



We bring STEAM to life



brianclegg

www.rapidonline.com

Rapid Education part of the **ONRAD** Group

The path towards a passion for STEAM starts early

Super Kit

£327.99

Order code

70-7891

Primary and secondary school is the most formative time in a young student's life. The best way to instill a lifelong interest in the areas of Science, Technology, Engineering, Art and Maths (STEAM) is to provide a fun, engaging, and hands-on opportunity to explore and experience it for themselves.

1408H

By its nature, the study of robotics inherently incorporates all pillars of STEAM. VEX IQ is a snap-together robotics system designed from the ground up to provide this opportunity to future engineers of all skill levels. By packaging advanced concepts into an accessible package, the system also naturally encourages teamwork, problem solving, and leadership for students as young as 8.

The Super Kit takes educational robotics to the next level. Use the familiar handheld Controller with the pre-programmed code to drive robots right out of the box, or program them to run autonomously using the additional Smart Sensors. While the included Clawbot IQ instructions help students easily build their first robot, the wide variety of additional included parts means that a team of students can build a robot that is bigger, stronger, and more functional.

• Snap-together parts

- Includes programmable Brain, controller, batteries, 4 motors and 7 sensors
- Over 800 structural and motion components
- Supplied in stackable storage bin
- Use the FREE VEXcode Blocks app on Windows, Mac, Chromebook, iOS and Android to program your creations
- Numerous additional example robot instructions to download from www.rapidonline.com/vexiq

Coming Soon – preorder now!



Supplied in storage cases making it easy to keep track of parts
Use the FREE VEXcode Blocks app on Windows, Mac, Chromebook, iOS and Android to program your creations

Chromebook, IOS and Android to program your crea

VEX GO kit £215.97 Shipping October

Preorder and find out more at www.rapidonline.com/vexgo



- Program sequences using the buttons on top of the robot
- Create more complex programs by sliding cards into the Coder
- Use the FREE VEXcode Blocks app on Windows, Mac, Chromebook, iOS and Android to unlock the full power of 123

Robot, Coder and cards £119.97 Shipping October

Preorder and find out more at www.rapidonline.com/vex123

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WELCOME ...

To the Steam@Home mailer

It's been a challenging year for schools, with a significant amount of learning done at home instead of in the classroom. We hope that will changed as we enter the new academic year, but home learning is here to stay. This is why we are bringing you the very best in Science, Technology, Engineering, Art and Maths products in these pages, with a special focus on Key Stage 1 and 2. This publication is packed with useful practical resources including electronics kits, the BBC micro:bit and e-textiles, as well as robotics for every age group. Some products are available in class packs giving exceptional value for money, while there are projects tips throughout.

Don't forget that we are official partners of Arduino Education and VEX Robotics, so we are able to offer extensive support for these products. Please do not hesitate to contact us for more information. We are also partnering with Steam School, the virtual Steam club for 9-14 year olds, and can offer 10% discount on subscriptions to this exciting platform. Find out more at **www.rapidonline.com/steam-school**.

For a comprehensive hub of projects and resources related to STEAM learning, visit **www.rapidonline.com/steam-lab**.

Enjoy the mailer.

Pricing correct at time of going to press and includes VAT. For up-to-date pricing visit our website.



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Snap Circuits 2

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Snap Circuits® teaches basic engineering, electronics and circuitry concepts by using building components with snaps to assemble electronic circuits on a simple "rows-andcolumns" base grid.

Radio <u>Controlled</u> <u>Snap Rover</u> £68.34



Have fun building your own RC Snap Rover[®] using colourful Snap Circuits[®] parts that simply snap together. This innovative kit offers a fun, hands-on education in electronics, allowing kids to create rovers and other fun devices by snapping together working circuitry. Guide your Snap Rover® with the easy-to-use remote control.

- Over 40 other experiments
- Over 50 parts

Only

Order code

- Wireless Remote Control included
- Run up to three Rovers at once
- No Soldering required
- Multi- function, wireless remote control
- Easy to build using easy to follow directions
 Requires 1x PP3, 9V battery and 6x AA
- batteries (not included)
- Suitable for age 8 and up



Junior Plus

Snap Circuits Junior Plus allows for hours of educational fun whilst learning about electronics!

All components are mounted on plastic modules and snap together with ease. The electrical components provide students of ages $8\pm$ with hands-on experience of designing and building models

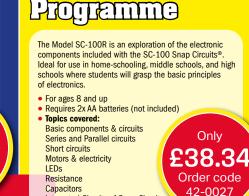
Only

£26.83

Order code

42-0026

- of working electrical circuits.
- Snap-together parts require no tools and ensure correct connections
- Includes 30 parts and instructions for over 100 projects
 Requires 2x AA batteries
- (not included)
- Clear and concise illustrated manual included and available online



Junior Training

Integrated Circuits of Snap Circuits

Pro Training Programme

The Extreme Student Guide for SC-500R includes 138 pages of educational curriculum. Written with the help of educators, the Student Guide is essential in covering most topics related to the electricity and electronics being taught in middle schools and above. It includes real-world applications and problem-solving guizzes.

Only

Order code

42-0029

The Teacher Guide is meant to prepare educators for the proper introduction of Snap Circuits® and guide them through each chapter with quizzes £103.14 for students to test their knowledge.

- Contains over 75 snap-together par
- Builds over 500 exciting projects Requires 4x AA batteries (not included)
- Suitable for ages 8 and up
- Tel: 01206 751166 Fax: 01206 751188



4

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ELECTRONICS KIT FOR BEGINNERS

The Velleman Electronics Kit for Beginners allows the first steps into the world of electronics. If you ever needed proof that electronics can be fun, this is it, as the EDU01 allows you to build your own circuits in a fun, safe and educational way.

The kit contains a breadboard and all the components needed to get started, so you can finish assembling your first circuit in just a few minutes.

- Suitable for ages 13+
- No soldering required
- High-quality breadboard with 456 contact terminals
- Extended manual
- Dimensions: 80mm x 60mm



Projects include:

- LED with push button
- Transistor as current amplifier
- Astable multivibrator
- Simple burglar alarm with LED indication and sound
- Light detector
- Polarity tester
- Start-Stop circuit
- Timer circuit
- Light switch
- Water alarm



Only

£12.14

Order code

70-4204

IOW + 10W STEREO AMPLIFIER KIT

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Our most powerful audio amplifier kit has 10W per channel, meaning it can drive much larger speakers to give a loud, clear sound. The kit is available with speakers or without if you would prefer to add your own.



