

Educational Gardens

An exploration into the learning benefits and identified curricular outcomes.

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Syllabus links

An educational garden holds numerous tie-ins with the School Curriculum, some of which are identified below.

Science and Geography

An educational garden environment offers many natural links to the science syllabus. Indeed, there are some topics for which the physical example that a garden offers is an irreplaceable demonstration of the concepts involved.

Some such examples are:

- Plant taxonomy.
- Soil science; texture, structure and profiles.
- Chemical properties of soils, nutrients and fertilisers.
- Plant life cycles; ephemeral, annual, bi-annual and perennial. Deciduous and evergreen.
- Plant adaptations; volatile chemicals, root/stem/leaf adaptations.
- Elements of the water cycle.
- Temperate zones, climate.

Aside from the more obvious links into the Biology syllabus benefits with more general scientific activity have been noted¹. For instance, pupil devised experiments and understanding of scientific language.

Other benefits may be found by using the garden setting to teach aspects of

- **History;** British empire, agriculture
- **Literacy;** Latin rooted plant classification
- **Mathematics;** Estimating, Data recording, dimensions, statistical review and analysis, plant structure ratios and patterning.

Arts and humanities

The second set of direct syllabus interconnection comes through the teaching and enjoying of arts and humanities.

The tranquil and inspiring setting of a garden lends itself to the pursuits of music, art, drama, DT, sculpture, photography, design etc. and offers an excellent space for performance and display of such practices.

In the recent paper by the National Foundation for Educational Research¹ the benefits of a school garden were identified through the four learning domains – Cognitive, behavioral, affective, physical².

They identified that the links to the school curriculum will aid in cognitive learning, however, the greater impact on student development will be found in the gardens affective outcomes.

Through case study qualitative analysis they reported notable increases to pupil attitudes, values, beliefs and self-perceptions, which were most evident in relation to enhanced self-esteem and motivation;

The experiences afforded by taking the pupils outside and encouraging them to undertake investigative work involves a different kind of pedagogy in which pupils take greater control over their own learning and in which the teacher's role becomes more facilitative.

Work in the garden was frequently reported as an instrument to improve children's self-esteem, particularly for those who lacked confidence and self belief.

Improved confidence and self-esteem was also seen as an outcome of being able to contribute (and being seen to be able to contribute), through the garden, to the school and wider community.

Teachers reported that this pride, in turn, meant that children were more likely to maintain the good condition of the school grounds.

Schools reported that the garden is a particularly appropriate place in which to gain new physical skills and to learn about healthy eating and sustainable living so that there was a behavioral change in relation to eating (healthy) food.

Extra caricular activities

An educational garden that incorporates open space may be utilised as a motivating environment for a whole myriad of clubs and activities.

Some such utilities include:

- Garden Design clubs
- Gardening Clubs
- Yoga, Pilates, Karate
- Euntrapineur societies, who manage the purchase and sale of goods for/from the garden
- Debating

The other great advantage of the school garden is as a tool for community cohesion. Schools currently use gardens to invite the public to participate in many of the above activities, and examples include visits by local gardening clubs and allotment holders,

private paid participation of activities, lads and dads days in the garden and even displays of produce at Royal Horticultural Society shows.

Legislation

This section summarises the legislative and regularly requirements and compliances that the garden and contractor must satisfy.

The Garden

The design and maintenance of the garden must adhere to school policy on health and safety with respect to staff and pupil safety with the physical environment and hazardous items and chemicals.

The Contractor

As an employer the contractor, (ref. they), must have Employers Liability Insurance, (Liability Compulsory Insurance Act 1969).

They should have Product Liability, Professional Indemnity and Hired in plant insurance, which cover; failure of products installed, incorrect knowledge sold and hired equipment, respectively.

They must also display a current Health and Safety Poster (or provide all employs with pamphlets containing the same information).

They, therefore, must conduct risk assessments for activities undertaken by, and tools used by, the project, and make measures to control them.

