

## About BBSRC and the Schools' Liaison Service

The Biotechnology and Biological Sciences Research Council (BBSRC) promotes and supports high-quality basic, strategic and applied research and related postgraduate training relating to the understanding and exploitation of biological systems.

BBSRC supports over 7,000 scientists, technicians, students and support staff in universities and institutes and is funded principally from the Science Budget of the Office of Science and Technology.

### A free service for schools

As part of its schools-based programmes, the BBSRC Schools' Liaison Service runs a Science Club, offering free support and resources, which is open to all schools and colleges in the UK.

To join the Science Club, photocopy, complete and return the slip on this page to the address given below. Membership is free and ensures that your school receives information about the Schools' Liaison Service and free school resources.

## About this discovery pack

This pack has been developed by the Biotechnology and Biological Sciences Research Council (BBSRC) with support and technical advice from Suttons Consumer Products Ltd. Suttons produce a range of child friendly 'Seed Squad' seeds which can be used to complete many of the activities suggested in this booklet.

Initially BBSRC worked with a team of primary teachers and Dr Nick Peters of the Institute for Arable Crops Research, Long Ashton Research Station, to develop many of the activities in this booklet. BBSRC thanks the teachers and children of all the schools who helped to trial the activities.

### The teacher team:

Jane Nicholls (team coordinator), Brook Field Primary School, Swindon, Wiltshire  
Carolyn Adams, Ludwell First School, Shaftesbury, Dorset  
Phil Allan, Colerne Primary School, Colerne, Wiltshire  
Judy McAteer, Liden Junior School, Swindon, Wiltshire  
Penny Wood, Salt Way Primary School, Swindon, Wiltshire



In 1999, Dr Jackie Spence and Dr Phil Gates and colleagues from the School of Biological Sciences, University of Durham developed five further activities for 5 to 7 year olds. These were trialed by 50 primary schools in the BBSRC Science Club. The activities have been included in this booklet.

*Yes you can photocopy this booklet!*

The contents of this booklet may be photocopied for educational use. All 'Seed Squad' character illustrations remain the copyright of Suttons Consumer Products Ltd.

## General themes

All the activities can be used to encourage children to care for and appreciate living things and to think about the world around them.

The activities can also be used to encourage children to think about health and safety issues.

Children should have opportunities to make first hand observation and to use secondary sources of information including books and videos.

## Beyond the classroom

All of the activities suggested would be enhanced by experiences beyond the classroom such as a visit to a local garden centre, park, nature area or botanical garden. Many garden centres are keen to welcome organised school parties (if they are given prior notice and can liaise with the teacher) and will offer short guided tours or demonstrations. A number have Sutton Seeds *primary trails*, a series of colourful posters plus quiz and 'did you know' sheets to help children make the most of their visit. Most botanical gardens and nature areas make excellent provision for young visitors and all of these options allow children to interact with a greater range of plants and plant products and to think about growing conditions, habitat, care and conservation.

### Links to the Curriculum

This pack has been designed to allow 5 to 12 year old pupils to explore the world of seeds and plant growth. Particular curriculum links are listed below:

#### *England and Wales*

- Key Stages 1 and 2: Science: Attainment Target 1 - Experimental and Investigative Science.

- Key Stages 1 and 2: Science: Attainment Target 2 - Life Processes and Living Things. In particular:

3. Green plants as organisms;

4. Variation and classification, and at Key Stage 2, 5. Living things in their environment - adaptation.

#### *Scotland*

Environmental Studies 5-14. P1-P3.

Science: Understanding Living Things and the Processes of Life.

## Health and safety

All the seeds suggested in this pack have been especially selected for use by young children and are safe for them to handle. However, all normal precautions should be taken and the teacher should make the children aware of health and safety issues relating to the areas covered. For example, the teacher should explain that the seeds are not sweets and should not be eaten and that children should wash their hands after handling plants or soil. The teacher should also be aware that some of the children may suffer from allergies or asthma and therefore should not smell, or be in prolonged proximity to flowering plants.

The Association for Science Education's *Be Safe!* booklet (second edition ISBN: 0 86357 081 X) is an excellent source of health and safety advice and guidance for primary science and technology teaching.

## *Be Safe!* - plant information

*Be Safe!* recommends a number of plants for general use and to illustrate growth from seeds. These include: begonia, Busy Lizzy, geranium, runner bean, cress, maize and wheat.

*Be Safe!* recommends that all parts of the following plants should be considered poisonous; Giant Hogweed, Caster Oil seeds, Holly, Laburnum, Mountain Ash seeds, Potato (except tubers when not green), Privet, Red kidney beans (except when well cooked), Spindle-tree, Rhubarb (except leaf stalks) Tomato (except fruits), Yew, Black Bryony, Black Nightshade, Cuckoo Pint, Deadly Nightshade, Hemlock, Henbane, Ragwort, White Bryony, Woody Nightshade.

### Lesson planner

Activity	Suggested age range	Time indicator
1. Discovering seeds	5-7 years	2 weeks set-up; 30 minutes examination
2. Seed sorting	5-7 years	30 minutes activity
3. Sunflower jigsaw	5-7 years	1 hour activity
4. Fun with flowers	5-7 years	2.5 months if grown from seed; 30-45 minutes examination
5. Climbing and crawling	5-7 years	2 months if grown from seed; 30-45 minutes examination
6. Room to grow	5-7 years	4 weeks of plant growth; 30 minutes examination
7. Eating plants	5-7 years	30-45 minutes examination
8. Seed detectives	8-12 years	1 hour
9. Introduction to seed germination	8-12 years	30 minutes preparation; 5 days monitoring
10. Seed dispersal	8-12 years	30 minutes
11. Tank trials - measuring germination	10-12 years	8 days set-up/monitoring
12. The growth cycle of <i>Sunflower</i> - looking at variables and planning a fair test	10-12 years	1 hour set-up; 2-3 weeks monitoring