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DFROBOT

SOLDERING ZOO ANIMAL KIT



INTERACTIVE KIT

This 4 Claying electronic DIY kit is a fun-to-play kit that combines the fun of sculpting with ultra-light clay and building interactive circuits around it. It is a great way of helping kids to learn the basics of electronics and to play with a sensor kit in an easy and intuitive way.

The kit contains not only vibrant coloured, non-toxic lightweight modelling clay, but also high quality colour LEDs and motion sensors to bring your sculptures to 'life'.

With up to 5 colours of clay and 2 colours of LEDs, you will be able to create a full colour spectrum and make your creation look fabulous. You can make use of these LEDs as eyes, stars or whatever you want, and use the motion sensor as a trigger. For example, a cat that blinks its eyes when you walk close to it. The PIR motion sensor detects the infra-red heat from people or animals moving close by and produces a switching signal.

Notes for clay:

- · Fully knead before use
- Sprinkle with water and continue to knead if the surface is dry Keep unused clay sealed to preserve it
- Avoid storing in direct sunlight
- Dry naturally in air
- Do not eat
- Fully dry electronic components, if they get wet
- Slowly pull and plug to replace the LEDs If LEDs don't light, check the battery

Tel: 01206 751166 Fax: 01206 751188

Onlv

Order code

75-0162

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BBC ••• micro:bit

micro:bit barely needs any introduction. Since its launch in 2016 when 1 million devices were delivered to students across the UK, micro:bit's popularity has continued to grow and the device has been used by students all over the world to learn coding and basic electronics.

What is micro:bit?

micro:bit is a small, handheld programmable computer that can be used for making all sorts of fun projects from robots and remote controls to wearable electronic devices.

It has an LED matrix on the front for displaying messages and shapes, two push-button inputs, a 3-axis accelerometer to detect movement in all directions and a compass to detect heading. It can also transmit to and receive data from another micro:bit which means it can be used to send messages or act as a remote control.

* Starter kit contains micro:bit, USB cable, switched battery box and 2x AAA batteries.



BIT:BOT XL ROBOT WITH ADDRESSABLE LEDS

Bundle includes the Bit:Bot XL robot, BBC Micro:Bit and 3x AA batteries. Pen and ultrasonic sensor are sold separately not included.



micro:bit accessories

tronix

ROBO:BIT BUGGY MK3





LINE SENSOR / FOLLOWER ADD ON PACK

When used with the Robo:Bit buggy the Line Follower Sensor Pack uses two line sensors to follow a black line and keep the buggy on track. You can write more complex programs that behave as required when you meet a T-junction or crossroads.





We all like adding blinky LEDs to our electronic creations, whether it is a robot, weather station or something that reads and displays sensor data. Now with McRoboFace you can add emotions to everything at the same time as adding blinkies.



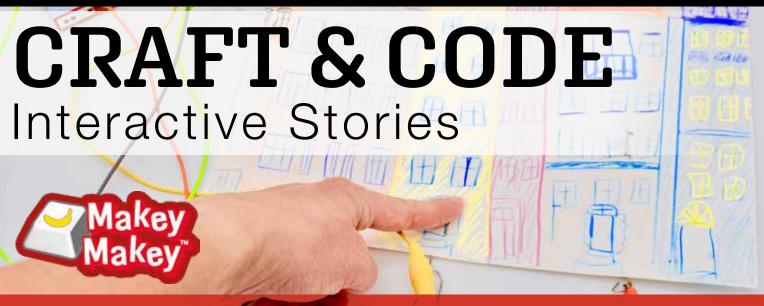
BBC MICRO:BIT SWITCHED BATTERY BOX UPGRADE



PROGRAMMABLE ROBOT WITH SENSORS Micro:Bit not included

FOR FULL DETAILS ON ALL OF THESE PRODUCTS VISIT WWW.RAPIDONLINE.COM





Craft a city out of cardboard, or draw a city to make an interactive poster. The idea behind this project is to craft or create buildings for an imagined city and then tell the story of the people who live in your crafted buildings.

Makey Makey are sharing this idea from the LEGO Foundation who are "inviting kids to create the buildings, neighborhoods, and stories of #StoryCity, a collaboratively constructed and imagined city that will let kids connect around the world."

The picture below is an interactive #StoryCity Poster. The picture on the right is a crafted #StoryCity by Liam Nilsen. In fact you can craft your Story City however you would like! Either draw a city, build a city, or construct a city in a shoebox. The important thing is to imagine the buildings and the stories of the people who live in your crafted city.

TASK – ADD CONDUCTIVE TOUCH-POINTS TO YOUR CITY

Use thumbtacks, paper clips, or pencil drawings to make your city interactive with Makey Makey and Scratch. By adding different conductive touchpoints you are building the hardware that will go with the software you create in Scratch!

Everyday conductive materials:

Kitchen foil – paperclips – pencils – staples – pins – coat hangers

Plus many more!







Makey Makey GO Includes Case with Magnet, Croc Lead, Keyring & Instruction Guide

The Makey Makey® GO brings inventing - on the go - to tinkerers, makers, and anyone who wants a fun and exciting way to transform a host of everyday objects, with just the snap of a croc clip, into an internet touchpad!

See what you've got to hand - banana, plant, frying pan, pencil line, coin, pet or friend (doesn't work with imaginary friends, which are non-conductive), or anything even a little bit conductive, and use it to send a signal, through the USB Invention Stick to a computer. Just plug, clip and play - no complicated setup, no programming knowledge needed, no software to install and works on both PC and Mac.

- Contents: USB Invention Stick, case with magnet, 1 white crocodile lead, key ring, and instruction guide
- Simple USB connection
- Have fun and expand your imagination
- For ages 6 up

TASK – PROGRAM EVENTS; CODE STORIES AND ANIMATIONS IN SCRATCH

Write the stories you want to tell on a piece of paper or type them up so you can record them easily into Scratch. If you use multiple sprites in your Scratch project, you'll have to record your stories with the correct sprite. Scratch is the software component to your interactive story invention! Let's look at some examples before you start coding your own software.

Here is an example of a coded Story City drawing in Scratch. Press the UP arrow to hear one story. Press the SPACE bar to hear another story. Lastly, press the DOWN arrow to experience the final story.

Here is an example of the coded story diorama in Scratch. To play along, Frederico asks you to find the pigeon drawing (press the SPACE key), the Family Portrait (which is connected to the UP arrow), the hiding dog (press the DOWN arrow), and the messy scribble by Bonnie (press the RIGHT arrow).



TASK – RECORD SOUNDS

To add your stories as sounds to your project, click on the "Sounds" tab where you can choose a sound from the Scratch library, record your own sound, or upload an mp3 or way file to use in your project.

