charge time of around three hours. It is economically beneficial, as well as being more environmentally friendly.



WeDo 2.0 uses Bluetooth® Low Energy

For WeDo 2.0, we have integrated the latest Bluetooth technology into our solution to let you take 'live' control of the models you create for near-instantaneous response. To ensure the best-possible WeDo 2.0 experience, desktops, laptops and tablet devices must meet a minimum set of system requirements.

<https://education.lego.com/en-au/support/wedo-2/software-requirements>

Replacement packs for WeDo 2.0

Replacement Pack WeDo 2.0

LEG2715

\$12.95

Don't let a missing piece spoil your enjoyment of WeDo 2.0. This Replacement Pack includes elements for the LEGO® Education WeDo 2.0 Core Set (part of LEG45300).



MTA Storage Systems suitable for WeDo 2.0



MTA Storage Systems & Trays

SUN8316	\$159.95
SUN8326	\$229.95
SUN8336	\$289.95

These MTA exclusive storage systems have been designed to organise your LEGO Education Storage tubs. The storage system also houses its own storage containers in two sizes. Each unit comes with the option of castors or adjustable feet for static storage*.

SUN8316 – Single Storage. Holds 6 WeDo 2.0 trays.

SUN8326 – Double Storage. Holds 12 WeDo 2.0 trays.

SUN8336 – Triple Storage. Holds 18 WeDo 2.0 trays.

*Assembly required 3rd party product





Participate in *FIRST*® LEGO League Jr. with LEGO Education WeDo 2.0

SUCCESS STORY

Inspiring Students to Reach for the Stars

In April of 1993, Ellen Ochoa became the first Latina astronaut to ever go to space. Today *FIRST*® LEGO League Jr. is helping students at her namesake elementary school learn to shoot for the stars. Elementary school students from Ellen Ochoa STEM Academy in Grand Prairie, Texas participated in the CREATURE CRAZE™ Challenge and learned a lot about the important role of bees in human existence. Using WeDo 2.0 and the annual Inspire Set, the intrepid STEMVentors (a team name the students chose together) set to work making a moving model to show how astronauts could potentially harness bee power to make life on Mars a reality. During the competition, the students also got a chance to visit NASA headquarters and talk about their research. “The experience was life-changing to many of our students and their families that had never been outside our community,” says technology teacher Carmela Brown, adding that her students were excited to see what opportunities lay ahead of them in STEAM fields. Thanks to their time in *FIRST* LEGO League Jr., the students’ interest in robotics and other STEAM topics was launched into the stratosphere.

**FIRST
LEGO
LEAGUE JR.**
Ages 6-10 (Grades K-4)

PROVEN, VERIFIABLE IMPACT
FOR PARTICIPANTS IN
FIRST® LEGO® LEAGUE JR.™

98%

SHOWED GREATER
AWARENESS OF STEM

85%

WERE BETTER ABLE
TO EXPLAIN IDEAS

71%

COULD PROBLEM-
SOLVE

88%

SHOWED TEAMWORK
SKILLS

***FIRST*® LEGO® League Jr. Evaluation Study (2014), The Research Group, Lawrence Hall of Science, University of California, Berkeley and Brandeis University, 2013 *FIRST*® LEGO® League Evaluation





SOLUTIONS

- Simple & Powered Machines Solution P35
- Simple Machines Solution P41
- Early Simple Machines Solution P45

Discover how the real world works with LEGO® Education Machines & Mechanisms

With Machines & Mechanisms, teachers can ignite STEM learning in scientific inquiry and creative engineering design. We help teachers with guidance, easy-to-use activities, and real-world inspiration, bridging into technology and science textbooks.



Machines & Mechanisms from LEGO® Education is a range of challenging hands-on tools that link book-learning in science, technology, engineering and maths to real-world phenomena.

Using specially compiled LEGO elements to cover advanced topics like pneumatics and renewable energy, Machines & Mechanisms provides a compelling means of investigating mechanical principles, while encouraging students to engage in scientific inquiry and engineering design.



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FREE freight on all orders over \$199. Conditions apply, see website for details.



“They’re focused.
They’re asking questions.
They’re going beyond what
they’re required to do.”

