LEGO® Education Catalog 2016

Playful learning experiences that enable every student to succeed







Welcome to **LEGO® Education**

LEGO® Education, in partnership with educators for more than 35 years, offers playful learning experiences to help every student succeed. Our full range of educational solutions are based on the LEGO system of bricks, curriculum-relevant material, and physical and digital resources targeted for preschool, elementary, middle school. and after school. We provide curriculum for subjects from humanities and language arts to science, technology, engineering, and math (STEM). We believe in building academic, innovation, and life skills as well as expanding children's knowledge to create lifelong learners.

We influence students' learning as they grow and strive to fully engage every type of learner. In preschool, LEGO Education solutions stimulate children's curiosity to explore together and learn through play. During elementary, we help educators lay the foundation for students to become engaged during their school day by igniting enthusiastic, effective, and lifelong learning. By middle school, we grow critical thinking of and creativity in all students to help them understand challenging subjects and encourage them to develop problem-solving skills, grow their ideas, and

make their own creations. In after school, we unfold each child's potential through specially designed workbooks to best facilitate each child's learning and provide regular feedback to parents.

We all want our children to be successful in their endeavors, academic and personal. At LEGO Education, we take the pursuit of hands-on learning very seriously. We do this in conjunction with educators who play a critical role in encouraging students' budding interest during the span of their academic careers. Together, we can support our students in an inspiring, engaging, and effective way and encourage them to become active, collaborative learners; build skills for future challenges; and establish a positive mind-set toward learning. We hope, as educators, you are inspired by the following pages and what can happen in your classrooms.

Warmest regards,





Contents

In this catalog you will find a description of our learning solutions listed according to subjects and segments for preschool, elementary school, and middle school. Please note our new, engaging solution WeDo 2.0, with which you and your students can make science come to life.





Make science come to life. See pages 13-18.



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Impactful teaching and playful learning through unique hands-on solutions

We provide a distinctive experience for teachers and students that combines focused curriculum content, the LEGO system of bricks, and digital components with our unique principles for teaching and hands-on learning.

This is achieved by:

An offering of extensive professional development, classroom management, and customer services to teachers and administrators worldwide, to fully understand the versatility and applicability of LEGO Education teaching and learning resources.

LEGO® Education teaching and learning resources



LEGO® hands-on learning material with software/apps

Our approach combines the LEGO system of bricks with core software for computers and apps for tablets and mobile devices. With relevant curriculum content to get started easily, your classroom will soon be up and running.



Focused curriculum content with integrated assessment

We provide subject-specific curriculum material built on standards. You will have all the support you need with lesson plans, teacher guides, student material, tutorials, differentiated tasks, and ideas for classroom management.



Complementary resources

Building on our core solutions, our expansion sets, extra sensors, and digital tools for documentation and assessment enable you to extend learning opportunities to meet the needs of your students while rechargeable batteries simply make classroom management easier.



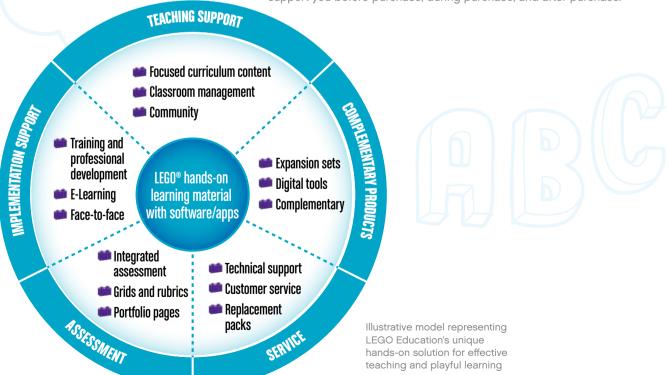
Training and professional development

We can provide a range of training options from basic to advanced levels. With E-Learning or on-site opportunities, you can find a blend that meets your needs. Plus with the LEGO Education Community for educators, you can always call on the experience of teachers working in classrooms just like yours.

Technical support and customer service



Online and telephone support is available for brick replacement, software-related queries, or general technical questions. We will be there to support you before purchase, during purchase, and after purchase.



Engaging and effective teachers

Based on more than 35 years of research and close collaboration with teachers worldwide, we strive to enable teachers to achieve four fundamental outcomes:

A positive mind-set for learning

Using LEGO® Education resources in the classroom, students develop positive mindsets that are contributing to effective lifelong learning.

More skillful learners

Students who learn using LEGO® Education acquire stronger core, innovation, and life skills.

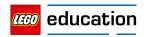
More knowledgeable students

Through a hands-on and minds-on approach, students are more capable of retaining, applying, and demonstrating their knowledge.

Student success

Using LEGO® Education resources, teachers deliver inspiring, effective, and rewarding teaching lessons, which have a bigger impact on students learning – enabling every student to learn and succeed.





LEGO® Education online

Discover resources

Browse the full range of LEGO® Education resources for various ages and subjects.

Engage on social networking

Join LEGO Education on Facebook, Twitter, Pinterest, Instagram, and YouTube to share your ideas, see the latest LEGO Education news and solutions, and engage with educators around the world.

Develop as an educator

Get the knowledge you need to support your students' learning.

Understand LEGO Education

Learn more about our teaching and learning approach, our philosophy, organization, and connection to the LEGO Group.

Find support

Find the latest downloads, activities, software. updates, FAQs, and more online.

Share with other teachers

Join other like-minded educators in the LEGO Education Community to share ideas, discuss best practices, or be inspired. The global community is for educators, administrators, and other professionals in the education industry to connect and share great ideas, engage in discussions about hot topics, and share lesson plans and activities.



Professional development



"I loved how the presenter made the information so relevant to my teaching. The presentation was broken down to make it easy to apply and understand. This was the best professional development I have ever been involved in!" "I am excited about sharing the programming knowledge I gained during this workshop! I had previously thought some of the advanced programming was too difficult for my students and me, but now I know this is not true."

E-Learning

The LEGO® Education E-Learning solution is built on many hours of testing and hundreds of teachers' input, creating the most user-friendly content and structure – all with the goal of making it an easy and efficient solution for teaching you how to utilize your LEGO Education solution in the classroom. The E-Learning programs all offer the following opportunities:

- Download extensive teacher resources:
 Includes curriculum-relevant materials, sample programs, and building instructions.
- Testing and certification: Shows when you are ready to begin teaching with your LEGO Education solution.
- Site license: Share with all relevant staff at the purchasing institution.
- Web based: Access from anywhere at any time using PC, Mac, and tablets.
- Video tutorials: Access videos created by LEGO Education Master Trainers.

"I feel confident in doing lessons with students and guiding them when they have problems to help them find their own solutions."

Face-to-Face

LEGO Education Face-to-Face training courses introduce educators to their specific LEGO Education solution(s). The courses are specially designed to match the needs and requirements of the school based on a detailed dialogue between the school and the LEGO Education trainer. The Face-to-Face training course is made to ensure that the participants become specialists of their LEGO Education solution, and are all facilitated by a certified LEGO Education trainer.

The benefits of Face-To-Face training include:

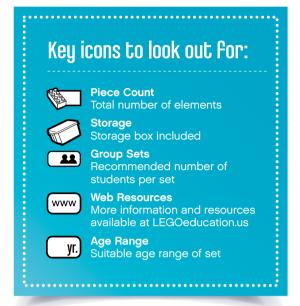
- Participants get extensive hands-on experience with LEGO Education solutions and leave the course prepared to implement them in their classrooms.
- Participants learn the best ways to use LEGO Education solutions to meet their needs in the best possible way in their classrooms.
- Participants learn how to design their own lessons with LEGO Education solutions.



Engage preschool, elementary, and secondary

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 preschool through middle school, the content is created by a full development team of educators and education experts. We offer resources for teaching science, technology, engineering and math as well as educational resources, to address humanities, language, and literacy.



	Cross-Curricular	Math	Language and Literacy	Communication and Dialogue	Technology	Science	Engineering	Coding
Middle School								
Wilduic Oction				BuildToExpress	Mac	hines & Mechanisr	ns	
Elementary					WeDo 2.0			
Licinicinal y	LearnToLearn	MoreToMath	StoryStarter	BuildToExpress	Mac	hines & Mechanisr	ns	
Preschool	Preschool							
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After School									
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LEGO® Education Elementary

Ignite enthusiastic, effective, and lifelong learning





Elementary

We support teachers to ignite students' engagement in core subjects.



LEGO® Education enables every student to succeed in elementary by igniting enthusiastic, effective and lifelong learning. Through our hands-on solutions, we support elementary school teachers as they lay the foundation for students to become engaged learners.

From literacy to numeracy

With our playful learning experiences for language arts, science, technology, engineering and math problem solving, students will not only learn subjects more effectively but also improve their collaboration, communication, creativity, and problem-solving skills.

Let's create stimulating, hands-on learning experiences.

LearnToLearn

Get started with LEGO® Education solutions.

An introduction to LEGO® Education solutions. LearnToLearn will show you how to effectively use LEGO bricks across areas of the curriculum while keeping 21st-century skills development at the forefront. It is a cost-effective classroom trial kit with simple activities across language arts, mathematics, social studies, science, and design and engineering.



5+ 2000

LearnToLearn is the perfect way to see the impact LEGO® Education solutions have on student engagement and learning outcomes.

LearnToLearn

education

LearnToLearn Core Set & Curriculum Pack

45120 \$99.95





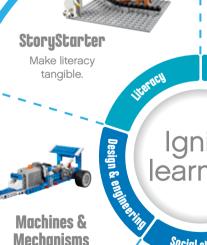




Across elementary grades, we give you strong, inspiring, and effective solutions within core subjects such as language arts and math along with science.

Technology, engineering, and coding can also be taught using one or more of our solutions.