Regulations:

- Management of Health and Safety at Work Regulations 1999; Risk assessments
- Health and Safety Regulation 1996; Consultation with employees
- Safety Representatives and Safety Committees Regulation 1977; assigning responsibilities and controls.
- Workplace Regulations 1992; Health Safety and Welfare within the workplace.
- Manual Handling Operations Regulations 1992 (as amended)
- Management of Health and Safety at Work Regulations 1999
- Control of Noise at Work Regulations 2005
- Control of Vibration at work 2005
- Electricity at work Regulations 1989
- Work at Height Regulation 2005
- Provision and Use of Work Equipment Regulations 2005

If they utilises hazardous substances they must adhere to:

- Control of Substances Hazardous to Health Regulations 2002 (COSHH) (as amended)

Being in the construction industry, they must adhere to;

- Construction (Health Safety and Welfare) Regulations 1996; Building work
- Construction (Design and Management) Regulations 2007

- Confined spaces Regulations 2005

For those who regularly use computers at the workplace;

- Health and Safety Regulations 1992; Display Screen Equipment

They must also ensure that employees, and those sub-contracted, are trained in being able to identify the correct equipment to use, as well as how to safely operate any equipment used;

- Provision and Use of Work Equipment Regulations 1998
- Lifting Operations and Lifting Equipment Regulations 1998
- Supply of Machinery (safety) Regulations 1992, as amended 1994

If there is an incident at work, they have the legal requirement to inform the Incident Contact Centre (ICC) as specified in the

- Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR).

Design

Practical requirements- H+S, School policies
dangerous chemicals and
sharp instruments. and carrying heavy loads.

Soil profile

Geography bed

Water cycle

Wildlife

Re-cycling compost

Operation

This section considers the more practical operational considerations of using and maintaining a school garden, and presents the more successful practices that are employed by existing school gardens.

In the NFED paper Impact of School Gardening on Learning, recommendations on successful practices by the school are made;

- Embed the garden within the school development plan
- Ensure that staff members are given specific garden-related tasks
- Employ teaching and support staff for whom outdoor learning was a priority
- Provide staff with non-contact time in which to plan gardening activities and to develop expertise among other staff members.

The garden should be incorporated as a teaching aid into the lesson plan of suitable subjects, and made available for extra curricular activities.

Below, examples from other schools of methods to greater incorporate the garden into school life are given;

- Giving pupils awards for achievements from the garden
- Using the kitchen notice-board to announce which fruit and vegetables have come from the garden.
- Organizing well-publicised family garden activities
- Showing parents the garden as part of open days.

These schools report great success in drawing in parents and the local community to both construct and maintain the garden.

The maintenance of the garden would ideally be performed by pupil participation as part of a club run by volunteer teachers, parents or local gardening clubs. The other important aspect of maintenance comes from the design of the garden, in which easy maintenance must be considered.

The Royal Horticultural Society's (RHS) Campaign for School Gardening

The RHS Campaign has four aims and objectives:

1. To encourage all schools to get growing, and to acknowledge the right of every child to get involved in gardening.
2. To demonstrate the value of gardening in enriching the curriculum, teaching life skills and contributing to children's mental and physical health.
3. To convince everyone involved with education in schools of the value of gardening in developing active citizens and carers for the environment.
4. To show how gardening can contribute to a sustainable environment.

The Campaign differs from other school gardening initiatives in that it involves providing advice and information on school gardens together with continuing professional development for teachers.

Registered schools receive benefits and rewards when they have achieved each of the five levels on the benchmarking scheme, and receive free seeds for their gardens.

The overarching aim is to raise the profile of gardens as a natural, sustainable resource that has the capacity to offer curricular, social and emotional benefits to pupils.

In April 2010 the Campaign had registered 11,500 members, and is approaching its aim of enrolling 80 per cent of all primary schools in the UK.

Bibliography

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References

1 Following the categorisation adopted by Dillon *et al* (2005)