LAURA KNAPP
K–5 TECHNOLOGY TEACHER,
GATEWAY SCIENCE ACADEMY
SOUTH, ST. LOUIS, MISSOURI

Powering “Aha!” Moments

This solution helps students in grades 6–8 learn a broad range of concepts such as force, motion, and energy. Using 396 LEGO® Technic bricks and a motor to model physicality, students can get hands-on experience with problem-solving, collaboration, and other 21st-century skills. Watch as these bricks and unit plans spark creativity, ignite career opportunities, and develop critical thinking and observation skills.

SOLUTION INCLUDES

CORE & SOFTWARE

SIMPLE & POWERED MACHINES

UNIT PLANS

INTRODUCING SIMPLE & POWERED MACHINES

ADVANCING WITH SIMPLE & POWERED MACHINES

SIMPLE & POWERED MACHINES MAKER

SUPPORT

QUICK-START GUIDES

PLUS: ASSESSMENT TOOLS & TECHNICAL SUPPORT

ADDITIONS

CORE

RENEWABLE ENERGY ADD-ON SET

PNEUMATICS ADD-ON SET

UNIT PLANS

RENEWABLE ENERGY

PNEUMATICS

ACCESSORIES & REPLACEMENT PACKS

TRAINING & PROFESSIONAL DEVELOPMENT



CORE

Simple & Powered Machines Core Set

LEG9686

\$299.95

This is the STEAM tool that helps students investigate everything from basic mechanical principles to advanced motor-powered machines. Let STEAM curiosity rev up with full lessons, extension activities, and problem-solving tasks that help students explore design engineering with more advanced mechanisms, structures, and forces.

KEY LEARNING VALUES

- Investigate the principles of simple machines, mechanisms, and structures
- Experiment with balanced and unbalanced forces
- Experiment with friction
- Transformation of energy
- Measure distance, time, speed, and weight
- Calibrate scales
- Investigate powered forces, motion, speed, and pulling power

1-3
 396

 8+



Included with the Core Set

UNIT PLAN

Introducing Simple & Powered Machines

Using model activities and problem-solving tasks, students get a fundamental understanding of simple machines, structures, and mechanisms.

48
 45-90

Advancing with Simple & Powered Machines

Use our unit plan to actively engage students in inquiry, reasoning, and critical thinking. This unit plan is designed to apply students' prior learning in science, technology, and mathematics together with engineering skills, creativity, and intuition.

28
 45-90

Simple & Powered Machines Maker

Using open-ended problembased design challenges, teachers can encourage students to really explore the world of machines and mechanisms.

15
 45-90



SIMPLE & POWERED MACHINES

Classroom Solutions

Simple & Powered Machines Curriculum Solution Packs



3rd party product

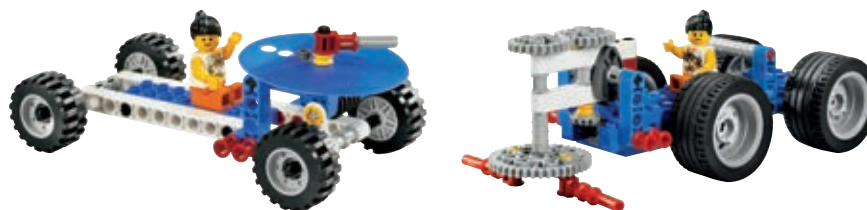


3rd party product



3rd party product

		Simple & Powered Machines Curriculum Solution LEG9686	Track, Ramp & Stand EIS0355DYTR	MTA Storage System Double SUN8327	MTA Storage System Triple SUN8337
LEG9686-3N 6 students	\$869.95 SAVE \$29.90	3			
LEG9686-6N 12 students	\$1,699.95 SAVE \$99.75	6			
LEG9686-6ST 12 students	\$1,949.95 SAVE \$110.70	6		1	
LEG9686-8N 16 students	\$2,239.95 SAVE \$159.65	8			
LEG9686-8ST 16 students	\$2,499.95 SAVE \$231.10	8			1
LEG9686-12N 24 students	\$3,329.95 SAVE \$269.45	12			
LEG9686-12ST 24 students	\$3,759.95 SAVE \$361.35	12		2	
LEG9686-12NS 24 students	\$3,799.95 SAVE \$436.30	12	1	2	
LEG9686-15N 30 students	\$4,079.95 SAVE \$419.30	15			
LEG9686-15ST 30 students	\$4,679.95 SAVE \$482.20	15			2
LEG9686-15NS 30 students	\$4,659.95 SAVE \$732.10	15	2		2



EXPANSION SET

Renewable Energy Add-On Set

LEG9688

\$249.95

Part of preparing students for the world of tomorrow is teaching them about renewable energy. This add-on set allows students to explore and understand energy sources like solar cells, wind turbines, and hydro-electric power plants. The Renewable Energy Add-On Set can be used with the Simple & Powered Machines Core Set and LEGO® MINDSTORMS® Education EV3.