See the following pages for details on our offerings for each core subject.



Ignite learning

Social studies



BuildToExpress

Ignite reflection and self-expression.



Succeed in math through problem solving.



WeDo 2.0

Make science come to life.

Discover how

the world works



Don't just take our word for it....

"LEGO Education systems for learning provide opportunities for students to engage in a creative process that enhances understanding, promotes 21st-century skills, and brings content to life."

Dr. Shirley Disseler, Assistant Professor of Elementary and Middle Grades Education and Coordinator of STEM Education, High Point University, High Point, NC "I want my students to leave me with the knowledge and skills to think for themselves, to gather evidence, and to be able to stand up to a problem and solve it. I want to cultivate tenacity, skepticism, curiosity, and imagination in my students, and LEGO Education solutions are a tool I use to help do that."

Breigh Rhodes, Second-Grade Teacher, Rollins Place Elementary, Zachary, LA "LEGO Education is a great way to do what you are already doing, just differently. Student engagement and excitement are at an all-time high and learning is very rich and deep. It is an experience that the students and teacher look forward to, remember, and enjoy."

Erin Hardy, Second-Grade Teacher, Eas Richland Elementary School, Olney, IL

"LEGO Education tools allow the power of hands-on learning to mix with the feel of nostalgia along with the opportunity for deeper learning to take hold, one brick at a time."

Aaron Maurer, Instructional Coach, Bettendorf, IA

"LEGO Education solutions are really instrumental for engaging students and making them college and career ready, which is our ultimate goal."

Frederick Tudda, Principal, P.S. 188. New York

"A mom of a summer school student expressed the following to me about StoryStarter. She said she didn't know what I was doing to make her child enjoy summer school so much. She had thought it would be difficult to get her daughter to go to school, but instead her daughter couldn't wait to get up and go each day and do something with LEGO bricks!"

Peggy Perkins, Gifted/Talented Support Teacher Mina Elementary and Bluebonnet Elementary

> "Some of those children who are our more reluctant speakers and writers can create something meaningful with LEGO bricks that they can talk about naturally."

Teacher, US



LEGO® Education WeDo 2.0

Make science come to life

Modeling
Computing

Designing

LEGO® Education WeDo 2.0

BUILT ON NEXT GENERATION SCIENCE STANDARDS

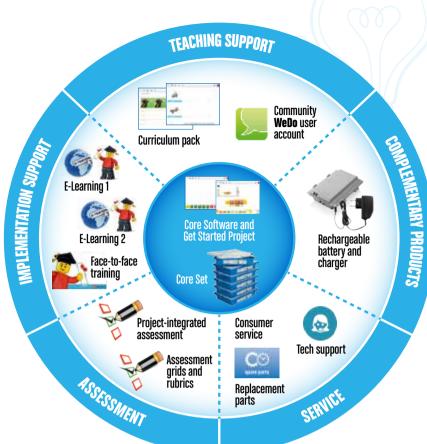




WeDo 2.0 science teaching solution

WeDo 2.0 supports teachers in igniting students' curiosity and enhancing their skills in science, engineering, technology, and coding. Through a series of hands-on, real-world projects, elementary students experience how science comes to life. This curriculumrelevant learning resource builds students' confidence to ask questions, define problems, and design their own solutions by putting discovery in their hands.

Here you see all the components that complement the WeDo 2.0 Core Set and Core Software.





Put scientific discovery in your students' hands.

WeDo 2.0 features motorized LEGO® models, relevant technology, and clearly structured, standards-based projects. The core set and classroom-ready digital tools provide an excellent platform for science learning, offering an innovative way for students to model reality, conduct investigations, and use design skills while developing knowledge of science practices.





LEGO® Education WeDo 2.0 Core Set, Software, and Get Started Project

45300 \$159.95











Designed for elementary classrooms, the WeDo 2.0 Core Set. Software, and Get Started Project is a hands-on solution that ignites students' curiosity and enhances their skills in science, engineering, technology and coding. The core set is delivered in a storage bin with sorting trays, labels, Smarthub, Medium Motor, motion sensor, tilt sensor and building elements for two students. The software includes one Get Started Project, which delivers an introductory experience to the hardware, software, and documentation tool. The desktop and tablet-supported software provides an easy-to-use programming environment that gives life to students' LEGO® models.

The LEGO® Education WeDo 2.0 Software can be used on tablets and PCs with Bluetooth 4.0.





Build your students' confidence to ask questions and solve problems.



LEGO® Education WeDo 2.0 empowers teachers to deliver engaging science projects through a combination of accessible software and intelligent components, harnessing all the excitement of discovery across the sciences in the curriculum.

Key learning values

- Engaging students in science by making it real and relevant
- Learning basic programming skills

LEGO Education WeDo 2.0











40+ hours of projects built on Next Generation Science Standards

LEGO® Education WeDo 2.0 Curriculum Pack

2045300 \$289.95



Promote investigation and experimentation with the WeDo 2.0 Curriculum Pack. Built on the latest science standards, the pack aids second-through fourth-grade educators in delivering key science content while incorporating activities across engineering, technology and computing. Included are the materials for delivering 17 projects totaling more than 40 hours of instructional content across life, physical, and Earth and space sciences as well as engineering. Additional resources such as learning grids aligning activities to key standards and objectives, integrated assessment tools, ideas for differentiation and classroom management tips and tricks are also included.



Rechargeable battery for easy classroom management

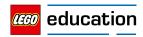
LEGO® Education WeDo 2.0 Add-On Power Pack

5004838 \$79.95



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 a 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.





Classroom Solutions WeDo 2.0 ReadyGo **Delivers Full Teaching Support**

For the educator wanting the complete WeDo 2.0 solution that contains more than 40 hours of ready-made guided and open projects, this is the pack for you. ReadyGo provides teachers with full teaching support from implementation to curriculum activation.

WeDo 2.0 YouCreate

View all classroom solutions online at LEGOeducation.us/WeDo



WeDo 2.0 ReadyGo Package - 24 students

5004833 \$2259.95 12 **2.2** (7 yr.)

- LEGO® Education WeDo 2.0 Core Set - Core Software and Get Started Project included
- LEGO® Education WeDo 2.0 Curriculum Pack (2045300)
- E-Learning 2 (2000527)







For teachers looking to create their own WeDo projects, this solution is right for you. The WeDo 2.0 YouCreate bundle is intended to coach educators on the fundamentals of the WeDo system, enabling the development of personal ideas.



WeDo 2.0 YouCreate Package - 24 students

12

- LEGO® Education WeDo 2.0 Core Set - Core Software and Get Started Project included (45300)

E-Learning 1 (2000526)



LEGO® Education StoryStarter Make language arts tangible

We enable every student to become confident writers and help them bring their stories to life. We do this by supporting teachers with a strong and inspiring hands-on, minds-on solution, bringing engagement and creativity into the classroom, and focusing on developing skills.

StoryStarter helps students structure their stories; use their imagination and language to describe personalities and to create, write, and visualize stories; communicate the stories to others; and evaluate them together.



LEGO® Education **StoryStarter**

BUILT ON COMMON CORE ELA STANDARDS





Relevant curriculum to build strong language arts skills



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

The StoryStarter Expansion Sets and Curriculum are add-on packs to the StoryStarter Core Set, and students are challenged even further by going deeper into genres and social studies through a three-phase method: Theme, Research, and Reporting. It enables students to create and document their stories with different types of writing such as interviews, articles, logbooks, reports, and much more.

Core curriculum

Creating, telling, and writing stories

Beginning

Middle \

End

Building story structures • Creating narratives
Exploring genres • Analyzing and retelling
Enhancing writing styles

Expansion pack curriculum

Exploring different writing styles

Theme

Reporting

Research

Newspaper • Diary • TV script • Letter • Interview
Biography • Documentary • Report
Advertisement • Infographic
Instructional writing • Poem

MEETING COMMON CORE AND STATE STANDARDS

Writing

 Improve the writing of stories and other text types with activities that focus on building, planning, and editing ideas.

Communication of ideas

 Sharing is such a large part of StoryStarter, making it a valuable tool for developing communication and collaboration skills.

Genres and styles

 The core curriculum pack and expansion packs offer activities across a range of genres (including fairy tale, science fiction, and historical) and nonfiction text types (including newspapers, reports, and autobiographies).

Topic-based learning

 StoryStarter covers many different topics, especially in the expansion packs, and all activities can be used as part of a topical approach to schemes of work. This ensures creativity and collaborative learning in the classroom.

Accessible for all

 StoryStarter is accessible to all, at different levels and with a range of educational, behavioral, and social difficulties and needs.



StoryStarter An engaging and motivating solution

Key learning values

- Strengthens literacy skills, improving writing, an language abilities
- Enhances communications skills, including speaking, listening, and presentation capabilities
- Improves collaboration skills and enhances students' ability to work in teams
- Develops comprehension skills and enables students to compose new stories or analyze existing ones



StoryStarter Core Set

45100 \$119.95



The StoryStarter Core Set contains enough elements to equip up to five students with everything they need to start constructing their own stories. Building materials are delivered in a sturdy storage box along with sorting trays, baseplates, activity spinners, organizational stickers and an assortment of specialty bricks and minifigures.

StoryStarter Curriculum Pack & Software

2045100 \$149.95



The StoryStarter Curriculum Pack ensures educators are able to get going with the product straightaway. Includes 24 activities in four categories:

- · Getting Started
- · Day-to-Day Storytelling
- · Building and Telling Stories
- Telling, Retelling, and Analyzing

By combining word and images, the *StoryVisualizer* software helps students to present, share, and document their stories. Students can take images of their story creations and import them into the software. The program allows users to select from a variety of preexisting writing templates or to customize their own. Also available on tablets.

