



Where learning's an adventure

Science Policy 2015-16



	Name	Signature	Date
Prepared by:	H Patel		Spring 2016
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Aims

It is our aim in Science that children are given opportunities to observe, record and draw conclusions about the world around them. We hope to introduce children to the basic elements of experiments and investigations and help them to become more inquisitive. This policy outlines the teaching and learning of Science at Copenhagen Primary School. The implementation of the policy is the responsibility of all teaching staff and will be monitored by the Science Leader and Head Teacher.

Through teaching Science children are given opportunities to:

- Develop their knowledge and understanding of important scientific ideas, processes and skills and relate these to everyday experiences
- Acquire a curious and questioning mind
- Develop skills of observation and investigation
- Collect, retrieve, present and communicate their findings to others in a variety of ways

These aims and purpose are taught through:

Knowledge and Understanding

Children should:

- Be curious about things they observe, experience and explore the world about them with all of their senses.
- Use this experience to develop their understanding of key scientific ideas and make links between different phenomena and experiences.
- Begin to think about models to represent things they cannot directly experience.
- Try to make sense of phenomena, seeking explanations and thinking critically about claims and ideas.

Process and Skills

Children should:

- Acquire and refine the practical skills needed to investigate questions safely.
- Develop skills of predicting, asking questions, making inferences, concluding and evaluating based on evidence and understanding and use these skills in investigative work.
- Practical mathematical skills in real contexts.
- Learn why numerical and mathematical skills are useful and helpful to understanding.

Language and Communication

Children should:

- Think creatively about Science and enjoy trying to make sense of phenomena
- Develop language skills through talking about their work and presenting their own ideas using sustained and systematic writing of different kinds.
- Use scientific and mathematical language including technical vocabulary and conventions and draw diagrams and charts to communicate scientific ideas.
- Read non-fiction and extract information from sources such as reference books, CD-ROMs or the Internet.

Values and Attitudes

Children should:

- Work with others, listening to their ideas and treating these with respect.
- Develop respect for evidence and evaluate critically ideas, which may not fit evidence available.
- Develop a respect for the environment and living things and for their own health and safety.

Planning and Marking

Teachers are responsible for the teaching of Science. It is taught in units through a combination of whole class teaching, group and individual work. The units are based on a programme of study called **Science Bug** with scope for teacher's own initiatives and ideas. This is used as a basis for implementing the statutory requirements for biology, chemistry and physics which has more emphasis on using the outdoors, more scientific vocabulary and different kinds of enquiry.

Each unit has a 6 week cycle:

Week 1: Introduction and knowledge capture

Weeks 2 and 3: Develop understanding

Weeks 4 and 5: Apply understanding

Week 6: Reflect and Review

Wherever possible experimental and investigative work should form the basis for the teaching of Science. Children should be given as many opportunities as possible to carry out investigations and experiments.

Teachers will use Science Bug to plan their weekly lessons. The learning objectives from the units are methodically planned into a weekly plan that shows progression. The weekly plan will also include key vocabulary and questions, teaching strategies, differentiation, plenary and resources to be used.

The AHT for curriculum and the Science Coordinator are responsible for monitoring the science planning within our school.

Marking in science follows the school's marking policy.

Organisation

To provide adequate time for developing scientific skills, each class teacher will provide a weekly science lesson. This may vary in length from Nursery to Key Stage 2. In EYFS, the curriculum is cross linked and integrated with different aspects of early years learning. In Key Stage 1, the lesson can last up to 1.5 hours and in Key Stage 2, up to 2 hours.

Links will also be made to science within other subjects so pupils can develop and apply their science skills.

Throughout our Science teaching we hope that our children will develop a sense of awe and wonder about the world around them.

Early Years Foundation Stage

We teach science in the Early Years Foundation Stage as an integral part of the school's work. During the Foundation Stage children begin to explore the world around them, with specific Science work covered through the Early Learning Outcome 'Understanding the World'. We relate the science aspects of the children's work to the objectives set out in the Early Years Outcomes, which underpin the curriculum planning for the children. We give all the children opportunity to develop their understanding of science through practical experiences as well as investigative tasks, through varied activities that allow them to enjoy, explore, practise and talk confidently about science.

Assessment and Monitoring

Assessment will take place at three connected levels: short-term, medium-term and long-term. These assessments will be used to inform teaching in a continuous cycle of planning, teaching and assessment.

Short-term

These are informal part of every lesson and are closely matched to the teaching objectives. These tend not to be recorded because they are for the teacher's immediate attention and action; however, relevant comments can be recorded on 2simple.

Medium-term

These will take place at the end of each unit. Teachers will use the assessment toolkit on Science Bug to set a practical assessment task which will then allow them to make a judgment on what statements the pupils have met to be highlighted on Target Tracker.