KEY LEARNING VALUES

Explore energy supply, transfer, accumulation, conversion, and consumption

Understand and use energy variables, volts, amps, watts, and joules

REQUIRES ADDITIONAL PRODUCTS

LEGO® Education Simple & Powered Machines (LEG9686), see page 39

1-3



UNIT PLAN

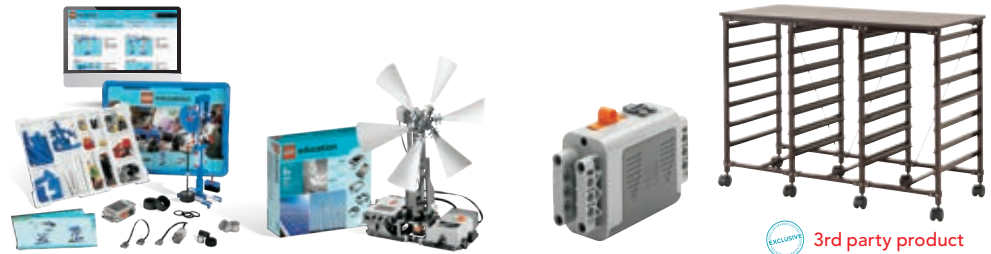
Renewable Energy

With six 45-minute lessons and four problem-solving activities, students can get hands-on experience with renewable energy sources like wind, water, and solar. This activity set also includes a range of real-life images so students can see what these energy sources look like beyond the classroom.

20 45-90

Classroom Solutions

Renewable Energy Add-on Packs



3rd party product

	Simple & Powered Machines Curriculum Solution LEG9686	Renewable Energy Add-on Set LEG9688	Power Functions Battery Box LEG8881	MTA Storage System Triple SUN8337
LEG9688-4 \$1,049.95 SAVE \$49.65		4	4	
LEG9688-8 \$2,059.95 SAVE \$139.25		8	8	
LEG9688-4N 8 students \$2,184.95 SAVE \$114.45	4	4	4	
LEG9688-8N 16 students \$4,159.95 SAVE \$438.85	8	8	8	
LEG9688-8NS 16 students \$4,499.95 SAVE \$430.30	8	8	8	1

SIMPLE & POWERED MACHINES

UNIT PLAN

Pneumatics

The activities in this unit plan engage students in the engineering and design stage of pneumatics research. Extended lessons and problem-solving tasks help introduce students to real-life renewable energy scenarios.



EXPANSION SET

Pneumatics Add-On Set

LEG9641

\$124.95

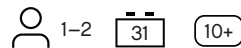
This add-on set, when combined and used with Simple & Powered Machines, helps students understand air-powered systems and explore kinetic and potential energy. Students investigate components such as measuring pressure and building models, all while honing communication, collaboration, and other 21st-century skills.

KEY LEARNING VALUES

- Explore air-powered systems
- Explore kinetic and potential energy
- Understand pressure measuring in PSI and bar

REQUIRES ADDITIONAL PRODUCTS

LEGO® Education Simple & Powered Machines (LEG9686), see page 39



Classroom Solutions

Space Challenge Packs



3rd party product

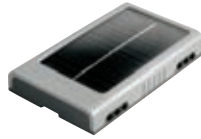
	Simple & Powered Machines Curriculum Solution LEG9686	Pneumatics Add-on Set LEG9641	MTA Storage System Triple SUN8337
LEG9641-4 \$479.95 SAVE \$19.85		4	
LEG9641-8 \$949.95 SAVE \$49.65		8	
LEG9641-4N 8 students \$1,614.95 SAVE \$84.65	4	4	
LEG9641-8N 16 students \$3,219.95 SAVE \$179.25	8	8	
LEG9641-8NS 16 students \$3,369.95 SAVE \$360.70	8	8	1

Energy Elements

LEGO® Solar Panel

LEG9667 **\$104.95**

The Solar Panel provides sufficient power to operate the LEGO® Energy Meter and motors. It delivers: 5V, 4mA in direct light from a 60W incandescent bulb positioned 25 cm from the solar panel (>2000 lux); and 5V, 20mA in direct light from a 60W incandescent bulb positioned 8cm from the panel (>10,000 lux).