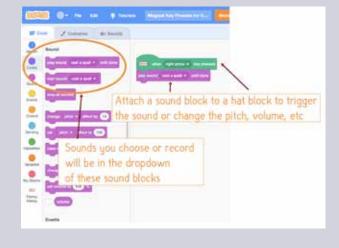
Click on the microphone to record your own sound.

TASK – CODING ANIMATIONS WITH MOVEMENT AND EFFECT

To get started making your story even more interactive, you'll need to understand a few things about coding. To create the software for your Makey Makey inventions, you have to speak to your computer in a language it understands!

Hook up Makey Makey and Share

Once you've coded your story in Scratch, hook it up to Makey Makey and share it with us!





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onder workshop



DASH ROBOT

Dash is a really smart robot that is packed with features and sensors - it can detect objects around it, knows which direction a sound is coming from, record and playback sounds and communicate with other Dash and Dot robots.

For younger children (5 to 7 years old) the Path, Xylo and Go apps are an excellent introduction to basic sequencing, spatial reasoning and navigation. For older children, Wonder and Blockly offer a visual coding experience that guides beginners through their first programs and lets students experiment with logic, loops and variables as their skills increase.





DOT ROBOT

Dot is Dash's companion and is the brains without the brawn! Whilst Dot doesn't have wheels to make it move, it has loads of cool sensors and can interact with Dash as well as being used as a standalone device.

Dot can hear sound, light up any colour you like, know when and how it is being moved and communicate with Dash.

Programming Dot Wonder Workshop have created a whole

Android phones and tablets. The apps are also available for Kindle.





DASH AND DOT WONDER PACK



 Accessory pack Building brick connector pack



EVO Bluetooth® Smart (30 ft. range) • Proximity sensors £28.97 for obstacle detection Order code 70-1107

2.0 BIT

Ozobot takes kids on

a fun and mesmerizing experience through

creative drawing, problem solving and group challenges using colour code commands in the form of basic colour

combinations.

2.0 BIT ROBOT 2.0 BIT £47.12

OZOBOT

🕝 ozobot

Order code 70-8200



 Optical sensors for detecting lines and colour codes • Built-in speaker

£103.40 Order code

Robotics 11



Following the detailed instructions, you can build your own wire-controlled Robotic Arm, and control its movements via the remote control box.

£27.12



MECHANICAL KIT It is hand-powered and can pick up and relocate items using four degrees of freedom and an articulated grabber hand.

> £29.99 Order code 70-0389



MOTORISED KIT

The VEX® Robotics Motorised Robotic Arm is a completely functional construction kit inspired by real industrial robot arms.

£89.99 Order code 70-0397 BOTIC ARMS

CODEY ROCKY PROGRAMMABLE



The MakeBlock Codey Rocky is a coding robot for STEAM education. coding robot for S I EAM education. Codey provides an entertaining learning experience and introduction to programming for ages 6+. With the combination of easy-to-use robotics hardware together with mBlock 5 block-based programming, you'll be up and coding within minutes.

Codey Rocky features an innovative 2 in 1 design structure:

Brainy Codey Codey is the brains of the outfit, having over 10 programmable electronic modules that produce enough data for a host of applications.

Agile Rocky Getting around is what Rocky loves best. Not only will Rocky swirl and follow lines, it will also navigate around obstacles, and you will have programmed Codey Rocky to do it.

ULTIMATE ROBOT 10 IN 1 KIT

At the heart of the kit is the MegaPi robotics controller which is based on the popular Arduino Mega 2560 but with additional motor driver interfaces. With dedicated motor power inputs the MegaPi can drive up to 10 x servos plus 8 x DC motors or 4 x stepper motors simultaneously with a maximum output current of up to 10A. You can program it using the mBlock graphical programming tool or as you mBlock graphical programming tool or as you get more confident, graduate to C/C++ using the Arduino IDE. If you have a Raspberry Pi, it can function as the brains of your robot while the MegaPi handles the low level details opening up a whole new area for creativity and exploration. It also supports a Bluetooth adaptor for wireless remote control from your Apple iPad (v3 or better) or Android (v4 or better) tablet.







MBOT ARDUINO COMPATIBLE STEM ROBOT KIT

• Simple to build and program Range of free programming tools from beginner to advanced





RANGER ARDUINO COMPATIBLE STEM 3-IN-1 ROBOT KIT • Drive the mBot Ranger from your smartphone Complete kit, just add batteries

> £162.22 Order code 75-0699

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Power-up their learning fun with Super Mario[™] in LEGO[®] form! The starter course set features a Mario figure that gives instant expressive responses via LCD screens and a speaker. Players earn virtual coins by moving LEGO Mario from the Start Pipe to the Goal Pole via spinning and cloud platforms, the ? Block, and super battles with the Goomba and Bowser Jr. toy figures. Rearrange the bricks to create new levels to master.

Enhanced play. A free LEGO Super Mario app is available for enhanced play. It has zoom and rotate viewing tools to make building easier, suggests other creative ways to build and play, and is a safe forum to share ideas with friends.

Mario unlimited! Great for solo play or group competitions, LEGO Super Mario sets bring a family-favourite character into the real world. This Starter Course offers unlimited challenges and nurtures problem-solving skills.

STARTER

COURSE SET

E49.98

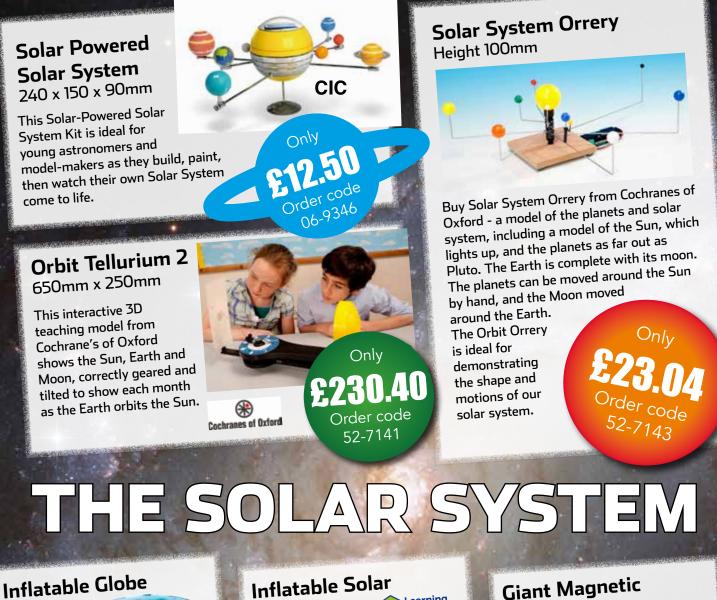
Order code

70-6635

Lego[®] Super Mario 13



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12in.