E-Learning: Getting Started with StoryStarter

2000524 \$99.95

The 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 organized into three levels, taking you from complete beginner to confident user.







LEGOeducation.us/StoryStarter

- See curriculum previews.
- Try a free version of the software.
- Find software requirements





Conduct research and practice writing styles.

Intended for use with the LEGO® Education StoryStarter Core Set.

The StoryStarter Expansion Sets encourage students to:

- · Create rich and detailed fairy tales.
- · Discover the science fiction genre.
- · Recount historical events.
- Explore a variety of social studies topics related to communities and their needs.

Every expansion set has a corresponding curriculum pack that invites students to delve deeper into each theme.

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StoryStarter Fairy Tale Expansion Set and Curriculum Pack

5004566 \$39.95



StoryStarter Space Expansion Set and Curriculum Pack

5004567 \$39.95



StoryStarter engages all learners.

We know that today's teacher has many responsibilities and it is a challenge to be able to help all types of learners. Imagine a literacy class that can cater to every student's unique thoughts, dreams, talents, capacities, and interests. This is one of the key strengths of StoryStarter. StoryStarter supports teachers to provide engaging and meaningful learning experiences for all students.

Key learning values

The curriculum packs:

- Feature fiction and nonfiction activities with real-world relevance
- Challenge students to read informational texts related to the different themes.
- Endow students with the powerful skills of conducting research and interpreting findings.
- Document stories using a variety of writing styles



StoryStarter Community Expansion Set and Curriculum Pack

5004565 \$39.95



Classroom Solutions

Classroom solutions are your specific class size. Visit

StoryStarter Package - 30 Students

5003452 \$1299.95







 StoryStarter Curriculum Pack and Software (2045100)



StoryStarter Space Expansion Package – 30 Students

5004452 \$299.95







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 StoryStarter Space Curriculum Pack (2045102)

Community and Fairy Tale Sets also available.









Real classrooms, real results

"Literacy is a key component of all content! LEGO (Education) StoryStarter enhances the

"I have been using StoryStarter in my classroom for the last four years. Over the years I have developed many cross-curricular activities to assess students' understanding of genres of literature, to any project, and students can show their depth of knowledge by creating amazing stories! Before I had StoryStarter in my classroom, students dreaded writing and it was not enjoyable, but now students love to create their own stories and write about them

Chrissy Knutson, First-Grade Teacher,



East Richland Elementary School, Olney, IL

LEGO® Education MoreToMath Succeed in math

Succeed in math through problem solving

Problem Solling Precision In Building Precis

LEGO® Education MoreToMath

BUILT ON COMMON CORE MATH STANDARDS

MoreToMath from LEGO® Education is a hands-on educational tool for first and second grade for teaching mathematical problem solving bridging to math facts. By using the familiar LEGO brick and real-life understanding, your students will feel encouraged and motivated to think, write, and speak freely about math.

MoreToMath includes curriculum activities for 48 lessons based on eight competencies in mathematical problem solving defined by the Common Core State Standards. Through the activities, students help the two characters, Max and Mia, solve problems within four real-life themes and they collaboratively experience that there is more to math than just facts. Learn more about MoreToMath at LEGOeducation.us





When abstract math becomes tangible and alive

LEGO® Education MoreToMath 1-2 helps students succeed in math through problem solving. Our full 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.

Key learning values

- Strengthens students' understanding of the mathematical problem-solving competencies, including making sense of problems, reasoning, perseverance, precision, modeling, and representation
- Reinforces math competency learning through hands-on activities across the areas of numeracy, operations in base 10, algebraic thinking, measurement, data, geometry, and spatial awareness
- Improves problem-solving and mathematical-thinking skills through working collaboratively as well as individually



A complete teaching solution



1-1-2-6

MoreToMath is an effective and engaging

teaching tool.





A limited number of bricks in use per task and only one piece of paper on the table makes it easy to handle using the set in the classroom. Each student worksheet covers one lesson and shows the bricks to use, the tasks with room to write answers, a self-assessment. and an extra extension task.

MoreToMath Curriculum Pack 1-2 and MathBuilder Software

2045210 \$139.95



Built on curriculum standards for mathematics, the MoreToMath Curriculum Pack 1-2 aids educators for the first and second grades in creating engaging lessons focused on mathematical problem solving.

Teacher's quide and intuitive student worksheets for 48 lessons are provided along with a learning grid aligning activities to key standards and objectives, integrated assessment tools, inspiration for differentiation, extension ideas, and training videos for teachers.

MoreToMath Core Set 1-2

45210 \$59.95

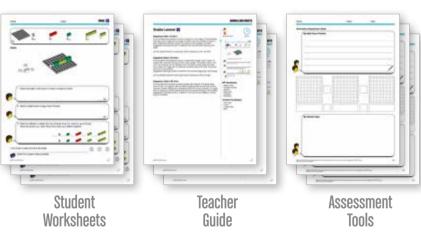








The MoreToMath Core Set 1-2, when used with the MoreToMath Curriculum Pack 1-2, enables students in the first and second grades to build and practice the competencies of mathematical problem solving. One set contains the LEGO® elements needed for two students. Building materials are delivered in a storage bin with sorting tray, organizational stickers, baseplates, brick separators, and two LEGO minifigures, the problem solvers Max and Mia.







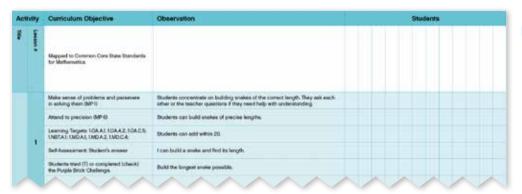
Enhance your students' learning with MathBuilder – a tool for interactive whiteboards.

Also included is *MathBuilder*, interactive whiteboard software that enables educators to bring math 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.



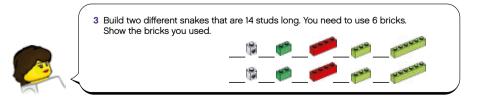
MoreToMath integrates ways to assess what counts.

Observation Checklist



Assessment supports learning. The forms of assessment integrated into MoreToMath are formative and ultimately guided by a single aspiration – to help measure what counts rather than what is easy to count.

Worksheets as portfolio pages



Peer and self-assessment







We can help each other before asking the teacher for help.

Classroom Solutions

MoreToMath 1-2 **Combo Pack**

5004430 \$196.95



- · LEGO® Education MoreToMath Core Set 1-2 (45210)
- LEGO® Education MoreToMath Curriculum Pack 1-2 (2045210)
 - · Activities for 48 lessons
 - · MathBuilder software
 - Assessment tools
 - Max and Mia animation
 - 5 training videos







MoreToMath 1-2 Package - 30 Students

5004435 \$999.95



- · LEGO® Education MoreToMath
- Core Set 1-2 (45210)
- LEGO® Education MoreToMath Curriculum Pack 1-2 (2045210)
 - · Activities for 48 lessons
 - MathBuilder software
 - Assessment tools
 - · Max and Mia animation
 - 5 training videos

Classroom solutions are available online that accommodate LEGOeducation.us to learn more





Differentiation tasks are included - the purple brick challenges. Children learn i

Children learn in different ways and sometimes it is great to have an extra challenge if they finish a bit before their classmates.

The purple brick in each student worksheet marks this extra challenge. Apart from this self-directed differentiation option, the teacher notes provide ideas for more differentiation as well as repetition.

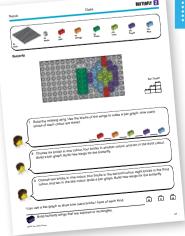
- LEGOeducation.us/MoreToMath
- See curriculum previews.
- Try a free version of the software.
- Find software requirements.

Can you build a snake that is 42 studs long with a red brick in the middle?



"Every student is actively engaged and participating in learning math. They normally aren't this excited about learning. The kids are careful with the pieces so they don't lose any; they beg to give up other things during the day so they can work on math problems with the LEGO® bricks. They look forward to it and love it!"

Sara Hunt, Math Teacher, US



Can you see the number pattern in the wing of the butterfly?

Already using WeDo? Continue to explore!

Do you need supplemental items for your previous WeDo investment? We've got you covered!

> Not compatible with WeDo 2.0

LEGO® Education WeDo Construction Set

9580 \$149.95









The WeDo Construction Set enables students to build and program simple LEGO® models that are plugged into a computer. The set contains more than 150 elements, including a motor, motion and tilt sensors, and the LEGO USB Hub. Combine with the 2000097 WeDo Software v.1.2 and Activity Pack to carry out 12 theme-based activities. Software and activity pack is sold separately.

LEGO® Education WeDo Software v.1.2 and Activity Pack Single License

2000097 \$89.95



Easy-to-use software and 12 theme-based activities for the WeDo Construction Set in one package!

The drag-and-drop software, powered by NI LabVIEW™, is icon based and provides an intuitive programming environment. Features the digital Getting Started Guide with building tips and programming examples. Activities are divided into four themes: Amazing Mechanisms, Wild Animals, Play Soccer, and Adventure Stories and provide up to 24 hours of instruction and project-based learning. Teacher notes, glossary, and building instructions included.

LEGO® Education WeDo Software v.1.2 and Activity Pack Site License

5003422 \$299.95









Tilt Sensor

9584 \$24.95



The Tilt Sensor, designed for the WeDo Construction Set, detects changes within six different positions: Tilt This Way, Tilt That Way, Tilt Up, Tilt Down, No Tilt, and Any Tilt. The Tilt Sensor is automatically detected by the WeDo Software when connected to the LEGO® USB Hub.



Power Functions M-Motor

8883 \$7.49



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



Motion Sensor

9583 \$24.95



The Motion Sensor, designed for the WeDo Construction Set, can detect objects within a range of 15 cm, depending on the design of the object, when attached to the LEGO® USB Hub. The Motion Sensor is automatically detected by the WeDo Software when attached to the LEGO USB Hub.