Power Functions Battery Box

LEG8881 **\$24.95**

Give even more power and movement to your models with an extra battery box to supply power to your Power Functions motors! Each battery box can power 2 XL-Motors or 4 M-Motors at the same time. Requires 6 AA (1.5V) batteries, not included.



Energy Storage

LEG9669 **\$49.95**

This Ni-MH battery with connector is designed to be combined with the LEG9668 Energy Display. When combined, the two elements form the LEGO Energy Meter. Storage capacity: 150 mAh.



Power Functions Light

LEG8870 **\$24.95**

Add bright LED lights to your models to create glowing eyes, illuminated headlights, and anything else you can imagine and build.



E-Motor

LEG9670 **\$47.95**

The E-Motor is a 9V motor with an internal gearbox. Its 9.5:1 gearing ratio provides a maximum torque of 4.5 Ncm and approximately 800 rotations per minute without load. It also functions as a very efficient generator.



Power Functions

Power Functions

Rechargeable Battery Box

LEG8878 **\$144.95**

This rechargeable battery box has built-in Lithium polymer batteries for low weight and maximum power. Use the LEG8887 10VDC LEGO Trans former to charge the battery. Motor speed can be controlled via the battery box speed control dial! Output voltage is 7.4V.



Power Functions Extension Wire 20"

LEG8871 **\$14.95**

Build your Power Functions-equipped models bigger, better and more mechanised and motorised than ever before by adding this 20-inch (50 cm) extension wire.



Power Functions Extension Wire 8"

LEG8886 **\$9.95**

Build your Power Functions-equipped models bigger, better and more mechanised and motorised by adding this 8-inch (20 cm) extension wire.



Power Functions XL-Motor

LEG8882 **\$29.95**

Build an extra medium-strength, medium-sized M-Mot Add an extra XL-Motor to your models! This superstrong motor will give plenty of power to your models, whether it's spinning a wheel or turning a system of gears. Use the "M" Motor to animate larger builds. Requires battery box (Item LEG8881), not included.



Power Functions M-Motor

LEG8883 **\$24.95**

Build an extra medium-strength, medium-sized M-Motor into your LEGO creations and watch things start moving.



Transformer 10V DC

LEG8887 **\$59.95**

This standard 10V DC transformer allows you to recharge your LEG45501 EV3 Rechargeable Battery, LEG8878 Power Functions Rechargeable Battery Box and WeDo 2.0 rechargeable battery.



SIMPLE MACHINES



“Because my students are so young, nothing stands in their way when it comes to solving problems together. They are very quick to learn that just because I am the ‘teacher,’ I do not have all the answers, and soon become confident with their own discoveries.”

MARY MEADOWS
HEAD OF SCHOOL AT ANDREWS
ACADEMY-CREVE COEUR,
CREVE COEUR, MISSOURI

Powering Exploration and Investigation

Get students’ creative wheels turning with two engaging solutions. These two solutions teach the basic mechanical principles behind gears, pulleys, levers, axles, and more. Digital tools and unit plans help launch students’ engagement to the next level.

SOLUTION INCLUDES

CORE & SOFTWARE

EARLY SIMPLE MACHINES CORE SET
 SIMPLE MACHINES CORE SET

UNIT PLANS

EARLY SIMPLE MACHINES
 SIMPLE MACHINES
 SIMPLE MACHINES MAKER

SUPPORT

QUICK-START GUIDES
 PLUS: ASSESSMENT TOOLS & TECHNICAL SUPPORT

ADDITIONS

ACCESSORIES & REPLACEMENT PACKS
TRAINING & PROFESSIONAL DEVELOPMENT



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CORE

Simple Machines Core Set

LEG9689

\$109.95

Use this set to help students investigate and understand the operation of simple and compound machines. This set features an assortment of bricks, gears, wheels, pulleys, and levers to spark students to explore science and engineering.