Learning Resources

An inflatable globe that shows continents, countries (differentiated by colour), major cities, oceans, lakes, rivers and other topographical features.

> Onlv Order code 06-5858

Inflatable Solar Learning Resources System Set

A set of models of the Sun, planets and the earth's Moon that will encourage students to learn about the position, order, size and shape of the contents of the solar system. When the lesson is finished simply hang everything from the ceiling.

Giant Magnetic Solar System



These full-colour magnets can help you model all the concepts of the solar system, simply by using a whiteboard. The magnets include the 8 main planets, plus Pluto, the sun, the moon and the asteroid belt. Only

Learning Resources

543

Order code

06-8960

Tel: 01206 751166 Fax: 01206 751188

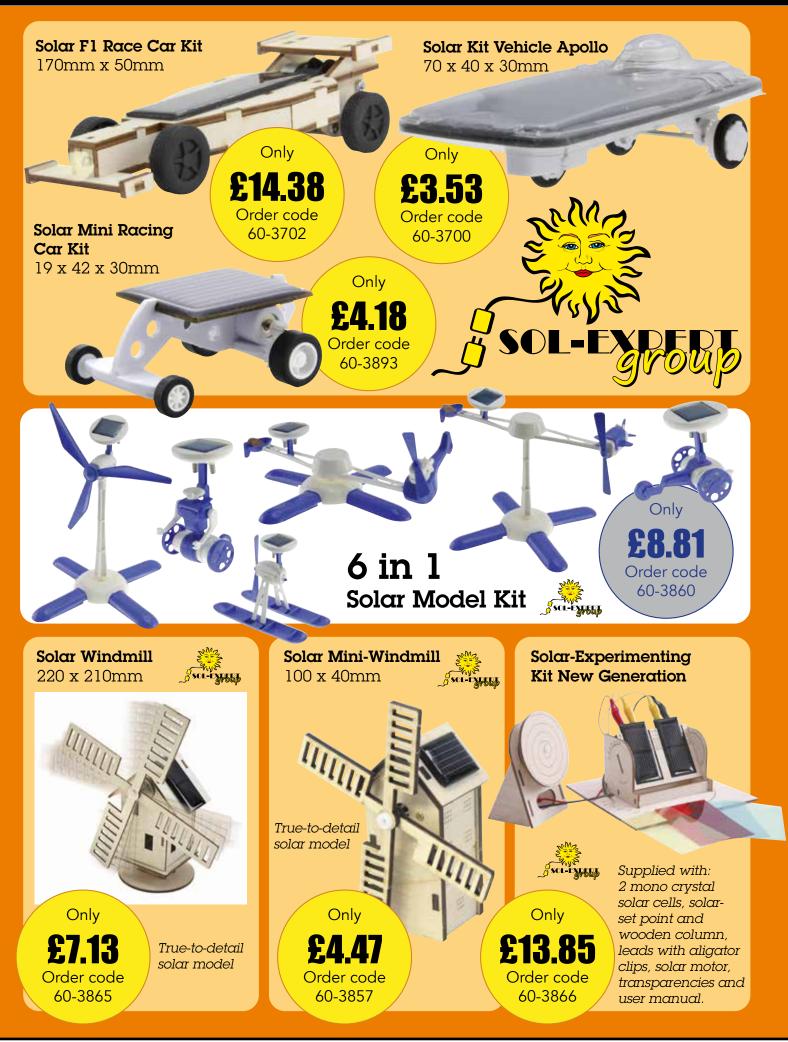
Only

Order code

06-5936



=Rapid



Tel: 01206 751166 Fax: 01206 751188



Zoom Pocket Microscope

A simple, yet robust LED illuminated pocket microscope that allows you to see things under high magnification even in poor light conditions.

- 20x to 40x zoom
- Super bright LED illumination
- Includes a sample slide
- Size: 100 x 80 x 30mm

Takes 3x LR44 button cell batteries, included.



CELESTRON

CELESTRON GLOBAL LIMITED



Order code 06-7089







THE DISCLITIVE SYSTEM

Optical Microscope Beginners Kit

- · Biological microscope with powers from 40x to 600x
- 4x, 15x, and 30x objective lenses and 10-20x zoom eyepiece featuring high-quality alass optics
- Illumination: top pen light style uses 2x AAA batteries (not included); bottom illuminator uses 2x AA batteries (not included)
- Includes 3 prepared glass slides, 2 blank glass slides, 1 blank well slide, light diffuser, needle probe, eye dropper and tweezers



viewing Order code £69.00

52-9643

Stereo Microscope Kit CL-S20

LABS

CELESTRON

CELESTRON GLOBAL LIMITED

Rapid

- Great introductory stereo microscope with 20x power
- Easy to use out of the box with two included insect specimens
- 10x eyepieces with 2x objective lenses
- Metal head with coarse focusing knob
- Upper LED illumination for detailed
- Two AA batteries (supplied)



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shav

Order code

06-0526

£12.55

Science Special Offers 19



Coloured Bath Bombs! lake up to MAKE YOUR OWN **BATH BOMBS KIT** 3955 Order code 06-8251 Fun and Easy-to-Do! eisco Premium **Potato Clock** £9.1 Order code 52-3610 Wind **=**Rapid Turbine This Wind Turbine model can be used to carry out a wide

the blades. **522.7**8 blades DC output Order code 06-1573

range of experiments with wind power. The blades of the turbine can be easily adjusted, attached and removed. This allows students to investigate the effects of changing the number, pitch, size and shape of

- Corriflute plastic
- Supplied assembled



This hand-painted, anatomical model of the human digestive system shows the nose, mouth cavity, pharynx, oesophagus, the gastro-intestinal tract, liver with gall bladder, pancreas, spleen, duodenum, and opened caecum and rectum.

- Transverse colon is removable
- Model is mounted on a base
- Structures numbered, supplied with key card
- Length 450mm, Width 200mm



Science Habitat Centre for Herbs, Insects or Pond - 700 x 520 x 525mm

This science habitat centre from Cicada is a fantastic addition to any classroom, presenting an ideal introduction into the world of nature and insects.