Power Functions Light

8870 \$6.49



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

LEGO® Education WeDo Resource Set

9585 \$69.95









Features extra and new elements for building large WeDo models that provide even more learning opportunities. Combine with 9580 WeDo Construction Set to build four new models: Ferris Wheel, Crane, Car, or House. Includes new elements such as wheels, rotors. and a door.

WeDo STEM Expansion Activity Pack

2009585 \$89.95



Take learning with LEGO® Education WeDo to the next level with this fun and challenging amusement park- and construction sitethemed set. Using the drag-and-drop intuitive programming environment that students are already familiar with, the WeDo STEM Expansion Activity Pack features six advanced activities and four open-ended problemsolving exercises. With enough material for up to 30 lessons, including worksheets and teacher notes, WeDo STEM Expansion Activity Pack is ideal for developing understanding of a wide range of STEM topics. Requires:

- 9580 LEGO® Education WeDo Construction Set
- 9585 LEGO® Education WeDo Resource Set
- · 2000097 LEGO® Education WeDo Software and Activity Pack



LEGO® USB Hub

9581 \$49.95



The LEGO® USB Hub. designed for the WeDo Construction Set, controls sensors and motors via the WeDo Software when connected to a computer's powered USB port. This two-port hub transmits power and data to and from the computer and both ports are able to control motors and sensors. The LEGO USB Hub is automatically detected by the WeDo Software when connected to a computer.

LEGO® Education Machines & Mechanisms Discover how the

Discover how the real world works

With Machines & Mechanisms, teachers can ignite learning about basic mechanisms, structures, and power sources in the real world and engage their students in scientific inquiry and creative engineering design. We support teachers by providing easy-to-use, age-appropriate, hands-on materials along with guided lessons that meet technology and science standards.



LEGO® Education Machines & Mechanisms

ALIGNED WITH CURRICULUM STANDARDS

Early Simple Machines Set **Ages 5-7**

Simple Machines Set **Ages 7-9**







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





Early Simple Machines Set

9656 \$144.95









The Early Simple Machines Set provides eight mechanical models and eight double-sided, full-color 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. Combine with the 2009690 Early Simple Machines Activity Pack to carry out eight lesson plans, each with 20-minute extension activities and four problem-solving tasks.

Early Simple Machines Activity Pack

2009690 \$59.95

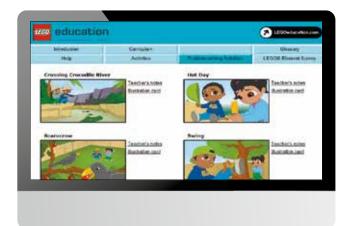


The activity pack for the 9656 Early Simple Machines Set includes eight 45-minute lessons, each with extension activities of up to 20 minutes, and four additional open-ended problem-solving activities. Illustrations introduce playful problems that the children must solve.

Key learning values

- Exploring basic mechanical principles

- Working with others and sharing findings





Classroom Solutions

Early Simple Machines Package - 2 Students

5003486 \$199.95





• LEGO® Education Early Simple Machines Activity Pack (2009690)



Classroom solutions are available online that accommodate your specific class size. Visit LEGOeducation.us to learn more

Early Simple Machines Package - 30 Students

5003494 \$2159.95





• LEGO® Education Early Simple

Machines Set (9656)

· LEGO® Education Early Simple Machines Activity Pack (2009690)







Simple Machines

Simple Machines from LEGO® Education is an engaging hands-on tool that introduces first through fourth graders to the basic principles behind gears, wheels and axles, levers, and pulleys while laying the groundwork for further learning about science and engineering.





Simple Machines Set

9689 \$69.95









Features 16 principle models, four main models, and four problem-solving models that enable students to investigate and understand the operation of simple and compound machines found in everyday life: gears, wheels and axles, levers, and pulleys.

Simple Machines Activity Pack

2009691 \$79.95



Features 16 principle activities, four main activities, and four problem-solving activities. Enables students to recognize 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.



Key learning values

- · Observing and investigating simple machines: gears, wheels and axles, levers, and pulleys
- · Developing scientific inquiry skills

Principle activities and problem-solving engineering activities; 20+ lessons

Classroom solutions are

Classroom Solutions

Simple Machines Package - 2 Students

5003466 \$147.95





- · LEGO® Education Simple Machines Set (9689)
- · LEGO® Education Simple Machines Activity Pack (2009691)

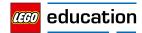
Simple Machines Package - 30 Students

5003498 \$1089.95



- · LEGO® Education Simple Machines Set (9689)
- · LEGO® Education Simple Machines Activity Pack (2009691)





Simple & Powered Machines Set

Introducing Simple & Powered Machines from LEGO® Education is a hands-on tool that helps students in Grade 5+ investigate everything from basic mechanical principles to advanced motor-powered machines while also acquiring key insights in science, engineering, and technology.

Key learning values

- Investigating powered machines with





Simple & Powered Machines Base Set

9686 \$164.95









The core brick set in our range of Machines & Mechanisms solutions, this set includes full-color building instruction booklets for 10 principle models and 18 main models. Combine with curriculumrelevant activity packs and add-on sets to carry out a broad range of activities within design, technology, science, and mathematics.

Introducing Simple & Powered Machines Activity Pack

2009692 \$129.95



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 problemsolving tasks. *Flash* animations introduce the activities. Teacher's notes, student worksheets, and glossary included.



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



Classroom Solutions

Simple & Powered Machines Package - 2 Students

5003416 \$289.95



- LEGO® Education Simple & Powered Machines Base Set (9686)
- Introducing Simple & Powered Machines (2009692)
- Simple & Powered Machines Package 30 Students

5003502 \$2524.95



 LEGO® Education Simple & Powered Machines Base Set (9686)

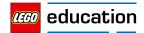
et

 Introducing Simple & Powered Machines (2009692) Classroom solutions are available online that accommodate your specific class size. Visit LEGOeducation.us to learn more.









Challenge your students



Introduce them to the fascinating world of science and technology

FIRST® LEGO® League Jr. and FIRST® LEGO® League are international inquiry-based programs teaching students ages 6-14 about science, technology, engineering and math. Through the process, the students obtain core life skills 'Core Values' such as problem solving, critical thinking, and teamwork.

Both FIRST® LEGO® League Jr. and FIRST® LEGO® League are topic based. Over the years, students participating in the programs have looked at a number of annual Challenge topics. They include:

- · Keeping food safe.
- Helping older people stay independent, engaged and connected.
- · Natural disasters.

As classroom resources, the programs:

- · Promote student engagement.
- · Allow for differentiation.
- · Promote self-directed learning.
- · Have real-life connections.

More than 265,000 students from more than 80 countries take part annually.



FIRST® LEGO® League Jr.

For children ages 6-9, FIRST® LEGO® League Jr. captures students' curiosity and directs it toward science and technology. Guided by an adult coach, students get to:

- Design and build a challenge-related LEGO® model with motorized parts.
- · Create a Show Me poster.
- Present their work at an event to grown-up volunteer reviewers.

Find out how you can get young students hooked on science and technology at FIRSTinspires.org/robotics/flljr



FIRST® is a registered trademark of the United States Foundation for Inspiration and Recognition of Science and Technology. FIRST LEGO League Jr., FIRST LEGO League, and their logos are jointly held trademarks of FIRST and the LEGO Group.

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 to express these thoughts or the opportunity to express what they truly think – and feel – about themselves and each other.

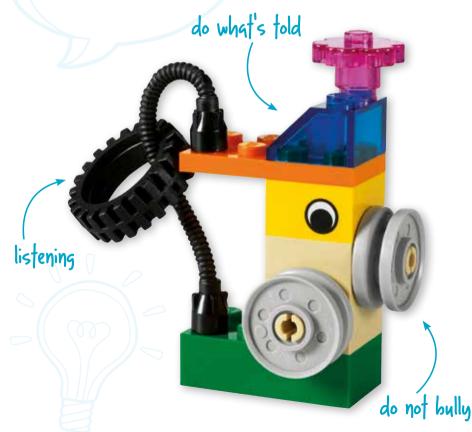
That is exactly what LEGO® Education BuildToExpress offers them. It's a genuinely creative teaching aid that enables all your students to communicate as equals in an inclusive, nonjudgmental, and highly motivational environment. Everyone gets involved and takes an active role in the learning process, transforming you, the teacher, into a true hands-on facilitator.

Key learning values

- Encourages reflection and gives students the opportunity to express feelings about the world around them
- Develops and strengthens 21stcentury skills, enabling students to communicate more effectively and enhancing creativity and their critical-thinking ability
- Promotes a cooperative learning environment and gives all students an equal voice



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





BuildToExpress Core Set

45110 \$54.95







The set includes 200 LEGO® elements in a separate storage unit. They have been carefully selected to provide a broad spectrum of ready-made metaphors. The colorful bricks, accessories, and minifigures inspire students and stimulate their creative thinking and imagination.

BuildToExpress Guide & Activity Pack

2045111 \$99.95





Contains practical guidance on introducing and working with BuildToExpress. Enables you to hear other teachers' experiences and includes 30 age-segmented, core-curriculum-based Build & Share Challenge Cards as well as plenty of prepared activities for you to work with.

BuildToExpress Extension Activity Pack

2045112 \$79.95



(www) (6+ yr.)

This activity pack features up to 40 hours of hands-on activities that meet curriculum expectations in character education, language arts, mathematics, science, and social studies. This extension pack provides additional lesson plans for those who have attended BuildToExpress Product Training or purchased the self-paced BuildToExpress Guide and Activity Pack.

