

Primary Science & Technology

Learning out of doors

FREE

to all member primary schools & other members.

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Frog invasion

A school reported that a disused swimming pool, drained but filling up with water, had lots of big tadpoles in it, plus a 'huge developed frog'. They asked what they can legally do to avoid being overrun by frogs.

First, identify the species and confirm whether it is protected. If it is, there are restrictions on the action you can take. Your local Environmental Health department or wildlife society may be able to advise on what to do. Generally, tadpoles are unlikely to be from a protected species, and it would

help maintain the frog population to allow them to develop and move away. Amphibians can usually climb out of ponds quite easily but a swimming pool may have vertical sides, so provide them with a ramp at the edge. There may be a number of baby frogs around later in the summer when they metamorphose before they disperse. It is not likely that your school will be overrun by frogs.

And if you decide to bring your pool back into use once the tadpoles have left, ordinary cleaning and disinfection usually discourages animals from coming in, so you the pupils shouldn't need to compete with nifty amphibians while swimming.



Q? A!

Calls to the *Helpline*

Recent calls to the
**CLEAPSS Helpline from
primary schools included:**

Scents and sensitivity

A school proposed using small quantities (up to 1 ml) of some essential oils, e.g. lavender, clove oil, eucalyptus oil, peppermint oil and some household products – coffee granules, vinegar, soy sauce, strawberry flavouring, in a smelling game. Children would be allowed to briefly smell a couple of drops on cotton wool, protected by a cotton wool pad in reasonably narrow, sealable plastic containers or vials.

The risk assessment would take the age and abilities of pupils into account. It would be sensible to seal the vials, just allowing pinholes through which the aromas could be sampled. Also, check for any allergies. Train the pupils how to smell safely by wafting the scent to their nose, not holding the vial very close. Some oils are irritants, so take care when handling them. Store them in glass from year to year as some oils disintegrate plastics over time.

Chinese lanterns and balloons

A school asked if it could light and release 'Chinese lanterns' as part of a project on flight.

In 'Danny, the Champion of the World', Danny's dad launches a hot air balloon with a flame beneath the canopy. Similar Chinese lanterns are available in party shops. Their popularity has led to an increase in reports of unidentified flying objects and hazards for aircraft. They are spectacular. The lanterns carry a flame but you have no control over their flight. There may be no haystacks, thatched roofs or other obvious fire risks around you, but you cannot be sure of the balloon's destination. It would be safer to buy a few toy helium balloons and release them. They might carry a message from the school. You can use helium or 'balloon gas' to inflate your own balloons - teachers only to inflate each balloon in a roped off area. No inhaling the gas to talk in a 'Mickey Mouse' voice, which can be lethal (see Supplementary Risk Assessment 07 on the CLEAPSS web site). Each child has a labelled balloon, signed with a first name only, and with the school's address. Map them as the balloons are returned. Of course, this is not cheap, but a party shop or your secondary school might help. You might think about talking to a hot air balloon enthusiast. They might be willing and legally able to launch from your school field. An infant school asked whether children might use their own puff to blow up party balloons. There should be no problem – as long as balloons are not shared – but some balloons are hard to inflate. Rubbing the balloons vigorously between your hands demonstrates heat produced by friction and softens the balloon before inflating.



New resources

Free human body parts resource

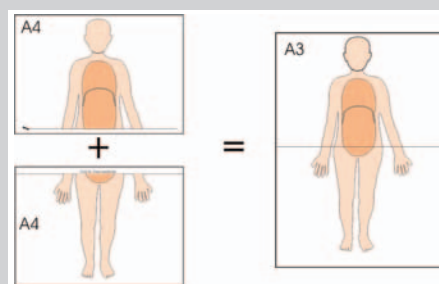
E261 *Body Parts* is a new CLEAPSS resource for teaching the position of the major organ systems in the human body. It is for pupils in key stages 2 & 3, depending on the detail you include. The skeleton and torso outlines are useful at key stage 1, too.

The resource consists of drawings of body and torso outlines, and sets of illustrations of major organ systems to fit each of the outlines. The whole body outline is one that pupils will recognise

easily, but the organ drawings will be small. You will get larger organs by using the torso outline instead. Choose the format that best suits your needs. The body and torso outlines have been drawn to fit A3-sized paper. If you are not able to print out colour graphics larger than A4, each outline has been split into upper and lower halves that will print to A4 format. The two halves can be pasted together to form a large outline – see the illustration.

