



modern teaching aids

# LEGO® Education Classroom Solutions 2017



EV3 Robotics • WeDo 2.0 Robotics  
STEM Resources • Simple & Powered Machines



**Free Freight**

Just add \$200 of Art & Craft, Stationery  
or Health & Hygiene to your order

P 1800 251 497

F 1800 151 492

[teaching.com.au](http://teaching.com.au)

# 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](http://www.teaching.com.au/page/mta-lego)



## Teachers' Workshop Feedback

"I cannot recommended highly enough the PD on Lego WeDo 2.0. We were a mixed group from all areas of education with varying levels of exposure to WeDo 2.0 and Joanna quickly engaged us all in this wonderful program. Joanna explained clearly the links to curriculum, the important elements for students to grasp and then led us through various activities that we could use with our students. What perhaps was most impressive is that we were all able to become very familiar with the WeDo program through her planned activities and suggested classroom strategies. This led to positive discussions about how we would implement this into our classrooms. Joanna did more than just deliver a PD, she engaged in discussions with teachers, using their ideas and experiences to link in with the program. Every participant left this PD with the confidence and enthusiasm to implement this program into their schools and classrooms. Do WeDo? We sure do!"

– Sue Boylan, Senior Teacher, Hocking Primary School

"It was a great introduction to robotics, I was able to spend time learning about the use of motors and sensors, develop my programming skills and explore how I could integrate robotics into the classroom as a tool for teaching STEM."

– Mr Joshua Scott from St George Christian School NSW

## 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](http://teaching.com.au)



## Technical Support & MTA Reps

Modern Teaching Aids has qualified trainers and sales representatives on hand, with over 20 years experience, to assist customers with any queries about the LEGO education range. Call **1800 251 497** for your local MTA rep to visit your school.



### Free Freight

Just add \$200 of Art & Craft, Stationery or Health & Hygiene to your order

Valid until 31st December 2017. Promotional value excludes GST & freight. \*Offer excludes export & new projects.

# Contents

In this catalogue you will find a description of our learning solutions listed according to subjects; maths, science, programming and control, engineering, literacy, STEM and more, and segments; primary school and high school.

|  | SOLUTIONS   | SUBJECTS  | PAGE         |
|--|---|---|--------------|
|  | <b>What's New</b>   | LEGO® Education curriculum solutions                        | <b>2</b>     |
|  | <b>LEGO® MINDSTORMS® Education EV3</b><br>Instant STEM learning with best in class robotics solutions | Computing, science, design & technology, maths, engineering | <b>3-16</b>  |
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Key icons to look out for:

|  |   |  |   |
|--|---|--|---|
|  | <b>Piece Count</b><br>Total number of elements  |  | <b>App Available</b><br>Available for free download in different App Stores |
|  | <b>Storage</b><br>Storage box included  |  | <b>Exclusive</b><br>Exclusive to MTA  |
|  | <b>Group Sets</b><br>Recommended number of students for using a single set  |  | <b>Locally Made</b><br>Made in Australia or New Zealand                     |
|  | <b>Number of sets</b><br>Number of sets available in a Solution   |  | <b>3rd Party Product</b><br>Are not endorsed by LEGO Education              |
|  | <b>Available for free download from</b><br><a href="http://LEGOeducation.com/downloads">LEGOeducation.com/downloads</a> |  |   |

# What is NEW?

## What's included in a Curriculum Solution?



### LEGO® Education Core Set ✓

A tailored brick set to facilitate engaging and meaningful hands-on, playful learning experiences.

#### Curriculum content ✓

Subject specific activities and materials built on national curriculum standards.

#### Teaching software ✓

Easy to use software and apps for a range of devices, including PC, Mac, tablets and Chromebooks.

#### Assessment tools ✓

Tools, rubrics and teacher guidance for assessing student progress.

#### eLearning program ✓

Step-by-step tutorials to help you get started.

#### Technical support ✓

Ongoing telephone and online support to help you with any questions.

#### Community ✓

Access to the LEGO® Education community of teachers for additional ideas, tips and new connections.



## What can I add on?

#### Curriculum packs/ Expansion sets ✓

Additional curriculum packs and expansion sets are available to expand and deepen the teaching and learning experience.

#### Accessories ✓

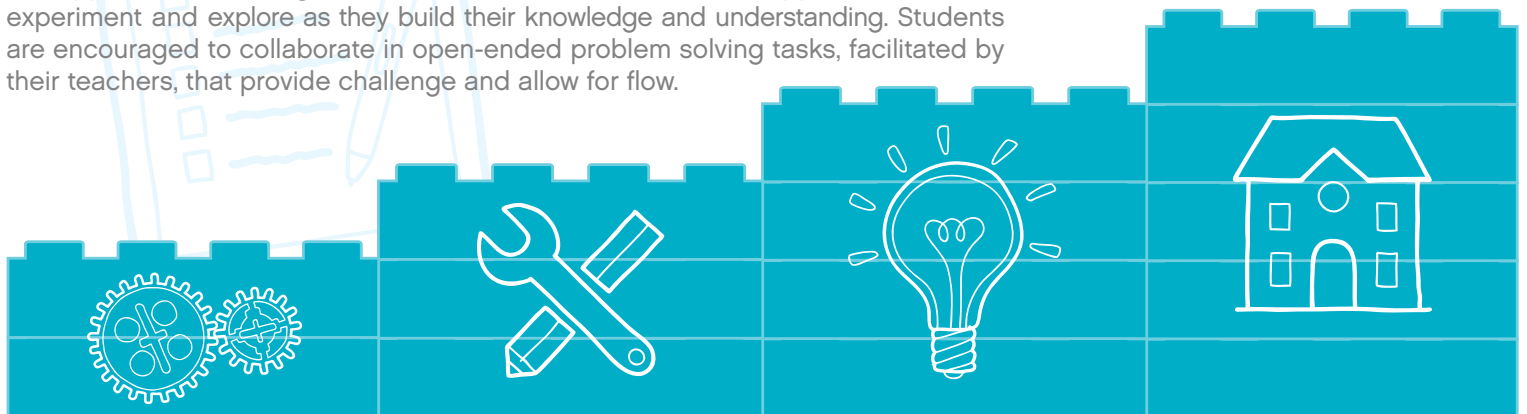
Additional accessories are available to build upon core and expansion sets.

#### Replacement packs ✓

Replacement bricks are available for each core set.

# A system for learning

Our approach to learning is founded on a '4C' framework that supports students to experiment and explore as they build their knowledge and understanding. Students are encouraged to collaborate in open-ended problem solving tasks, facilitated by their teachers, that provide challenge and allow for flow.



### Connect with new experiences

The task is introduced, allowing students to ask clarifying questions and build on their own knowledge.

### Construct your ideas

Every task includes a building activity to promote experimentation and exploration and construct artefacts that can be recalled later.

### Time to Contemplate

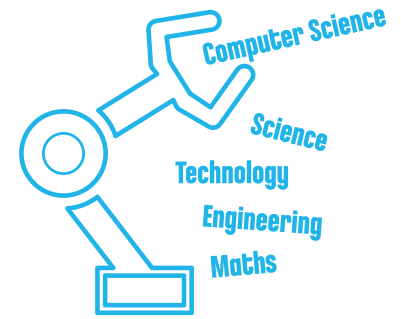
Students consider what has been learned and share insights with each other.

### Continued development

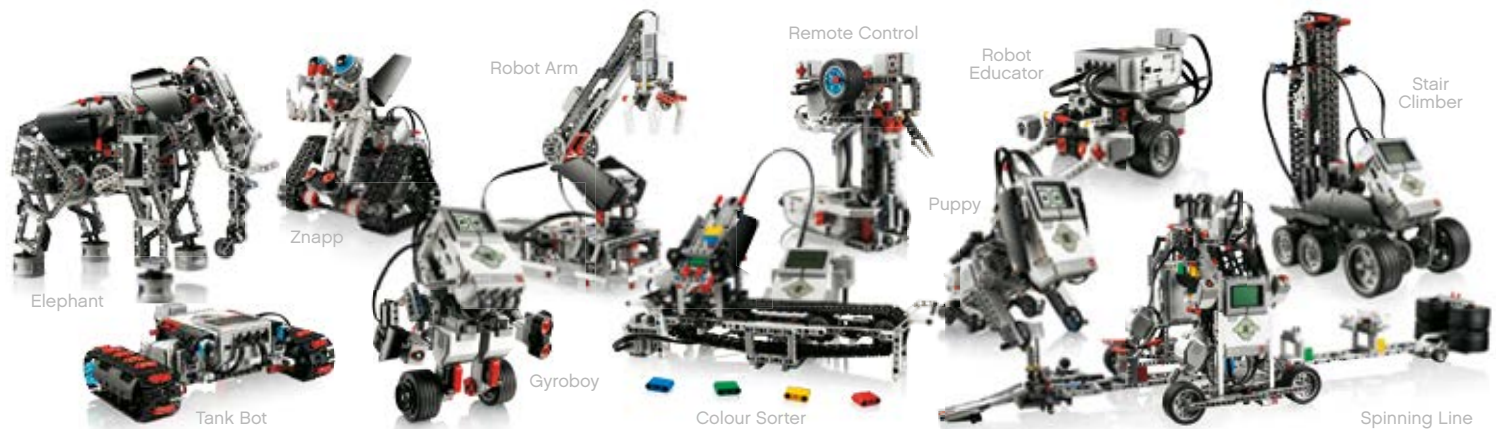
Every task ends with a new task that builds on what has just been learned, keeping students motivated and curious.

# LEGO MINDSTORMS® Education EV3

## Instant STEM learning with best in class robotics solutions



**LEGO® MINDSTORMS®**  
Education



With LEGO MINDSTORMS® Education, the greatest challenge you'll face is getting your students to leave the classroom!

LEGO MINDSTORMS Education EV3 grows critical thinking and students' creativity in computer science, science, technology, engineering and maths. You can be up and running in less than 45 minutes with full support from 48 step-by-step tutorials and a guide to the EV3 programming language and hardware functions.

Over the past decade, LEGO MINDSTORMS Education has enabled students to solve authentic design and engineering problems with continued firmware support and software updates.

Ignite students' instant STEM learning with best in class robotics solutions to encourage critical thinking and creative learning through real-life problem solving with LEGO MINDSTORMS Education EV3.



# Prepare your students for tomorrow's jobs



## LEGO® MINDSTORMS® Education EV3 Curriculum Solution

LEG45544-1 **\$629.95**



This set contains everything you need to start teaching STEM and computer science using the exciting LEGO® MINDSTORMS® concept. It offers full teacher support, including STEM and computing teaching materials, and a comprehensive eLearning program.

The system includes the Intelligent EV3 Brick, a compact and powerful programmable computer that makes it possible to control motors and collect sensor feedback using the intuitive icon-based programming and data logging software that is delivered with the set.

The set is delivered in a sturdy storage bin with a sorting tray, three Servo Motors, five Sensors (Gyro, Ultrasonic, Colour and 2x Touch), a Rechargeable Battery, connecting cables and Building Instructions. Battery charger (LEG8887) is required and sold separately.

### Solution includes

- LEGO MINDSTORMS Education EV3 Core Set 1
- EV3 Software and App\* [Download] [www]
- EV3 Design Engineering Projects Curriculum\* [www]
- EV3 Coding Activities\* [www]
- EV3 eLearning\* [www]

# How to get ahead in STEM learning

The LEGO MINDSTORMS Education EV3 motivates students to design, build and program robots using motors, sensors, gears, wheels, axles and other technical components, to gain a better understanding of how technology works in real-world applications.

The solution enables students to understand and interpret two-dimensional drawings to create three-dimensional models; build, test, troubleshoot and revise designs; apply maths and science concepts on real-life applications; and master programming and data logging functions.



# Learning powered by LEGO MINDSTORMS Education EV3



Ignite student engagement and energise learning through real-life problem solving in computing science, science, technology, engineering and maths. LEGO MINDSTORMS Education brings a hands-on, minds-on approach through a comprehensive and inspiring teaching solution, that helps every student reach their curriculum targets.

Based on easy-to-use robotics technology and the EV3 Core Set, LEGO MINDSTORMS Education EV3 offers all teachers need to get started in the classroom, including LEGO building bricks and hardware, programming and data-logging software, student-ready teaching material, online teacher eLearning and more.

