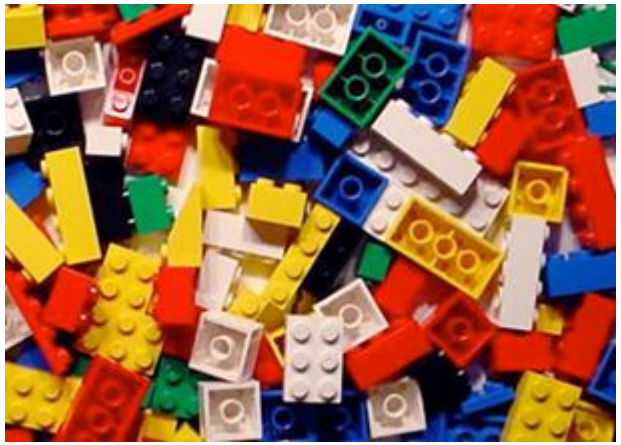
# WHAT IS LEGO LEAGUE ALL ABOUT?

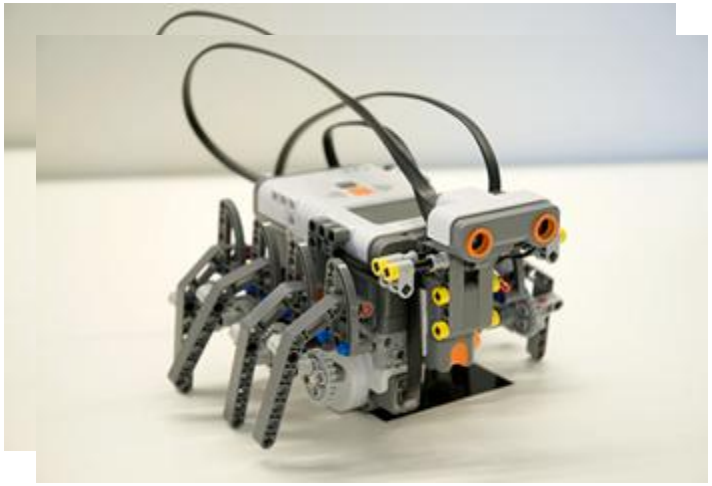
- Building with LEGOs?



… only a little bit

# WHAT IS LEGO LEAGUE ALL ABOUT?

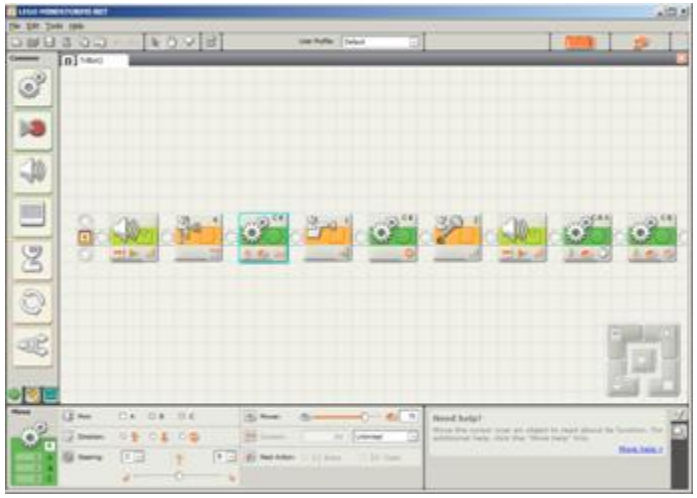
- Building robots?



… definitely

# WHAT IS LEGO LEAGUE ALL ABOUT?

- Writing computer programs?



… definitely

# WHAT IS LEGO LEAGUE ALL ABOUT?

- Learning how to work as a team?

… totally!

# WHAT IS LEGO LEAGUE ALL ABOUT?

- Learning how to solve hard problems with limited time and resources?

… yep!

# 2011 CHALLENGE


Can *FIRST*® LEGO® League teams improve the quality of food by finding ways to prevent food contamination?

# 2012 CHALLENGE


Can *FIRST*® LEGO® League teams improve the quality of life for seniors by helping them continue to be independent, engaged and connected in their communities?

- A team of 6 – 10 kids, ages 9 -14

- Build and program a Robot with an NXT LEGO Mindstorm Robot kit and 1000+ parts, including motors, sensors, etc to push, pull or lift items on the various missions. The team will have 2 ½ minutes to complete as many missions as they can -- with only two team members allowed at the table at a time.

- Research the team's Project using the internet, reading books and interviewing people in related fields. The team will have 5 minutes to present their results in front of a team of judges. The team decides on the format of their presentation.

- The coaches' jobs are to help them work together as a team, teach them robot building and programming skills, keeping the team on task, help them find resources for the Project, etc.

