



Beddington Infants' School

Policy for Science

The vision for our school is rooted in an understanding of, and respect for, the incredible capacity of every child.

With a focus on basic skills and strong academic achievement our curriculum has evolved to enable each child to engage at a high level and therefore to achieve to his/her personal best. Our provision is inspired by the Italian **Reggio Emilia Approach**. It is an experiential provision for both children and adults.

'Tell me and I forget. Teach me and I remember. Involve me and I learn.' Benjamin Franklin

Children

- are respected as individuals with something valuable to say
- have a genuine input into the direction of their learning
- are empowered to engage fully with the learning process, to take personal responsibility and to develop skills for life.
- are given a variety of opportunities to explore the world in which they live, indoors and outside, developing positive attitudes to all weathers
- are supported in developing positive relationships with children and adults across the school
- are given regular, meaningful opportunities to express themselves

Our holistic approach is reflected in our aim that children leave Beddington Infants' School with the following seven gifts:



We are scientists because we are curious about the world around us. We ask open minded questions that empower us to be full members of our community and planet.

What is Science?

Science should be fun. It is a unique way of looking at the world. Science involves children in finding out about the world through their own activities and making some sense of the results through their own thinking. It is concerned with understanding the way things are and why they behave as they do. Children are confronted by Science in their daily life but being able to look at the world scientifically requires the development of particular knowledge and understanding, skills

and attitudes.

AIMS

Through our Science education we intend to:

- To foster children's natural curiosity about the world
- To develop scientific knowledge and understanding
- For children to observe living and inanimate things and to recognise characteristics such as pattern and order
- To ensure that children have regular, relevant and pleasurable experiences of science
- To provide equal opportunities for all children
- To provide a structure from which we can all ensure continuity and progression both within the school and for transfer to other schools
- To develop attitudes that are positive to science, such as open-mindedness, respect for evidence, perseverance and critical reflection
- To match learning experiences to the abilities, aptitudes, needs and expectations of the children so that they may fulfill their scientific potential
- To develop the intellectual and practical skills that allow the children to explore the world of science
- To develop an understanding of the links between Science and technology
- To ensure sensitivity and respect for the environment and all it contains
- To gain knowledge about safety and to develop a responsible attitude for scientific exploration

STRATEGIES FOR TEACHING AND LEARNING SCIENCE

Beddington Infants' provides a Science curriculum based on the requirements of the programme of study as listed in the DFE National Curriculum Document for Key Stage One.

In Early Years Foundation Stage Science comes under the heading Understanding the World.

There are five main areas in Year 1:

- 1) Working Scientifically**
- 2) Plants**
- 3) Animals, including humans**
- 4) Everyday materials**
- 5) Seasonal change**

There are five main areas in Year 2:

- 1) Working Scientifically**
- 2) Living Things and their Habitats**
- 3) Plants**
- 4) Animals including humans**
- 5) Uses of everyday materials**

Across these there are other requirements that apply. In systematic enquiry, children should ask questions, using both first hand experience and secondary sources in investigation to acquire scientific knowledge, skills and understanding. Considering Science in everyday life means that children should use their understanding of Science to respect living things, the environment and their own health. After relating scientific ideas to the evidence, children should be taught scientific vocabulary to communicate their information in a number of ways. At all times children should be aware of risks and follow given instructions.

1) **Working scientifically** is concerned with the development of scientific investigation set within the everyday experience of the child. These activities should require a progressively more systematic and quantitative approach. Children should have opportunities to express and interpret findings in a variety of ways.

2) **The study of Life Processes and Living things (Plants and animals including humans)** encourages the children to find out about themselves and other living things. They will study plants and animals in a variety of local habitats. The issues of health and safety will be considered with the effect of man on the environment.

3) **The study of Materials and their Properties** considers the simple properties and uses a variety of materials both natural and manmade. Similarities and differences will be observed, Children will investigate the effects of heating and cooling and other agents of change.

4) **Seasonal Change** is concerned with weather associated with the seasons and how day length varies. Children will be taught to observe changes across the four seasons.

PLANNING AND ORGANISATION

- The units of work have, where possible, been linked to the new Cornerstones Curriculum followed by the school.
- Approximately one and a half hours of science should be taught each week (45 hours over the course of a school year.) Where appropriate in Year groups Science will be taught in weekly blocks.
- In addition, some aspects of science will be considered throughout the year, such as the local environment and our striving for an environmentally friendly school. Links with other subjects, especially English and Mathematics are recognised so that science is seen in context and interdependent skills developed. I.C.T. will be used to store, retrieve and present information where appropriate. Home science ICT activities will be included in both Education City and Google Classroom. Regular visits and speakers are organised, linked with topics, to extend the children's scientific learning.

Implementation: THE EMPHASIS IN OUR TEACHING OF SCIENCE IS ON:

First hand practical experience

Through this, children will be given opportunities to observe, discover and learn from first hand experiences.