## Everything you need to make teaching with EV3 a success

### What's included in the Curriculum Solution?

#### Core Set ✓

Contains all the LEGO bricks and technology elements needed to get students curious and excited about STEM learning and robotics.



#### Curriculum content ✓

Multiple student-ready curriculum materials based on national standards ensure students' learning outcome within STEM and Computer Science.\*

#### Teaching software ✓

Intuitive software and app for easy programming and robot control. Includes student tutorials and teacher support.\*

#### Assessment tools ✓

Asses students' learning using the integrated rubrics, observation checklists, and student self-assessment tools. Student creativity assessment tool is also included.\*

#### eLearning program ✓

15 online courses with self-paced videos will take any educator from novice to classroom ready with EV3.\*

#### Technical support ✓

Ongoing telephone and online support to help you with any questions.

#### Community ✓

Access to the LEGO Education community of teachers for additional ideas, tips and new connections.



### What can I add on?

#### Additional curriculum content ✓

Additional STEM curriculum packs are available to expand the EV3 learning coverage.\*

#### Expansion sets ✓

Additional brick sets are available to expand and deepen the teaching and learning experience.

#### Accessories ✓

Additional sensors, motors and other technology parts are available to supplement the EV3 Core Set.

#### Training and professional development ✓

Check our Professional Learning calendar on [teaching.com.au](http://teaching.com.au) to find training near you.

#### Replacement Packs ✓

Replacement bricks are available for each core set.

\*Available for free download from [LEGOeducation.com/downloads](http://LEGOeducation.com/downloads)

# Included with every purchase of the EV3 curriculum solution

## EV3 Software and App

The easy-to-learn, easy-to-use EV3 Software and the EV3 Programming app are optimised for classroom use. Programming is done by dragging and dropping icons into a line to form commands allowing students to build simple programs, and then easily and intuitively build on their skills until they are developing complex algorithms.

The data logging feature inside the EV3 Software is a powerful science tool for carrying out experiments. It is easy to predict, collect, view, analyse and manipulate data from sensors and see the data in interactive graphs. The software is based on LabVIEW, the industry-leading graphical programming language, and is optimised for classroom usage.

## Get up and running in less than 45 minutes

Robot Educator is the name of both the basic robot and the tutorials included in the software and app. The robot provides students with a quick-build introduction to the world of robotics, while the tutorials takes both the teacher and the students through the essentials of programming, data logging and hardware in a structured and engaging way.

## Program with the tablet app

The EV3 Programming app is a simple and effective way of getting started with LEGO® MINDSTORMS® Education EV3 using the intuitive icon-based programming environment (data logging not available). The app is available for iPads®, Android tablets™ and Chromebooks.

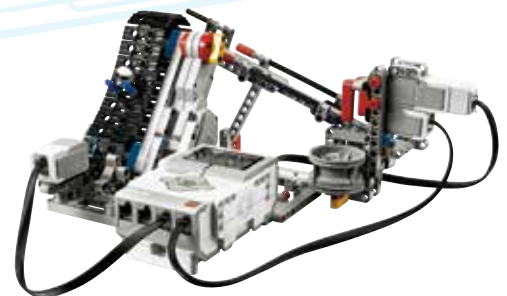


## EV3 Design Engineering Projects Curriculum

This curriculum pack presents students with open-ended problem solving activities, in a context that makes it fun and engaging to learn science, technology, engineering and maths. Each activity provides a design brief and culminates in a final project that can be presented and shared.

Students capture their work with the built-in digital workbook, making it easy to follow and assess their progress.

This curriculum is included in the LEG45544-1 LEGO MINDSTORMS Education EV3 Curriculum Solution.



## Make it move

Design and build autonomous robots that move and measure distance and speed, up an incline or in a regular polygon pattern. Program the motor using the built-in Rotation Sensor.

## Make it smarter

Design and build smarter autonomous robots that react to the environment. Program the EV3 brain to use Colour, Gyro, Touch and Ultrasonic Sensors to sense a range of data.

## Make a system

Design and build robotic systems that perform complex tasks. Identify tasks within the design brief and use subsystems to target smaller behaviours so the whole design brief task can be completed accurately and reliably.



# Bring physical science to life

## EV3 Science Curriculum

This curriculum pack consists of physical science experiments centered on energy, heat and temperature, force and motion, and light. Developed together with Fraunhofer IAIS, Europe's largest application-oriented research organisation, and real science teachers, the pack utilises the data logging capabilities of the hardware and software.

This curriculum is included in the LEG45544-1 LEGO MINDSTORMS Education EV3 Curriculum Solution. The Renewable Energy Add-on set (LEG9688) and the Temperature Sensor (LEG9749) are required and not included.



### Light

The phenomenon of light intensity is investigated using this experiment.



### Heat and temperature

The heat and temperature experiments are used to study the phenomena of insulation and heat transfer.

### Force and motion

Experiments relate to mechanical and kinematic phenomena, including gears, friction and inclined planes and free fall.



### Energy

Experiments related to energy – from manual energy transfer, to wind and solar energy, to electric vehicles.

The following additional products are required to be able to perform the EV3 science experiments of the EV3 science curriculum:

- Renewable Energy Add-on Set (LEG9688)  
Please see page 32
- Temperature Sensor (LEG9749)  
Please see page 13

# Students become real engineers through problem solving

## EV3 Coding Activities

This curriculum pack provides extensive content to deliver the Computing or Computer Science curriculum, providing ample cross-curricular opportunities in design and technology, science and math. The material will enable students to apply and develop their programming knowledge and inspire them to discover the importance of coding in their everyday lives.

This curriculum is included in the LEG45544-1 LEGO MINDSTORMS Education EV3 Curriculum Solution.

## EV3 eLearning

eLearning for LEGO MINDSTORMS Education EV3 consists of more than 100 self-paced video lessons. Taking you from complete beginner to classroom ready, each of the 15 courses lasts approximately 90 minutes, including build time and activities.

This material is included in the LEG45544-1 LEGO MINDSTORMS Education EV3 Curriculum Solution.

## Key Learning Values

- Understand several key algorithms that reflect computational thinking
- Make appropriate use of data structures such as lists, tables and arrays
- Design, use and evaluate computational abstractions that model the state and behavior of real-world problems and physical systems

15 online courses with more than 100 videos take you from beginner to classroom ready





LEG45544-6S

# Classroom Solutions

## EV3 Curriculum Solution Packs

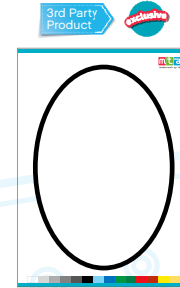
LEGO® Education EV3 Curriculum Solution  
LEG45544-1



Battery Charger  
LEG8887



Robotics Training Mat  
ROB014



MTA Storage System Double  
SUN8327



|   |   |   |   |   |
|---|---|---|---|---|
| <b>LEG45544-1K</b><br>2-3 students<br><b>\$649.95</b><br>SAVE \$37.95   | 1 | 1 |   |   |
| <b>LEG45544-4</b><br>8 students<br><b>\$2,599.95</b><br>SAVE \$253.60   | 4 | 4 | 1 |   |
| <b>LEG45544-4S</b><br>8 students<br><b>\$2,809.95</b><br>SAVE \$283.45  | 4 | 4 | 1 | 1 |
| <b>LEG45544-5</b><br>10 students<br><b>\$3,249.95</b><br>SAVE \$291.50  | 5 | 5 | 1 |   |
| <b>LEG45544-5S</b><br>10 students<br><b>\$3,399.95</b><br>SAVE \$381.35 | 5 | 5 | 1 | 1 |
| <b>LEG45544-6</b><br>12 students<br><b>\$3,889.95</b><br>SAVE \$339.40  | 6 | 6 | 1 |   |
| <b>LEG45544-6S</b><br>12 students<br><b>\$4,039.95</b><br>SAVE \$429.25 | 6 | 6 | 1 | 1 |



# Classroom Solutions

## EV3 Curriculum Solution Packs

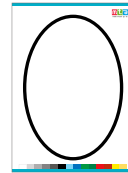
LEGO Education EV3 Curriculum Solution  
LEG45544-1



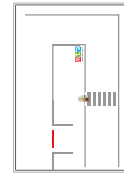
Battery Multi-Charger  
WLMC01



Robotics Training Mat  
ROB014



Robotics Challenge Mat  
ROB15



MTA Storage System Double  
SUN8327



MTA Storage System Triple  
SUN8337



| Product Code / Student Count  | LEGO Education EV3 Curriculum Solution | Battery Multi-Charger | Robotics Training Mat | Robotics Challenge Mat | MTA Storage System Double | MTA Storage System Triple |
|---|--|-----------------------|-----------------------|------------------------|---------------------------|---------------------------|
| <b>LEG45544-8</b><br>16 students<br>\$4,999.95<br>SAVE \$461.55     | 8                                      | 1                     | 1                     |                        |                           |                           |
| <b>LEG45544-8S</b><br>16 students<br>\$5,199.95<br>SAVE \$571.35    | 8                                      | 1                     | 1                     |                        |                           | 1                         |
| <b>LEG45544-10</b><br>20 students<br>\$6,239.95<br>SAVE \$481.45    | 10                                     | 1                     |                       | 1                      |                           |                           |
| <b>LEG45544-10S</b><br>20 students<br>\$6,539.95<br>SAVE \$661.15   | 10                                     | 1                     |                       | 1                      | 2                         |                           |
| <b>LEG45544-12</b><br>24 students<br>\$7,399.95<br>SAVE \$901.30    | 12                                     | 2                     |                       | 1                      |                           |                           |
| <b>LEG45544-12S</b><br>24 students<br>\$7,699.95<br>SAVE \$1,081.00 | 12                                     | 2                     |                       | 1                      | 2                         |                           |
| <b>LEG45544-15</b><br>30 students<br>\$9,199.95<br>SAVE \$991.15    | 15                                     | 2                     |                       | 1                      |                           |                           |
| <b>LEG45544-15S</b><br>30 students<br>\$9,599.95<br>SAVE \$1,210.75 | 15                                     | 2                     |                       | 1                      |                           | 2                         |



LEG45544-10CS

# Classroom Solutions

## EV3 Curriculum Solution Packs

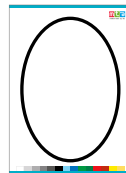
LEGO® Education EV3 Curriculum Solution  
LEG45544-1



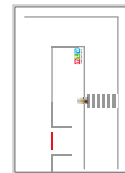
Battery Multi-Charger  
WLMC01



Robotics Training Mat  
ROB014



Robotics Challenge Mat  
ROB15



EV3 Expansion Set  
LEG45560



MTA Storage System Triple  
SUN8337



| Product Code                 | Students | LEGO Curriculum Solution | Battery Multi-Charger | Robotics Training Mat | Robotics Challenge Mat | EV3 Expansion Set | MTA Storage System Triple |
|------------------------------|----------|--------------------------|-----------------------|-----------------------|------------------------|-------------------|---------------------------|
| LEG45544-8C<br>16 students   | 8        | 1                        | 1                     | 1                     | 1                      | 4                 | 2                         |
| LEG45544-8CS<br>16 students  | 8        | 1                        | 1                     | 1                     | 1                      | 4                 | 2                         |
| LEG45544-10C<br>20 students  | 10       | 1                        | 1                     | 1                     | 1                      | 5                 | 2                         |
| LEG45544-10CS<br>20 students | 10       | 1                        | 1                     | 1                     | 1                      | 5                 | 2                         |
| LEG45544-12C<br>24 students  | 12       | 2                        | 1                     | 1                     | 1                      | 6                 | 2                         |
| LEG45544-12CS<br>24 students | 12       | 2                        | 1                     | 1                     | 1                      | 6                 | 2                         |
| LEG45544-15C<br>30 students  | 15       | 2                        | 1                     | 1                     | 1                      | 8                 | 3                         |
| LEG45544-15CS<br>30 students | 15       | 2                        | 1                     | 1                     | 1                      | 8                 | 3                         |

# Teach STEM with a Mission to Mars

## EV3 Space Challenge Set

LEG45570 **\$359.95**



ADD-ON

This set 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, provide rich opportunities for students to explore and create innovative solutions to current space exploration topics. The 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.

The curriculum material for the EV3 Space Challenge Set is included in the LEG45544-1 LEGO MINDSTORMS® Education EV3 Curriculum Solution.



See page 12 for Classroom Solutions.