The centre creates a variety of exciting environments within the classroom, from an all herb garden, butterfly/insect house or even a mini pond. The versatile design provides open and easy access, while the bottom tub comes with two different plugs, one with ventilation holes and one for use with water. £276.83

- Great for the classroom!
- Open and easy access
- Versatile herbs, insects or pond!
- 70 x 52.5 x 52.5cm



cicadã

Only

Order code

52-2315

Thames & Kosmos Science Kits 22

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Motors & Generators Experiment Kit

Electric motors and generators can be found in countless devices, appliances, and vehicles we use every day. They are an essential technology in our modern world. With this kit, you can conduct 25 experiments to learn how an electric motor converts electricity into motion, and how an electric generator does just the opposite, converting motion into electricity.

The electric motor is made of transparent plastic to show how the inside components work. Set up the motor to run on battery power and learn how a motor works. Then reconfigure the device to work in reverse as a hand-cranked electric generator. Experiment with magnets to learn about the forces of magnetism, and how magnetic fields relate to electric current. Build simple circuits consisting of the motor or generator, wires, and a light bulb to learn about the flow of

electricity. Learn about gears and drive-trains and how they work to effectively convert kinetic energy into electrical energy and back again.

· 25 experiments · Full-colour, 48-page manual guides your experiments Step-by-step instructions Ages 8 and up

£26.39 Order code 70-0342



Genetics & DNA Experiment Kit

Head into the lab for an in-depth investigation of genetics, the branch of biology focused on heredity and variation in organisms, and DNA, the acid that holds the blueprints for life. See genetic material with your own eyes as you isolate the DNA from a tomato in a test tube. Investigate inheritance and learn how traits are passed down from parents to children. Learn about dominant and recessive genes and play inheritance games to determine how traits will be expressed.

Learn about the biology of reproduction, the components of cells, and how chromosomes are combined and copied. Assemble a model to see the elegant double-stranded helical structure of DNA. Then crack the genetic code and find out how the different parts, called nucleotides, fit together. Analyse DNA evidence to identify suspects and solve a crime. Breed your own bacteria colony to experiment with survival of the fittest. Read about how mutation affects genes and how scientists clone plants and animals.

Supplied complete with 48-page full-colour manual



THAMES KOSMOS



Air & Water Power

Build your own models powered by air and water pressure to learn about the laws of physics.

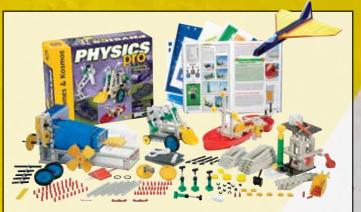
This unique kit allows you to build two different air-and-water-powered systems: water-jet propelled cars and hydro-pneumo (which simply means air pressure and water pressure) powered engines. The hydro-pneumo system uses a self-contained air-and-water turbine system as a motor.

Construct 15 models including a truck, excavator, radar car, tank, antique car, helicopter, motorbike, digger, rocket car, forklift, roadster, propeller plane, grinder and cutting machine. The water-jet propelled cars are a fun outdoor activity, while the self-contained hydro-pneumo powered models are fun both indoors and out. Compete with your friends to see whose water-jet propelled car and hydro-pneumo car goes the fastest!

A 48-page colour instruction book illustrates the step-by-step assembly of each model and related principles so that children learn through playing.

Construct 15 models including a truck, excavator, radar car, tank, antique car, helicopter, motorbike, digger, rocket car, forklift, roadster, propeller plane, grinder and cutting machine · 48-page colour instruction book
 · 165 building pieces

£38.39 Order code 70-0357



Advanced Physics Pro Science Kit

With this advanced physics kit, you can continue your study of statics and dynamics from previous lessons and begin your study of more advanced topics in physics, including fluid dynamics, energy, oscillation, hydraulics, and pneumatics. By adding advanced topics like fluid dynamics to your physics repertoire, you can now build some really spectacular models and devices, such as a wind tunnel, pneumatic shocks, and a hydraulic lift. You will see how physics ex-tends far beyond the classroom, giving us an amazing set of tools that can be applied in the real world to engineer marvellous things.

The main focus of the kit is the behaviour of the two most important fluids in our world: water and air and objects immersed in them. You will investigate how air and water rest and flow, what they can carry and how they move. With experiments and models, you will find out what forces work on them and

what kinds of energy they possess. You will learn how ships float and aeroplanes fly, why a streamlined shape lets a car drive faster and how power stations convert a current of water into electrical current.

96-page, full-colour experiment manual • Over 213 parts • Ages 10 and up



Thames & Kosmos Science Kits 23



Solar Mechanics Experiment Kit

Power Your Machines with the Sun's Energy!

Build more than 20 solar-powered models to learn about how solar cells convert energy from sunlight into mechanical energy. Conduct experiments with the solar cell to see how different placement angles, different light levels, different sources of light, and different loads affect its operation. Learn about solar power in a fun, hands-on way.

The kit includes a unique single-piece solar motor that is composed of a photovoltaic cell and an electric motor joined together in one compact unit. With this solar motor, you can power dozens of electric vehicles and devices. Build models including cars, trucks, planes, windmills, waterwheels, robots, and other vehicles. 60-page, full-colour experiment manual Step-by-step illustrated instructions for building projects and experiments

£29.32 Order code 70-0345



Electricity & Magnetism Experiment Kit

Conduct more than 60 electrifying experiments with circuits and magnetic contraptions to learn about electricity and magnetism, and how these two fundamental properties are closely related. Children of eight years and up can safely and easily experiment with electric current and magnetic fields using the colourful snap-together blocks and components in this hands-on kit.

Build series and parallel circuits to light up a light bulb. Experiment with push buttons and on-off switches. Assemble circuits that include a spinning motor, two switches, and up to three light bulbs.

Conduct tests to see which materials are magnetic. Learn about the force of magnetism and magnetic poles. Magnetize a metal object. Use iron fillings to make invisible magnetic fields visible. Investigate magnetic force and direction with a magnetic pendulum device. Learn how a compass works and about Earth's magnetic fields. Conduct a series of experiments with a sturdy electromagnet.

Conduct more than 60 electrifying

experiments 64-page, full-colour experiment manual guides you through experiments with easyto follow diagrams



Contraction Thames Kosmos



Power House Sustainable Living

The energy consumption of human civilization is growing. At the same time, the harmful environmental impact of our energy usage is becoming apparent. A massive global effort to adopt renewable energy and use our resources more sustainably has begun. To live sustainably, we must use Earth's resources at a rate at which they can be replenished, and thus provide for future generations to live as we have.

With this kit, you can learn about alternative energy and sustainable living by conducting 100 experiments and building energy related models. Build the Power House and then conduct experiments in and around the house. Learn about energy-efficient construction materials and passive house design. Experiment with heating, cooling, conduction, convection and insulation. Investigate the Earth's climate, the water cycle, and that inexhaustible power plant in the sky: the sun. Test passive solar collection methods with a solar collector. Hook up a photovoltaic solar panel to generate electricity from sunlight. Build wind turbines to extract energy from wind. Construct a greenhouse and learn about the energy conservation tricks used by plants.