Long-term

These will take place towards the end of the school year to assess and review pupils' progress and attainment. These will be made through compulsory National Curriculum science tests for pupils in Years 2 and 6. Teachers will also draw upon their class records of attainment against key objectives and supplementary notes and knowledge about their class to produce a summative record. Accurate information will then be reported to parents and the child's next teacher.

Record Keeping

Informal notes on the child's progress in Science can be made in teacher's planning evaluations.

Each lesson must have a date, WALT and Success Criteria.

Before recording, teachers must ensure that the children have had plenty of opportunity to talk about what they have done.

A range of recording styles must be used such as charts, graphs, drawings and photos.

Reporting to parents is done termly through parents' evenings and annually through a written report.

Progression

Teachers must refer to the non-negotiables for Science to help them with their planning.

Science Bug programme must be used by KS1 and KS2 staff to help with planning and ensure all objectives are being addressed for each unit.

The Foundation Stage use the Early Years Outcomes as a guide to making best fit judgements about whether a child is showing typical development for their age for Understanding the World.

Teacher's planning is collected and monitored by the subject leader once every full term.

In order for children to make progress in Science, teaching should provide opportunities for children as they move through the Key Stages to progress:

- From using everyday language to increasingly precise use of technical and scientific vocabulary, notation and symbols.
- From personal scientific knowledge in a few areas to understanding in a wider range and of links between these areas.

The role of the Science Subject Leader

The Science leader is to:

- Take lead in policy development and the implementation of the Scheme of Work.
- Support colleagues in their development of work plans, and implementation of the Scheme of Work.
- Monitor the resources in Science and advise the Head Teacher of any action needed.
- Take responsibility for the purchase and organisation of central resources for Science.
- Keep up to date with developments in Science education and disseminate information to colleagues as appropriate.
- Monitor the teaching and learning of Science throughout the school.

Special Education Needs

All children are encouraged and supported to develop their full potential in Science. Some children may require extra support in the classroom and opportunities for consolidation and reinforcement. Activities are differentiated to meet the needs of all pupils.

Equal Opportunities

All children are entitled to access to the Science curriculum in line with the schools policy for equal opportunities. Children who show a particular ability and flair for Science, who work more quickly through the levels of the National Curriculum are extended through the use of more challenging problems and investigations.

Resource Management

At Copenhagen Primary School there are a range of resources available to support the teaching of science. All classrooms have a range of appropriate small apparatus. Additional equipment and topic specific items can be ordered from the Education library Service.

Health and Safety

All scientific equipment will be shared and used sensibly by all pupils. Any defective equipment will be removed from use and replaced by new ones. For more detail, please refer to the school's Health and Safety Policy.

Inclusion

Copenhagen Primary School believes that every child has the right to develop their full potential, irrespective of ability, race, gender, creed or physical ability. We aim to ensure that, in partnership with parents, we offer all pupils equality of access and opportunity for successful learning.

We recognise and celebrate the diversity of our pupils, staff and parents, who are encouraged to share their experiences and culture to enhance the quality of learning for all. Pupils' classroom work and displays will celebrate diversities in society.

All pupils are entitled to a broad, balanced, relevant and differentiated curriculum. They will be given every opportunity to be successful in their learning and achieve as high a standard as possible.

We actively seek to remove barriers to learning and participation so each pupil can achieve their personal potential.

When teaching Science we need to plan, assess and provide for a wide range of abilities, aptitudes and interests. When planning provision for pupils with Special Educational Needs, Gifted and Talented, or EAL pupils **we** recognise the need to

- Set suitable learning challenges
- Respond to pupils' diverse needs
- Work to overcome barriers to learning

Please also refer to the school's SEN, Gifted and Talented, and EAL Policies.

In planning for SEN pupils' learning, we consider the curriculum, the physical and social environment and the nature of support from peers and adults. The selection of appropriate learning objectives, teaching styles and resources will enable access to curriculum, according to each pupil's specific needs. Support from the teacher or Teaching Assistant will be used effectively to achieve these aims. The SENCO is available to advice on differentiation in planning and classroom strategies.

Gifted and Talented

Gifted and Talented pupils are identified, and teachers plan opportunities for those pupils to develop their abilities, skills and talents. They are provided with appropriately differentiated and stimulating tasks, with challenging learning outcomes. These may include enrichment or extension activities, and additional opportunities such as clubs, or outside agencies' programmes. The Gifted and Talented / Inclusion Leader is available to advice on differentiation in planning, classroom strategies and resources for this area of the curriculum.

EAL pupils

EAL planning and learning will take account of pupils' stage of learning English. Within this subject area, pupils will be given opportunities to develop their spoken and written English, including the use of accessible texts, materials and ICT, and the use of their home language where appropriate. The EAL and Inclusion is available to advice on differentiation in planning, classroom strategies and resources.