



## **Gardening in Schools** A vital tool for children's learning

**Ready to learn / Resilient / Responsible** / The 3 Rs of school gardening



# Foreword / Dame Gillian Pugh

As a keen gardener and long standing member of the RHS, I am delighted to write a short foreword for this report on the very successful RHS Campaign for School Gardening.

There can be few more rewarding experiences – for either children or adults – than watching the seeds they have sown, sometimes more in hope than expectation, push up through the soil and grow into beautiful flowers or vegetables that they can pick and eat.

It is greatly to the credit of the schools that have signed up to this campaign, that they are seeing the potential of gardens as a natural and sustainable resource, offering huge benefits to their pupils across all areas of the curriculum, but importantly also in supporting children’s social and emotional development.

Not only does gardening provide opportunities for increasing scientific knowledge and understanding, and improving literacy, numeracy and oracy, but this report also shows that it improves pupils’ confidence, resilience and self-esteem. It gives them a sense of responsibility, and fosters positive behaviour, particularly for those with behavioural and learning difficulties.

In the words of pupils from this study “Gardening brings learning alive” and “I just adore gardening. I love watching stuff grow”. What better way can there be to engage children actively in their learning, to support healthy living and sustainable development – and to make learning fun?

The RHS is to be congratulated on providing support and encouragement to schools to ensure that gardening continues to contribute to children’s learning, health and overall well being.



**Dame Gillian Pugh**  
Chair, Cambridge Primary  
Review and the National  
Children’s Bureau

# Introduction

## **Our research**

We asked the **National Foundation for Educational Research (NFER)** to assess the impact of gardening in schools.

They surveyed 1,300 teachers and conducted an in-depth study of 10 schools reflecting a robust mix of types – from a large primary school in urban London to a small village school in Yorkshire.

**We believe gardening in schools is a necessity.**

**That's why we launched the RHS Campaign for School Gardening in 2007 with these three important aims:**

- 1 To encourage all schools to use gardening as a teaching tool**
- 2 To show how gardening can enrich the curriculum, teach children life skills, and contribute to their emotional and physical health.**
- 3 To demonstrate gardening's pivotal role in developing active citizens of the future.**

**Since then, 12,000 schools and educational institutions have signed up to the Campaign.**

**To understand its impact, we commissioned a significant new study investigating the role of gardening in children's wellbeing, learning and overall development.**

**This report is a summary of those findings.**



**12,000 schools  
and educational  
institutions have  
signed up to the  
Campaign.**

# Introduction

## The 3 Rs of School Gardening

Although the benefits of gardening as a teaching tool are many and varied, we've identified 3 core areas in which children's lives are radically improved.

They become:

1. **Ready to learn**
2. **Resilient**
3. **Responsible**

## How school gardens help our children grow stronger

As well as helping children lead happier, healthier lives today, the research showed gardening helped them acquire the essential skills they need to fulfil their potential in a rapidly-changing world and make a positive contribution to society as a whole.

Specifically it found that gardening in schools encourages children to:

- Become stronger, more **active learners** capable of thinking independently and adapting their skills and knowledge to new challenges at school and in future;
- Gain a more **resilient, confident and responsible** approach to life so they can achieve their goals and play a positive role in society;
- Learn **vital job skills** such as presentation skills, communication and team work, and fuel their **entrepreneurial spirit**;
- Embrace a **healthier, more active** lifestyle as an important tool for success at school and beyond;
- Develop the ability to **work and communicate with people of all ages** and backgrounds.

Just 1 in 4 primary teachers uses gardening to teach. **We can train thousands more to do the same.**

---

It can cost just a few pennies to start a school garden. **We can help make each one count.**

---

Based on a survey of 1,300 teachers and evidence from schools participating in the Campaign

## Other benefits    Why now?    Our vision

### Giving a more significant role to gardening in schools could have real benefits for society:

- Children develop into **more skilled, creative thinkers** better able to adapt to the changing needs of society and the jobs market in later life;
- **Stronger community** bonds are created as gardening deepens relationships with people of all ages and backgrounds;
- Greater awareness of **sustainable living** spreads from children to parents and across the entire community;
- **Parents** play a more active role in their children's learning and life of the school.

