



About LEGO Education

LEGO Education develops learning solutions that cover core curriculum areas of science and technology in a way that makes learning an adventure. Our solutions are designed to actively engage students in scientific inquiry and provide them with technological know-how by giving them first-hand experience with constructions, mechanisms, energy and programming techniques.

The thrill of genuine achievement

LEGO Education solutions are based on hands-on learning techniques that empower students to enter a dynamic learning process. Instead of simply memorizing the achievements of

others, students are presented with challenges that encourage them to use their imagination, try out their problem-solving skills and cooperate with others. This way students experience the thrill of genuine achievement – and develop vital skills for their future success.

For more information about LEGO Education and LEGO® MINDSTORMS® Education visit:

www.LEGO.com/education

www.LEGOeducation.com (USA)

LEGO® MINDSTORMS® Education Base Set includes:

Element item	Quantity in set
Intelligent NXT Brick	1
Rechargeable Battery	1
Interactive Servo Motors	3
Touch Sensors	2
Sound Sensor	1
Light Sensor	1
Ultrasonic Sensor	1

Element item	Quantity in set
USB cable, 100 cm	1
Connector cables, different lengths	7
Lamps	3
Converter cables (connects lamps and old sensors/motor to NXT Brick)	3
Building instructions, element overview etc.	Yes
Storage box incl. top and bottom sorting tray	Yes
Total piece count (all elements in set)	431

One of the most exciting new features of the LEGO MINDSTORMS Education robot is the ability to program directly on the intelligent NXT brick.