# Expanding learning possibilities

## EV3 Expansion Set

LEG45560 **\$169.95**



ADD-ON

This set contains a wide range of supplementary elements to continue the theme of critical thinking and creativity featured in the EV3 Core Set. Students deepen their robotics experience with new structural and mechanical elements, and additional building instructions and programs.

Requires the LEG45544-1 LEGO MINDSTORMS Education EV3 Curriculum Solution.



# Classroom Solutions

## Space Challenge Packs

|   | LEGO® Education EV3 Curriculum Solution<br>LEG45544-1 | EV3 Space Challenge Set<br>LEG45570 | Battery Charger<br>LEG8887 |
|---|---|-------------------------------------|----------------------------|
| <b>LEG45570-3</b><br>\$969.95<br>SAVE \$109.90                    |   | 3                                   |                            |
| <b>LEG45570-6</b><br>\$1,899.95<br>SAVE \$259.75                  |   | 6                                   |                            |
| <b>LEG45544-SP4</b><br>8 students<br>\$3,229.95<br>SAVE \$241.55  | 4   | 2                                   | 4                          |
| <b>LEG45544-SP8</b><br>16 students<br>\$6,399.95<br>SAVE \$543.05 | 8   | 4                                   | 8                          |

# Classroom Solutions

## Science Activity Add-on Packs

|  | LEGO Education EV3 Curriculum Solution<br>LEG45544-1 | Temperature Sensor<br>LEG9749 | Renewable Energy Add-on Set<br>LEG9688 | Battery Charger<br>LEG8887 |
|--|--|-------------------------------|--|----------------------------|
| <b>LEG9688-T1</b><br>\$259.95<br>SAVE \$27.95                    |  | 1                             | 1                                      |                            |
| <b>LEG9688-T4</b><br>\$999.95<br>SAVE \$151.65                   |  | 4                             | 4                                      |                            |
| <b>LEG9688-T8</b><br>\$1,999.95<br>SAVE \$303.25                 |  | 8                             | 8                                      |                            |
| <b>LEG45544-RE4</b><br>8 students<br>\$3,599.95<br>SAVE \$303.25 | 4  | 4                             | 4                                      | 4                          |
| <b>LEG45544-RE8</b><br>8 students<br>\$6,999.95<br>SAVE \$806.45 | 8  | 8                             | 8                                      | 8                          |

# Main Components

## Transformer 10V DC

LEG8887 **\$57.95**



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 **\$399.95**



The heart and brain of LEGO MINDSTORMS® Education EV3 robots. 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 **\$139.95**



Designed for use with the EV3 Intelligent Brick. It provides longer run time than AA batteries and can be charged without taking the model apart. The charge time is around 3 to 4 hours. It requires the LEG8887 DC Charger, sold separately.

## EV3 Large Servo Motor

LEG45502 **\$57.95**



Comes with built-in rotation sensor and has a 1 degree accuracy. Auto ID is built into EV3 software.

## EV3 Medium Servo Motor

LEG45503 **\$45.95**



Comes with built-in rotation sensor and has a 1 degree accuracy. Great for lower load, higher speed applications. Auto ID is built into EV3 software.

## EV3 Cable Pack

LEG45514 **\$29.95**



Contains the same 7x RJ12 Connector Cables as included in the LEG45544-1 EV3 Core Set & Software. The cables can also be used with NXT. Use these 7 connector cables to expand your EV3 element set and get even more out of your EV3 experience. The pack contains: 4x 25cm, 2x 35 cm, 1 x 50cm

# Sensor Elements

## Temperature Sensor

LEG9749 **\$57.95**



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 **\$55.95**



Measures distance and detect objects around the EV3. Auto ID is built into EV3 software.

## EV3 Gyro Sensor

LEG45505 **\$55.95**



Measures angles and measures degrees per second of rotation. Auto ID is built into EV3 software.

## EV3 Colour Sensor

LEG45506 **\$55.95**



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

## EV3 Touch Sensor

LEG45507 **\$34.95**



Has 3 different modes: It can be pressed, released or it counts the number of presses. Auto ID is built into EV3 software.

## EV3 Infrared Beacon

LEG45508 **\$55.95**



This has been designed 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 brick through signals sent to the infrared sensor.

## EV3 Infrared Sensor

LEG45509 **\$55.95**



Detects proximity to the robot and reads signals emitted by the EV3 Infrared Beacon. Students can create remote controlled robots and learn how infrared technology is used in TV remotes, surveillance systems and even in target acquisition equipment. Auto ID is built into EV3 software.

# HiTechnic Sensors

Enquire about our Professional Learning workshops in your region



## Soccer Kit

LEGIB1005K **\$259.95** **SAVE \$9.90** 3

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.

## Angle Sensor

LEGNX1030 **\$79.95** 1

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.

## Force Sensor

LEGNX1074 **\$79.95** 1

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.

## HiTechnic Barometric Sensor

LEGNX1036 **\$89.95** 1

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

## HiTechnic IR Seeker v2

**LEGNX1042 \$89.95** 1

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.

## HiTechnic Compass Sensor

**LEGNX1034 \$79.95** 1

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

## HiTechnic Gyro Sensor

**LEGNX1044 \$99.95** 1

This sensor lets you accurately detect rotation for your projects. Build robots that can balance, swing or perform other functions where measurement of rotation is essential.

## HiTechnic Colour Sensor v2

**LEGNX1038 \$89.95** 1

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



## Omniwheel

LEG2051 **\$19.95**

3rd Party Product

For greater freedom of movement and increased stability. The single omniwheel can be modified to fit cross axles. 49.2mm in diameter.



## Connect Cables

TTR150 **\$8.95**

3rd Party Product

TTR155 **\$8.95**

3rd Party Product

TTR150 – 10cm, set of 5. TTR155 – 15cm, set of 5.



## Actuator

FIR12-50 **\$89.95**

3rd Party Product

FIR12-100 **\$89.95**

3rd Party Product

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.

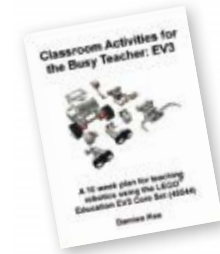


## STEM by Design Teaching with LEGO Mindstorms EV3

C01001 **\$109.95**

3rd Party Product

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



## Rotacasters

ROT8435G **\$39.95**

3rd Party Product

ROT8465 **\$39.95**

3rd Party Product



Multi-Directional Rotacaster wheels with LEGO compatible hub. Excel in robotic mobility by enabling ultimate manoeuvrability easily. Ideal for use in RobocupJunior events. ROT8435G – 48mm diameter, 35A durometer. Softer, grippier roller compound. 5kg load bearing capacity. Packs of 2. ROT8465 – 48 mm diameter, 65A durometer. Firmer, stronger roller compound. kg load bearing capacity. Packs of 2.

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

WLMC01 **\$319.95**

3rd Party Product

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

WLMC03 **\$44.95**

3rd Party Product

50cm cables (if extra length required).



## Classroom Activities for the Busy Teacher: EV3

LPLEG8 **\$76.95**

3rd Party Product

A 10 week curriculum package to implement the EV3 Core Set & Software in your classroom. Containing over 20 chapters that follow a planetary exploration storyline.

# MTA Storage Systems suitable for EV3

Compatible with LEGO Education Storage Tubs



## MTA Storage Systems & Trays

exclusive

SUN8317 **\$149.95**

3rd Party Product

SUN8327 **\$219.95**

3rd Party Product

SUN8337 **\$279.95**

3rd Party Product

SUN832S **\$9.95**

3rd Party Product

SUN831L **\$12.95**

3rd Party Product

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.

# 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 **\$10.95**

LEGO Education Replacement Packs are the ideal way to replace key elements for your LEGO Education products. This pack includes elements for the EV3 Curriculum Solution (LEG45544-1), and the EV3 Expansion Set (LEG45560).



## Replacement Pack 2 - LEGO Education EV3

LEG2701 **\$10.95**

LEGO Education Replacement Packs are the ideal way to replace key elements for your LEGO Education products. This pack includes elements for the EV3 Expansion Set (LEG45560).



## Replacement Pack 3 - Ball & Ball Joint for EV3

LEG2702 **\$12.95**

LEGO Education Replacement Packs are the ideal way to replace key elements for your LEGO Education products. This pack features a ball and ball joint for the EV3 Curriculum Solution (LEG45544-1).



## Replacement Pack 4 - Green City Challenge

LEG2703 **\$12.95**

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



## Replacement Pack 5 - Space Challenge

LEG2704 **\$12.95**

LEGO Education Replacement Packs are the ideal way to replace key elements for your LEGO Education products. This pack includes elements for the EV3 Space Challenge Set (LEG45570).



## Replacement Pack 6 - LEGO Education EV3

LEG2705 **\$12.95**

LEGO Education Replacement Packs are the ideal way to replace key elements for your LEGO Education products. This pack features elements for the EV3 Expansion Set (LEG45560) and the EV3 Curriculum Solution (LEG45544-1).



## Replacement Pack 7 - LEGO Education EV3

LEG2706 **\$12.95**

LEGO Education Replacement Packs are the ideal way to replace key elements for your LEGO Education products. 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 **\$12.95**

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



# RobocupJunior



In 2017 Modern Teaching Aids celebrate 10 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 30 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 Dance, 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:

Sydney NSW – September 2017

Please visit [www.robocupjunior.org.au](http://www.robocupjunior.org.au) for 2017 competition dates and locations.

### New Zealand Nationals:

Dunedin – September 2017

Please visit [www.robocupjunior.org.nz](http://www.robocupjunior.org.nz) for 2017 competition dates and locations.



1st Place Secondary Division 'Call it Steam Punk' Home Education Network Canberra and Southern Tablelands

## 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.

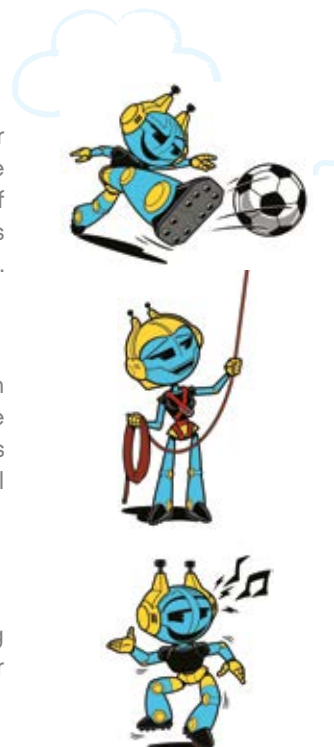
Contact us for one of the many training sessions and for your nearest regional competitions.

[www.robocupjunior.org.au](http://www.robocupjunior.org.au) or [www.robocupjunior.org.nz](http://www.robocupjunior.org.nz)

# RobocupJunior Challenges

## RCJ Dance

RobocupJunior Dance is a stunning integration of Science, Technology and the Arts. Participants program their robot or robots to perform to music. Competitors are encouraged to decorate their entries and to motorise robot limb movements, to give their robots real personality. RCJ Dance can be approached in a number of ways with creative new ideas appearing every year. The Dance Challenge is a real team effort where students prepare themselves for the team interview and create their costumes, on top of the programming and building.



## RCJ Rescue & Premier Rescue

The Rescue competition mirrors the real life use of robots that rescue people from life threatening situations. In rescue, robots compete by following a line on a series of tiles encountering obstacles to a designated rescue area locating and rescuing the victim from the chemical disaster spill. Premier rescue involves the same tiles as Rescue, however, this time the robots can encounter some extra more challenging tiles. Once in the chemical spill, the Premier rescue robot is required to find and lift the victim to the safety of a raised platform.

## Standard Soccer

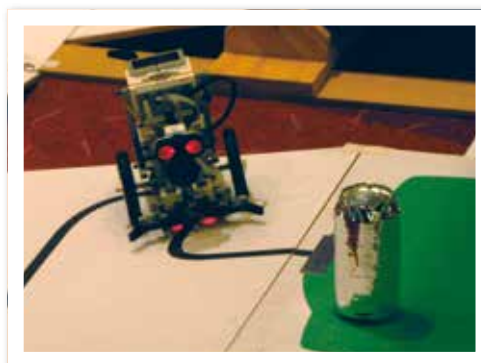
Students are required to design and program 2 robots to compete against an opposing pair of robots by kicking an infra-red transmitting ball into their designated goal. Teams have a choice of using 2 attacking robots or an attacker teamed with a goalie.