### Taking a more rounded approach to our children's development has never been better understood or more important.

The **Every Child Matters** programme, for example, aims to ensure every child in Britain achieves 5 key outcomes: **Be Healthy, Stay Safe, Enjoy & Achieve, Make a Positive Contribution** and **Achieve Economic Well-Being**.

What's more, recent reviews of the primary curriculum have shifted the emphasis away from a purely subject-based approach to teaching and instead advocates the development of the **skills, knowledge & understanding** of learners.

The research carried out by the NFER showed that gardening can play a pivotal role in helping children reach all those goals. It can do this by supporting children's development in 3 key areas we've identified as the **3 Rs of school gardening**.

### As the UK's leading gardening charity we are passionate about gardening and the impact it can have on people's lives.

Our vision is for every child in the UK to be given the chance to garden to ensure they grow up with a love of learning, strong grasp of essential life skills, and robust physical and emotional health.

**The RHS is in a strong position to work with government, local authorities, schools and others to make this vision a reality, turning gardening into an important tool that is embedded in all schools and supports all children to reach their full potential.**

# The 3 Rs of School Gardening

“Gardening is cross-curricular. From those with limited language and who need physical help to the most able, it covers them all.”

## Ready to learn

Gardening in schools can have a profound impact when it comes to giving children the skills they need to reach their full potential in life. The research showed that the practical, hands-on nature of gardening meant children became more active, flexible thinkers who were better able to meet life’s challenges – from the classroom to the workplace. In particular teachers reported that, using gardening as an essential teaching tool:

### Turning a garden into a curriculum

Gardening is ideally suited to help schools deliver all aspects of the primary curriculum and can support the application of the emerging emphasis on learners’ attributes and creative freedom for teachers. As the research found, a single practical, hands-on gardening project could teach a wide range of skills.

### Co-ordinated benefits

School gardens don’t just keep children active. Tasks such as planting seedlings and tying tomatoes to canes helped develop children’s fine motor skills too.

- Improved children’s readiness to learn;
- Encouraged children to take greater control of their own learning and become more active in seeking knowledge and solving problems;
- Enhanced children’s skills in core subjects including literacy and numeracy;
- Contributed to progress across a range of local authority Attainment Indicators in Early Years and Key Stage 2.

Fundamental to the success of school gardens in stimulating a love of learning was their ability to translate sometimes dry academic subjects into practical, real world experiences. Children were encouraged to get their hands dirty – in every sense. Teachers involved in the research said the result was a more active, inquisitive approach to learning that children could apply across a wide range of subjects, in and outside school, to achieve their goals.

“The creative curriculum is working very well – it’s very exciting for children. It gets them motivated to learn and gives them some ownership of their learning.”

Furthermore, the research revealed that the changeable nature of gardening projects – where anything from the weather to plant disease can affect the outcome – forced children to become more flexible and better able to think on their feet and solve problems. All essential skills for today’s technology and knowledge-based jobs market where the pace of change is faster than ever.

The extent to which gardening was used as a teaching tool was another striking finding of the study. For many schools, the garden was not merely a cosy add-on but was deeply and easily embedded across all areas of the curriculum.

“You’re not just learning how to do stuff. You can do it.”

## Why slow worms helped children learn faster

When Medway Council gave All Saints use of two allotments – one for fruit and vegetables, one for wildlife – teachers wasted no time embedding their new garden into much of the curriculum.

The Second World War home front was brought to life for lower Key Stage 2 pupils by a 'Dig for Victory' project, and two fellow allotment gardeners, Bob and Stan, shared their experiences as wartime evacuees. An old air raid shelter found on the plot was even used as a scene-setting classroom.

For a group of Key Stage 1 pupils, worms played a decisive role in their battle to write poetry about mini beasts. By giving them the chance to see

and touch slow worms, teacher Lesley Fielding believes their poems were more creative and contained far more 'wow' words. Though she adds, 'I had to check a few pockets before we left as several snails were heading home for pets'.