KEY LEARNING VALUES

Observe and investigate

Develop scientific inquiry skills

Follow a design brief as part of the engineering design process

Learn to apply relevant vocabulary for simple machines

Test, predict, and measure; collect data and describe outcomes



Included with the Core Set

UNIT PLAN

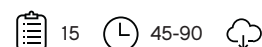
Simple Machines

Ignite students' curiosity about science and engineering with this unit plan. The Simple Machines unit plan includes 20 lessons with instructions for a variety of models and problem-solving activities. By working through them, students will develop critical-thinking skills while investigating simple and compound machines.



Simple Machines Maker

Introduce elementary students to the hands-on creative freedom of Maker. Using open-ended questions and real-life scenarios, students can think up ideas, tinker with prototypes, and build and develop solutions using the LEGO® Education Simple Machines Core Set and other materials from around the classroom. Through worksheets and assessments, students can feel supported and inspired, and teachers can have the creative confidence to help students think up new ideas.



SIMPLE MACHINES

Classroom Solutions

Simple Machines Curriculum Solution Packs



3rd party product

		Simple Machines Curriculum Solution LEG9689	Power Functions Battery Box LEG8881	Power Functions M-Motor LEG8883	MTA Storage System Single SUN8317
LEG9689-4N 8 students	\$424.95 SAVE \$14.85	4			
LEG9689-4NM 8 students	\$619.95 SAVE \$19.45	4	4	4	
LEG9689-8N 16 students	\$829.95 SAVE \$49.65	8			
LEG9689-8NM 16 students	\$1,169.95 SAVE \$108.85	8	8	8	
LEG9689-8NS 16 students	\$1,279.95 SAVE \$169.30	8	8	8	1
LEG9689-12N 24 students	\$1,199.95 SAVE \$119.45	12			
LEG9689-12NM 24 students	\$1,724.95 SAVE \$193.25	12	12	12	
LEG9689-12NS 24 students	\$1,839.95 SAVE \$248.70	12	12	12	1

Power Functions Battery Box

LEG8881

\$24.95

Give even more power and movement to your models with an extra battery box to supply power to your Power Functions motors! Each battery box can power 2 XL-Motors or 4 M-Motors at the same time. Requires 6 AA (1.5V) batteries, not included.



Power Functions M-Motor

LEG8883

\$24.95

Build an extra medium-strength, medium-sized M-Motor into your LEGO® creations and watch things start moving.



CORE

Early Simple Machines Core Set

LEG9656

\$259.95

This set has all the gears, levers, pulleys, wheels, wings, and more that students need to explore real-world science concepts. With building instructions, student worksheets, and teacher guides, this set sparks engaged learning, problem-solving skills, creativity, and critical thinking.

KEY LEARNING VALUES

- Basic mechanical principles such as gears, levers, pulleys, wheels, and axles
- Investigating force, buoyancy, and balance
- Problem-solving through design
- Collaboration and data sharing

1-3
 102

 5+



STEAM

Included with the Core Set

UNIT PLAN

Early Simple Machines

This unit plan contains 12 lessons: six beginner lessons, four intermediate lessons, and two advanced lessons. This unit plan is designed to help kindergarteners through second graders discover how gears, axles, pulleys, and more work by building them with LEGO DUPLO® bricks.

12
 30-45



Classroom Solutions

Early Simple Machines Curriculum Solution Packs



3rd party product

	Early Simple Machines Curriculum Solution LEG9656	MTA Storage System Single SUN8317
LEG9656-2N 4 students	\$499.95 SAVE \$19.95	2
LEG9656-4N 8 students	\$979.95 SAVE \$59.85	4
LEG9656-8N 16 students	\$1,919.95 SAVE \$159.65	8
LEG9656-8NS 16 students	\$2,059.95 SAVE \$190.10	8 1



MTA Storage Systems suitable for Machines & Mechanisms



Compatible with LEGO Education Storage Tubs

MTA Storage Systems & Trays

SUN8317	\$159.95
SUN8327	\$239.95
SUN8337	\$299.95
SUN832S	\$10.50
SUN831L	\$13.50

These MTA exclusive storage systems have been designed to organise your LEGO® Education Storage tubs. The storage system also houses its own storage containers in two sizes. Each unit comes with the option of castors or adjustable feet for static storage*.

