Logical Learning Lab

www.LogicalLearningLab.com

Featuring LEGO® and K'NEX®

Math. Science. Technology. Hands-On Courses!

Mechanical Principles ..... Ages 8 - 88

Introduces 1st, 2nd, & 3rd class levers, fulcrums, wheels & axles, steering, movement, rotation & speed, drivers, followers, idlers, gearing up & down, pulleys, gear & pulley ratios, open & cross belting

Exploring Mechanisms ..... Ages 8 - 88

Build fundamental mechanisms that use mathematical & experimental concepts to highlight physical science & the process for calculating mechanical advantage

Engineering Connections ..... Ages 8 - 88

Think critically & logically to make connections between evidence and explanations. Use physical models, algebraic, graphical & numerical representations to relate linear functions, formulas, averages, graphs, and proportional reasoning

Mind Masters Mechanisms ..... Ages 8 - 88

Build fully functional mechanisms that highlight mechanical concepts of machine operation and the math of mechanical advantage

Engineering Machines ..... Ages 8 - 88

Explore the concept & use of "end effectors" in robotics to create practical machines to grip, grab, scoop, & pull while learning about automation & the architectural maxim "Form Follows Function"

Design, Application, & Problem-solving .... Ages 8 - 88

Motion, forces, transfer of energy, and principles of simple machines are studied through the application of key mechanical concepts. Students identify a problem; then design, implement, and evaluate solutions

Simple & Motorized Machines I & II
(*prerequisite -- Mechanical Principles*) ..... Ages 8 - 88

Promotes the awareness of technology for deeper understanding of mechanical principles adding structures & forces, linkages, flywheels, compound gearing, & ratios. Demonstrates design in the technology of manufacturing, transportation, construction, and bio-technology

Robotics Labs ..... *(available to those who understand the concepts in courses listed above)*

Integrate math, science, and technology to design, build, and program autonomous robots. Robotics builds mathematical competency and technological literacy through cross-discipline connections. These disciplines combine mechanical advantage, design engineering, basic electronics, programming, digital control, applied algebra & geometry, systems, equilibrium, conversion of units, ratios & proportions, decimals, fractions, constancy, change, and measurement

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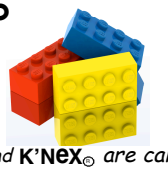

LLL looks for new program locations where there is sufficient interest and a place to hold classes. Contact us with ideas.

Familiar blocks from LEGO® and K'NEX® are called "bricks."

Language Arts Brick Labs

- ***Emphasizing the writing process, vocabulary, research, and analytical thinking***
- ***Research shows students learn better with Hands-On curriculum and activities***

Essential Communication ..... Ages 8 - 88

Introduces communication terminology while engaging students in public speaking, descriptive, auditory & inquiry-based communication, forensics, mime, tactile sensation, verbal dependence, misinterpretation, & free association

Creative Communication ..... Ages 8 - 88

Write, build, & learn with multiple forms of communication. Decipher heiroglyphs, phonograms, ideograms. Explore American sign language, Braille, representation/replicas in modeling, duplication, and even the Semaphore codes used in the Battle of Waterloo

Core Construction ..... Ages 8 - 88

Language arts is learned with walls, dams, arches, buttresses, pyramids, castles, and pagodas constructed by the students

Architectural Design ..... Ages 8 - 88

Language arts will be demonstrated & practiced with post & lintel bridges, cantilevers, floor plans, urban planning, and Greek architecture

Meaningful Math ..... (using language arts!) ..... Ages 8 - 88

This language arts course will use cubes, circles, circumferences, Pi, trapezoids, line intersections, tessellations, and estimation to teach language arts

Measurement Matters ..... Ages 8 - 88

Language arts course covering measurement, bar graphs, line plots, frequency, tables, mean, median, mode, and probability

Speaking of Physics ..... Ages 8 - 88

Language arts course researching gravity, force, mass, volume, density, and the coefficient of friction

Want classes near you?

Fill out the quick form on the web. If we get enough interest from your area, we may be able to make it happen.

The form's called **Course Interest Survey,** a special tab on our web site.

We bring the classes where we're invited *(where the right conditions are in place).*

Your group? Your school? Your co-op? Adult ed? Even senior centers? Fill out the **"Course Interest Survey"**

ALL COURSES ARE COMPLETED IN 7 HOURS. CERTIFICATES OF COMPLETION ARE ISSUED.

TUITION FOR EACH COURSE POSTED ON OUR WEB SITE

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