1. Through collections of living and non-living things, models and through the children's own interests.
2. By making provision for free activity and experiments with basic materials.
3. By using the resources of the immediate environment of the school, local community, visits to places of interest further a field and inviting visiting "speakers".
4. By producing stimuli for children to conduct their own simple experiments and problem solving activities using relevant apparatus.
5. By providing opportunities for children to use books, stories, pictures, charts and visual cards when and where appropriate to gather information.
6. By encouraging children to communicate their findings appropriately to others, by discussion and recordings. Such recordings may be in the form of charts, graphs, pictures, paintings, collages, and will reflect the capabilities of individual children.
7. By giving pupils opportunities, where appropriate, in their study of science to develop and apply their information communication technology (ICT) capabilities both at home and at school.
8. Ideas will arise from children's interests and from cross-curricular topics, themes or projects introduced by teachers.

The predominant mode of working

- Direct training will be essentially oral and interactive involving a variety of strategies including demonstration, explanation, questioning and discussion. This will take place with the whole class or with groups.
- Children will be given the opportunity to work independently and in groups. The groups may be of mixed or matched ability depending on the task set.

Practical, investigative, oral, written and problem solving activities will be pursued. Open-ended tasks providing opportunities for further research and discussion will also be used.

- The children's learning in Years 1 and 2 will be mainly recorded in their Independent Learning Folder. This folder will provide a record of the progress made within science during the year and will be a source of evidence for assessments. Marking will be used to inform future planning as well as providing the children with guidance on how to improve their work.
- In the Foundation Stage Science is taught through Knowledge and Understanding of the World.

Impact: FORMATIVE ASSESSMENT is used to guide the progress of individual pupils in Science:

The assessments will help to plan for progression and differentiation. Pupils should be made aware of the purposes of the tasks they undertake and the objectives should be explicit. Suitable tasks for assessment in science include.

- Annotated work
- Specific assignments including whole investigations
- Individual or group discussions
- Self-assessment where appropriate

Year group liaison and discussions take place regularly. Statutory assessment at the end of K.S.1 is carried out in accordance with national requirements.

Informal assessment will also be undertaken by teachers, from the results of practical and non-recorded working in science. Class teachers to provide Science subject leader with representative sample of children's work.

SPECIAL EDUCATIONAL NEEDS

- Where appropriate the teacher or classroom assistant will support pupils in their tasks.
- More able children will be given the opportunity to carry out further research into the area being taught. They will be encouraged to work with increasing independence and taught the strategies with which to do so.

EXCELLENCE IN SCIENCE IS CELEBRATED:

- In display, reflecting current work.
- By sharing of work in both the classroom and in assembly where appropriate.
- By sharing research or work the child may have undertaken at home on their own initiative.
- Reporting to parents through class assemblies or notes home.

STRATEGIES FOR ENSURING PROGRESS AND CONTINUITY

Planning in science is a process in which all staff are involved through:

- Long term plans
- Medium term plans
- Weekly plans
- Schemes of work for science for Years 1 and 2 are link to Cornerstones Curriculum
- Science leader to check that curriculum is being covered
- The framework is flexible as new issues arise and, with changes in the foreseeable future to the National Curriculum new responses will be needed.

THE ROLE OF THE SCIENCE CO-ORDINATOR IS TO:

- Take the lead in policy development and implementing schemes of work to ensure continuity and progression.
- Support colleagues with planning, delivery and assessment.
- Monitor progress and teaching and advise the Head Teacher of action needed.

- Take the responsibility for ordering and organising resources.
- Keep up to date with developments in science and disseminate developments to colleagues.
- Evaluate results and set targets for science.
- Develop on assessment portfolio.

FEEDBACK TO PUPILS about their learning is achieved through marking their work:

Effective marking:

- Should be positive, constructive and help children to learn, not to find fault.
- Is often done while a task is being carried out through discussion between child and teacher.
- Should be sensitive
- Should be carried out regularly.
- Should inform future work.

INVOLVEMENT WITH PARENTS INCLUDES:

- Helping to promote understanding of the aims and methods of science e.g. at Curriculum newsletters.
- Constructive consultation as the need arises.
- Involvement through working in school with pupils and with supporting homework.

REPORTING TO PARENTS OCCURS FORMALLY AND INFORMALLY THROUGH:

- Parents' Evenings (3 per year)
- Reports
- Assessment results at the end of Key Stage 1.

RESOURCES USED INCLUDE:

- Classroom helpers
- A range of appropriate equipment labeled and stored in the resource area.
- Teachers' resources and reference materials.
- Multimedia material (e.g.: YouTube videos).
- Access to computers and appropriate software.
- Resource area facilities for sand, water, materials and construction kits.
- Children's books relevant to the topic.
- Interactive displays

- The local environment
- Speakers and outside agencies used for in-school activities and visits.

EQUAL OPPORTUNITIES

The school provides a differentiated curriculum that is sufficiently broad, balanced and relevant to meet the needs of each child and ensure equality of access for all. This is in line with our Equal Opportunities, Racial Equality and Special Needs policies.

STAFF DEVELOPMENT

Senior management and the Science co-ordinator will endeavour to support and develop the science teaching skills of staff through various INSET programmes within the school and at other venues.

Needs of the school, as outlined in the School Development Plan, will be kept under review, and common and agreed approaches towards planning activities, the learning environment and time management will be pursued.

Reviewed: May 2021 by Suzanne Magnussen