Science and Technology powered by



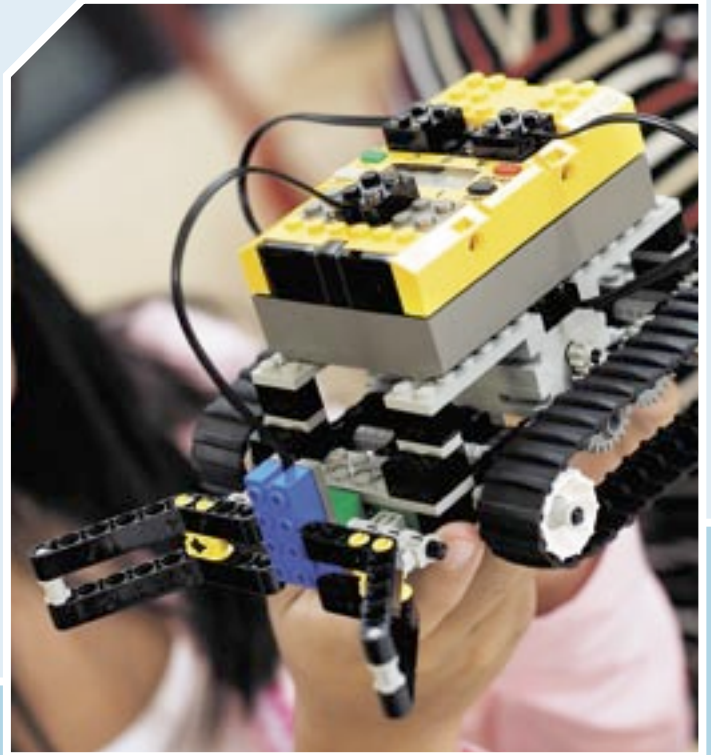
MINDSTORMS
education

A robotic revolution

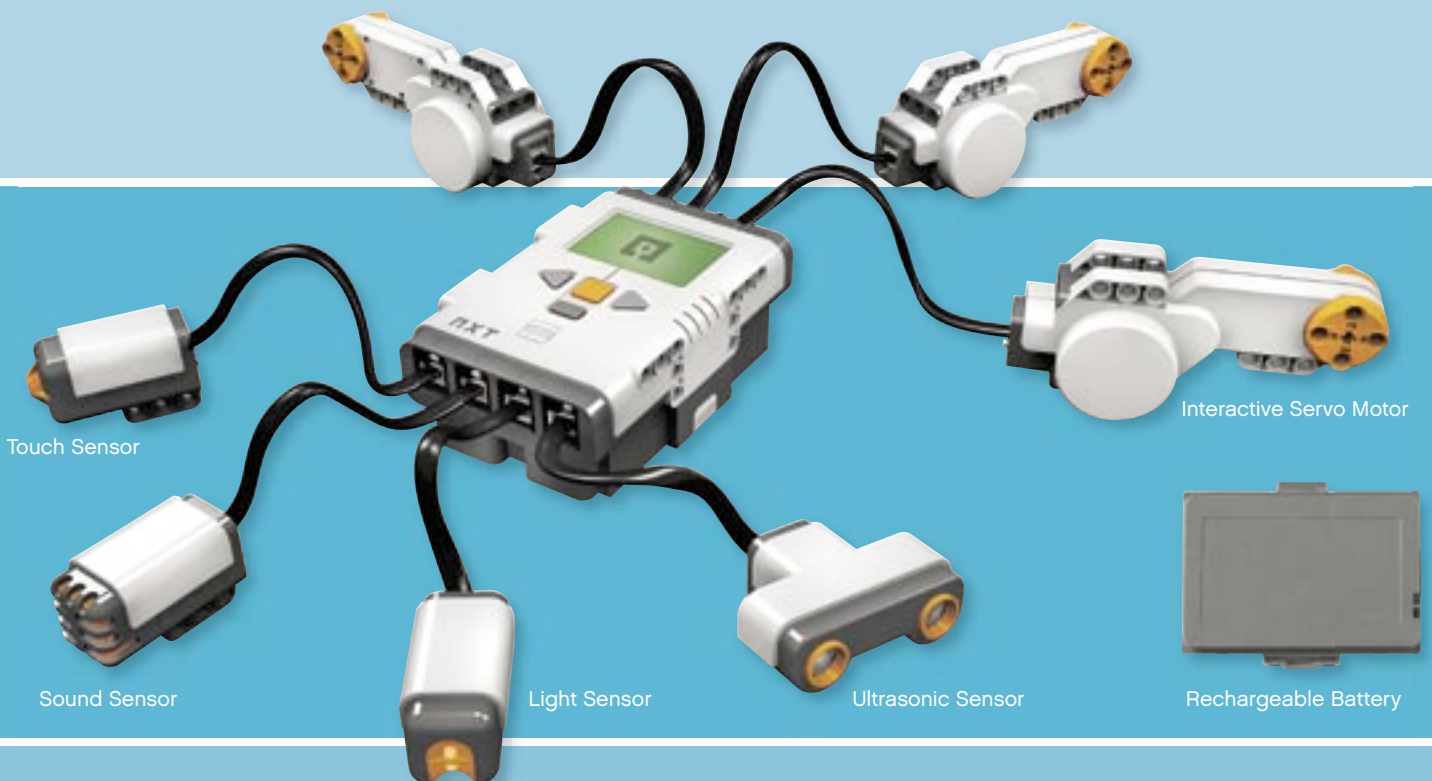
In 1998, the LEGO Group revolutionized the world of popular and educational robotics with a pioneering product concept: LEGO® MINDSTORMS®. The core of the concept was the RCX, an intelligent LEGO brick which enabled users to build and program unique, moving robots.

Since its launch, LEGO MINDSTORMS for Schools, the educational version of the MINDSTORMS concept, has helped thousands of students to grasp science, technology, engineering and math. Combining the power of the LEGO building system with the intuitive ROBOLAB™ programming software and engaging curriculum activities, LEGO MINDSTORMS for Schools offers teachers new ways of teaching traditional curriculum areas.

Today, LEGO MINDSTORMS for Schools is used in more than 25,000 educational institutions worldwide, from elementary to universities.



The LEGO Group has produced more than one million yellow RCX bricks since the MINDSTORMS concept was launched in 1998.



