

# Robots 101



**Educator's Guide**

Discovery Area for Grades 1 – 4  
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.

## Engineering skills in motion!

Students work as design teams to build a robot to cross a challenge course. Student engineers rely on creativity, problem solving skills and teamwork to reach their goals.

## In Lego Robot Challenge, you can:

- *Modify and Design* working robots from Lego Mindstorms.
- *Program* robots to carry out specific instructions.
- *Test* the robots and *modify* the programs and the robots 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* what makes a robot. What would you need to make a robot that would be able to clean up your room?
- *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.

### **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](http://www.unionstation.org/edinfo.html)*



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