# THE TOURNAMENT

- Four Major Components
  - Research Presentation
  - Technical Interview
  - Core Values and Teamwork Interview
  - Robot Performance

# WHAT ARE OUR GOALS?

**(Besides having fun, of course!)**

# Core Values

| |
|---|
| •Discovery -- IT'S NOT JUST ABOUT WINNING AWARDS |
| • Team Spirit – HAVE FUN |
| •Integration – HOW DO WE USE FLL SKILLS & VALUES IN REAL LIFE? |
| •Effectiveness – PROBLEM SOLVING & DECISION MAKING |
| •Efficiency – TIME MANAGEMENT AND ALLOCATION OF ROLES |
| •KIDS DO THE WORK – PARENTS PROVIDE GUIDANCE |
| •Inclusion – ONE FOR ALL AND ALL FOR ONE |
| •Respect – ENCOURAGE DIFFERENT IDEAS |
| •Coopertition – FRIENDLY COMPETITION & COOPERATION |
| |

# Project – 5 minute presentation

- Problem Identification – WHAT ARE WE RESEARCHING?
- Sources of Info – NOT JUST THE INTERNET
- Problem Analysis -- HOW WELL DID WE RESEARCH?
- Review Existing Solutions – DO WE KNOW WHAT'S ALREADY BEING DONE AND DO WE HAVE AN ORIGINAL IDEA?
- Team Solution – DO WE KNOW OUR IDEA?
- Innovation – DOES THIS MAKE LIFE BETTER?
- Implementation – IS THIS AN EASY & CHEAP SOLUTION?
- Presentation Effectiveness – SPEAK UP & SPEAK CLEARLY
- Creativity – USE YOUR IMAGINATION; BE DIFFERENT
- Sharing – TELL PEOPLE ABOUT OUR IDEA WHO CAN USE IT

# Robot Design – 2 ½ minutes

- Durability -- LITTLE OR NO REPAIRS NECESSARY
- Mechanical Efficiency – GOOD USE OF TIME & PARTS
- Mechanization – DOES THE ROBOT WORK WELL?
- Programming Quality – APPROPRIATE AND CONSISTENT RESULTS
- Programming Efficiency – GET MISSION DONE AS EASILY AS POSSIBLE
- Automation/Navigation – HOW WELL DOES THE MECHANICAL/SENSOR FEEDBACK WORK?
- Design Process – TEST - IMPROVE – TEST AGAIN
- Mission Strategy – DO WE UNDERSTAND THE MISSION?
- Innovation – THE ABILITY TO COME UP WITH NEW DESIGNS

# How Do Other Schools Implement?

Robin Denil, Zion School District :

- Started having 10 teams in school 10 or so years ago
- Had received grant money to get started. The first few years was run fully on grant money or donation which of course took a lot of work and time.
- The district then allotted each school enrichment funds. Used some of those funds to have an after school program.
- Now the program gets funding from the central office with one team in each of our 6 buildings.

# How Do Other Schools Implement?

Donald S. Angelaccio, Ed.D., Principal, Lincoln Middle School, Mt Prospect

- It has been a tremendous opportunity for our students and a wonderful experience to lead.
- Funding is a blend of district money, student fees and monies raised by the team.
- Pay $253 stipend to a faculty member to coordinate an exploratory and introductory club for ten sessions. From this group of students, they select students to participate in the competition teams.
- Parent volunteers provide all coaching and coordination of services.
- School principal acts as the school liaison and coordinates the program.
- The District collects a small fee from students that offsets the costs of running all programs.
- The competition teams seek donations from businesses
- About $500 is earned from running concession stand at their tournament
- Any other costs associated with the program are paid out of student activity and board accounts

# How Much Does it Cost?

- Robot -- $420 (each team needs to have their own, but it can be re-used year after year)
- Team Registration -- $225 per team per year
- Field Kit -- $65 per year (it can be used by multiple teams)
- Illinois Tournament Registration -- $65 per team per year
- Possible teacher stipend -- $200 per year per teacher
- Approximate student cost -- $200 per student for the first season and $100 for each subsequent year if team stays together

# Expectations for Millburn Teams

- No cash outlay from the District
- All expenses to be paid by parents and other donors as well as fund raisers
- Space in gym or cafeteria for practices (September – mid December)
- Storage space for robots and tables
- Perhaps a teacher or two and computers to help with research
- Parents will coach each team of 5 – 7 girls and/or boys
- We already have enough interest to form 3 or 4 teams

# Pros to Making This an After School Program

- The ownership of the robots stays with the school.  There will be no arguments regarding who keeps the robot if the team splits.
- It is a great program which most schools in our area do not have.
- One location provides opportunity for teams to help one another and share equipment.


**Click the link below (or copy and paste it into a web browser) to see a short version of our team at the 2011 Food Factor Tournament.**

http://youtu.be/pQM80h_9IFE