

FUNDamentals of Engineering with LEGO 1

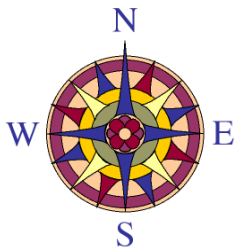
Dates: September 11- October 23, 2013 (7 weeks)

Instructor: PlayWell Teknologies

Objective: Students will use LEGO to design and build cars, towers, conveyors, bridges, ramps, crawlers, and other constructions in this 90-minute class. Explore concepts in physics, mechanical engineering, structural engineering, and architecture while playing with your favorite creations. Students will be exposed to concepts and vocabulary of engineering, architecture, and physics. Each class session opens with 10-minutes of free build from tubs of LEGO components followed by a short discussion and demonstration of the day's project and concepts. Students build individually or in groups. Instructors will provide individual assistance, facilitate challenges, performance testing, competitions, and modifications to projects. This hands-on class is suitable for LEGO novices or experienced "enthusiasts." Projects will not be repeated from 4th quarter 2013.

Preliminary Course Outline

<u>Week</u>	<u>Theme/Topic</u>
1.	Gear Car <ul style="list-style-type: none">LEGO® Vocabulary, Intro to Gears, Gear Transmission, Gear Meshing, Gear Ratios
2.	Tower (FUN) <ul style="list-style-type: none">LEGO® Vocabulary, Overlapping, Modular Construction
3.	Conveyor Belts <ul style="list-style-type: none">LEGO® Vocabulary, Work Efficiency, Transmissions



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4. Corbelled-Arch Bridge/Ramps
 - LEGO® Vocabulary, Architectural Corbels, Overlapping, Load Distribution, Incline Plane
5. Helicopter
 - LEGO® Vocabulary, Alternate Motor Mounting, Intro to Crown Gears, Helicopter Flight Concepts
6. Framed Building
 - Overlapping, Load Distribution, Construction Sequencing, Structural Terminology, Scale Modeling
7. Worm Gear Crawler
 - Intro to Worm Gear, Worm Gear Transmission, Chassis Design, Eccentric Motion, Friction

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