For more information on the challenges refer to the RobocupJunior website [robocupjunior.org.au](http://robocupjunior.org.au)

# Suggested RobocupJunior resources using the EV3 Robot

For more details on the competition and rules go to [robocupjunior.org.au](http://robocupjunior.org.au)

For more RobocupJunior Packs go to the RobocupJunior page at [teaching.com.au](http://teaching.com.au)



### Dance Pack (2 robots)

RCJ45544-D **\$1,249.95** SAVE \$188.05

The kit consists of:

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

### Rescue (1 robot)

RCJ45544-R **\$829.95** SAVE \$83.80

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)
- 1x ROT8435G Rotocaster (pack of 2 multidirectional wheels)
- 1x LEG8887 Battery Charger

### Standard Soccer (2 robots)

RCJ45544-SN **\$1,899.95** SAVE \$103.55

The kit consists of:

- 2x LEG45544-1 EV3 Core Set & Software
- 1x LEG1B1005K 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

## RobocupJunior Resources



### RobocupJunior Soccer Kit

**LEGIB1005K \$259.95 SAVE \$9.90**



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.

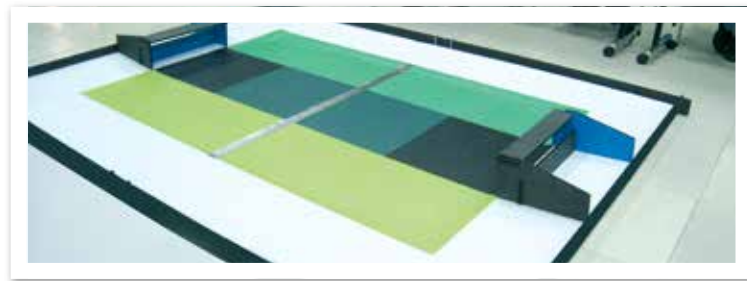


### Official RobocupJunior Rescue Practice Field

**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.



### 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.



### Pulsed IR RoboBall

**LEGIB1005 \$99.95**



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 \$89.95**



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



### HiTechnic Compass Sensor

**LEGNX1034 \$79.95**



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



### HiTechnic IR Seeker v2

**LEGNX1042 \$89.95**



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.



### IR Temperature Sensor for EV3 or NXT

**MIND001 \$99.95**

**NEW**



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



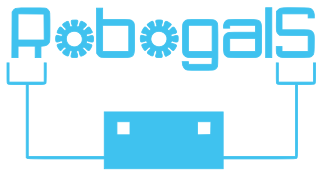
### Art & Craft Pack Robocup Dance

**ROB001 \$59.95**



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



www.robogals.org

# Robogals

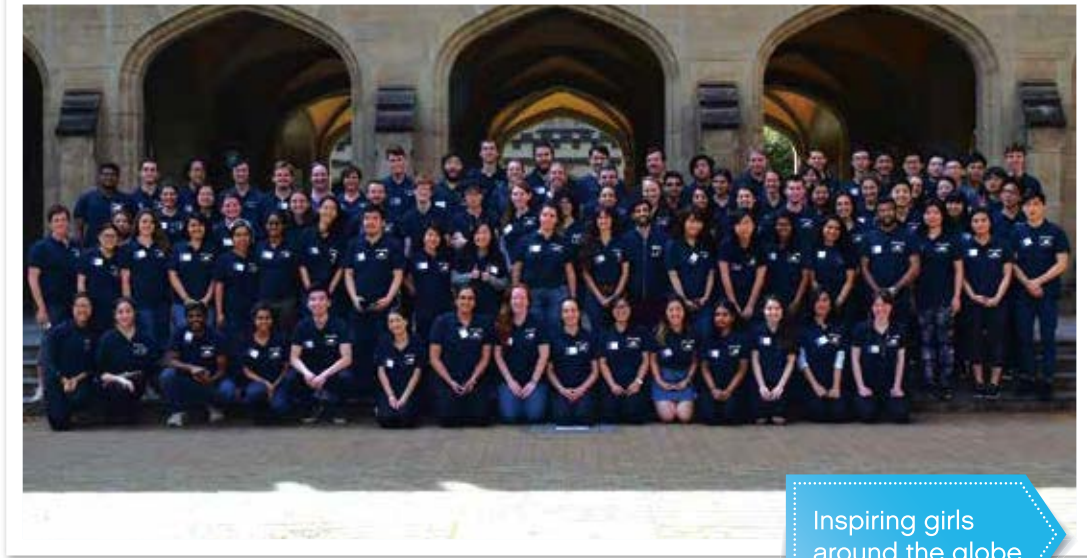
Modern Teaching Aids is proud to support Robogals as Platinum National Sponsor for 2017.

Robogals is an international, not-for-profit, student-run organisation that aims to increase female participation in engineering, science and technology through fun and educational initiatives aimed at girls in primary and secondary school.

They provide free robotics workshops, where the girls construct and program LEGO® MINDSTORMS® Education resources. These workshops have been designed to engage students in a range of engineering topics in a way that is fun and creative.

Furthermore, Robogals organises inspirational talks about studying engineering and working as an engineer, as well as an annual conference for executives from each of our regions, and they provide localised initiatives to meet certain demands and gaps.

Robogals was founded in 2008 by Marita Cheng, the 2012 Young Australian of the Year.



Inspiring girls around the globe



# FIRST® LEGO® League

FIRST® LEGO League (FLL®) is a competition catering for upper-primary and lower-secondary school students. Every year, teams of up to 10 students build, program and compete with a robot, while also learning about a modern problem in science and engineering and developing solutions for it. Tournaments are run with the feel of a sporting event, and teams compete like crazy while having the time of their lives. What FLL teams accomplish is nothing short of amazing. The skills they learn will last a lifetime. Throughout their experience, teams will operate under FLL's signature set of Core Values, celebrating discovery, teamwork, and Gracious Professionalism®.

Each Challenge has three parts: the **Robot Game**, the **Project** and the **FLL Core Values**. Teams of up to ten children, with one adult coach, participate in the Challenge by programming an autonomous robot to score points on a themed playing field (Robot Game), developing a solution to a problem they have identified (Project), all guided by the FLL Core Values. The culmination of research, building, programming and sharing their research are FLL tournaments where teams come together to celebrate their achievements.

For more information on being involved & to register your team for 2017 please visit: **Australia - [www.ausfll.org](http://www.ausfll.org) or New Zealand - [www.kiwifirst.org](http://www.kiwifirst.org)**

# LEGO® Education WeDo 2.0

## Make science come to life

Designing  
Investigating  
Modeling  
Coding



LEGO® Education WeDo 2.0

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.



# Build students' confidence to ask questions and solve problems

## WeDo 2.0 Curriculum Solution

LEG45300 **\$269.95**



This set is based upon the latest science standards and was created to enhance students' curiosity and science skills. The set is delivered in a storage bin along with sorting trays, labels, a Smarthub, a Medium Motor, Motion Sensor a Tilt Sensor and enough building elements for two students. The accompanying desktop and tablet supported software provides an easy-to-use programming environment and includes the WeDo 2.0 Curriculum Pack, which covers life, physical, earth and space sciences, as well as engineering. The accompanying eLearning program helps teachers to become confident users of the WeDo 2.0 Core Set.



### Solution includes

- WeDo 2.0 Core Set
- WeDo 2.0 Software & Curriculum Pack\*
- WeDo 2.0 eLearning\*

# A captivating science teaching solution

## What's included in the Curriculum Solution?

### Core Set

Containing the LEGO® bricks and technology elements needed to make elementary students motivated and make science projects come to life.



|   |   |  |  |  |  |
|---|---|--|--|--|--|
| <b>Curriculum content</b><br>Real life projects based on national standards to develop students practices within science, including engineering, technology and computing.* | <b>Teaching software</b><br>Intuitive software including integrated curriculum content, easy drag and drop programming and teachers guide.* | <b>Assessment tools</b><br>Project integrated assessment grids and rubrics for both teacher and student led assessment.* | <b>eLearning program</b><br>Five eLearning modules to give full teaching support from implementation to activation.* | <b>Technical support</b><br>Ongoing telephone and online support to help you with any questions. | <b>Community</b><br>Access to the LEGO Education community of teachers for additional ideas, tips and new connections. |
|---|---|--|--|--|--|



## What can I add on?

|   |   |   |
|---|---|---|
| <b>Complementary products</b><br>Rechargeable power add-on solution for easy battery management is available to supplement the WeDo 2.0 solution. | <b>Training and professional development</b><br>Check our Professional Learning calendar on <a href="http://teaching.com.au">teaching.com.au</a> to find training near you. | <b>Replacement Packs</b><br>The ideal way to replace key LEGO elements for the WeDo 2.0 sets. |
|---|---|---|

\*Available for free download from [LEGOeducation.com/downloads](http://LEGOeducation.com/downloads)



# Included with each purchase of the WeDo 2.0 curriculum solution



## WeDo 2.0 Curriculum Pack

This Curriculum Pack promotes investigation and experimentation in life, physical, earth and space sciences. Built on the latest science standards, the pack aids elementary educators in delivering key science content, while incorporating activities across engineering, technology, and computing.

This curriculum is included in the LEG45300 WeDo 2.0 Curriculum Solution.

## ...all follow a consistent structure...

| Explore  | Create   | Share   |
|--|--|---|
| <ul style="list-style-type: none"> <li>• Connect</li> <li>• Discuss</li> </ul> | <ul style="list-style-type: none"> <li>• Build</li> <li>• Program</li> <li>• Modify</li> </ul> | <ul style="list-style-type: none"> <li>• Document</li> <li>• Present</li> </ul> |

# There are three types of WeDo 2.0 projects...

- 1 Get Started Project, divided in 4 parts, to teach the basic functions of WeDo 2.0
- 8 Guided Projects linked to curriculum standards, with step-by-step instructions
- 8 Open Projects linked to curriculum standards, with initial design brief that inspires open-ended problem solving and exploration



## eLearning

eLearning for LEGO Education WeDo 2.0 is an easy, manageable solution with full teaching support from implementation to curriculum activation. Using an accessible blend of text, video, animation and curriculum links, it provides thorough training on using the different teaching tools and activity types.

This material is included in the LEG45300 WeDo 2.0 Curriculum Solution.



# Sensors & Motors

## LEGO® Education WeDo 2.0 Smarthub 2 I/O

LEG45301 **\$89.95**



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 Motion Sensor

LEG45304 **\$34.95**



Attach a Motion Sensor to the WeDo 2.0 Smarthub and detect objects within a range of 15cm, depending on the design of the object. No set-up is required. Simply connect the Motion Sensor and it will be identified automatically by the WeDo 2.0 Software.

