

Lego Robot Challenge



Educator's Guide

Discovery Area for Grades 5 – 12
Group size: 15-24 students
Adult chaperones required based on group size.
2 hours

**Design in the NEW
Burns & McDonnell
Engineering!**

DAY OF YOUR VISIT TEACHERS: Organize group into teams of 4 students maximum. Some team members will specialize in computer programming, others in building robot models.
Nametags should include: Student Name, School Name, Programmer OR Builder

Engineering skills in motion!

Given a state of emergency, students work as design teams to build a robot to perform a rescue mission. Student engineers rely on creativity, problem solving skills and teamwork to reach their goals.

In Lego Robot Challenge, you can:

- *Design* and *build* working robots from Lego Mindstorms.
- *Program* robots to carry out specific instructions.
- *Test* the robots and *modify* the programs to accomplish tasks.

Educator's Workshop box

Pre/Post-Visit Activities:

- *Write* a set of instructions for a robot to navigate through your school. How many feet down the hall? Where and at what degree to turn? How fast?
- *Research* an inventor or an invention. What problem was the inventor trying to solve, or how does the invention improve everyday life?
- *Discuss* how robots could improve your school.
- *Build* simple paper airplanes and experiment with changes that increase distance, time in flight, etc. Log your changes and effects.

Are you ready for **Advanced Lego Derby**?

Students having completed Lego Robot Challenge work on advanced building and programming techniques, and compete in a series of team competitions.

National Science Standards

Science Inquiry:

Abilities necessary to do inquiry
Understanding about inquiry

Physical Science:

Motion and forces
Transfer of energy

Science and Technology:

Abilities of technological design
Understanding about science and technology

Personal & Social Perspectives:

Science and technology in local challenges

History and Nature of Science:

Science as human endeavor

Students will also meet many required curriculum standards during their Science City visit.

Visit the Curriculum Guides at www.unionstation.org/edinfo.html



For questions about field trips or
Science City Discovery Area programs
Call 816-460-2020