Classroom Solutions

education

Teacher's Guide



Classroom solutions are available online that accommodate your specific class size. Visit LEGOeducation.us to learn more



BuildToExpress Package -5 Students

5003508 \$369.95



Extension Activity Pack

education



- LEGO® Education BuildToExpress Core Set (45110)
- LEGO® Education BuildToExpress Guide & Activity Pack (2045111)

BuildToExpress Package -30 Students

5003510 \$1695.95





- LEGO® Education BuildToExpress 30 Core Set (45110)
- LEGO® Education BuildToExpress Guide & Activity Pack (2045111)

LEGO® Education Middle School

Grow critical thinking and creativity





Middle School

We support teachers to grow students' critical thinking and creativity for a digital future.



LEGO® Education enables every student to succeed in middle school by growing critical thinking and creativity. Through real-life themes and physical and digital creation, we support middle school teachers with effective, structured, and curriculum-relevant STEM solutions. These solutions enable all students to understand challenging subjects, encourage them to develop critical thinking, grow their ideas and make their own creations through playful learning experiences.



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

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

Using specially compiled LEGO elements to cover advanced topics such as 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.

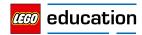
Machines & Mechanisms is easy to incorporate into everyday classwork, where it adds variation and motivates middle school students to acquire curriculum-relevant knowledge and skills.



LEGO® Education
Machines & Mechanisms

ALIGNED WITH CURRICULUM STANDARDS





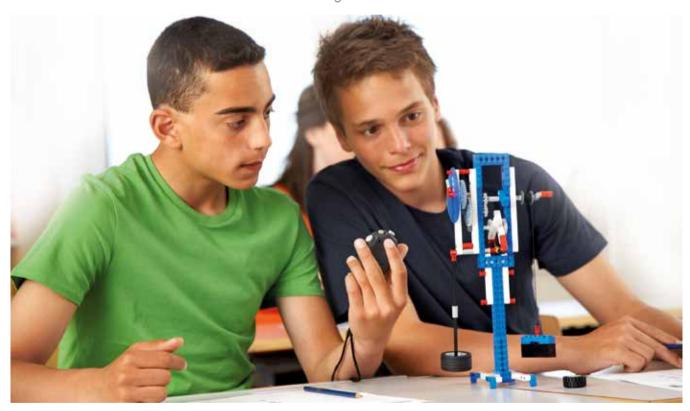
Simple & Powered **Machines Base Set**

The Simple & Powered Machines curriculum pack and building set provide comprehensive materials that start with the principles behind all six simple machines and then add complex mechanisms such as gears and cams. Topics cover concepts in forces and motion, measuring, energy, and structures.

The activities progress to more challenging applications using machines powered with a motor. Students ask relevant scientific and technical questions, reflect on what they observe, discuss their results, formulate conclusions based on evidence, and communicate with their fellow student scientists and engineers.

Key learning values

- Building and exploring real-life machines and mechanisms
- Investigating powered machines with the motor
- and capturing wind
- Exploring gearing mechanisms with the assorted gear wheels



Simple & Powered Machines Base Set

9686 \$164.95







The core brick set in our range of Machines & Mechanisms solutions, this set includes full-color building instruction booklets for 10 principle models and 18 main models. Combine with curriculum-relevant activity packs and add-on sets to carry out a broad range of activities within design, technology, science, and mathematics.



Simple & Powered Machines Activity Packs

Simple & Powered Machines from LEGO® Education is a hands-on tool that helps students investigate everything from basic mechanical principles to advanced motor-powered machines while deepening their knowledge of forces, motion, measuring, and energy.

Introducing Simple & Powered Machines Activity Pack

2009692 \$129.95



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 problemsolving tasks. *Flash* animations introduce the activities. Teacher's notes, student worksheets, and glossary included.

Advancing with Simple & Powered Machines Activity Pack

2009693 \$79.95



Includes 38 models for studying principle concepts, four main investigation activities, and six problem-solving design engineering activities. Each main activity and problem-solving activity is best with two consecutive classes (20 classes total). The principle models come with materials and quick activities. However, if you choose to spend a set number of classes on all the principles, plan an additional six to eight classes.

Key learning values

- Investigating the principles of simple machines, mechanisms, and structures
- · Mechanical advantage
- Experimenting with balanced and unbalanced forces
- Calibrating scales
- 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 Package - 2 Students

5003416 \$289.95



- LEGO® Education Simple & Powered Machines Base Set (9686)
- Introducing Simple & Powered Machines (2009692)

Simple & Powered Machines Package - 30 Students

5003502 \$2524.95



- LEGO® Education Simple & Powered Machines Base Set (9686)
- Introducing Simple & Powered Machines (2009692)



Classroom solutions are available online that accommodate your specific class size. Visit LEGOeducation.us to learn more.





Renewable Energy Add-On Set to Simple & Powered Machines





Key learning values

- Building and exploring renewable energy through real-life LEGO® models
- Exploring energy supply, transfer, accumulation, conversion, and consumption
- Engaging students in engineering and design

Consisting of a Simple & Powered Machines Set, a Renewable Energy Add-On Set, and a special activity pack, **Renewable Energy** from LEGO® Education helps students in Grades 5-8 explore solar, wind, and water energy and meet curriculum goals in science, technology, and engineering by building their own real-life models.

Renewable Energy Add-On Set

9688 \$109.95







This exciting add-on set enables students to learn about renewable energy sources and can be used with the Simple & Powered Machines Set (9686) and LEGO® MINDSTORMS® Education (45544). The set includes a solar panel, turbine blades, a motor/generator, LED lights, an extension wire, a LEGO Energy Meter, and full-color building instructions for six real-life LEGO models to build with 9686. Add the Renewable Energy Activity Pack (2009694) for detailed lesson plans to cover solar, wind, and hydroelectric power. Connected to the MINDSTORMS EV3 Brick, the energy meter works as a sensor and can be used for both programming and data logging. To use the Renewable Energy Add-On Set with LEGO MINDSTORMS Education EV3, see the EV3 Science Activity Pack on page 63.

Renewable Energy Activity Pack

2009694 \$79.95



This activity pack provides six 45-minute lessons and four problem-solving activities that enable students to explore the three major renewable energy sources, solar, wind, and water, through real-life LEGO® models. Includes a wide range of real-life images, ideal for introducing them to the topic and task at hand. Teacher's notes, student worksheets, and glossary included.

Pneumatics

Add-On Set to Simple & Powered Machines

Pneumatics from LEGO® Education encourages logical and creative thinking and motivates students in Grades 5-8 to engage in scientific inquiry and engineering design by building air-powered LEGO models such as a scissor lift, a robotic hand, and a stamping press.

Key learning values

- Building and exploring pneumatics through real-life LEGO models
- Investigating power systems and components
- · Measuring pressure in psi and bar
- · Exploring kinetic and potential energy

Pneumatics Add-On Set

9641 \$69.95



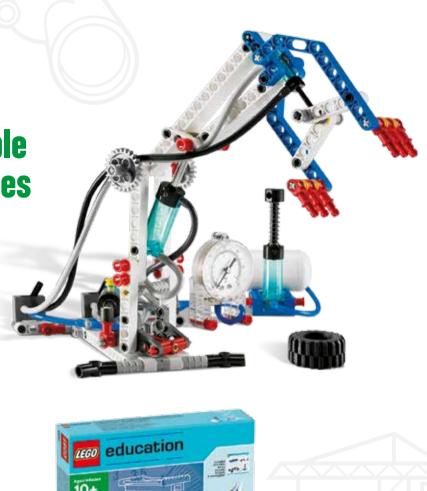
The Pneumatics Add-On Set for the Simple & Powered Machines Set provides five principle models and four real-life pneumatics models. Includes full-color building instructions, pumps, tubes, cylinders, valves, an air tank, and a manometer. Combine with the Pneumatics Activity Pack to carry out 14 principle model activities, four new lesson plans, and two problem-solving tasks.

Pneumatics Activity Pack

2009695 \$79.95



Includes 14 models for exploring principle concepts, four main activities, and two problemsolving activities. Each main activity and problemsolving activity is best with two classes. Total: 12 classes (45 minutes each). The principle models come with reference materials and quick activities. However, if you choose to spend a set number of classes on all the principles, plan an additional two classes (45 minutes each).









Energy Display

9668 \$59.95

8+ yr.

This element displays input and output in volts, watts, and amps and energy storage level in joules. Combine with 9669 Energy Storage to form the LEGO® Energy Meter

Energy Storage

9669 \$29.95

E-Motor

9670 \$24.95

8+ yr.)

This NiMH battery with connector is designed to be combined with the 9668 Energy Display. When combined, the two elements form the LEGO® Energy Meter. Storage capacity: 150 mAh.

functions as a very efficient generator.



Power Functions Light

8870 \$6.49

(7+ yr.)

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

LFGO® Solar Panel

9667 \$49.95



The Solar Panel provides sufficient power to operate the LEGO® Energy Meter and motors. It delivers 5 V, 4 mA in direct light from a 60 W incandescent bulb positioned 25 cm from the Solar Panel (>2,000 lx) and 5 V, 20 mA in direct light from a 60 W incandescent bulb positioned 8 cm from the panel (>10,000 lx).

Power Functions Battery Box

8881 \$6.99

(7+ yr.)

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

Power Functions

The E-Motor is a 9 V motor with an internal gearbox. Its 9.5:1

approximately 800 rotations per minute without load. It also

gearing ratio provides a maximum torque of 4.5 N-cm and

Power Functions Extension Wire 20"

8871 \$3.99

(7+ yr.)

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

Power Functions Extension Wire 8"

8886 \$2.99

(7+ yr.)

Build your Power Functions-equipped models bigger, better, and more mechanized and motorized by adding this 8 in. (20 cm) extension wire.

Power Functions M-Motor

8883 \$7.49

7+ yr.



