



What are the curriculum highlights?

The process of children actively building, exploring, investigating, enquiring and communicating together benefits their development in innumerable ways over and above the more traditional learning parameters. See the curriculum grid for more details. Here is an overview:

Design and technology

Making solutions to match real needs; choosing appropriate materials and processes; designing, making, testing and modifying; exploring systems and subsystems, and safety and control systems; using 2-dimensional instructions; creating 3-dimensional models; working cooperatively in a team, and more.

Science

Investigating, collecting, storing and transferring energy; force, speed, and the effect of friction; simple machines, calibrating and reading scales, scientific fair testing, purposeful enquiry, predicting and measuring, collating data, drawing conclusions, and more.

Mathematics

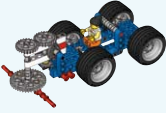


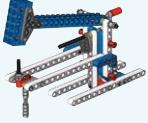
Maths in the service of science and technology; measuring distance, time, speed (velocity), and weight (mass); notions of accuracy in calibrating and reading scales; tabulating and interpreting data; informally calculating ratios, and more.

Curriculum grid

Grab a pencil and note pad and sit just for a few minutes watching and listening as a pair of your 'Buddy Builders' collaborate on any of the LEGO® activities. Note down key knowledge, skills and attitudinal outcomes as they become apparent to you.

We are sure the many valuable academic, creative, problem-solving and social aspects of the activities will speak for themselves.

The major skill and knowledge outcomes most schools require for lesson planning are listed in the Curriculum grid on the following pages.

	Sweeper	Fishing Rod	Freewheeling	The Hammer
				
FORCES & MOTION				
<p>Design and technology curriculum:</p> <p>Identifying a need and developing ideas. Working as individuals and in teams. Use materials and components as well as modular construction kits to design and make high-quality working prototypes. Use appropriate testing to identify improvements. Assembling and disassembling a range of familiar products and testing how well they meet the intended purpose.</p>	<ul style="list-style-type: none"> Investigating pulley drives for safety and gears for speed Controlling friction and slip Designing and making: the most efficient push along cleaning machine 	<ul style="list-style-type: none"> Investigating the ratchet and pawl as a safety system Investigating automatic mechanical control of motion Designing and making: a fishing game with easy-to-understand rules and a fair scoring system 	<ul style="list-style-type: none"> Investigating the effects of different wheel sizes and tyre material on vehicle efficiency (working characteristics of materials) Wheels and axles to move loads Designing and making: a downhill runner vehicle that rolls as far as possible 	<ul style="list-style-type: none"> Investigating mechanical control and timing of complex actions by cams and levers Investigating how industries test quality of components Designing and making: a mechanical toy with as many actions as possible
<p>Science curriculum:</p> <p>Scientific enquiry including predicting and measuring the effect of variables on the performance of simple machines. Careful observation, measurement and recording.</p>	<ul style="list-style-type: none"> Balanced and unbalanced forces Friction 	<ul style="list-style-type: none"> Reducing speed and increasing force using string and pulleys (block and tackle) 	<ul style="list-style-type: none"> Inclined planes Friction 	<ul style="list-style-type: none"> Inclined planes Friction
<p>Mathematics' curriculum:</p> <p>Using and applying mathematical ideas. Calculations using all number operations. Calculate and use notions of area, averages and ratios. Measure time, distance and (force) weight to a suitable degree of accuracy. Use word equations; solve simple equations to calculate speed. Identify patterns in results; collect and handle data in tables. Communicate mathematical ideas in speech, and in written and graphic forms.</p>	<ul style="list-style-type: none"> Measuring distance Ratios Notions of efficiency as a percent or fraction 	<ul style="list-style-type: none"> Measuring distance Estimating and comparing force, speed Designing and evaluating fair scoring systems and fair rules for games Ratios and fractions 	<ul style="list-style-type: none"> Reading and calibrating scales Measuring distance, mass Working with negative numbers (at bottom of hill, rolling the car backwards to zero) Exploring limits to accuracy Calculating averages 	<ul style="list-style-type: none"> Measuring number of 'impacts' per unit time Estimating and comparing LEGO® element grip forces Expressing relative grip forces using mathematical terms