Gardening's ability to teach multiple skills through single projects was another reason teachers embraced the school's new plots.

Teachers at All Saints agreed that the practical, hands-on nature of gardening made it ideally suited for today's more flexible and creative approach to teaching. As Lesley Fielding put it, 'Everything is learnt from themes'.

### School

All Saints Church of England Primary School, Chatham, Kent

### Type

Larger than average urban primary

### Pupils

310. A third of pupils are from various minority ethnic backgrounds. 10% have English as an additional language. 40% have been identified as having learning difficulties and/or disabilities – mostly speech and language or behavioural.

### Garden

Two plots on local council allotment



**Air raid shelters and slow worms aren't typical teaching resources unless you work at All Saints Primary School in Kent.**

# The 3 Rs of School Gardens

## Resilient

The bold aims of the Every Child Matters programme calls for bold new teaching methods to ensure children grow as people not just pupils. According to the research, when it came to supporting this broader vision of children's development, gardening could:

### Growing confidence in the garden

Here are just some ways the research found gardening helped improve children's sense of self-worth:

- Exposure to insects such as worms helped small children overcome their fears;
- Less confident pupils were given a gentler, less pressurised route into learning where bright flowers and vegetables replaced the whiteboard as teaching tools;
- Waiting for crops to grow taught the value of patience;
- Public praise for school gardens, for example in assembly, generated a sense of pride.

- Boost self-esteem, confidence and motivation;
- Teach the ability to cope with life's ups and downs;
- Improve concentration by providing a calm space to learn.

Key to boosting children's confidence was the school garden's ability to act as a leveller. Teachers taking part in the study reported that the wide range of skills needed to complete tasks, from logic to physical strength, meant academic pecking orders were quickly forgotten.

This was most striking for children with special educational needs, behavioural problems or those that were simply demotivated by conventional classroom learning. Researchers found gardening enabled teachers to address children's unique problems in creative ways and play to their strengths – without singling them out from their peers.

“Having a garden has made us happier. When you're out there you feel like you won't get told off if you say something. It's made the teachers happier as well...”

Resilience in the face of life's disappointments was another important product of garden-based teaching, according to teachers. From failed crops to insect damage, children were forced to deal with setbacks to achieve positive goals, for example, a healthy crop of vegetables.

Classroom pressures such as deadlines and neatness were less obvious outside, and many teachers reported that a calm outdoor space helped improve children's concentration – a building block for success in any endeavour and at any stage of life.

“It's like building up poker chips. Every time you have a positive experience, you get another poker chip. The more you get, the better you feel. The knocks soon bounce off.”



**“Gardening at school allows all of our pupils the freedom to care for a living thing and to take pride in it.”**



## How a pumpkin changed children's lives

Growing their own Halloween pumpkins wasn't just a novelty for pupils of Pirton Hill Primary School. For many of them, it marked a transformation in their confidence and motivation.

With a large number of pupils with special educational needs, and others requiring significant emotional support, challenging behaviour was not uncommon at this Luton primary – embedding gardening in the curriculum has helped change that.

“Our teachers have to deal with some pupils with challenging behaviour,” says Deputy Head Emma Woollon. “But to see those pupils nurturing and protecting a growing plant provides a great sense of achievement.”

Gardening's ability to shape children's behaviour, Woollon believes, owes much to the fact it produces a result. Formal learning's smaller achievable 'steps'

can be “frustrating for those who have difficulty focusing or other barriers to learning.”

With a high percentage of children living in high rise blocks and without direct access to a garden and green space, pupils are also fascinated by the whole growing process – for example, watching a plot of pumpkins grow from seed in time for Halloween – and others enjoy the chance to get close to nature: “They squeal with delight at seeing worms.” For some, the physical side of gardening helps them stay focused and “use up surplus energy.”

It isn't just the children, however, who are being transformed. Pirton Hill's Deputy hopes that plans for a new gardening club will encourage parents and carers to get involved and foster a “sense of community identity and spirit in this diverse community.”