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



Transformer 10 V DC

45517 \$29.95

(8+ yr.)

This standard 10 V DC transformer enables you to recharge your 9693 Rechargeable Battery or your 45501 EV3 Rechargeable Battery or 8878 Power Functions Rechargeable Battery Box

Power Functions XL-Motor

8882 \$9.99



Add an extra XL-Motor to your models! This superstrong motor will give plenty of power to your models, whether it's spinning a wheel or turning a system of gears. Use the M-Motor to animate larger builds. Requires battery box (8881), sold separately

Power Functions Rechargeable Battery Box

8878 \$49.99



This rechargeable battery box has built-in lithium polymer batteries for low weight and maximum power.

Use the 45517 10 V DC Transformer to charge

- · Motor speed can be controlled via the battery box speed control dial.
- · Output voltage is 7.4 V.

Classroom Solutions

Simple & Powered Machines **Complete Package - 4 Students**

5003503 ¢1038 05



0000000 V1000.00	
Simple and Motorized Mech Base Sets	anisms 2
Introducing Simple and Mot Mechanisms Activity Pack	orized 1
 Advancing with Simple and Motorized Mechanisms Activ 	1 vity Pack
• Pneumatics Add-On Sets	2
Pneumatics Activity Pack	1
• Renewable Energy Add-On	Sets 2
• Renewable Energy Activity F	Pack 1

Simple & Powered Machines Complete Package - 30 Students

5003507 \$5399.95





- Simple and Motorized Mechanisms Base Sets
- Introducing Simple and Motorized Mechanisms Activity Pack
- · Advancing with Simple and Motorized Mechanisms Activity Pack
- 15 · Pneumatics Add-On Sets
- Pneumatics Activity Pack 15 • Renewable Energy Add-On Sets
- Renewable Energy Activity Pack













Challenge your students

and introduce them to the fascinating world of science and technology

FIRST® LEGO® League Jr. and FIRST® LEGO® League are international inquirybased programs teaching students ages 6-14 about science, technology, engineering, and math. Through the process, the students obtain core life skills (Core Values) such as problem solving, critical thinking, and teamwork.

Both FIRST® LEGO® League Jr. and FIRST® LEGO® League are topic-based. Over the years, students participating in the programs have looked at a number of annual Challenge topics.

They include:

- · Keeping food safe.
- · Helping older people stay independent, engaged, and connected.
- · Natural disasters.

As classroom resources, the programs:

- · Promote student engagement.
- · Allow for differentiation.
- · Promote self-directed learning.
- · Have real-life connections.

More than 265,000 students from more than 80 countries take part annually.

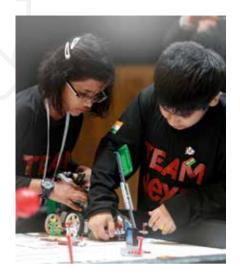
FIRST® LEGO® League

FIRST® LEGO® League is open for students ages 9-14. An FIRST® LEGO® League Challenge consists of two parts:

- A research assignment (the Project) - Research and come up with innovative ideas for solving a real-world problem.
- A Robot Game Design and program a LEGO MINDSTORMS® robot to solve missions on a special obstacle course

After eight to 10 weeks, the teams meet and compete at regional tournaments and present their work to panels of judges.

Find out how to join the challenging fun at FIRSTinspires.org/robotics/fll





FIRST® is a registered trademark of the United States Foundation for Inspiration and Recognition of Science and Technology. FIRST LEGO League Junior, FIRST LEGO League, and their logos are jointly held trademarks of FIRST and the LEGO Group.

World Robot Olympiad

Taking place in 50+ countries worldwide, an estimated 70,000 participants compete in four exciting competition categories:

- Regular Design and program robots that solve challenging and fun tasks.
- Open Create and present theme-based robotics solutions.
- WRO™ GEN II Football Teams of two autonomous robots play head to head in action-packed soccer tournaments.
- · College Regular An advanced challenge for students 17+.

Local and national WRO tournaments are organized by the national organizer in each member country. All member countries qualify teams that are invited to participate in the annual WRO international final.

Find out how to get involved at wroboto.org. LEGO Education is a Premium Sponsor of World Robot Olympiad Association.

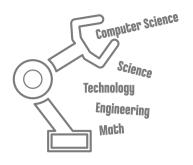






LEGO® MINDSTORMS® Education EV3

Instant STEM learning with best-in-class robotics solutions



LEGO® MINDSTORMS®
Education

BUILT ON COMMON CORE STANDARDS

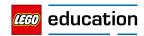
With LEGO® MINDSTORMS® Education, the greatest challenge you'll face is getting your students to leave the classroom!

LEGO MINDSTORMS Education EV3 grows critical thinking and students' creativity in computer science, science, technology, engineering, and math. You can be up and running in fewer 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 bestin-class robotics solutions to encourage critical thinking and creative learning through reallife problem solving with LEGO MINDSTORMS Education EV3.







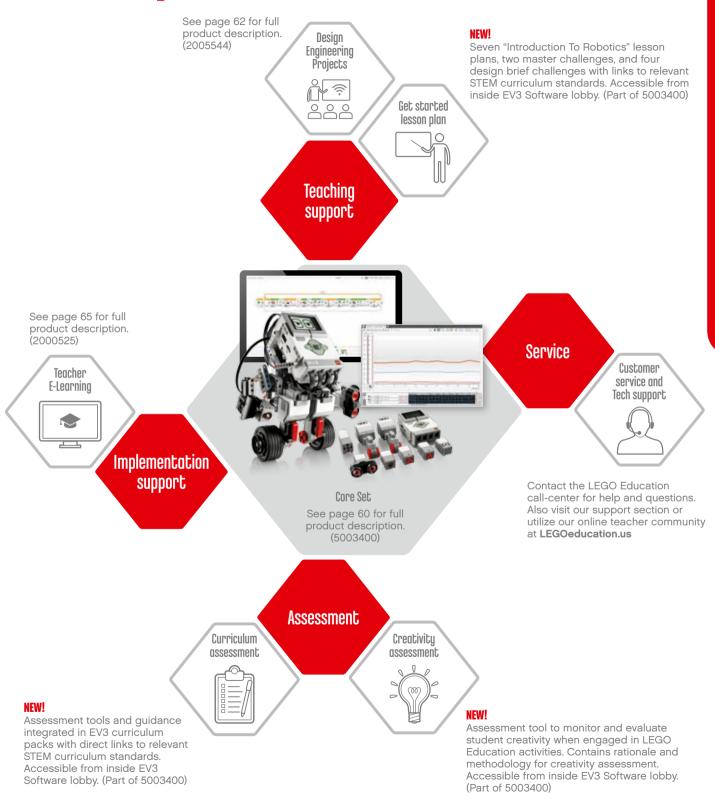
Solutions to suit every teaching style

By the time they reach middle school, students should be ready to start developing critical-thinking and problem-solving skills. LEGO® MINDSTORMS® Education enables this through creative and playful learning experiences that combine best-in-class robotics with intuitive software.

And because every educator has his or her own unique approach when it comes to creating lesson plans, we are excited to offer two new solutions. These provide all the flexibility and freedom - or step-bystep, highly structured processes - that your personal teaching style demands.



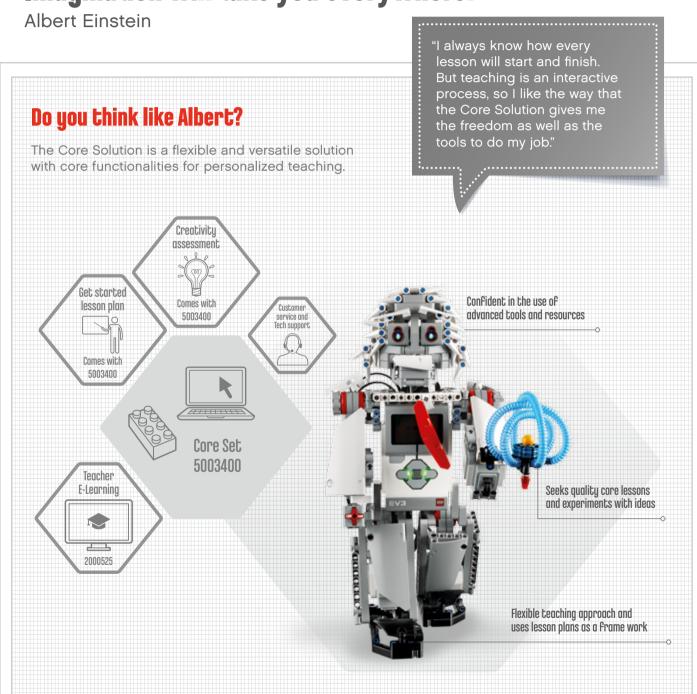
The components for successful classes





Core Solution

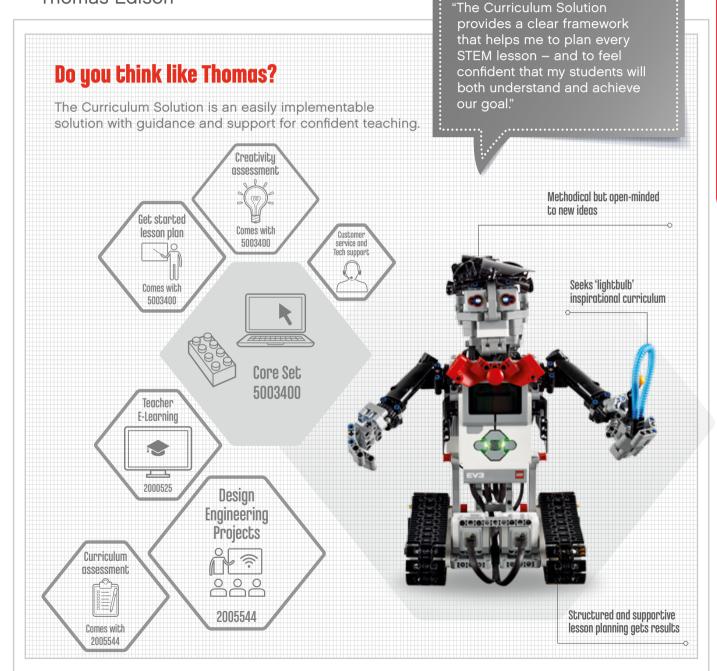
"Logic will get you from A to B. Imagination will take you everywhere."