Touch Sensor

Sound Sensor

Light Sensor

Ultrasonic Sensor

Interactive Servo Motor

Rechargeable Battery



Introducing the NXT generation

LEGO MINDSTORMS Education is the next generation in educational robotics, enabling students to discover science, technology, engineering and math in a fun, engaging, hands-on way.

Developing curriculum skills

MINDSTORMS Education helps students aged 8 and up to develop curriculum skills by building and programming smart robots in a natural, step-by-step learning process. With its combination of a LEGO building set, user-friendly software and progressive curriculum activities, MINDSTORMS Education provides students with the right tools to put their knowledge into practice – and challenges them to come up with new ideas themselves. Whilst the LEGO MINDSTORMS home

version engages children to construct in a play environment, MINDSTORMS Education is specifically designed for use by teachers and other adults working with groups of children.

Cutting-edge technology for everyone

With its intelligent NXT brick, expansive sensor capabilities, interactive servo motors, wireless Bluetooth® technology and powerful graphical programming software, the MINDSTORMS concept is easier to use and has more possibilities than ever before!

LEGO® MINDSTORMS® Education key Features

- Powerful 32-bit intelligent NXT brick with programming on the brick
- Ultrasonic and sound sensors + improved light and touch sensors
- Interactive servo motors with built-in rotation sensors
- Bluetooth® technology for wireless communication
- Rechargeable battery system with A/C plug
- Sturdy LEGO Technic building system with over 400 elements
- Intuitive programming software, powered by LabVIEW™ from National Instruments
- For PC (Windows XP) and Mac (OS X)
- Online tech support and a global network of experienced MINDSTORMS dealers

“With LEGO® MINDSTORMS® Education, students experience how to apply their knowledge in a practical way – and they get to see the results of their work immediately. This is incredibly motivating.”

Louise Erratt, coordinator
New Lodge School, Dorking, United Kingdom



Science, Technology, Engineering and Math

LEGO® MINDSTORMS® Education helps to reinforce students' understanding of science, technology, engineering and math in the following ways:

Science

Investigate transfer of energy, force, speed, power relationships, the effect of friction; understand the difference between science and technology.

Technology

Program and control input and output devices; use new wireless communications technology; research and share information via computer network and/or internet; use multimedia for classroom activities.

Engineering

Brainstorm solutions; choose one, then build it, test it and evaluate it.

Math

Gain experience measuring distance, circumference, rotational speed; use coordinate systems; convert between decimals and fractions and between metric and customary units; apply mathematical reasoning in various practical contexts.

Creativity, problem-solving, and team-working

As well as developing curriculum skills, MINDSTORMS Education also stimulates students' creative, problem-solving, and team-working skills. Students are challenged by working with various problems hands-on, solving them by using their own ideas and working together with others.

This not only strengthens their ability to learn, they also become better at co-operating, communicating and thinking independently.

“LEGO® MINDSTORMS® Education fits all ages and all learning types. By working with MINDSTORMS Education, students can experience that they actually have a greater talent for science and engineering than they expect.”

Corey Schmidek, science, engineering and math teacher
University of Hartford Magnet School, Hartford, Connecticut, USA



Build. Program. Learn!

MINDSTORMS Education combines the latest programming technology with a sturdy LEGO Technic building set. The set offers a versatile collection of elements for easy, stable building, excellent functionality and improved movement capabilities. The assortment is especially created for an educational setting and curriculum-relevant activities.

Low threshold, high ceiling software

Based on the industry-leading LabVIEW™, the new MINDSTORMS Education software offers a user-friendly, icon-based interface that enables “drag and drop” programming. The “low threshold, high ceiling” nature of the software enables programming at all levels, from beginner to advanced. This makes MINDSTORMS Education relevant for eight year olds as well as university students.

The programming software includes an integrated Robot Educator that provides interactive, step-by-step guidance and can be used as simple teaching tutorials. Furthermore, the curriculum activities, developed by Carnegie Mellon University's Robotics Academy, provide a 30-hour introduction to Robotics Engineering, including video and digital support materials and three 15-hour research projects for students to carry out.

