

# Compass Homeschool Enrichment LLC

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## Pre- Engineering with LEGO 1

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

**Instructor:** PlayWell Teknologies

**Objective:** Students will use LEGO to design and build stunts, houses, airplanes, bridges, merry-go-round, boats, windmills 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.

### Preliminary Course Outline

<u>Week</u>	<u>Theme/Topic</u>
1.	Pullback Stunt Cars/Ramps <ul style="list-style-type: none"><li>LEGO® Vocabulary, Potential/Kinetic Energy, Incline Plane, Simple Machines</li></ul>
2.	House/City <ul style="list-style-type: none"><li>LEGO® Vocabulary, Overlapping, City Planning</li></ul>
3.	Airplanes/Airports <ul style="list-style-type: none"><li>LEGO® Vocabulary, Forces of Lift/Thrust, Landing Gear, Wings, Flight, Structures</li></ul>

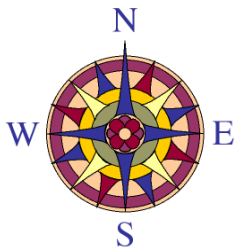
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4. Simple Bridge
  - LEGO® Vocabulary, Overlapping, Bridge Supports/Components
5. Merry-Go-Round
  - LEGO® Vocabulary, Alternate Motor Mounting, Transmission: Direct Drive, Balance, Centrifigual Force
6. Boats and Docks
  - Motors, Nautical Terminology
7. Farm/Windmill
  - Belt & Pulley Transmission, Energy Sources

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