### School

Pirton Hill Primary School, Luton

### Type

Much larger than average urban primary

### Pupils

550 children, the majority entering the school with skills significantly below national averages. Around 60% of pupils are from a variety of ethnic backgrounds, 20% have English as an additional language. The proportion of pupils eligible for free school meals is above average, and the number of pupils identified as needing additional support is high.

### Garden

Various plots situated around the school.

# The 3 Rs of School Gardens

“Pupils feel, ‘I now have something I can focus on.’ It has a certain kudos to it as well: ‘I could be special without being the person sat outside the head teacher’s office, without being constantly in detention.’”



## School. Community. Planet.

Gardening projects also helped teach children about sustainability and their responsibility to the environment. For example, several schools built bottle greenhouses using over 1,500 plastic bottles collected from their communities.

“When I’m on playground duty they want me to come and see a bit of the garden they’ve been working on. It’s nice to know they value it; they are very proud of it.”

## Responsible

**Making sure our children grow up healthy and make a positive contribution to society, from their neighbourhood to the nation as a whole, is a major concern in Britain today. The NFER research identified several core ways that gardening in schools helped children take greater control over their own well-being and behaviour:**

- **Encouraged healthy eating so children are fitter and more active participants in everything from lessons to sport;**
- **Promoted responsible behaviour in dangerous situations;**
- **Prepared children for rapid changes in today’s skills-based jobs market by encouraging them to be more flexible and entrepreneurial thinkers;**
- **Enhanced children’s social skills as they mix with the wide range of people needed to ensure gardening projects succeed;**
- **Increased awareness of a child’s role and responsibilities in the wider community.**

Children took more responsibility for their own physical health and diet. Teachers taking part in the study said children who grew their own crops, for example, displayed a greater willingness to eat new vegetables – from cabbage to marrow. This, combined with physical tasks such as digging and weeding, taught children colourful new ways to stay active.

Teaching children to take control of their own physical safety was another important lesson highlighted by the research. By trusting them with garden chemicals and sharp tools, most children rose to the challenge and behaved responsibly.

The very hands-on nature of gardening also gave a new focus for children with a

history of disruptive behaviour and enabled them to make their mark in practical ways a classroom could not. When combined with other long-term measures, teachers often reported dramatic improvements in behaviour, greater confidence and improved self-esteem.

For many schools, gardening was considered a valuable way to forge links between pupils of all ages and the wider community. Some schools, for example, used gardening to strengthen bonds with local pensioners’ clubs by exchanging vegetables for pensioners’ gardening know-how.

Parents also became more involved in school life as children shared their gardening skills back home, according to the study. Fathers also seemed more comfortable with physical activities like ‘Digging Sundays’ than, for example, baking cakes for the school fair.

Other schools involved in the research used ‘Enterprise Days’ to sell crops and teach vital jobs skills from handling budgets to negotiation – both essential to helping them reach their full potential in life.

Although taking responsibility is often portrayed as a chore, the research showed children not only rose to the challenge but enjoyed their new responsibilities. Working as a community towards a common goal cultivated a sense of achievement in themselves and sense of pride in the school as a whole. Responsibility was seen as a powerful tool to achieve results – a valuable lesson for later life.



**Children are involved in every step of the process from planning what to grow to helping reduce food miles with their on-foot deliveries.**

## Turning over a new leaf – and a tidy profit.

Growing vegetables wasn't enough for the enterprising pupils of Orford Primary School. They turned their salad leaves into a healthy profit.

When it comes to creating entrepreneurs of the future, this small Suffolk primary takes some beating. Not content with simply growing an abundant range of vegetables – from potatoes and peas to beetroot and garlic – pupils now produce salad leaves they sell to the village pub.

An exotic mix of varieties, including rocket, sorrel and oriental leaves, are grown in the school's new polytunnel – then delivered to the pub on foot by one of the children.

To date, the school's salad-selling brainwave has made around £200

profit, says garden co-ordinator Elisabeth Briley. That's on top of the sense of achievement and pride generated by the children's enterprising scheme: "The pub proudly displays they're serving 'Orford Primary School salad leaves' on the menu."