· 64-page, full-colour experiment manual · Ages 10 and up

£61.69 Order code 70-0363



Wind Power Renewable Energy Science Kit V3.0

With this renewable energy science kit you can build a realistic wind turbine that creates power out of thin air. Wind is one of the most promising sources of clean, renewable energy available today and has been used for centuries to pump water and crush grain in windmills, and is increasingly being used to generate electricity to power our modern world.

The wind turbine is supplied complete with electric generator and adjustable rotor blades, designed with complex aerodynamic curves to look and work like modern-day wind turbine blades. • The full-colour, 32-page illustrated manual includes instructions and a wealth of scientific information • Suitable for age 8 and above

£41.32 Order code 70-0387

www.rapidonline.com education@rapidonline.com





Flashing LED Pencil Case **Project Kit**

A KS3 textile and electronics project that uses smart textiles and electronic components to create a flashing LED pencil case.

£5.62 Order Code 87-6107



Dancing Toy Smart Textiles Project

This exciting smart textiles and electronics project

provides a fun way of using and understanding the properties of two smart materials, muscle wire and polymorph.

£18.62 Order Code 87-6123



Light Stitches

_1

Light Stitches

iPod[™] Holder Smart **Textiles Project Kit**

A KS3 project that uses smart textiles and LEDs to create an illuminated iPod™ pouch.

The iPod[™] holder uses 1 colour changing LED for a visual display. The LED is

activated when the metal press stud is closed (Press stud acts as a switch turning the LED ON/OFF).





Light Stitches

Junior Soft Switch Kit

This inexpensive kit uses a felt pad as both a switch and a battery holder and can be easily incorporated into soft toy and felt projects. When completed, pressing the felt pad turns the 2 flashing red LED lights on, and releasing it turns the lights off.

- Kit contains: Adhesive felt
- pad CR2032 coin cell battery Conductive thread
- 2x Red flashing LEDs



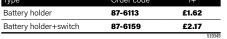


This highly conductive thread is ideal for introducing electronics into textile projects. The thread looks and behaves like conventional sewing thread with the added bonus of being highly conductive.

Available on bobbins of 6m



 Large attachment holes for easy attachment Easy to connect to conductive thread Houses a standard 3V, CR 2032 battery Available with or without an On/Off switch Туре 87-6113





Conductive Thread Kits

The extremely successful Light Stitches projects use a new smart material, Conductive Thread to attach LEDs (lights) to textile projects by simply fastening a knot or sewing onto the LED. This highly conductive thread acts and behaves like conventional thread with the added bonus of being extremely conductive.

- Free downloadable teachers booklet
- Various flashing and colour changing kits available • Includes 2 metres of conductive thread and all components to easily attach the 5mm LEDs to textiles projects
- No soldering involved. If the thread breaks tie the two ends together and it still works perfectly
- FREE downloadable booklet includes all information needed including schemes of work and lesson plans. It shows in detail how to turn metal textiles materials like zips, press studs, etc., into switches
- Originally designed as a KS3 project, these extremely popular projects are being used by various textile consultants and due to their simplicity are being used throughout education from primary to university
- Introduction to product design encouraging the mixing of different D&T elements thus encouraging creativity in later school life

Please note that the kits each contain 2 LEDs except the Rainbow kit 87-6104, which only contains 1.

Туре	Order code	1+
Red	87-6103	£3.22
Yellow	87-6119	£2.82
Blue	87-6100	£3.01
Green	87-6102	£3.01
Rainbow	87-6104	£3.32
		3006

MADERA **Conductive Thread**

150/250m Spools The thread is available in

two lengths, 150m and 250m. The 250m length thread is slightly finer and is ideal for delicate work or conductive gloves. The resistance ratings for Madeira HC thread are as follows: 98-6098- Resistance: < 1000/m

98-6099- Resistance:

- < 300Ω/m
- Excellent conductivity · Suitable for use as either top thread
- or under thread Maximum number of LEDs per battery: 5

Туре	Order code	1+
150m Spool	87-6098	£35.57
250m Spool	87-6099	£37.61







- Suitable for all ages
- Supplied in a pack of 50 Order Code 06-8552





- 10 x 250q Shakers
- No-fuss glitter, sparklez and confetti
- Excellent for adding sparkle and shimmer • 10 x 230ml shakers



Home Learning Craft Kit

Kit contains: Chenille pipe

- cleaners
- Two bags of UK made sequins
- One bag of beads • Two bags of embellishment
- gems
- Embroidery hoop Two tapestry wool skeins
- One hessian bag
- Metallic net
- Card and paper assortment
- UK made pom-poms
- Fabric motifs
- Plastic canvas
- Metallic threads Children's knitting needles Order Code 06-8333



£10.64



- paper carrier bags.
- Large: 31 x 24 x 11cm
- Medium: 24 x 18 x 8cm
- Small: 20 x 15 x 8cm Supplied in packs of
- 18, 6 of each size



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Round Black Elastic Reel 100m

A reel of high quality black elastic.

- 1mm in diameter Stretches to just over twice its own
- length Ideal for threading beads, jewellery making and
- textiles Verv durable Will withstand dry
- cleaning and washing Supplied on
- reels of 100m



Textile Cones

- Cardboard cones Ideal for making models Especially suited to making Christmas
- Angels
- approx. 26mm
 - Supplied in packs of 30





£8.54



Paper Mache Collage Boxes

These trinket sized collage boxes are ideal for painting and decorating with your own designs.

- Perfect for gifts or jewellery boxes
- 2x heart
- 2x hexagon
- 2x oval
- 2x circular 2x square
- 2x rectangle
- Dimensions of rectangular box approx. 60 x 85mm
- All shapes are 35mm deep Supplied in assorted
 - Order Code 06-1152



Order Code 06-4143



Translucent Mosaic Tiles

These colourful assorted flat plastic shapes look great when light shines though them. Use them in your mosaic and 'stained glass' designs for sparkling results

Ideal for mosaics, lampshades, window and mirror decoration Supplied in 500g packs





- Just add a polystyrene ball, a doily and some cardboard wings! Approx. dimensions: height 170mm, outside diameter 64mm tapering to 40mm Hole in top is



MAJOR BRUSHES



containing approx.

Barrel

Beads

These Pony or

Barrel Beads from

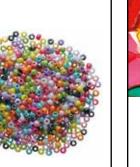
Artstraws are ideal

for collage work,

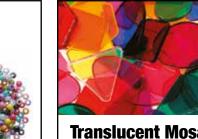
decoration and

jewellery making.





