



What are the curriculum highlights?

The process of children actively building, exploring, investigating, enquiring and communicating develops a wide range of skills, knowledge and understanding. For more details see the curriculum grid on the next page. Here is an overview:

Science

Investigating energy, force, speed, the effect of friction, reading scales, fair testing, predicting and measuring, collecting data, and describing outcomes.

Design and Technology

Investigating gears, wheels, axles, levers and pulleys; matching solutions to needs, choosing appropriate materials; designing, making and testing; using instructions in 2 dimensions to create 3-dimensional models; working cooperatively in a team; and evaluating.

Mathematics

Both non-standard and standard measurement of distance, time, weight (mass) and reading scales. Counting, calculating, shape and problem-solving.

	Key Science Curriculum Scientific enquiry including investigating the effect of variables on the performance of simple machines, predicting and estimating the performance of simple machines. Careful observation, describing and presenting results, plus:	Key D&T Curriculum Working with different mechanical and structural components to develop specific knowledge and understanding. Evaluating products against technical criteria; developing design skills, plus:
1. Pinwheel	<ul style="list-style-type: none"> Investigating wind power Investigating area 	<ul style="list-style-type: none"> Properties of materials Designing
2. Spinning Top	<ul style="list-style-type: none"> Investigating gearing Investigating rotation 	<ul style="list-style-type: none"> Designing mechanical toys Structures and stability
3. Seesaw	<ul style="list-style-type: none"> Investigating balance Investigating weight 	<ul style="list-style-type: none"> Levers Designing mechanical toys
4. Raft	<ul style="list-style-type: none"> Investigating wind power Investigating area 	<ul style="list-style-type: none"> Properties of materials
5. Car Launcher	<ul style="list-style-type: none"> Investigating pushes Investigating friction Investigating inclined plane 	<ul style="list-style-type: none"> Mechanisms: wheels and axles
6. Ice Hockey Player	<ul style="list-style-type: none"> Investigating gearing Investigating forces 	<ul style="list-style-type: none"> Levers Designing mechanical toys
7. Measuring Car	<ul style="list-style-type: none"> Reading scales to measure distance Investigating forces 	<ul style="list-style-type: none"> Mechanisms: worm gear Mechanisms: wheels and axles
8. Sam's New Dog	<ul style="list-style-type: none"> Investigating pulley drive and gearing 	<ul style="list-style-type: none"> Designing mechanical toys Mechanisms: pulley wheels



Links to QCA Schemes of work

There are significant links between the activities and the QCA schemes of work.

The activities are particularly appropriate for children aged 5-7, i.e. QCA Units 1 and 2.

The QCA Science **Unit 1C: Sorting and using materials:** children learn about the characteristics and uses of a range of common materials.

The QCA Science **Unit 1E: Pushes and pulls:** children learn about how movement can be described in many ways.

The QCA Science **Unit 2D: Grouping and changing materials:** children learn to distinguish an object from the material from which it is made.

The QCA Science **Unit 2E: Forces and Movement:** extends children's understanding of how push and pull affect the movement and shape of objects.

The QCA Design and Technology **Unit 1A: Moving pictures:** children develop an understanding of simple mechanisms.

The QCA Design and Technology **Unit 1B: Playgrounds:** children learn about framework structures and how to make them stable and able to support loads.

The QCA Design and Technology **Unit 2A: Vehicles:** children learn about wheels and axles and how to use these when making wheeled vehicles for a specific purpose.

The QCA Design and Technology **Unit 2C: Winding up:** children are introduced to the concept of winding mechanisms.

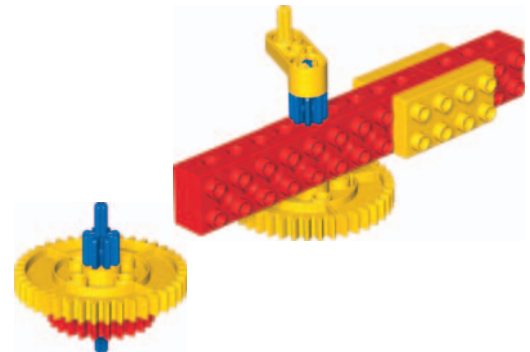
1. Pinwheel

You can use this activity to meet some of the requirements of QCA Science **Unit 1E: Pushes and pulls**; QCA Science **Unit 2E: Forces and movement**; and QCA Design and Technology **Unit 2A: Vehicles**.



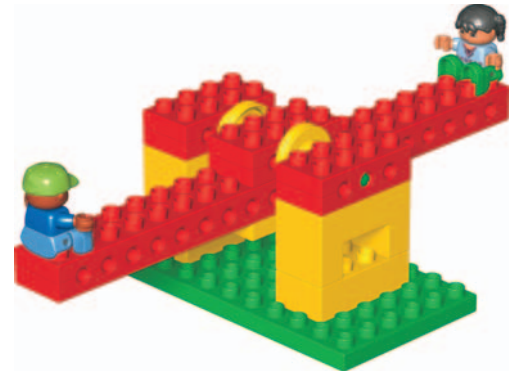
2. Spinning Top

You can use this activity to meet some of the requirements of QCA Science **Unit 1E: Pushes and pulls**; QCA Science **Unit 2E: Forces and movement**; QCA Design and Technology **Unit 1B: Playgrounds**; and QCA Design and Technology **Unit 2A: Vehicles**.



3. Seesaw

You can use this activity to meet some of the requirements of QCA Science **Unit 1E: Pushes and pulls**; QCA Science **Unit 2E: Forces and movement**; and QCA Design and Technology **Unit 1B: Playgrounds**.



4. Raft

You can use this activity to meet some of the requirements of QCA Science **Unit 1C: Sorting materials**; QCA Science **Unit 1E: Pushes and pulls**; QCA Science **Unit 2D: Grouping and changing materials**; and QCA Science **Unit 2E: Forces and movement**.



5. Car Launcher

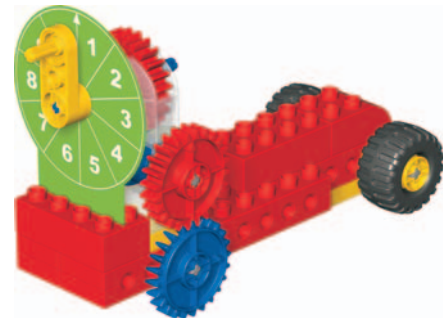
You can use this activity to meet some of the requirements of QCA Science **Unit 1E: Pushes and pulls**; and QCA Science **Unit 2E: Forces and movement**.

This activity meets some of the requirements of QCA Design and Technology **Unit 2A: Vehicles**.



6. Measuring Car

You can use this activity to meet some of the requirements of QCA Science **Unit 1E: Pushes and pulls**; QCA Science **Unit 2E: Forces and movement**; and QCA Design and Technology **Unit 2A: Vehicles**.



7. Ice Hockey Player

You can use this activity to meet some of the requirements of QCA Science **Unit 1E: Pushes and pulls**; QCA Science **Unit 2E: Forces and movement**; and QCA Design and Technology **Unit 1A: Moving pictures**.



8. Sam's New Dog

You can use this activity to meet some of the requirements of QCA Science **Unit 1E: Pushes and pulls**; QCA Science **Unit 2E: Forces and movement**; and QCA Design and Technology **Unit 2C: Winding it up**.