## LEGO Education WeDo 2.0 Smarthub Rechargeable Battery

LEG45302 **\$89.95**



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



## LEGO Education WeDo 2.0 Tilt Sensor

LEG45305 **\$34.95**



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 Medium Motor

LEG45303 **\$34.95**



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 Add-On Power Pack

LEG54838 **\$129.95**



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-us/support/wedo-2/software-requirements>

# Replacement packs for WeDo 2.0

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

## 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).



## Classroom Solutions

### 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

3rd Party Product **NEW**



MTA Storage System Double  
SUN8326

3rd Party Product **NEW**



|                                     |   |    |    |   |
|-------------------------------------|---|----|----|---|
| <b>LEG45300-2K</b><br>4 students    | <b>\$499.95</b><br><b>SAVE \$39.95</b>    | 2  |    |   |
| <b>LEG45300-2KP</b><br>4 students   | <b>\$799.95</b><br><b>SAVE \$35.75</b>    | 2  | 2  |   |
| <b>LEG45300-3K</b><br>6 students    | <b>\$749.95</b><br><b>SAVE \$59.90</b>    | 3  |    |   |
| <b>LEG45300-3KP</b><br>6 students   | <b>\$1,169.95</b><br><b>SAVE \$83.60</b>  | 3  | 3  |   |
| <b>LEG45300-5K</b><br>10 students   | <b>\$1,229.95</b><br><b>SAVE \$119.80</b> | 5  |    |   |
| <b>LEG45300-5KP</b><br>10 students  | <b>\$1,939.95</b><br><b>SAVE \$149.30</b> | 5  | 5  |   |
| <b>LEG45300-5KS</b><br>10 students  | <b>\$1,329.95</b><br><b>SAVE \$169.75</b> | 5  |    | 1 |
| <b>LEG45300-5KPS</b><br>10 students | <b>\$2,039.95</b><br><b>SAVE \$199.25</b> | 5  | 5  | 1 |
| <b>LEG45300-8K</b><br>16 students   | <b>\$1,929.95</b><br><b>SAVE \$299.65</b> | 8  |    |   |
| <b>LEG45300-8KP</b><br>16 students  | <b>\$2,999.95</b><br><b>SAVE \$342.85</b> | 8  | 8  |   |
| <b>LEG45300-8KS</b><br>16 students  | <b>\$2,079.95</b><br><b>SAVE \$299.60</b> | 8  |    | 1 |
| <b>LEG45300-8KPS</b><br>16 students | <b>\$3,149.95</b><br><b>SAVE \$412.80</b> | 8  | 8  | 1 |
| <b>LEG45300-12K</b><br>24 students  | <b>\$2,879.95</b><br><b>SAVE \$359.45</b> | 12 |    |   |
| <b>LEG45300-12KP</b><br>24 students | <b>\$4,499.95</b><br><b>SAVE \$514.25</b> | 12 | 12 |   |

# Classroom Solutions

## WeDo 2.0 Curriculum Solution Packs

WeDo 2.0 Curriculum Solution  
LEG45300



WeDo 2.0 Add-On Power Pack  
LEG54838



MTA Storage System Double  
SUN8326

3rd Party Product **NEW**

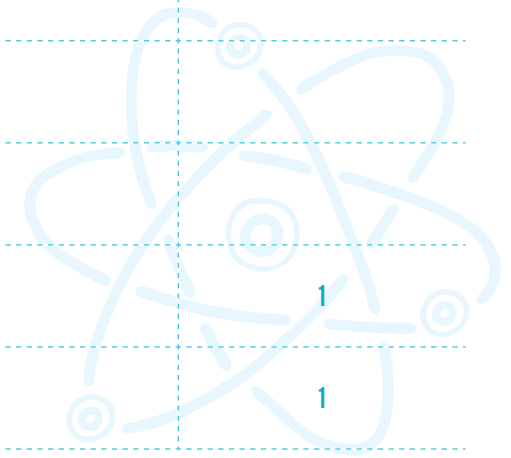


MTA Storage System Triple  
SUN8336

3rd Party Product **NEW**



|                                      |   |    |    |   |   |
|--------------------------------------|---|----|----|---|---|
| <b>LEG45300-12KS</b><br>24 students  | <b>\$3,029.95</b><br><b>SAVE \$429.40</b> | 12 |    | 1 |   |
| <b>LEG45300-12KPS</b><br>24 students | <b>\$4,649.95</b><br><b>SAVE \$584.20</b> | 12 | 12 | 1 |   |
| <b>LEG45300-15K</b><br>30 students   | <b>\$3,579.95</b><br><b>SAVE \$469.30</b> | 15 |    |   |   |
| <b>LEG45300-15KP</b><br>30 students  | <b>\$5,599.95</b><br><b>SAVE \$667.80</b> | 15 | 15 |   |   |
| <b>LEG45300-15KS</b><br>30 students  | <b>\$3,779.95</b><br><b>SAVE \$549.25</b> | 15 |    |   | 1 |
| <b>LEG45300-15KPS</b><br>30 students | <b>\$5,799.95</b><br><b>SAVE \$747.75</b> | 15 | 15 |   | 1 |



# MTA Storage Systems suitable for WeDo 2.0

## MTA Storage Systems & Trays

- SUN8316 \$149.95**
- SUN8326 \$219.95**
- SUN8336 \$279.95**

**NEW**

These MTA exclusive storage systems have been designed to organise your LEGO® Education Storage tubs. Each unit comes with the option of castors or adjustable feet for static storage.

- SUN8316** – Single Storage. Holds 7 WeDo 2.0 trays.
- SUN8326** – Double Storage. Holds 14 WeDo 2.0 trays.
- SUN8336** – Triple Storage. Holds 21 WeDo 2.0 trays.



Compatible with LEGO Education Storage Tub

# LEGO® Education Machines & Mechanisms

## Discover how the real world works



### 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.



Simple & Powered  
Machines Solution 28

Simple Machines  
Solution P34

Early Simple Machines  
Solution P37

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.

Machines & Mechanisms is easy to incorporate into everyday classwork, where it adds variation and motivates students to acquire curriculum-relevant knowledge and skills.

With Machines & Mechanisms, teachers can ignite learning about basic mechanisms, structures, and power sources in the real world.



# Facilitate real-world STEM learning

## Simple & Powered Machines Curriculum Solution

LEGO9686 **\$279.95**



This primary and high school level core set contains a brick assortment and full-colour building instruction booklets for 28 models.

Use this set with the accompanying curriculum pack to promote students' fundamental STEM understanding of simple machines, structures and mechanisms. The curriculum pack provides full lessons, extension activities and problem solving tasks, as well as teacher guides and student worksheets.



### Solution includes

- Simple & Powered Machines Core Set 1
- Introducing Simple & Powered Machines Activity Pack\* www
- Advancing with Simple & Powered Machines Activity Pack\* www

# A stimulating STEM solution

## What's included in the Curriculum Solution?

### Core Set ✓

Contains LEGO® bricks and gears to create small models to build and explore real world mechanisms and energy concepts, motivating students STEM learning.



### Curriculum content ✓

The curriculum material is based on national curriculum standards and supports teachers with easy accessible activities to deliver highly engaging STEM learning.\*

### Assessment tools ✓

Assessment of learning is enabled through creative assessment, teachers checklists and student self assessment tools.\*

### eLearning program ✓

Step-by-step tutorials to help you get started.\*

### Technical support ✓

Ongoing telephone and online support to help you with any questions.

### Community ✓

Access to the LEGO Education community of teachers for additional ideas, tips and new connections.



## What can I add on?

### Expansion sets ✓

Two add-on packs are available, each with curriculum pack included. These are the Renewable Energy Add-on and the Pneumatics Add-on.

### Training and professional development ✓

Check our Professional Learning calendar on [teaching.com.au](http://teaching.com.au) to find training near you.

### Complementary products ✓

Technology components are also available as separate products.

### Replacement Packs ✓

Replacement bricks are available.

\*Available for free download from [LEGOeducation.com/downloads](http://LEGOeducation.com/downloads)

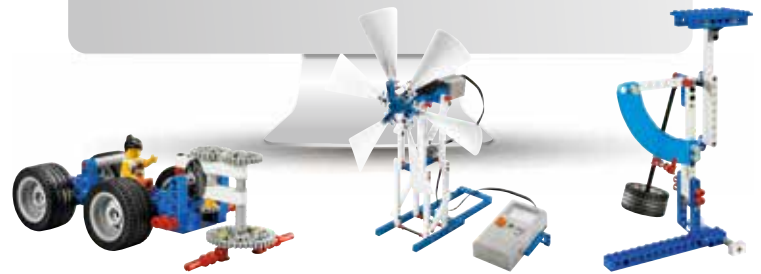
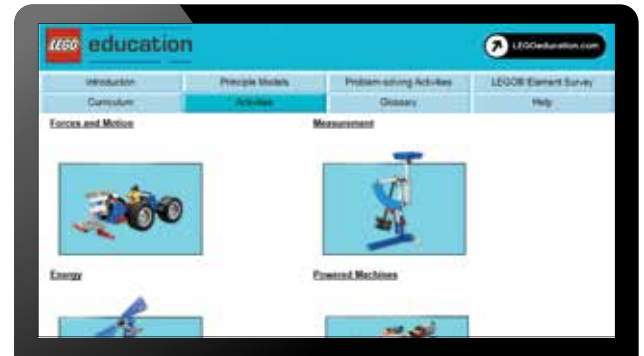
# Included with each purchase of the Simple & Powered Machines curriculum solution

## Introducing Simple & Powered Machines Activity Pack

With this activity pack students get a fundamental understanding of simple machines, structures and mechanisms. The pack features 37 principle model activities, 14 main activities, including extension activities, and six problem-solving tasks. Flash animations introduce the activities. Teacher's notes, student worksheets and glossary included. This activity pack is included in the LEG9686 Simple & Powered Machines curriculum solution

### Key Learning Values

- Investigating the principles of simple machines, mechanisms and structures
- Experimenting with balanced and unbalanced forces
- Experimenting with friction
- Capturing, storing and transferring wind energy
- Measuring distance, time, speed and weight
- Calibrating scales
- Investigating powered forces and motion, speed and pulling power

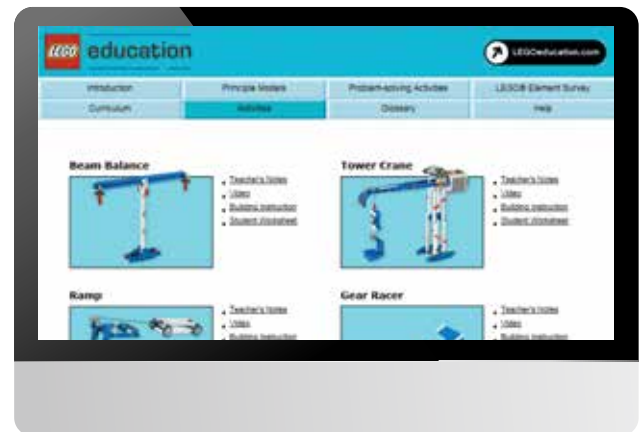


## Advancing with Simple & Powered Machines Activity Pack

This activity pack allows students to get an in-depth understanding of simple machines, mechanisms, structures and mechanical advantage. It includes 38 principle model activities, four main activities, including extension activities, and eight problem-solving activities. Real-life video clips introduce students to the activities. Teacher's notes, student worksheet and glossary included. This activity pack is included in the LEG9686 Simple & Powered Machines curriculum solution.

### Key Learning Values

- Investigating the principles of simple machines, mechanisms and structures
- Mechanical advantage
- Balanced and unbalanced forces
- Equilibrium
- Block and tackle
- Effect of force on an object
- Experimenting with friction
- Calculating speed, distance, time and weight
- Identifying dependent and independent variables



# Classroom Solutions

## Simple & Powered Machines Curriculum Solution Packs

Simple & Powered Machines Curriculum Solution  
LEG9686



Track, Ramp & Stand  
EIS0355DYTR



MTA Storage System Double  
SUN8327

3rd Party Product



MTA Storage System Triple  
SUN8337

3rd Party Product



|                                    |   |    |   |   |   |
|------------------------------------|---|----|---|---|---|
| <b>LEG9686-3N</b><br>6 students    | <b>\$799.95</b><br><b>SAVE \$39.90</b>    | 3  |   |   |   |
| <b>LEG9686-6N</b><br>12 students   | <b>\$1,569.95</b><br><b>SAVE \$109.75</b> | 6  |   |   |   |
| <b>LEG9686-6ST</b><br>12 students  | <b>\$1,719.95</b><br><b>SAVE \$179.60</b> | 6  |   | 1 |   |
| <b>LEG9686-8N</b><br>16 students   | <b>\$1,999.95</b><br><b>SAVE \$239.65</b> | 8  |   |   |   |
| <b>LEG9686-8ST</b><br>16 students  | <b>\$2,199.95</b><br><b>SAVE \$319.60</b> | 8  |   |   | 1 |
| <b>LEG9686-12N</b><br>24 students  | <b>\$2,979.95</b><br><b>SAVE \$379.45</b> | 12 |   |   |   |
| <b>LEG9686-12ST</b><br>24 students | <b>\$3,279.95</b><br><b>SAVE \$519.35</b> | 12 |   | 2 |   |
| <b>LEG9686-12NS</b><br>24 students | <b>\$3,379.95</b><br><b>SAVE \$529.30</b> | 12 | 1 | 2 |   |
| <b>LEG9686-15N</b><br>30 students  | <b>\$3,699.95</b><br><b>SAVE \$499.30</b> | 15 |   |   |   |
| <b>LEG9686-15ST</b><br>30 students | <b>\$4,099.95</b><br><b>SAVE \$659.20</b> | 15 |   |   | 2 |
| <b>LEG9686-15NS</b><br>30 students | <b>\$4,199.95</b><br><b>SAVE \$779.10</b> | 15 | 2 |   | 2 |



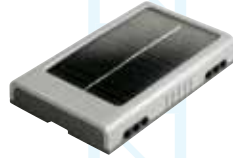


## Energy Elements

### LEGO® Solar Panel

LEG9667 **\$92.95**

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).