These pictures are accurate and clear.

Go to the primary area of the CLEAPSS website, log in and select Electronic Documents to download E261 as either a Word or pdf document.



You can call the CLEAPSS **Helpline** with your questions on 01895 251496

CLEAPSS web site password

To access the Primary Resource part of our website requires a user name and a password. Click on the 'Primary Resource' button. You will then be asked to type in the user name: **lithium** and the password: **b3x2w4n7**. This will give you access through 2011 to all our primary documents, including back copies of *Primary Science and Technology*.

Getting Practical

Improving Practical Work in Science Programme

Check out the *Getting practical* web site www.gettingpractical.org.uk for some new case studies of successful practice and for dates of upcoming courses

What's happening in primary D&T?

Gareth Pimley from Shropshire Council's Advisory Service updates us on the latest news, ideas and resources in primary design and technology.



In recent years primary schools have had to work hard to maintain breadth and balance across the curriculum. As part of the wider curriculum, design and technology continues to play a very important role in

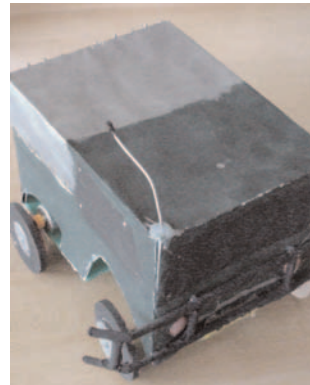
children's learning and remains a statutory subject at both key stages 1 and 2. Since the abandonment of Sir Jim Rose's primary curriculum proposals, the National Curriculum (1999) has continued to set out children's entitlement in all subjects, including design and technology. The Government intends these requirements to remain in force, with a new subject-based National Curriculum due to be taught from September 2013.

So how are things looking for primary design and technology?

Research indicates that it is one of primary-aged children's favourite subjects; and teachers report that the enjoyment and engagement derived from design and technology has a positive impact on other areas of the curriculum. In many schools, design and technology is thriving. According to Ofsted's 2009 report on primary

teachers' subject knowledge, apart from English and maths, D&T is now in the top three primary school subjects for good and outstanding teaching.

Many primary schools have now adopted a thematic or topic-based



approach, adding coherence to children's learning and helping to establish cross-curricular links. However essential elements can be lost. If the design and technology projects in your school have become uninspiring 'craft' activities, a good place to start is with the three S's. When planning your D&T, make sure that children's activities will enable them to:

Design and make
something for
somebody for
some purpose.

If you are aiming for excellence with your D&T planning, you might also find it helpful to use the 'D&T essentials' curriculum evaluation tool, freely downloadable as a PowerPoint from the Design and Technology Association's website www.data.org.uk

Let's Get Practical!

The Design and Technology Association is developing a number of Let's Get Practical! resources to help teachers who would like to do more practical work in D&T but don't feel very confident or would like more ideas for techniques. The resources are designed to help subject leaders organise their own workshops or as support for individual class teachers. Publications that already support the development of practical expertise are available from the online shop at www.data.org.uk including Helpsheets to support practical delivery of the ideas, skills and techniques described in each QCA unit of work for design and technology and an *A-Z of D&T CD-ROM* presented as PowerPoint presentations which may also be printed as classroom display cards.

Design and Technology Association membership

Primary membership of the D&T Association has grown significantly in recent years with members enjoying low-cost regular CPD through a range of services including downloadable teaching resources, termly specialist magazines featuring new project ideas, conferences, face-to-face training events and individual phone and email advice. For more details visit www.data.org.uk.

Primary D&T Health and Safety Training

Primary design and technology has a framework of health and safety training standards approved by the Training and Development Agency (TDA). Training is carried out by one of the Design and Technology Association's Registered Design and Technology Health and Safety Consultants whose contact

details are available on the D&T Association website at www.data.org.uk

There is specific accreditation for primary health and safety for subject specialist trainees and teachers with responsibility for co-ordinating/leading D&T in primary schools.

Fed up with slippers?

'Designer Bags' is a tried and tested alternative to the slippers unit at KS2. On the non-members section of the



D&T Association Helpsheets **Designer Bags**

Introduction
This unit is adapted from Unit 66 Slippers. Children enjoy working with fabric and this unit gives them the opportunity to design and make a bag for a specific use. Investigating and evaluating a range of bags will provide a source of ideas and inspiration for developing their own products.