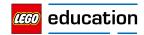


Curriculum Solution

"Genius is 1% inspiration, 99% perspiration."

Thomas Edison





Classroom Solutions

Core Solution

The LEGO® MINDSTORMS® Education EV3 Core Solution is a flexible and versatile solution with core functionalities for personalized teaching. In this solution, you get:

- EV3 Core Set (5003400 one per two students) containing LEGO building bricks, the EV3 Intelligent Brick with motors and sensors
- EV3 Software for intuitive programming and data logging including Get Started Lesson Plan and Creativity Assessment tool (part of 5003400)
- · Online Teacher E-Learning (2000525 - school license)



You can find supplementary products on the following pages to create your own customized solution.

Core Solution

Core Set = 1 per every 2 students

8 Students (4 sets) 5005021	\$2059.95
16 Students (8 sets) 5005022	\$3529.95
24 Students (12 sets) 5005023	\$4999.95
30 Students (15 sets) 5005045	\$5999.95

Save as much as \$299

Curriculum Solution

The LEGO® MINDSTORMS® Education EV3 Curriculum Solution is an easily implementable solution with quidance and support for confident teaching. In this solution, you get:

- EV3 Core Set (5003400 one per two students) containing LEGO building bricks, the EV3 Intelligent Brick with motors and sensors
- EV3 Software for intuitive programming and data logging including Get Started Lesson Plan and Creativity Assessment tool (part of 5003400)
- EV3 Design Engineering Projects Curriculum (2004455 - school license) with 30+ hours of classroom instruction and problem-solving activities including assessment tools linked to STEM curriculum standards
- · Online Teacher E-Learning (2000525 - school license)

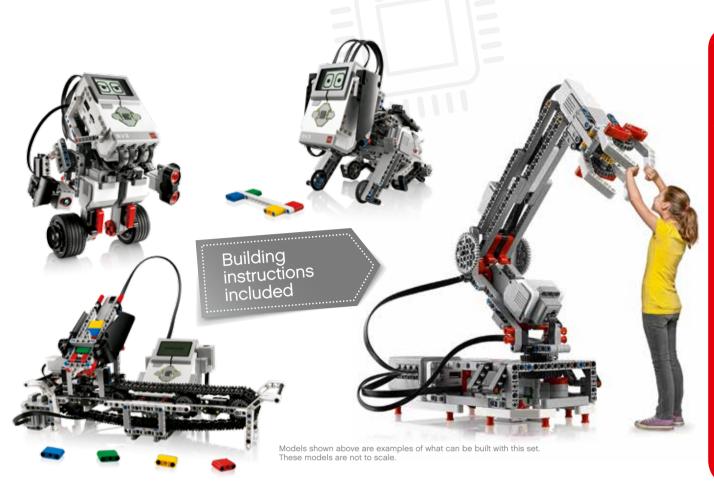


Curriculum Solution

Core Set = 1 per every 2 students

8 Students (4 sets) 5005024	\$2419.95
16 Students (8 sets) 5005025	\$3869.95
24 Students (12 sets) 5005026	\$5299.95
30 Students (15 sets) 5005046	\$6299.95

Save as much as \$379



Explore real-time results with data logging.

Data Set Calculation

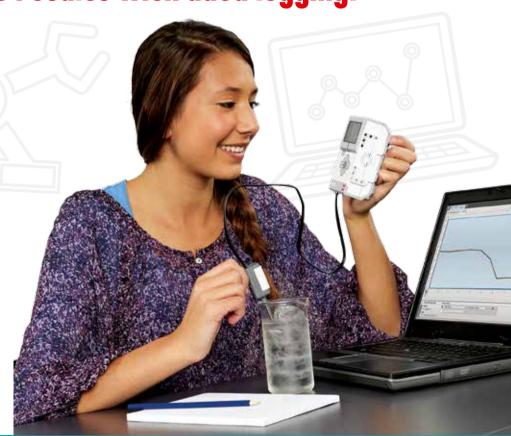
- Unique calculator interface
- · Three-data-set average
- From one value to another
- From rotational counts via speed to acceleration

Data Logging

- · Predict, collect, and analyze
- · Log data and view live graphs
- Basic and advanced analysis tools
- Easily export data to spreadsheets

Graph Programming

- · New and unique feature
- Execute actions based on data readings
- Makes science experiments come alive
- Increase student understanding of graphs and data formulas







LEGO® MINDSTORMS® Education EV3 Core Set

5003400 \$379.95 13 22 541 541 WWW (10-21 yr.









This core set is optimized for classroom use and contains all you need to start teaching science, technology, engineering, math, and computer science using the exciting LEGO® MINDSTORMS® concept. It enables students to build, program, and test their solutions based on LEGO building bricks combined with real-life robotics technology. The system contains the EV3 Intelligent 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 core set comes in a sturdy storage box with a sorting tray for easy classroom use and includes three servomotors, five sensors (gyro, ultrasonic, color, and two touch), a rechargeable battery, connecting cables, printed and digital building instructions, and LEGO Technic building bricks for creating a wide variety of models. Software is available in both desktop and tablet app versions.

Key learning values

Easy-to-use

- · Design and build programmable robots using high-quality motors, sensors, gears, wheels, axles, and other technical components.
- · Use input and output devices to produce simple sequences and commands linking cause and effect.
- Use intuitive prediction tools to gain firsthand experience in forming hypotheses.
- Integrate math and science using physical constraints, units of measurement, coordinate systems, minimum, maximum, mean, and linear.



LEGO® MINDSTORMS® Education EV3 Expansion Set

45560 \$99.95











This set contains a wide range of supplementary elements to continue the theme of critical thinking and creativity featured in the EV3 Core Set. It is designed to enable students to take their robotics experience to the next level and includes a wide variety of special elements, such as different gears, a large turntable, robotpersonalization parts, unique structural elements, beams, axles, and connectors. This set helps students build larger and more complex models while also providing extra or replacement elements. The expansion set comes in a sturdy storage box with a sorting tray for easy classroom use. Requires the 5003400 LEGO® MINDSTORMS® Education EV3 Core Set.



Models shown above are examples of what can be built with this set. These models are not to scale.





Key learning values

- mathematical concepts, such as proportions and ratios, graphing data, and multidigit computation.
- Apply knowledge of science concepts, such as speed and power, motion and stability. and forces and interactions.
- experiment in problem solving.

Design Engineering Projects Curriculum

2005544 \$379.95



The Design Engineering Projects Curriculum lets your students work with open-ended problemsolving activities in a context that makes it fun and engaging to learn science, technology, engineering, and math. The material is divided into three main sections: Make It Move, Make It Smarter, and Make a System. Each section includes five design projects. All 15 projects follow the engineering design process, as used by real-life engineers, which provides a structured flow through the activities, starting with a design brief explaining the challenge and culminating in a final project that can be shared and presented. As they complete each project, the students capture their work with the built-in digital workbook, making it easy to follow and assess their progress.

This structure is designed to help students develop the 21st-century creative-thinking, problem-solving, teamwork, and communication skills required for success in school and beyond. The curriculum package delivers 30 hours of classroom teaching and is written to match curriculum standards. The EV3 Software includes briefs and inspirational material for students, teacher notes, example solutions, and instructions for building ideas. Requires the 5003400 LEGO® MINDSTORMS® Education EV3 Core Set.

Students become real engineers through problem solving.



Make It Move

- · Understand forces and motion -Measure and calculate distance and average speed.
- · Graph and interpret rotation sensor data.
- · Observe the transfer of energy driving motion.
- · Use knowledge of simple machines to build more complex machines.
- Understand and program geometric patterns.
- Use ratios to describe proportional relationships.



Make It Smarter

- · Use sensors to control behavior and to measure, graph, and analyze data, including percentage of reflected and ambient light, discrete color values, distance, angle in degrees, and motor rotations.
- · Develop robots capable of more complex thinking using logical structures and sensor feedback - Imitate the responses of living organisms.
- · Calculate using decimals and fractions.



Make a System

- · Understand that complex systems are created from subsystems.
- Design, build, and program a functioning robotic system.
- · Test robotic systems.
- · Use feedback as evidence to decide ways to improve and optimize a system or to prove
 - the success of the system.
- · Develop robotic systems related to manufacturing, transportation, communication, and other technologies.

Bring physical science experiments to life.

FV3 Science Curriculum

2005576 \$199.95



This curriculum pack has been developed together with Fraunhofer IAIS. Europe's largest application-oriented research organization, and real science teachers. The pack consists of 14 engaging physical science experiments for middle school, utilizing the data-logging capabilities of the LEGO® MINDSTORMS® Education EV3 hardware and software. Experiments are centered on energy (energy production and consumption), heat and temperature (melting points, insulation, and heat transmission), force and motion (mechanics and kinematics), and light (light intensity). Each experiment is designed to meet curriculum standards, is structured to fit a 45- to 90-minute science lesson, and incorporates small, engaging LEGO models that are easy to build and program. The EV3 Software includes student-ready materials, teacher notes, building instructions, and sample programs. Requires the 5003400 LEGO MINDSTORMS Education EV3 Core Set, 9688 Renewable Energy Add-On Set, and 9749 Temperature Sensor.