£2.00



Tel: 01206 751166 Fax: 01206 751188

Acrylic Jewels

These acrylic gem stones are ideal for fashion design, making bracelets and hair accessories, collages, mosaic designs and stained glass work.

• Pack contains an assortment of colours, shapes

and sizes

		07218
Acrylic jewels 500g	06-7564	£10.42
Acrylic jewels 70g bag	06-0860	£3.07
Туре	Order code	1+
• Available in <i>rug bags</i> and bulk packs of buug		



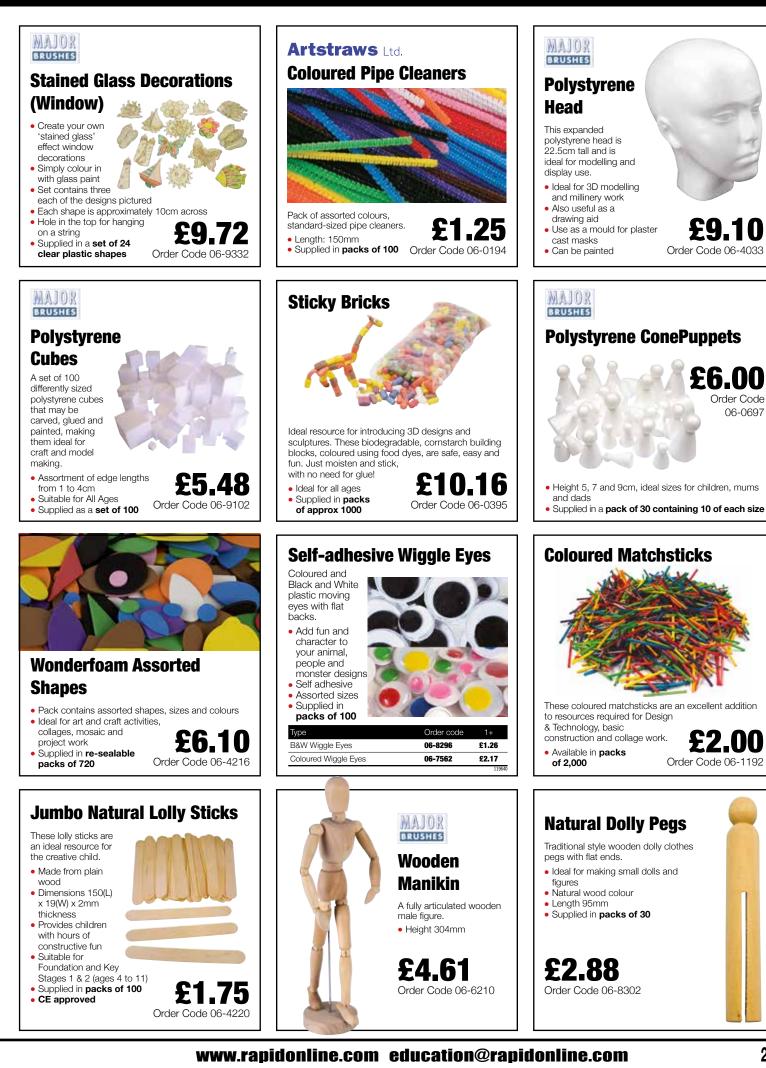
Feathers

Great value packs of feathers, in either natural or exotic selection packs, ideal for crafts, decoration, collage work, etc.

Available in 28g packs

Туре	Order code	1+
Exotic feathers 28g	06-7568	£1.85
Natural feathers 28g	06-8618	£3.19
		066031

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DA



06-8609

£1.50



Air Hardening Air Drying Clay - Terracotta & Stone

Colour	Pack size	Order code	1+
Terracotta	2.5kg	06-5439	£5.10
Terracotta	12.5kg	06-0687	£13.14
Stone	1kg	06-2285	£2.10
Stone	2.5kg	06-5433	£5.34
Stone	12.5kg	06-0641	£13.14
			5018

Colour Clay (Plasticine) 10kg - 18 colours

This 10kg pack of colour clay (plasticine) from Scola is an excellent modelling material which provides hours of . fun for both kids and professional animators alike. Can be used



repeatedly - environmentally

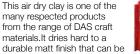
- friendly! Ideal for kids, hobbyists or animators
- 18 colours

£25.08

Order Code 06-0895



modelling clay from DAS. This air dry clay is one of the



painted and varnished, and has

a multitude of uses both for arts and crafts and around the home.

May contain silica.

Size	Colour	Order code	1+
500g	White	06-5432	£2.34
500g	Terracotta	06-5434	£2.34
1kg	White	06-5436	£4.74
1kg	Terracotta	06-5438	£4.74
			078

Rainbow Colour Clay AVAIO MINIO ROSO

Scola Colour Clay is a highly economical modelling material as it never dries out; so it can be used again and again. Despite always being malleable, models will always retain their shape. Perfect for kids play and professional animators alike.

 Rainbow colours Never dries out

Use again and again

- £1.62 Supplied in a 500g pack
 - Order Code 06-0896



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System 3 Acrylic Paint Assortment Set

Set contains a 59ml tube of each of the following colours:

- Cadmium Yellow Hue
- Cadmium Red Hue
- Ultramarine
- Sap Green Yellow Ochre
- Burnt Umber
- Mars Black
- Titanium White

Supplied as a set of 8x 59ml tubes



Over 35 colours

System 3 Acrylic Paints

Daler-Rowney's System 3 Acrylic Colour Paint is a durable, water-resistant, acrylic-based paint with excellent adhesion.

- Ideal for art, craft and design projects in colleges and schools
- Useful for both amateurs and professionals using colour in large quantities



£27.54 2.5L bottles



System 3 Acrylic Paint **Jumbo Selection Set**

A Jumbo Selection Set of 8 System 3 acrylic paints is ideal for use with art and crafts projects in the classroom or studio as well as for use by artists on larger works. The Jumbo Selection Set includes eight 150ml tubes of this durable, water-resistant, acrylic-based paint.