- SUN8317 – Single Storage. Holds 3 EV3 trays
- SUN8327 – Double Storage. Holds 6 EV3 trays
- SUN8337 – Triple Storage. Holds 9 EV3 trays
- SUN832S – Small Tray. SUN831L – Large Tray.

*Assembly required 3rd party product



Engage primary and high school students in subjects from science to humanities

LEGO Education provides a continuum of curriculum content that is relevant to students' everyday lives and realworld contexts as well as expandable for teachers. From primary through to high School, the content is created by a full development team of educators and education experts. We offer resources for teaching science, technology, engineering and maths.

2019 School Resource Plan

Resource	Page	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
EV3 Robotics	2					X	X	X	X	X	X	X	X
EV3 Design Engineering Projects	5							X	X	X	X	X	X
EV3 Science Activity Pack	7					X	X	X	X	X	X	X	X
EV3 Space Challenge	9					X	X	X	X	X	X	X	X
FLL	21				X	X	X	X	X	X			
RobocupJunior	22	X	X	X	X	X	X	X	X	X	X	X	X
WeDo 2.0	26		X	X	X	X	X						
Simple & Powered Machines	38					X	X	X	X	X	X	X	X
Advancing with Simple & Powered	39						X	X	X	X	X	X	X
Renewable Energy	41					X	X	X	X	X	X		
Pneumatics	42					X	X	X	X	X	X		
Simple Machines	44		X	X	X	X	X						
Early Simple Machines	47	X	X										



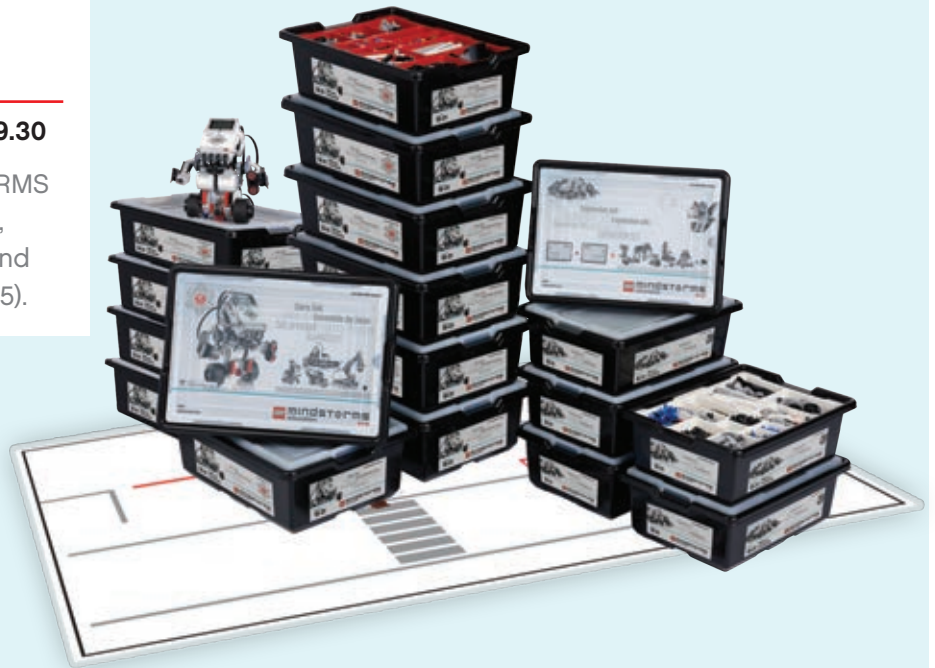
Computing	Engineering	Technology	Science	Maths
LEGO Mindstorm® EV3				
WeDo 2.0				
	Machines & Mechanisms			



LEGO® EV3 Class Pack – 24 Students

LEG45544-12 **\$8,239.95** SAVE **\$729.30**

This kit includes 12x LEGO® MINDSTORMS Education EV3 Core Set (LEG45544-1), 2x Battery Multi Chargers (WLMC01) and 1x MTA Robotics Challenge Mat (ROB15).



LEGO Education WeDo 2.0 – 30 Students

LEG45300-15K **\$3,999.95** SAVE **\$424.30**

This kit includes 15 LEGO Education WeDo 2.0 Sets(LEG45300).



MTALEG19



FREE freight
on all orders over \$199*

*Conditions apply, see website for details

teaching.com.au

P 1800 251 497 F 1800 151 492

Prices exclude GST

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