Key learning values

- Ask questions; develop and use models
- · Plan and carry out investigations.
- · Analyze and interpret data.
- Use mathematics, information and computer technology, and computational thinking.
- Construct explanations and design solutions.





Light

The phenomenon of light intensity is investigated using this experiment.



Energy

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



Heat and Temperature

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



Teach STEM with a mission to Mars.



Challenge Missions and nine Learning Missions on Mars







Models shown above are examples of what can be built with this set

LEGOeducation.us

EV3 Space Challenge Pack

5003488 \$354.95



The EV3 Space Challenge Pack is for all educators who want to teach science, technology, engineering, and math through hands-on problem solving. This theme-based material consists of seven Challenge Missions, nine Learning Missions, and one Basics of Gears project. Each mission and project presents a fun and engaging STEM learning opportunity. Three research projects, codeveloped with space experts, provide rich opportunities for students to explore and create innovative solutions to current space exploration topics. In addition to the activity pack, it contains three learning mats, a challenge mat, dual-lock tape, and all the LEGO® elements required to build the eight challenge models.

The Space Challenge conforms with curriculum standards and enables students to take responsibility for their own learning. They work as young scientists and engineers, immersing themselves in motivating STEM activities that develop creative problem-solving, communication, and teamwork skills. As they complete each project, the students capture their work with the built-in digital workbook, making it easy to follow and assess their progress. The EV3 Software includes student-ready materials, teacher notes, and building instructions. Requires the 5003400 LEGO® MINDSTORMS® Education EV3 Core Set.

Key learning values

- · Easy start with robotics and STEM subjects
- · Real-world applications in problem solving
- Develop solutions through teamwork skills
- · Learn to build, test, and evaluate robots
- · Hands-on experience with programming,

EV3 Space Challenge Set

45570 \$189.95







Need additional sets for your school? This set is included in the EV3 Space Challenge Pack, but can also be purchased separately by schools that prefer more than one challenge space. It contains three learning mats, a challenge mat, dual-lock tape, and all the LEGO® elements required to build the eight

challenge models.

Step-by-step teacher training

E-Learning: Getting Started with EV3

2000525 \$599.95



E-Learning for LEGO® MINDSTORMS® Education EV3 consists of more than 100 self-paced video lessons in full HD led by LEGO Education Academy Master Trainer. Rob Widger. These online lessons are organized into 15 courses, taking you from complete beginner to classroom ready. Each course lasts about 90 minutes, including build time and activities. Lessons include downloadable resources, ready-made sample programs, and "test your knowledge" quizzes to strengthen the learning process. Your progress is tracked, making it easy to pick up where you left off. Obtain the official Certificate of Completion upon successfully completing the Certificate guiz. This resource will help get vou up and running with EV3 in no time - both on desktop and tablet. Requires the 5003400 LEGO MINDSTORMS Education EV3 Core Set.



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



Teach computing with real-world examples.

EV3 Computing Curriculum

2005579 \$79.95

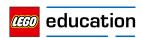


This curriculum pack provides extensive content for teachers to deliver the computing or computer science curriculum, providing ample crosscurricular opportunities in design and technology, science, and math. Engage your students with real-world examples, enabling them to apply and develop their programming knowledge to topics such as vehicle reversing warning systems, keyless ignition systems, and cruise control. The activities are delivered in PDF files for easy printing and will help teachers inspire students to discover the importance of computer programming in our everyday lives. The Computing Scheme of Work conforms with curriculum standards and consists of 12 sessions, providing about 36 hours of classroom teaching. It includes student work cards, teacher support, programming examples, and possible solutions. Requires the 5003400 LEGO® MINDSTORMS® Education EV3 Core Set.



12 lessons providing 36 hours of classroom teaching





Main Components

Sensor Elements

Replacement packs available online



Temperature Sensor

9749 \$39.95



Transformer 10 V DC

45517 \$29.95







45504 \$29.95



EV3 Intelligent Brick

45500 \$189.95







45505 \$29.95



EV3 Rechargeable DC Battery

45501 \$84.95







45506 \$39.95



EV3 Large Servo Motor

45502 \$24.95







45507 \$19.95



EV3 Medium Servo Motor

45503 \$19.95







EV3 Infrared Beacon

45508 \$29.95



EV3 Cable Pack

45514 \$14.95







EV3 Infrared Sensor

45509 \$29.95



LEGO® Education BuildToExpress Ignite reflection and self-expression

BuildToExpress is a unique tool that helps you to inspire all your students to reflect on and express about the world around them, but also to reflect on and understand challenging curriculum-related topics. They might use BuildToExpress to discuss a novel, to prepare for a design challenge, or to debate, for instance, democracy.

BuildToExpress is a method for addressing virtually any curriculum subject and learning outcome. Educators can use the tool to tailor their lesson plans.

Key learning values

- BuildToExpress encourages reflection and gives students the opportunity to express about the world around them.
- BuildToExpress develops and strengthens 21st-century skills, enabling students to communicate more effectively and enhancing creativity and their critical-thinking ability.
- BuildToExpress promotes a cooperative learning environment and gives all students an equal voice.





BuildToExpress Core Set

45110 \$54.95







The set includes more than 200 LEGO® elements in a separate storage unit. They have been carefully selected to provide a broad spectrum of ready-made metaphors. The colorful bricks, accessories, and minifigures inspire students and stimulate their creative thinking and imagination.





BuildToExpress **Guide & Activity Pack**

2045111 \$99.95



Contains practical guidance on introducing and working with BuildToExpress. Enables you to hear other teachers' experiences and includes 30 age-segmented, core-curriculumbased Build & Share Challenge Cards as well as plenty of prepared activities for you to

Classroom Solutions



Classroom solutions are available online that accommodate your specific class size. Visit LEGOeducation.us to learn more



BuildToExpress Package -**5 Students**

5003508 \$369.95





· LEGO® Education BuildToExpress Guide & Activity Pack (2045111)

5003510 \$1695.95

30 Students





BuildToExpress Package -

· LEGO® Education BuildToExpress Guide & Activity Pack (2045111)

LEGO® Education Preschool

Stimulate children's curiosity to explore together and learn through play



LEGO® Education **Preschool**

SO MANY WAYS TO LEARN, TOGETHER

NEW:

Build Me "Emotions" See more on page 71.





Preschool

We support teachers to reach all children as they play and learn together.

Let's create engaging and effective playful learning experiences together.



LEGO® Education enables every child to succeed in preschool by stimulating children's curiosity to explore together and learn through play. We offer preschool professionals relevant hands-on solutions, suitable for both free play and play with a more structured learning objective based on the safe LEGO system and developed in collaboration with educational experts. Our solutions engage and enable children to explore the world and discover their own capabilities through effective, playful learning experiences, helping them build fundamental skills for school readiness and for life.



Share your Feelings!

happy surprised silly sad sassy

Build Me "Emotions"

45018 \$69.95







Build Me "Emotions" invites preschoolers to explore emotions and physical characteristics in a fun and engaging way. As children collaborate on a range of character-building experiences, they recognize feelings and identify similarities and differences. Building cards provide support and inspiration so children can continue to build and rebuild characters again and again!

Why buy me?









Unlock children's imaginations.



Creative LEGO® DUPLO® **Brick Set**

45019 \$59.95







Set children's creativity free with this imaginative LEGO® DUPLO® Brick Set. Not only will it inspire big ideas in young minds, it will also encourage self-expression and develop fine motor skills as they build. deconstruct, and build again. Building cards provide support and inspiration so children can enjoy endless building fun!

Why buy me?





Combine Build Me "Emotions" with the Creative LEGO DUPLO Brick Set for even more playful





Fine

motor

Open a world of imagination.

Creative LEGO® Brick Set

45020 \$59.95







Stimulate children's natural curiosity to explore and learn with this versatile brick set. With 1.000 bricks included, the set enables children to create all sorts of lifelike or imaginary figures, objects, and buildings. Children develop fine motor skills while constructing, and the building cards will support and inspire their creativity. Where will their imaginations take them? A handful of LEGO® bricks can turn into absolutely anything!

Why buy me?



Creativity

Self-expression



Doors, Windows & Roof Tiles

9386 \$49.95



This set gives you a huge variety of windows with shutters, doors, and roof tiles. Everything you need to give your constructions the finishing touches.

Wheels Set

9387 \$49.95





Combine this set with standard LEGO® bricks and let children build all sorts of vehicles and add mobility to their constructions. The set includes tires in four different sizes along with plates, axles, and wheel hubs to make sets of wheels and vehicle chassis for up to 12 different vehicles at the same time.





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Our friendly customer service staff will assist you in resolving any concerns. We want you to be completely satisfied with your order.

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Our technical support staff is well trained and knowledgeable. Call if you need help or have challenges with any of our products.

HOURS

We're open Monday through Friday from 8:30 a.m. to 6:30 p.m. Eastern Time. We're closed on major holidays.

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`	Order mount	Ground	Next Day	Second Day	Alaska, Hawaii, Puerto Rico (next day)	Alaska, Hawaii, Puerto Rico (ground)	
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\$10	0-\$499	7%	\$55 + 7%	\$40 + 7%	\$75 + 7%	\$35 + 7%	
\$5(00-\$999	6%	\$75 + 6%	\$55 + 6%	\$90 + 6%	\$45 + 6%	
\$1,00	00-\$2,750	5%	\$90 + 5%	\$75 + 5%	\$125 + 5%	\$65 + 5%	
\$2,7	51-\$3,500	4%	\$125 + 4%	\$90 + 4%	\$140 + 4%	\$90 + 4%	
>	\$3,501	3%	\$125 + 3%	\$90 + 3%	\$175 + 3%	\$110 + 3%	

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