 Colours supplied: Titanium White, Cadmium Yellow Hue, Cadmium Red Hue, Ultramarine, Sap Green, Yellow Ochre, Mars Black and Burnt Umber



• Height 44cms (17in) Height 75cms (29in) Max canvas size Max canvas size 30cms (12in) 55cms (22in) Easel studio. DALER 🔷 ROWNEY 803660739 Simply Table Easels These value-for-money Table Easels from Daler-Rowney's Simply range are ideal for budding artists or students for use in the home, shed or studio Order co Mini table easel 06-8674 £6.05 Table easel 06-8676 £14.82

£16.75

Order Code 06-1411

DALER 🔷 ROWNEY **Oxford Studio**

The Daler Rowney Oxford Studio easel is a strong, adjustable ratchet easel which may be tilted backwards or forwards from vertical. It is designed particularly for use in the

- Maximum canvas height 1450mm (57in)
- Weight 12kg (26.5lb) Manufacturer's part

£103.18 Order Code 06-9524

DALER 🔷 ROWNEY

Simply Canvas, Packs of 3

With a 15mm thick edge for a 3D effect, these Simply Canvas packs from Daler-Rowney are ideal for use with both oil and acrylic paints in the classroom or in the studio. The canvas, stretched on a wooden frame, is highly versatile and suitable for mixed media, collage, impasto, heavy textures, etc.

- Ideal for Oil and Acrylic Back stapled - clean edge for painting on sides
- Double primed

MAJOR

BRUSHES

Primed and

• Medium texture

necessarv

rigidity

15 x 15cm

25 x 30cm

40 x 60cm

Size

Stapled on the back

Stretched Canvas

These primed stretched canvases are

ideal for use with traditional or watersoluble oil paints, acrylics and alkyds.

 Mounted on sturdy wood frame • 15 x 15cm, 25 x 30cm and 40 x 60cm

sizes are supplied complete with

• 40 x 60cm size features a centre

brace across the frame to increase

Order code

£1.33

£2.10

£4.22

06-9258

06-1850

06-1852

wedges to further stretch the frame if

- Medium grain texture 100% acid-free cotton for
- durability
- Supplied in packs of 3

Order code	1+
06-9531	£9.44
06-9533	£13.80
06-9535	£8.52
06-9536	£14.86
06-9537	£19.31
	06-9531 06-9533 06-9535 06-9536



Acrylic Paint and Synthetic Sable Brushes Pack

A super Painting Pack including 10 assorted colours of Scola acrylic paint and 50 synthetic sable artist's brushes in 6 different sizes from Major Brushes.

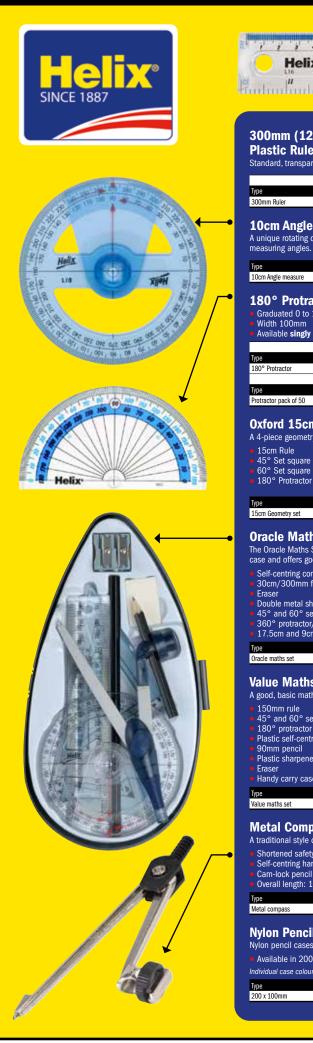
- Suitable for use on paper, card, canvas, ceramic and wood
- All colours are intermixable
- · Can be used straight from the bottle or diluted with water
- 10x 500ml bottles
- Major Brushes Synthetic Sable Brushes perform just like genuine sable and represent good value for money. Best quality, terrific point and spring
- Excellent for thin detail lines, lettering and detailing Nickel plated seamless ferrules
- Ideal for painting with water, oils or acrylic paint
- Pack contains 6 sizes; 10 each of sizes 0, 2, 4 and 6,
- plus 5 each of sizes 8 and 10 Each brush supplied with plastic cap to protect the bristles
- Packs of 50



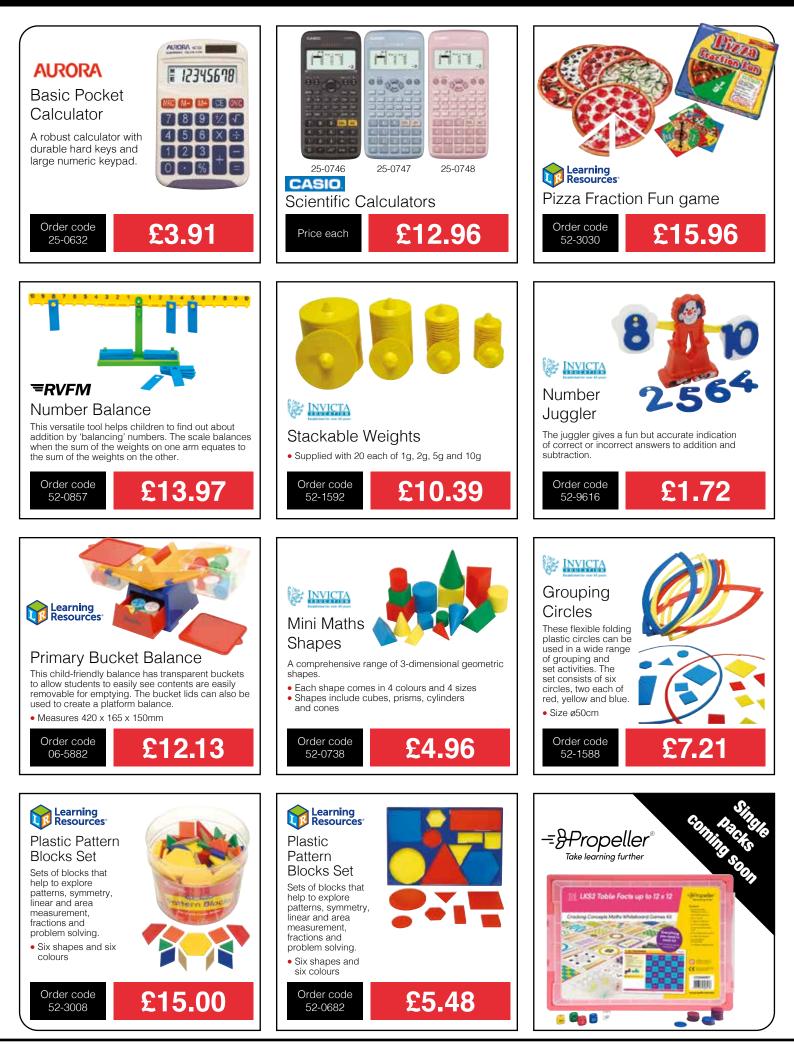
£50.34

Order Code 06-0083





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