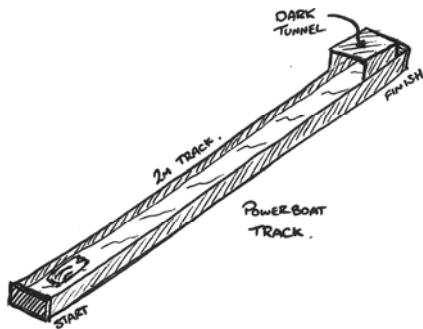
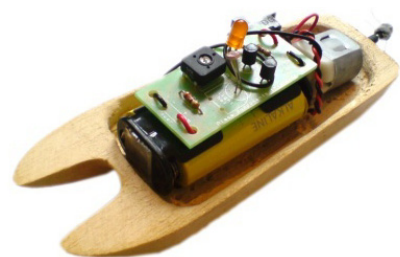


Kitronik update March 2009

See inside for motor based final year project themes that are ideal for engineering courses.

This boat is designed to automatically stop at the end of a race and is perfect for systems and control



This fun idea was developed by the Fernwood School. They have designed miniature race boats that automatically stop at the end of the race track.

The boats are powered by a low cost motor unit and impeller. The motor is controlled by a light activated switch board. When the boat enters the dark section at the end of the race track the board turns off power to the motor and stops the boat.

The simple operation of the light activated switch board is easy to understand and can help you meet the systems and control element of the syllabus.

A race track would be simple to construct (see the bottom picture). A section of low cost guttering, available at any DIY store would be perfect for the task. You could even have a removable section that covers the boats at the start line, which can then be quickly removed to start the race. The electronic parts required to build a simple boat like this are listed below.

Description	Code	1+	10+	100+
Light activated project kit	2112	£1.79	£1.49	£1.19
Medium torque DC motor, pack of 10	2501	£3.25		
2x AA cage, pack of 25	2232-25	£3.10		
Impeller blade	2509	£0.55	£0.42	

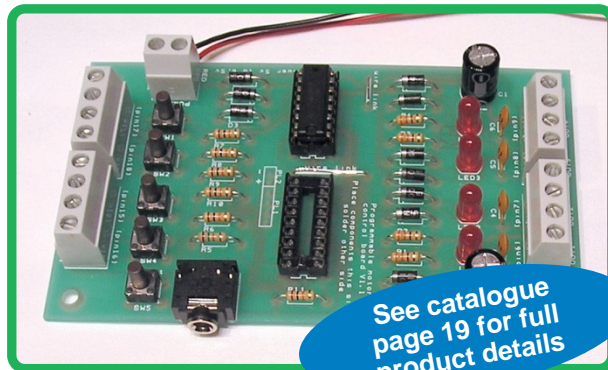
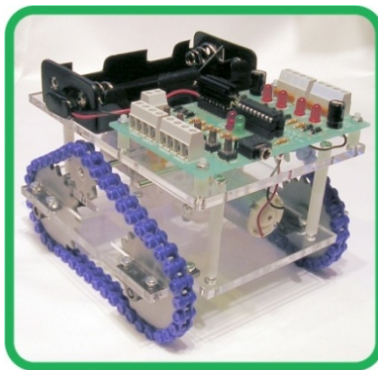
D&T and Engineering courses

Motor control will help move your final year projects forward

By adding a motor and therefore movement to a final year project it is possible to create a much more engaging and impressive product than might otherwise have been the case. In fact the AQA GCSE Engineering syllabus suggests a number of project themes that are based around motor control. These are listed below and would be appropriate project themes for GCSE (and related diplomas) courses from the various examining boards.

- Design an automatically deployable security bollard to prevent cars being used to break into shops.
- Design a supermarket advertising board which displays three A2 advertisements in a sequence.
- Design an interactive mechanical toy that will allow teachers to discuss and explain educational concepts to pupils.
- Design a simple robotic system which can be used to lift and move parts between two locations in a manufacturing system.
- Design a conveyor to transport small assemblies to a packaging area within a factory environment.
- Design a system for moving water for a situation of your choice.

Designs based on these themes can all be quickly created by using Kitronik's motor controller board (below right), with the addition of a few other items (motors, solenoids, LEDs etc). The kit is compatible with most education PICs and can be used with the accompanying 'Laser cut it yourself - tank kit' (below left, requires motor controller board) which could be used to introduce the board.



Description	Code	1+	10+
Motor controller board	2124	£9.90	£8.90
Laser cut it yourself – tank kit	2125	£21.30	£19.30

Game based projects

Games are played by everyone, young and old. A game is therefore a perfect starting point for a project. Here we examine two interesting ways in which electronics have been used as part a larger design and make task.

A pop-up game that is perfectly portable



The innovative game design shown to the left was created by a student at the Stockport School. The board used for playing the game has been design so that is folds out and it incorporates a number of neat pop-up features.

An electronic dice kit has been used to replace the traditional dice that would not be practical in a portable game. A vacuum formed case has been designed to hold the electronic dice as well as the counters for the game.

Description	Code	1+	10+	100+
Dice project kit	2109	£3.98	£3.15	£2.85

A steady hand game with a personal touch



The steady hand game shown to the left was built by a student at the Alderman and White School. This school chose to use the latching version of the kit which has an LED (in addition to the buzzer) that latches on after the briefest of touches to the wire. As this kit comes from our easy build range it is perfect for younger students.

This examples perfectly demonstrates how the electronics can be integrated in to standard foam board enclosure, with an individually styled background image.

Description	Code	1+	5+
Steady hand game (with latch), box of 24	2108-24	£59.80	£52.60
Terminal block steady hand kit, box of 24	2107-24	£29.50	£27.50

Free sample – Fax back

Tick one

- 2101, Alarm
- 2102, Battery tester
- 2103, Game
- 2104, Timer
- 2105, Xylophone
- 2106, Rear bike light
- 2107, Steady hand game, terminal block
- 2108, Steady hand (with latch)
- 2109, Dice
- 2110, Thermometer
- 2111, Easy build timer
- 2112, Light activated switch
- 2113, Heat activated switch
- 2114, LED torch
- 2115, MP3 amplifier
- 2116, Quiz buzzer
- 2117, Square wave
- 2118, 7 segment counter
- 2119, Rainbow LED & bat box
- 2120, Dark activated colour changing LED
- 2121, Programmable timer
- 2122, Programmable music box
- 2123, Air freshener
- 2126, PIC development board
- 2127, PIC project board

To request your free sample kit with accompanying teaching notes, please tick **one** box on the left.

(Or / and please tick)

Send me a 2008 / 2009 catalogue.

Update my name or address details as amended (left).

**Fax this side to:
0845 8380782**

Alternatively, call or Email us (see below).



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