Efficient classroom management

A MINDSTORMS Education set is designed for groups of 2-3 students. For efficient classroom management, the sets come in sturdy storage boxes with sorting trays, an illustrated element overview, and an assortment of LEGO elements optimized for curriculum relevant activities.



A complete learning solution

- Hands-on solution: students learn science, technology, engineering and math in a practical, engaging way
- Progressive learning platform: from elementary school to university level
- Cutting-edge technology: intelligent NXT brick, smart sensors, Bluetooth® and more
- Easy to use: user-friendly programming software with step-by-step guides
- Tested quality: based on sturdy LEGO Technic building system
- Curriculum-relevant: comprehensive curriculum activities developed by Carnegie Mellon University's Robotics Academy
- Easy classroom management, with rechargeable battery and handy storage solution



Students can program the MINDSTORMS Education robot to ‘see’ using the ultrasonic sensor, to react to sounds using the sound sensor, to avoid obstacles using the touch sensor, and, for example, to find a red ball and slap it with the hockey stick using the light sensor and interactive servo motors.



The LEGO MINDSTORMS Education Base Set includes 431 elements. You can also purchase additional motors, sensors and NXT bricks, as well as an add-on resource set of 672 LEGO elements.

Developed with expert partners

LEGO® MINDSTORMS® Education has been developed in co-operation with renowned partners, each of them experts in their field:



National Instruments

The powerful new MINDSTORMS Education software is based on NI LabVIEW™, the industry-leading graphical programming software used by scientists and engineers worldwide. NI is a technology pioneer and leader in virtual instrumentation – a revolutionary design and development approach that engineers and scientists use to create automated measurement, control, and test systems. NI, an international sponsor of FIRST LEGO League, is committed to enhancing science, technology, engineering and math education worldwide by providing educators and students with software and hardware that connect curriculum and concepts with the real world.

www.ni.com



Carnegie Mellon®

Carnegie Mellon University's Robotics Academy

Carnegie Mellon University's Robotics Academy has many years of experience in developing curriculum activities for teaching robotics in schools. Carnegie Mellon University's Robotics Academy has developed the curriculum activities for MINDSTORMS Education.

www.education.rec.ri.cmu.edu



Tufts University

Tufts University's Center for Engineering Educational Outreach, creator of the ROBOLAB™ software for MINDSTORMS for Schools, continues to support LEGO Education and the users of the new and the former MINDSTORMS platform.

www.ceeo.tufts.edu



A worldwide robotic movement

Schools and after-school clubs all over the world have recognized robotics as a popular way to get youngsters interested in science and technology. Robotics offers kids a challenge – and is the perfect activity for competing with others.

Robotic competitions

Every year, thousands of youngsters gather to take part in huge robotics competitions around the world. Contest organizers publish a robotics challenge which must be completed within a given timeframe. Teams of young robot enthusiasts then compete in designing and programming a robot to complete a series of tasks. The competitions usually begin with regional events and end in an international grand final. In 2005, the participant count reached more than 100,000 children and an estimated 10,700 teams worldwide.



Support and services

- LEGO Education has a network of educational specialists selling LEGO MINDSTORMS Education around the world. These partners offer first-class support and services for school teachers on their home markets.
- Visit www.LEGO.com/education and see under Where to Buy for a list of countries supplying MINDSTORMS Education.
- Online support and information is also available at www.LEGO.com/education/MINDSTORMS

Competition organizers

Competitions are organized by a variety of non-profit organizations with LEGO MINDSTORMS Education as a key player. One of the forerunners is FLL, FIRST LEGO League, which was established by FIRST* and the LEGO Group in 1998. In just seven years, FLL grew from 200 to more than 6,000 participant teams. The World Robot Olympiad had more than 3,700 teams competing in 2005, just one year after it was launched.

For more information on robotics competitions visit:
www.FIRSTLEGOLeague.org
www.wroboto.org



*FIRST: For Inspiration and Recognition of Science and Technology

