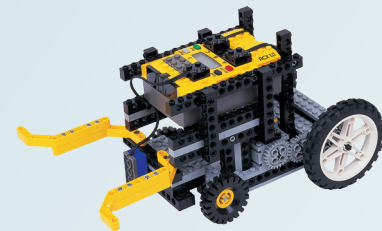


“Children learn best when they are actively engaged in constructing something that has a personal meaning to them – be it a poem, a robot, a sandcastle, or a computer program.”

Seymour Papert
Professor of Learning Research, MIT

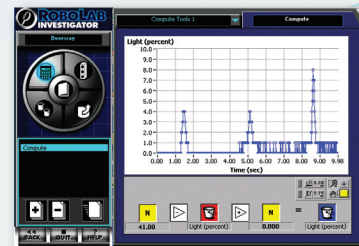


1986

January

LEGO MINDSTORMS Robotics Invention System (RIS) First product of the new brand launched in US and UK. This is the result of close cooperation with the Media Laboratory at MIT from previous years.

Breakthrough technology
The RCX, the revolutionary LEGO microcomputer, is the heart of the MINDSTORMS System. The RCX code runs on the most popular PC platform of the time – Microsoft Windows – for the consumer market.



Two different software platforms

ROBOLAB™ – LEGO MINDSTORMS sets for schools – is based on software from National Instruments LabVIEW™ developed by Professor Chris Rogers of Tufts University. LEGO Education needs a version of the software running on Apple Macintosh, a more popular platform for the education market.



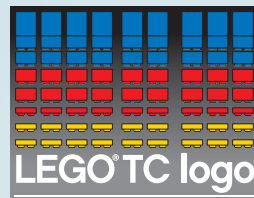
Concept introduction

At the Royal College of Art, London, a global multimedia event is launched, introducing a new generation of LEGO products.

1986

The first computer-controlled LEGO products

Collaboration between LEGO Education and MIT produces LEGO TC LOGO. Now children are able to control the models they build from LEGO elements. LEGO Technic Control products are based upon an interface box through which students send signals to LEGO motors and receive information from sensors. To program their creations, they use a special version of the LOGO computer language.



A working prototype of a programmable brick

A product development department – LEGO Futura Boston Branch – is set up to cultivate close relations and interaction with MIT Media Lab. The following year, the team comes up with the first working prototype of a programmable brick. But, the market is not ready for programmable bricks. Penetration of PCs in households is low and component costs high.

October 1984

Kjeld Kirk Kristiansen watches on TV as children use Professor Seymour Papert's LOGO programming language to control the behavior of robot turtles. Kjeld asks his management to contact Seymour Papert. The LEGO® Group visits MIT Media Lab in Boston.

1984



“The philosophy behind LEGO MINDSTORMS is to allow children not only to understand technology but also to become creative masters of it. This happens when they design, construct, and program their own intelligent inventions.”

Kjeld Kirk Kristiansen
President & CEO of the LEGO Group



1989

After several years' work linking the LOGO language to LEGO bricks, Seymour Papert is appointed LEGO Professor of Learning Research in 1989, in an endowed LEGO Chair of Learning Research at Massachusetts Institute of Technology.

1991

February
LEGO MINDSTORMS® becomes a trademark. This is the first LEGO product name related to the consumer experience.

PC popularity grows worldwide

As PCs become more affordable, the home PC and the Internet reach out across the world. More than eight million children in the US are daily users of a personal computer and the Internet. The time has come to develop and commercialize the programmable brick pioneered at MIT Media Lab.

November
Concept documentation by experts

Scientific rubberstamping of the LEGO MINDSTORMS learning concept – without showing the product. Documentation is circulated to reputable and independent researchers in a number of relevant fields.

LEGO MINDSTORMS Learning Center
The first LEGO MINDSTORMS Learning Center opens at the Museum of Science and Industry in Chicago. Children ages eight and up are guided through a process of building and controlling robotic inventions.



1999

FIRST® LEGO League launches
FLL's first official year with a series of tournaments in nine US states. The first challenge is "First Contact."



FIRST and LEGO partnership
A partnership between the LEGO Group and FIRST (For Inspiration and Recognition of Science and Technology) is born. The goal is to inspire and stimulate young people's interest in science and technology through engaging, hands-on, and minds-on experiences.



Overwhelming success – and not just for children
LEGO MINDSTORMS attracts immense coverage in the global media. It is estimated that more than a billion people all over the world have read or seen a description of the product. No fewer than 80,000 sets are sold from August to December 1998. The first toy version of the product is sold out before Christmas. And to much surprise, 52% of all robotics sets are registered to adults.



LEGO MINDSTORMS Centers open in the LEGOLAND Parks in Denmark and the UK.

2006

The NXT generation is here!

The LEGO Company introduces its next generation of MINDSTORMS: NXT. It boasts greater user friendliness and:

- Expanded sensor capabilities.
- Wireless Bluetooth® technology.
- New and improved programming software.
- Progressive curriculum activities.
- Challenges to allow students to come up with new ideas themselves.



The software that comes with NXT is powered by National Instruments LabVIEW, a programming software that is used in industry. This program is very visual, having many icons for different commands that the robot can perform.

At the launch of NXT, Carnegie Mellon creates 18 weeks of curriculum for schools, *Robotics Engineering I and II*. Science, technology, engineering, and math (STEM) are addressed in the curriculum and teach students programming basics.

2007

HiTechnic introduces new sensors that are compatible with NXT. These sensors increase robot functionality and learning opportunities for students.



2009

Carnegie Mellon creates three new curriculum and activity packages for use with LEGO MINDSTORMS Education:

- *Science & Data Logging* – delves further into the power of the brick in science classes; one focus is the temperature sensor, and it investigates the concepts of heat, light, sound, and motion
- *NXT Video Trainer* – a self-guided learning tool that students use at their own pace to learn robotics
- *Terraformers Camp-on-a-Disk* – curriculum and activities for a one-week STEM-based robotics camp or a 9-12 week after-school program



2011

LEGO Education introduces the *Green City Challenge Activity Pack*. This pack gives students the opportunity to solve real-world problems dealing with energy. Students use LEGO MINDSTORMS NXT to build a power plant, wind turbine, and dam.



2013

The third generation of MINDSTORMS is introduced: EV3. The new platform includes a more powerful intelligent brick, new motors and sensors, and improved icon-based programming. The software also includes a newly updated Robot Educator multimedia tutorials that define the education version of the software and help students master the basics of building and programming. The new *Design Engineering Projects* curriculum provides 18 weeks of STEM lessons for middle school classrooms.



education