### Energy Display

LEG9668 **\$114.95**

This element displays input and output in volts, watts, amps and energy storage level in joules. Combine with LEG9669 Energy Storage to form the LEGO Energy Meter.



### Power Functions Battery Box

LEG8881 **\$21.95**

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 **\$44.95**

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 **\$21.95**

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



### E-Motor

LEG9670 **\$44.95**

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 Transformer 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 **\$11.95**

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 **\$8.95**

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 **\$28.95**

Build an extra medium-strength, medium-sized M-Mot Add an extra XL-Motor to your models! This super-strong 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 **\$21.95**

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



### Transformer 10V DC

LEG8887 **\$57.95**

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.



# Explore Renewable Energy

Renewable Energy is an add-on set which, when combined with the Simple & Powered Machines Curriculum Solution, enables students to explore solar, wind and water energy, plus meet curriculum goals in science, technology and engineering, by building their own real-life models.

## Renewable Energy Add-on Set

LEG9688 **\$229.95**





When used together with the Simple & Powered Machines Curriculum Solution (LEG9686), this exciting add-on set facilitates the exploration of major renewable energy sources. This set includes a solar panel, turbine blades, a motor/generator, LED lights, an extension wire, a LEGO® Energy Meter, and full-colour building instructions for six real-life LEGO models.

The accompanying curriculum pack includes new lesson plans and problem solving activities, as well as teacher guides and student worksheets.

ADD-ON



### Solution includes

- Renewable Energy Core Set 
- Renewable Energy Activity Pack\* 



# Investigate with Pneumatics

Pneumatics is an add-on set which, when combined with the Simple & Powered Machines Curriculum Solution, encourages logical and creative thinking, and motivates students to engage in scientific inquiry and engineering design by building air-powered LEGO models such as a scissor lift, a robot arm and a stamping press.

## Pneumatics Add-on Set

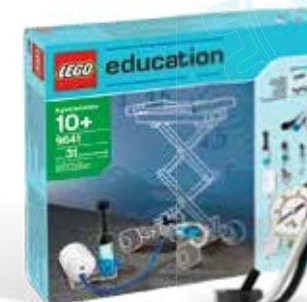
LEG9641 **\$114.95**





This add-on set is intended to be combined with the Simple & Powered Machines Curriculum Solution (LEG9686). It includes pumps, tubes, cylinders, valves, air tank, a manometer, and full-colour building instructions for four real-life pneumatics models.

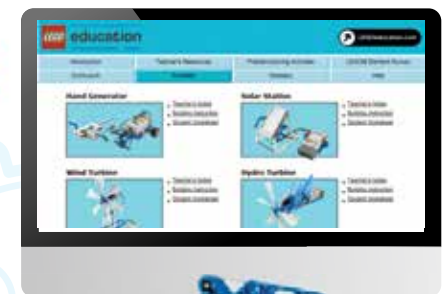
The accompanying curriculum pack provides new lesson plans and problem solving activities, as well as teacher guides and student worksheets.

ADD-ON



### Solution includes

- Pneumatics Core Set 
- Pneumatics Activity Pack\* 



## Classroom Solutions Renewable Energy Add-on Packs

Simple & Powered Machines Curriculum Solution  
LEG9688



Renewable Energy Add-on Set  
LEG9688



Power Functions Battery Box  
LEG8881



MTA Storage System Triple  
SUN8337



|                            |                                    |   |   |   |   |
|----------------------------|------------------------------------|---|---|---|---|
| LEG9688-4                  | <b>\$929.95</b><br>SAVE \$77.65    |   | 4 | 4 |   |
| LEG9688-8                  | <b>\$1,829.95</b><br>SAVE \$185.25 |   | 8 | 8 |   |
| LEG9688-4N<br>8 students   | <b>\$1,929.95</b><br>SAVE \$197.45 | 4 | 4 | 4 |   |
| LEG9688-8N<br>16 students  | <b>\$3,799.95</b><br>SAVE \$454.85 | 8 | 8 | 8 |   |
| LEG9688-8NS<br>16 students | <b>\$3,999.95</b><br>SAVE \$564.85 | 8 | 8 | 8 | 1 |

## Classroom Solutions Pneumatics Add-on Packs

Simple & Powered Machines Curriculum Solution  
LEG9688



Pneumatics Add-on Set  
LEG9641



MTA Storage System Triple  
SUN8337



|                            |                                    |   |  |   |   |
|----------------------------|------------------------------------|---|--|---|---|
| LEG9641-4                  | <b>\$439.95</b><br>SAVE \$19.85    |   |  | 4 |   |
| LEG9641-8                  | <b>\$849.95</b><br>SAVE \$69.65    |   |  | 8 |   |
| LEG9641-4N<br>8 students   | <b>\$1,449.95</b><br>SAVE \$129.65 | 4 |  | 4 |   |
| LEG9641-8N<br>16 students  | <b>\$2,899.95</b><br>SAVE \$259.25 | 8 |  | 8 |   |
| LEG9641-8NS<br>16 students | <b>\$2,999.95</b><br>SAVE \$469.05 | 8 |  | 8 | 1 |

# Build STEM learning with Simple Machines

Simple Machines is an engaging hands-on STEM tool that introduces second and third-graders to the basic principles behind gears, wheels, axels, levers and pulleys, while laying the groundwork for further learning about science and engineering.

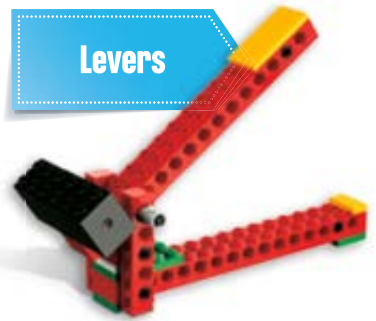


## Wheel & Axles

## Pulleys

## Gears

## Lever



## Discover how the real world works

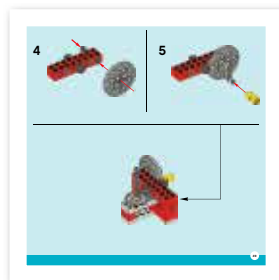
The Simple Machines solution promotes enjoyable and easily accessible classroom tools with which students can develop skills such as creative problem solving, communication of ideas and teamwork. The activities lead students to make initial use of scientific methodology through observation, reasoning, prediction and critical thinking.

Students get an in-depth understanding of mechanical and structural principles built into everyday machines. By building, designing and testing solutions, students work as young scientists and engineers, all while improving design, technology, science and maths skills.

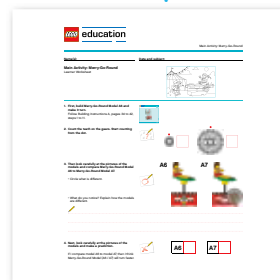
### Connect



### Construct



### Contemplate



### Continue



# Discover how the real world works with great hands-on learning

## Simple Machines Curriculum Solution

LEGO9689 **\$99.95**



This set features a brick assortment that includes gears, wheels and axles, levers and pulleys.

Use this set with the accompanying curriculum pack to engage students in investigating and understanding the operation of simple and compound machines found in everyday life. The support materials provided in this curriculum pack include teacher guides and student worksheets.

### Solution includes

- Simple Machines Core Set
- Simple Machines Activity Pack\*



# The Simple Machines Solution

## What's included in the Curriculum Solution?

### Core Set ✓

Carefully selected LEGO® bricks support students motivation to develop basic STEM capabilities, through building and investigation of real life machines and mechanisms models.



|   |  |   |   |   |
|---|--|---|---|---|
| <p><b>Curriculum content</b> ✓</p> <p>Built on national standards and developed by teachers. Lesson materials inspire and support educators and students to develop the foundation of STEM capabilities.*</p> | <p><b>Assessment tools</b> ✓</p> <p>Assessment of students' learning is enabled through rubrics, observation checklists, and student self-assessment tools.*</p> | <p><b>eLearning program</b> ✓</p> <p>Step-by-step tutorials to help you get started.*</p> | <p><b>Technical support</b> ✓</p> <p>Ongoing telephone and online support to help you with any questions.</p> | <p><b>Community</b> ✓</p> <p>Access to the LEGO Education community of teachers for additional ideas, tips and new connections.</p> |
|---|--|---|---|---|



## What can I add on?

|  |   |
|--|---|
| <p><b>Training and professional development</b> ✓</p> <p>Check our Professional Learning calendar on <a href="http://teaching.com.au">teaching.com.au</a> to find training near you.</p> | <p><b>Replacement Packs</b> ✓</p> <p>Replacement bricks are available. Please see page 39 for more information.</p> |
|--|---|

\*Available for free download from [LEGOeducation.com/downloads](http://LEGOeducation.com/downloads)

# Classroom Solutions

## Simple Machines Curriculum Solution Packs

Simple Machines Curriculum Solution  
LEG9689



Power Functions Battery Box  
LEG8881



Power Functions M-Motor  
LEG8883



MTA Storage System Single  
SUN8317



|   |    |    |    |   |
|---|----|----|----|---|
| <b>LEG9689-4N</b><br>8 students<br><b>\$379.95</b><br><b>SAVE \$19.85</b>       | 4  |    |    |   |
| <b>LEG9689-4NM</b><br>8 students<br><b>\$499.95</b><br><b>SAVE \$75.45</b>      | 4  | 4  | 4  |   |
| <b>LEG9689-8N</b><br>16 students<br><b>\$739.95</b><br><b>SAVE \$59.65</b>      | 8  |    |    |   |
| <b>LEG9689-8NM</b><br>16 students<br><b>\$949.95</b><br><b>SAVE \$200.85</b>    | 8  | 8  | 8  |   |
| <b>LEG9689-8NS</b><br>16 students<br><b>\$1,049.95</b><br><b>SAVE \$260.75</b>  | 8  | 8  | 8  | 1 |
| <b>LEG9689-12N</b><br>24 students<br><b>\$1,099.95</b><br><b>SAVE \$99.45</b>   | 12 |    |    |   |
| <b>LEG9689-12NM</b><br>24 students<br><b>\$1,399.95</b><br><b>SAVE \$326.25</b> | 12 | 12 | 12 |   |
| <b>LEG9689-12NS</b><br>24 students<br><b>\$1,499.95</b><br><b>SAVE \$386.15</b> | 12 | 12 | 12 | 1 |

# Included with each purchase of the Simple Machines curriculum solution



## Simple Machines Activity Pack

The activity pack for Simple Machines features 16 principle activities, 4 main activities and 4 problem-solving activities. Enables students to recognise simple machines in everyday use, to understand the principles behind them, and to become familiar with the vocabulary relevant for the simple machine in focus: gears, wheels and axles, levers or pulleys. Includes a comprehensive teacher's guide. This activity pack is included with LEG9689 Simple Machines Curriculum Solution.

## Key Learning Values

- Observing and investigating simple machines: gears, wheels and axles, levers, and pulleys
- Developing scientific inquiry skills
- Following a design brief as part of the engineering design process
- Learning and applying relevant vocabulary for simple machines
- Fair testing, predicting and measuring, collecting data, and describing outcomes

# Lay the STEM Foundation with Early Simple Machines

Early Simple Machines is an engaging hands-on tool that uses real-life LEGO® elements to help kindergarteners and first-graders learn how gears, levers, pulleys, wheels and axles work, while gaining early insight into science and engineering.

## Early Simple Machines Curriculum Solution

LEG9656 **\$239.95**



This set features a brick assortment and eight double-sided, full-colour building instructions. The set includes gears, levers, pulleys and wheels and axles, as well as a plastic punch-out sheet with eyes, sails, scales and wings.

Use this set with the accompanying curriculum pack to conduct full lessons, extension activities and problem solving tasks. The support materials provided in this curriculum pack include teacher guides and student worksheets.