Encourage children to make detailed drawings and notes when investigating the bags.
Compare the different styles of bag including appearance, contents, safety.
Question the children on the bags' suitability for different uses.
Discuss the choice of materials used for the main, handles and lining.

Show the parts of different styles of bags.
Demonstrate how to make a pattern including a seam allowance.

Existing bag samples
Hand bag, Shopping bag, School bag, Messenger bag, Rucksack, Briefcase

Making a pattern
You may need to make a pattern that is symmetrical. Children may need help to see how to fold fabric so that they can cut two pieces with the patterned side the correct way round.

Explain how to join right sides of fabric together:
- stitching right sides together
- sewing central seam

Parts of bags
Handle, Strap, Zipper, Pocket, Lining, Grommet, Buckle, Strap, Handle, Strap, Zipper

resource vault at www.data.org.uk you will find a free, fully re-written unit of work, a Helpsheet with sketches, tips and techniques, PowerPoints to help teach the project, and children's worksheets.

A positive approach to learning out of doors



A million school children visit the two thousand UK farms open for school visits every year. When you add the number that visit casually - 'Jenny's Dad says we can go and see the lambs' - and visits to 'countryside experiences', that figure rises even higher. CLEAPSS and others have been offering reliable health and safety advice for years. FACE (Farming And Countryside Education) have already trained and accredited 1,400 farmers who have visitor facilities at their farms. RoSPA, through the Child Safety Coalition (CSEC) developed a pack of online resources aimed at preventing unintended injuries in young people, not just on farms but in the countryside in general. CSEC is no more; but the resources are still available. Five working farmers contributed to the FACE/CSEC pack, together with Jason Cole, then CSEC coordinator and former primary school teacher, and Brian Hainsworth, FACE regional coordinator, West Midlands. The pack is aimed at Key Stage 2, and activities can be modified for both older and younger children, and for special school use. It is especially relevant following an outbreak of E. coli at a petting farm in 2009.

The pack, which encourages children and young people to think about and practice skills that will keep them safe, was piloted on five Midlands farms in June, 2010. Subjects include approaching and feeding animals, water safety, barn and machinery safety and the identification of harmful plants and berries. Thorough hand-washing, in surgeon style, is illustrated and explained.

You can find the resources and download them free from the farmer's section of the FACE website as a pdf file. Expect them to develop and be expanded. They will be an ideal preparation for a farm visit for any child living in or visiting the country.

www.face-online.org.uk/farmers

A Gift to the School – What shall we do with the garden?

A new CD-ROM resource from SSERC, our Scottish equivalent, in collaboration with SAPS – Science and Plants in Schools - imagines a donation to your school of a large garden surrounding 'Hazelbury House'. The garden is in disrepair, and your pupils are invited to plan how to develop it in the future. The project is broad enough to cover common curriculum outcomes in both Scottish schools and other schools in the United Kingdom. It is intended for primary and lower secondary pupils, for science clubs and outdoor centres. It might be appropriate for gifted and talented groups. Its paper teacher notes are

succinct and include a map of the entire CD-ROM.

Pupils enter the garden through an intriguing door, and then groups can work in six different garden areas, including the orchard, the paddock and the pond. There are pictures and film clips in each, all carefully cross-referenced. The password-protected teacher notes support pupil planning in groups and include ways of involving other adults. There is a work card for each area, but these all ask identical questions, and you might choose to edit them more imaginatively. The teacher notes include some open-ended questions that will need planning carefully if pupils are not to enter huge areas of research. Access to the pupil resources from the teacher notes on the disc is via the plan of the garden.

This is a useful resource to act as a discussion-starter, especially if you can relate it to a real-life garden or outdoor area – or it might supplement limited first-hand experience in a school without school grounds.

A Gift to the School is available for £25 including VAT and postage, from:
SSERC
2 Pitreavie Court
South Pitreavie Business Park
Dunfermline
KY11 8UB

New edition of

Be safe!