Children are involved in every step of the process from planning what to grow to helping reduce food miles with their on-foot deliveries. As well as teaching important skills for later life, Elisabeth Briley says gardening encourages children to take more responsibility for each other with older pupils teaching younger ones: "They point out things such as worms and say 'We like worms because they're good for the soil.'"

### **School**

Orford Primary School, Woodbridge, Suffolk

### **Type**

Much smaller than average village primary

### **Pupils**

80 pupils from a wide range of backgrounds. Eligibility for free school meals is well below average. Few pupils are from minority ethnic backgrounds or speak English as an additional language. The percentage of pupils who have learning difficulties and /or disabilities is broadly average, however the percentage with statements of special educational need is above average.

### **Garden**

Kitchen garden and additional plots.

# Conclusion /

## Dr Simon Thornton-Wood



**Dr Simon Thornton-Wood,**  
Director of Science  
and Learning,  
Royal Horticultural Society

## RHS commitment to gardening in schools

Since its launch in 2007, the RHS Campaign for School Gardening has helped over two million children across the country enjoy a richer quality of life.

From inspiring a lifelong love of learning to helping improve their physical and emotional health, our important new research shows the positive impact of gardening on childhood development is considerable.

In fact, our evidence suggests gardening can play such a vital role, we believe every child should be given the chance to experience the benefits.

Of course, actions always speak louder than words. So we are committed to taking several steps over the coming months and years to champion the importance of gardening in schools.

**We promise to:**

- **Continue our investment and work with partners to maximise the impact of the Campaign for School Gardening for children across the country;**

- **Inspire and support schools to embed gardening in learning and school life by providing a mix of hands-on local support and online teaching and learning tools;**
- **Train an additional 4,500 teachers over the next three years how to use gardening in delivering the curriculum and improving all aspects of school life;**
- **Campaign to get the benefits of gardening in schools better and more widely understood.**

As the UK's leading gardening charity, we look forward to working with government, local authorities, and schools to make our vision a reality, and help our children reach their potential in life.

## About the Campaign

**The RHS Campaign for School Gardening encourages and supports schools to use gardening to help children and young people learn and develop.**

The Campaign operates at two levels. At national level the RHS provides continuing professional development workshops and a range of resources for teachers. These tools help them progress their gardening skills and embed gardening activities at the heart of school life.

At local level the RHS has a team of Regional Advisors who work directly with schools to build capacity and promote the sharing of good practice. They create a network of schools which learn from each other through site visits and benefit from training sessions delivered locally to them.

The Campaign supports schools to create sustainable gardens by encouraging them to work through a series of benchmarking levels to improve both their gardening skills and the use of the garden in their school community. Attainment of each level is rewarded through awards and certificates to celebrate achievement.

**To find out more or to become a part of the Campaign for School Gardening please go to [www.rhs.org.uk/schoolgardening](http://www.rhs.org.uk/schoolgardening)**

.....  
“School was never my favourite place.  
I was a bit of a late developer  
academically so my interests tended to fly,  
wriggle and grow outside the classroom.

Luckily for me, I stumbled on the magical  
world of gardening. From the minute my  
grandfather took me to his allotment,  
I was hooked for life.

**Watching how plants grew and  
getting my hands dirty brought fun  
and learning together.**

It also played to my strengths –  
determination, single-mindedness and an  
ability to work with my hands. Looking  
back, what I learned on my grandfather’s  
plot has set me up for life.

That’s why I’m so pleased to see that this  
report backs up my heartfelt belief that  
gardening at school brings many benefits  
every child should get the chance to enjoy  
– even if it means a few muddy footprints  
on the head teacher’s floor!”

.....  
**Alan Titchmarsh**  
MBE VMH DL



## **RHS Campaign for School Gardening**

**RHS Campaign for School Gardening  
The Royal Horticultural Society  
80 Vincent Square  
London SW1P 2PE**

[www.rhs.org.uk/schoolgardening](http://www.rhs.org.uk/schoolgardening)

Registered Charity No. 222879/SC038262