### Solution includes

- Early Simple Machines Core Set 1
- Early Simple Machines Activity Pack\* www



# The Early Simple Machines Solution

## What's included in the Curriculum Solution?

|   |  |   |   |   |
|---|--|---|---|---|
| <p><b>Core Set</b> ✓</p> <p>LEGO DUPLO® bricks, gears, wheels and axles enables easy handling and simple builds, motivating students to explore more.</p> |  |   |   |   |
| <p><b>Curriculum content</b> ✓</p> <p>Highly motivating teachers notes and student worksheets are based on national curriculum standards.*</p>            | <p><b>Assessment tools</b> ✓</p> <p>Assessment of students' learning is enabled through rubrics, observation checklists, and student self-assessment tools.*</p> | <p><b>eLearning program</b> ✓</p> <p>Step-by-step tutorials to help you get started.*</p> | <p><b>Technical support</b> ✓</p> <p>Ongoing telephone and online support to help you with any questions.</p> | <p><b>Community</b> ✓</p> <p>Access to the LEGO Education community of teachers for additional ideas, tips and new connections.</p> |

## What can I add on?

**Training and professional development** ✓

Check our Professional Learning calendar on [teaching.com.au](http://teaching.com.au) to find training near you.

\*Available for free download from [LEGOeducation.com/downloads](http://LEGOeducation.com/downloads)

# Included with each purchase of the Early Simple Machines curriculum solution

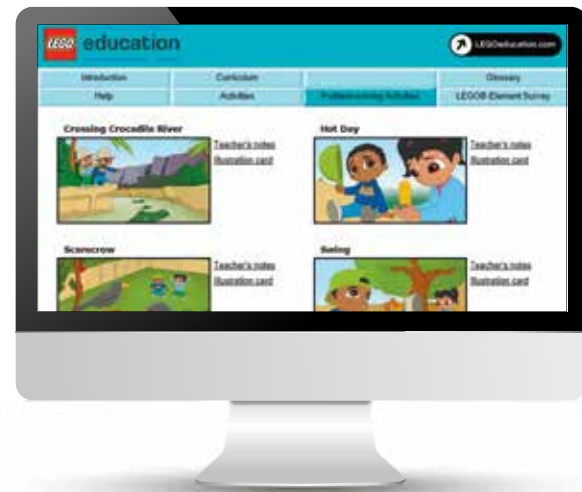


## Early Simple Machines Activity Pack

The activity pack for the Early Simple Machines Set includes eight 45-minute lessons, each with extension activities of up to 20 minutes, and four additional open-ended problem-solving activities. Illustrations introduce playful problems that the children must solve. This activity pack is included with LEG9656 Early Simple Machines Curriculum Solution.

### Key Learning Values

- Exploring basic mechanical principles such as gears, levers, pulleys, wheels and axles
- Investigating force, buoyancy and balance
- Solving problems through design
- Working with others and sharing findings



# Replacement packs For Machines & Mechanisms

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

## Replacement Pack M&M 1

LEG2708 **\$12.95**

LEGO Education Replacement Packs are the ideal way to replace key elements for your LEGO Education products. This pack includes elements for Simple & Powered Machines Set (part of LEG9686).



## Replacement Pack M&M 2

LEG2709 **\$12.95**

LEGO Education Replacement Packs are the ideal way to replace key elements for your LEGO Education products. This pack includes elements for Simple Machines Set (part of LEG9689).



## Replacement Pack 8 - Rubber Bands

LEG2707 **\$12.95**

LEGO Education Replacement Packs are the ideal way to replace key elements for your LEGO Education products. This pack features four rubber bands in white, red, blue and yellow for EV3 Expansion Set (LEG45560), Simple & Powered Machines Set (LEG9686).





## Classroom Solutions

### Early Simple Machines Curriculum Solution Packs

Early Simple Machines Curriculum Solution  
LEG9656



MTA Storage System Single  
SUN8317



|                            |   |   |   |
|----------------------------|---|---|---|
| LEG9656-2N<br>4 students   | <b>\$459.95</b><br><b>SAVE \$19.95</b>    | 2 |   |
| LEG9656-4N<br>8 students   | <b>\$899.95</b><br><b>SAVE \$59.85</b>    | 4 |   |
| LEG9656-8N<br>16 students  | <b>\$1,779.95</b><br><b>SAVE \$139.65</b> | 8 |   |
| LEG9656-8NS<br>16 students | <b>\$1,879.95</b><br><b>SAVE \$199.55</b> | 8 | 1 |



## MTA Storage Systems suitable for Machines & Mechanisms



Compatible with  
LEGO Education  
Storage Tubs

### MTA Storage Systems & Trays

|         |                 |                   |
|---------|-----------------|-------------------|
| SUN8317 | <b>\$149.95</b> | 3rd Party Product |
| SUN8327 | <b>\$219.95</b> | 3rd Party Product |
| SUN8337 | <b>\$279.95</b> | 3rd Party Product |
| SUN832S | <b>\$9.95</b>   | 3rd Party Product |
| SUN831L | <b>\$12.95</b>  | 3rd Party Product |

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 large or 7 small trays.
- SUN8327** – Double Storage. Holds 6 large or 14 small trays.
- SUN8337** – Triple Storage. Holds 9 large or 21 small trays.
- SUN832S** – Small Tray.
- SUN831L** – Large Tray.

\*Simple & Powered Machines are supplied in large trays and Simple Machines and Early Simple Machines are supplied in small trays.

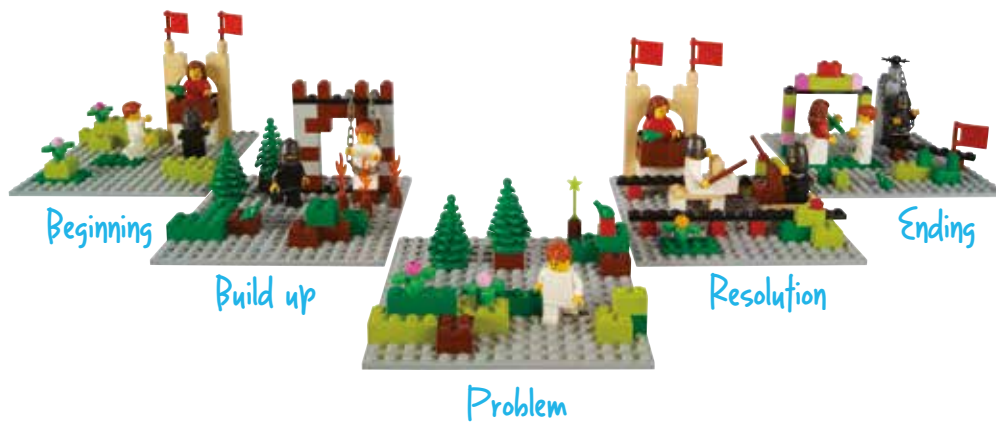
# LEGO® Education StoryStarter

## Make literacy tangible

StoryStarter is an engaging hands-on literacy tool for Primary classrooms that sparks students' imagination. It helps them to structure their stories, develop collaborative skills, and write and present with confidence.



LEGO® Education StoryStarter



## Relevant Curriculum to build strong literacy skills

The StoryStarter Core Curriculum focuses on story structure and creating narratives, enhancing writing abilities, communication and collaboration skills.

The StoryStarter Expansion Sets and Curriculum are add-on packs to the StoryStarter Core Set. Students are challenged even further going deeper into genres and social studies through a three phase method: Theme, Research and Reporting. Create and document stories with different types of writing.



# An inclusive and inspiring literacy tool

## StoryStarter Curriculum Solution ▶

LEG45100 **\$219.95**



This set contains enough elements to build a five-scene story. A supporting curriculum pack offers 'getting started' tasks and hands-on classroom activities covering a range of topics. Using a variety of creative writing templates, the accompanying StoryVisualiser software helps students to document and share their stories. An eLearning program is also included, and provides video lessons and software tutorials to help teachers become confident users of the StoryStarter Core Set.

### Solution includes

- StoryStarter Core Set 1
- StoryStarter Curriculum Pack\* www
- StoryVisualiser Software\* www
- eLearning: Getting started with StoryStarter\* www



# A motivating literacy solution

## What's included in the Curriculum Solution?

**Core Set** ✓

By using the thought-through selection of LEGO® bricks, students are encouraged and motivated to develop literacy skills, such as writing, reading and presenting, in a fun and engaging way.

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| <p><b>Curriculum content</b> ✓</p> <p>The classroom activities, which are built on national standards and objectives, inspire and support educators in creating engaging literacy lessons.*</p> | <p><b>Teaching software</b> ✓</p> <p>The easy to use StoryVisualizer software for a range of devices, including PC, Mac and tablets, allows users to select or create different writing templates. This helps students to present, share and document their stories.*</p> | <p><b>Assessment tools</b> ✓</p> <p>Rubric for assessing student progress.*</p> | <p><b>eLearning programme</b> ✓</p> <p>Eight eLearning videos and five software tutorials are available to help the teacher become a confident user of StoryStarter.*</p> | <p><b>Technical support</b> ✓</p> <p>Ongoing telephone and online support to help you with any questions.</p> | <p><b>Community</b> ✓</p> <p>Access to the LEGO Education community of teachers for additional ideas, tips and new connections.</p> |
|---|---|---|---|---|---|

## What can I add on? +

**Expansion sets** ✓

Additional Fairy Tale, Space and Community themed curriculum packs and Core Sets are available to expand and deepen the teaching and learning experience.

\*Available for free download from [LEGOeducation.com/downloads](http://LEGOeducation.com/downloads)

# Included with each purchase of the StoryStarter curriculum solution

## Curriculum Pack

The StoryStarter Curriculum Pack ensures educators are able to get going with the product straightaway. Including 24 activities, educators can easily create rich language arts lessons that also inspire teamwork, critical thinking, and creativity. Also included are the Space, Community and Fairy Tale Curriculum packs, which include different writing styles to experiment with.

## StoryVisualiser Software

The StoryVisualiser software helps students to present, share and document their stories by combining word and images. Using a web cam, digital camera, or smart device, students can take images of their story creations and import them into the software. The program allows users to select from a variety of pre-existing writing templates or to customise their own. Also available on tablets.

## eLearning

This online e-learning program consists of eight video lessons, plus five software tutorials in full HD led by a LEGO® Education Master Trainer and Content Developer. Each course is organised into three levels, taking you from complete beginner to confident user. Each course takes approximately five minutes and ends with questions that help you to reflect on what you have learned and further strengthen the learning process. Your progress is tracked so you can easily pick up where you left-off.



## Core curriculum

Creating, telling and writing stories

| Beginning ▶   | Middle ▶ | End |
|---|----------|-----|
| Story structures • Creating narratives Genres<br>• Analysing and retelling Enhancing writing styles |          |     |

## Expansion pack curriculum

Different writing styles

| Theme ▶  | Research ▶ | Reporting |
|--|------------|-----------|
| Newspaper • Diary • TV script • Letter Interview<br>• Biography • Documentary Report • Advertisement<br>• Info graphics Instructional writing • Poem |            |           |



# Research specific topics and explore different writing styles

The StoryStarter Expansion Sets are add-ons to the StoryStarter Core Set, developed to challenge students even further. Besides an additional selection of bricks ideal to create genre-based stories, the StoryStarter Expansion Sets contain a curriculum

with six classroom activities and up to nine additional lesson ideas. These activities and lesson ideas help students explore, researching on a specific topic and different writing styles, e.g. interviews, letters, instructions and advertisements.



**StoryStarter Fairy Tale Expansion Set**

LEG45101 **\$69.95**



The set includes 185 unique bricks such as decorated character elements and wings for fairies, dragons, or other creatures.



**StoryStarter Space Expansion Set**

LEG45102 **\$69.95**



The set includes 185 unique bricks such as character elements for creating astronauts and aliens.



**StoryStarter Community Expansion Set**

LEG45103 **\$69.95**



The set contains 200 unique bricks such as character elements representing different professions, including a variety of uniforms and tools.

## Designed for every type of learner

We know that every child is an individual, but certain characteristics can be seen in almost every classroom. We identified eight learner profiles to highlight some of the challenges that students face. They serve to illustrate how every type of learner can benefit from a hands-on minds-on tool like StoryStarter, whether they need to work on collaboration skills or simply find a way to free their creativity and unlock their potential.