The 4th edition of the Association for Science Education best-seller *Be safe!* was launched at the Annual Conference at Reading University in January. It is now sub-titled *Health and safety in school science and technology for*

have been reordered and most of the text has been revised to improve clarity or take account of curricular changes and the increasingly diverse curricula across the nations of the UK. It shows that science and technology present good opportunities for teaching children about the dangers in the world around them and how to

Many schools/advisers will have the 2nd (2002) edition of the *Be Safe! INSET Pack*. ASE are NOT producing a new edition of the *INSET Pack* because all the activities still work. However, the pack does contain a number of page references to the 3rd edition of *Be Safe!*, and these will almost all be wrong because ASE have expanded the book and changed the order of topics.



teachers of 3- to 12-year-olds, and is more early-years-friendly, with a completely new section on *Science for the under-5s*. At the other end of the age range, there is a new section on *Taking it further* for those involved in primary/secondary liaison or who have access to more specialist facilities than is common in most primary schools, but might be found in middle or all-through schools. There are also expanded sections on *Ourselves*, on *Science outside the classroom* and on *Making things*, which now includes advice on work in textiles, pottery and the use of plaster of Paris.

Although the book builds on the previous editions, the sections

deal with accidents. It emphasizes that science in primary schools is very safe so teachers should not believe some of the myths that get into the press. There is no need to go over the top on health and safety – you can (usually) use egg boxes, toilet roll centres and glass, for example.

This new edition was produced by experts from the ASE's Safeguards in Science Committee working with experienced primary teachers nominated by the Primary Science Committee. Every primary school or nursery needs at least one copy and larger schools will need several. A Welsh language edition is under development.

The ASE is making available an *Update Sheet*. This will be

- Included in copies of the *INSET Pack* sold from now on
- Available as a free take-away from Booksales at the ASE Annual Conference
- Available as a free download (for members) on the ASE web site at

www.ase.org.uk/resources/health-and-safety-resources/health-and-safety-primary-science/

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Our spring competition: Looking for 'The Natives'

What is a 'native'?

Many of the plants, animals and fungi that we see in Britain today have only been in the country a short time, brought here by people in the recent past. But there are many native species living close to us. Native species have been in the British Isles for at least 200 years. Native plants can be confirmed at:

www.nhm.ac.uk/nature-online/life/plants-fungi/postcode-plants/checklist-british-plants.html

A limited list of native vertebrate animals can be found on the Woodlands Junior School site:

www.woodlands-junior.kent.sch.uk/customs/questions/animals.html



Holly is an example of a native species.

The Competition

CLEAPSS and the ASE Outdoor Learning Group would like children from year 1 to year 6 to look around, find and photograph NINE native species of plants and animals out there. Find a good example of each of the NINE GROUPS shown in the grid below. We are looking for local examples, perhaps

Tree	Lichen	Mammal
Moss	Mollusc	Bird
Liverwort or Fern	Arthropod	Segmented worm

unusual ones, and clear photographs, accurately labelled. We are not judging on artistic merit!

Making your entry

The competition is open to children from year 1 to year 6, in member schools throughout the UK. We will award one prize to the winner in each of three categories: pupils in years 1&2, in years 3&4 and in years 5&6.

There must be no more than one entry for each class, but several classes in a school can make an entry.

To show that the photographs are original, you must have the date and time printed on them. Download an entry form with a grid from the CLEAPSS website, www.cleapss.org.uk Click on 'Primary' and then look in the 'news' section.

The grid is can be printed any size to suit the school but must end up no larger than A3 sized.

Stick your photographs very firmly onto the grid, and make sure you write the **CHILDREN'S NAMES** and **YEAR GROUP** and the **NAME AND ADDRESS OF THE SCHOOL** on the entry form.

Post your entry it to CLEAPSS at the address below: PST Ecology Competition, CLEAPSS, The Gardiner Building, Brunel Science Park, Kingston Lane, Uxbridge. UB8 3PQ.

Entries must reach us no later than **Wednesday May 4th**. Entries cannot be returned.

If you add a school e-mail address, we shall send a certificate of thanks to every entering school which you can print out, complete and present to the children involved.

Complete, correct entries will be judged by Roger Lock of the ASE Outdoor Learning Group, who has a lifetime's experience of engaging young people in natural history.

Winners will be announced on the CLEAPSS website during May, with one prize awarded for the best entry and winners' certificates for all members of a group winning together.

The winning entries will be posted on the CLEAPSS website.

Prizes are being donated by the school science and technology suppliers TIMSTAR (our sponsor for this competition).