# Classroom Solutions

## StoryStarter Curriculum Solution Packs



|                             |                                    |   |   |   |   |
|-----------------------------|------------------------------------|---|---|---|---|
| LEG45100-3N<br>9 students   | <b>\$629.95</b><br>SAVE \$29.90    | 3 |   |   |   |
| LEG45100-5N<br>15 students  | <b>\$999.95</b><br>SAVE \$99.80    | 5 |   |   |   |
| LEG45100-5NK<br>15 students | <b>\$1,949.95</b><br>SAVE \$199.05 | 5 | 5 |   |   |
| LEG45100-5NS<br>15 students | <b>\$2,099.95</b><br>SAVE \$288.90 | 5 | 5 | 1 |   |
| LEG45100-8N<br>24 students  | <b>\$1,599.95</b><br>SAVE \$159.65 | 8 |   |   |   |
| LEG45100-8NK<br>24 students | <b>\$2,999.95</b><br>SAVE \$438.45 | 8 | 8 |   |   |
| LEG45100-8NS<br>24 students | <b>\$3,299.95</b><br>SAVE \$448.25 | 8 | 8 |   | 1 |

# MTA Storage Systems suitable for StoryStarter

Compatible with LEGO® Education Storage Tubs



## MTA Storage Systems & Trays

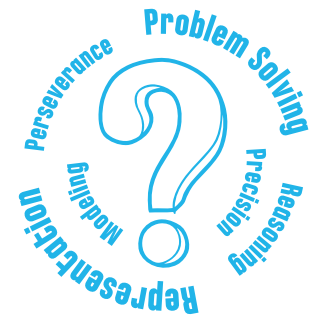
- SUN8317 **\$149.95**
- SUN8327 **\$219.95**
- SUN8337 **\$279.95**
- SUN832S **\$9.95**
- SUN831L **\$12.95**

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.

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

# LEGO® Education MoreToMaths Succeed in maths through problem solving

MoreToMaths from LEGO Education is a hands-on educational tool for teaching mathematical problem solving in primary classrooms. By using the familiar LEGO brick and real-life understanding, students will feel encouraged and motivated to think, write and speak freely about maths.



**LEGO® Education  
MoreToMaths**



LEGO Education MoreToMath helps students succeed in math through problem solving. Our hands-on teaching solution, including activities, guidance and assessment, helps teachers make abstract math tangible and ignites students' learning of the competencies needed to do mathematical problem solving. MoreToMaths also includes curriculum and the MathsBuilder software with activities for 48 lessons based on eight competencies in mathematical problem solving, defined by national standards. Through the activities, students help the two characters, Max and Mia, to solve problems within four real-life themes and they collaboratively experience that there is more to maths than just facts.



# Make abstract maths tangible and alive

## MoreToMaths Curriculum Solution

LEG45210 **\$109.95**



This set, combined with Curriculum Pack 1-2 and the MathsBuilder software, enables students to build and practice the competencies of mathematical problem solving.

Each set contains enough LEGO® elements for two students. The curriculum pack provides material for fully guided lessons, including student worksheets, lesson plans, an assessment tool, and ideas for differentiation. The MathBuilders software allows students to show and explain their thinking by building their solution on interactive whiteboards.

### Solution includes

- MoreToMaths Core Set 1-2 1
- MoreToMaths Curriculum Pack 1-2\* www
- MathsBuilder Software\* www



# A hands-on teaching solution for maths

## What's included in the Curriculum Solution?

**Core Set** ✓  
 Use LEGO bricks for building small simple models for maths problem solving competencies. The students will feel encouraged and motivated to think, write and speak freely about maths.



|  |  |   |  |   |   |
|--|--|---|--|---|---|
| <p><b>Curriculum content</b> ✓</p> <p>Built upon key national standards and objectives for mathematics, the solution supports educators in creating engaging lessons focused on mathematical problem solving.*</p> | <p><b>Teaching software</b> ✓</p> <p>MathsBuilder, an interactive whiteboard software for teaching.*</p> | <p><b>Assessment tools</b> ✓</p> <p>Teacher's guide with built-in integrated assessment tools. The solution includes teacher's notes, lesson plans, student worksheets and ideas for activity differentiation.*</p> | <p><b>eLearning program</b> ✓</p> <p>Five eLearning videos for easy classroom implementation.*</p> | <p><b>Technical support</b> ✓</p> <p>Ongoing telephone and online support to help you with any questions.</p> | <p><b>Community</b> ✓</p> <p>Access to the LEGO Education community of teachers for additional ideas, tips and new connections.</p> |
|--|--|---|--|---|---|

\*Available for free download from [LEGOeducation.com/downloads](http://LEGOeducation.com/downloads)



# Included with each purchase of the MoreToMaths curriculum solution

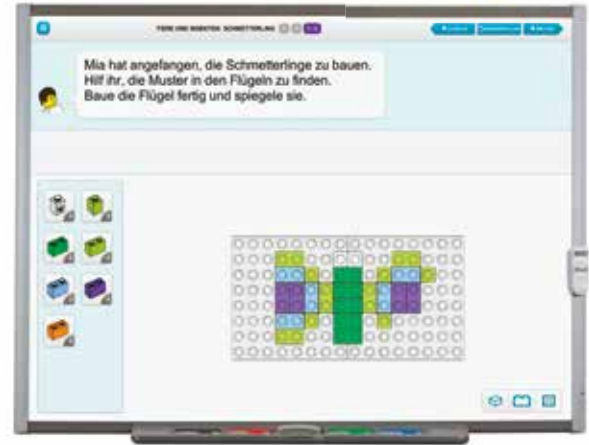


## MoreToMaths Curriculum Pack

Built upon curriculum standards for mathematics, the MoreToMaths Curriculum Pack 1 -2 aids educators in first and second year in creating engaging lessons focused on mathematical problem-solving. Teacher's notes and intuitive student worksheets for 48 lessons are provided along with a learning grid aligning activities to key national standards and objectives, integrated assessment tools, inspiration for differentiation, extension ideas, and training videos for teachers.

## MathsBuilder

Also included is the MathsBuilder interactive whiteboard software, which enables educators to bring maths lessons to life for the entire class. A digital building tool inside the software encourages students to share their problem-solving solutions, further promoting communication and collaboration skills.



## Classroom Solutions

### MoreToMaths Curriculum Solution Packs

MoreToMaths Curriculum Solution  
LEG45210



MTA Storage System Double  
SUN8327



MTA Storage System Triple  
SUN8337



|   |    |   |   |
|---|----|---|---|
| <p><b>LEG45210-3N</b><br/>6 students</p> <p><b>\$309.95</b><br/><b>SAVE \$19.90</b></p>       | 3  |   |   |
| <p><b>LEG45210-5N</b><br/>10 students</p> <p><b>\$499.95</b><br/><b>SAVE \$49.80</b></p>      | 5  |   |   |
| <p><b>LEG45210-8N</b><br/>16 students</p> <p><b>\$779.95</b><br/><b>SAVE \$99.65</b></p>      | 8  |   |   |
| <p><b>LEG45210-8NS</b><br/>16 students</p> <p><b>\$929.95</b><br/><b>SAVE \$189.50</b></p>    | 8  | 1 |   |
| <p><b>LEG45210-10N</b><br/>20 students</p> <p><b>\$999.95</b><br/><b>SAVE \$99.55</b></p>     | 10 |   |   |
| <p><b>LEG45210-10NS</b><br/>20 students</p> <p><b>\$1,169.95</b><br/><b>SAVE \$239.35</b></p> | 10 |   | 1 |

# LEGO® Education BuildToExpress

## Ignite reflection and self-expression



Children have all sorts of theories about how the world works. What they don't always have is the ability and tools to help them express these thoughts – or the opportunity to be able to reflect about the world around them, their thoughts or their feelings. In an inclusive, non-judgmental and highly-motivating environment, BuildToExpress enables all students to communicate as equals. It is a genuinely creative teaching aid allowing everyone to be involved and to take an active role in the learning process, transforming the teacher into a true hands-on facilitator. BuildToExpress can be used in Primary as well as High School.

## Designed to express feelings and thoughts

### Classroom Solutions

### BuildToExpress Curriculum Solution Packs



|                                    |   |   |
|------------------------------------|---|---|
| <b>LEG45110-2K</b><br>4 students   | <b>\$164.95</b><br><b>SAVE \$14.95</b>  | 2 |
| <b>LEG45110-5K</b><br>10 students  | <b>\$399.95</b><br><b>SAVE \$49.80</b>  | 5 |
| <b>LEG45110-8K</b><br>16 students  | <b>\$619.95</b><br><b>SAVE \$99.65</b>  | 8 |
| <b>LEG45110-8KS</b><br>16 students | <b>\$719.95</b><br><b>SAVE \$149.60</b> | 8 |

do what's told



listening

do not bully

This is what "respect" means to me: Oliver, 9

### BuildToExpress Curriculum Solution

LEG45110 **\$89.95**



This set consists of 200 LEGO® elements, which were carefully selected to provide a broad spectrum of 'ready-made metaphors.' An Activity Pack containing practical guidance on working with the BuildToExpress concept complements this set.

### Solution includes

- BuildToExpress Core Set 1
- BuildToExpress Guide & Activity Pack\* www



\*Available for free download from [LEGOeducation.com/downloads](http://LEGOeducation.com/downloads)

# 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 real-world 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 as well as educational resources, to address humanities, language and literacy.

## 2017 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 |
|--|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|
| <b>EV3 Robotics</b>                        | <b>4</b>  |        |        |        |        | X      | X      | X      | X      | X      | X       | X       | X       |
| <b>EV3 Space Challenge</b>                 | <b>12</b> |        |        |        |        | X      | X      | X      | X      | X      | X       | X       | X       |
| <b>EV3 Science Activity Pack</b>           | <b>11</b> |        |        |        |        | X      | X      | X      | X      | X      | X       | X       | X       |
| <b>EV3 Design Engineering Projects</b>     | <b>6</b>  |        |        |        |        |        |        | X      | X      | X      | X       | X       | X       |
| <b>Robocup Junior</b>                      | <b>16</b> | X      | X      | X      | X      | X      | X      | X      | X      | X      | X       | X       | X       |
| <b>FLL</b>                                 | <b>19</b> |        |        |        | X      | X      | X      | X      | X      | X      |         |         |         |
| <b>WeDo 2.0</b>                            | <b>32</b> |        | X      | X      | X      | X      | X      |        |        |        |         |         |         |
| <b>Simple &amp; Powered Machines</b>       | <b>39</b> |        |        | X      | X      | X      | X      | X      | X      | X      | X       | X       | X       |
| <b>Advancing with Simple &amp; Powered</b> | <b>39</b> |        |        |        |        |        | X      | X      | X      | X      | X       | X       | X       |
| <b>Renewable Energy</b>                    | <b>42</b> |        |        |        |        | X      | X      | X      | X      | X      | X       |         |         |
| <b>Pneumatics</b>                          | <b>43</b> |        |        |        |        | X      | X      | X      | X      | X      | X       |         |         |
| <b>Simple Machines</b>                     | <b>44</b> |        | X      | X      | X      | X      | X      |        |        |        |         |         |         |
| <b>Early Simple Machines</b>               | <b>47</b> | X      | X      |        |        |        |        |        |        |        |         |         |         |
| <b>StoryStarter</b>                        | <b>22</b> | X      | X      | X      | X      | X      | X      |        |        |        |         |         |         |
| <b>MoreToMaths</b>                         | <b>27</b> | X      | X      | X      | X      |        |        |        |        |        |         |         |         |
| <b>BuildToExpress</b>                      | <b>30</b> | X      | X      | X      | X      | X      | X      | X      | X      | X      | X       |         |         |



| Computing                      | Engineering | Technology | Science | Maths       | Social Sciences | Language & Literacy |
|--------------------------------|-------------|------------|---------|-------------|-----------------|---------------------|
| LEGO MINDSTORMS® Education EV3 |             |            |         |             |                 |                     |
| WeDo 2.0                       |             |            |         | MoreToMaths |                 |                     |
| Machines & Mechanisms          |             |            |         |             | BuildToExpress  | StoryStarter        |

# Put STEM & robotics into student's hands with our LEGO® Education classroom solutions



## LEGO® Education WeDo 2.0 Classroom Solution

LEG45300-12K **\$2,879.95** **SAVE \$359.45**

• LEGO® Education WeDo Curriculum Solution (LEG45300)

12

This WeDo 2.0 classroom solution is suitable for 24 students.



## LEGO MINDSTORMS® Education EV3 Classroom Solution

LEG45544-10C **\$6,989.95** **SAVE \$581.20**

• LEGO Education EV3 Curriculum Solution (LEG45544-1)

10

• Battery Multi-Charger (WLMC01)

3rd Party Product

1

• Robotics Challenge Mat (ROB15)

3rd Party Product

1

• EV3 Expansion Set (LEG45560)

5

• MTA Storage System Triple (SUN8337)

3rd Party Product

2

This EV3 classroom solution is suitable for 20 students.