



OXFORD GARDENS SCIENCE POLICY

The school will teach Science in a cross curricular manner using the units of work in the IPC. Science is a core subject within the National Curriculum. This policy outlines the purpose, nature and management of Science taught at Oxford Gardens Primary School. It reflects the consensus views of all the teaching staff and they are responsible for its implementation. This policy should be read in conjunction with the New Curriculum 2014 documentation which sets out in detail what pupils will be taught in different year groups as of September 2014.

Science is the study of the physical world, involving a collection of facts from observations, physical experiments and working scientifically(Living Processes,Materials, Physical Processes) from which children form ideas of their world.

AIMS

1. To increase children's confidence and interest in Science.
2. To develop children's scientific skills and understanding.
3. To deliver the Science curriculum in a way which is stimulating and relevant to age, experience and ability.
4. To enable children to plan and carry out scientific investigations, using equipment (including ICT) correctly.
5. To teach Science using a cross-curricular approach.
6. To ensure the children undertake a range of practical investigations within their IPC topic.
7. To enable children to evaluate evidence, and present their conclusions clearly and accurately.

EQUAL OPPORTUNITIES

At Oxford Gardens, all of our pupils, regardless of sex, race, ability or personal background have the opportunity to enjoy Science. Children are positively encouraged to fulfil their potential as scientists.

In doing this:

1. Teachers have high expectations of all children regardless of gender, race, socio-economic background and special educational needs.
2. Teachers will ensure that all children have equal access to all types of learning experiences.
3. Teachers acknowledge the achievements of all cultures, presenting positive images and role models and presenting Science in a non-ethnocentric way.

CURRICULUM CONTENT AND PLANNING

1. Pupils will cover all the relevant aspects of the Learning Goals at each Mile Post by following the units of the IPC. These cover the National Curriculum skills for science.
2. Science in Foundation Stage is taught as an integral part the Early Learning Goals throughout the year. The Foundation Stage curriculum is based around the seven areas of learning and development as set out in the New National Curriculum for 2014. There is scientific content within the learning area 'Understanding the World'.
3. Scientific Enquiry is to be used as a tool for teaching content; however certain Science activities may well focus specifically on scientific skills.
4. All Science planning should follow the IPC units of work. Where appropriate, ICT should be integrated into science lessons to further promote scientific understanding.
5. All weekly plans will show clear learning objectives and/or key questions and will include the relevant programme of study to be covered. Weekly Science plans should be saved in the year group folder in the Planning Folder on the staff drive.
6. All teachers' plans should have a Learning Intention. Scientific vocabulary should be highlighted on the plan and displayed on the IPC working wall. It should be discussed at the beginning of the lesson and be referred to throughout the lesson so that children build up appropriate language.
7. Teachers should be encouraged to take part in topic related trips to further extend or consolidate scientific concepts.

ASSESSMENT

Science assessment is currently under review. There are a number of assessment procedures in place currently, all of which are detailed below, however this is an area that we as leaders recognise needs improving and reviewing. Throughout the year, alternative assessment procedures will be trialled in order to find a more effective and informative method of assessment.

1. In KS2, teachers will assess the children's understanding of a topic using a Knowledge Harvest at the beginning of their IPC unit. This may be in the form of a mind map in pencil that can be added to throughout the unit in different colours to show increasing knowledge. The results will inform lesson planning.
2. All children will record their lessons and vocabulary in their IPC book. They will self-assess their understanding at the end of each lesson using a traffic light code representing levels of understanding.

3. At the end of each term children will self-assess their skills using a rubrics grid at an appropriate level (see example). This grid will be in their IPC books.
4. At the end of Year 2 and Year 6, the teachers will use teacher assessment to provide an end of key stage grade for each of the areas of science.
5. It is the responsibility of the IPC Leaders to monitor the standards of children's work throughout the school and report to the management team.

SCIENCE LESSONS

I. Format

Each class teacher will follow their IPC units of work and accord the relevant block of time for Science teaching. If certain Learning Goals are not met (see list) each year group will plan a Science focus at the end of the term to cover these objectives where necessary.

Science lessons should usually include:

A starter or review activity

Input of new content - whole class. This should be as visual and interactive as possible, and challenging, yet inclusive.

Consolidation - group or individual work - pre-planning play, planning using planning poster, investigating or writing or problem solving activity to develop new learning.

Plenary - to check that pupils have learned what was intended; and to give pupils the opportunity to feed back on their learning thereby giving teachers the opportunity to correct any misconceptions.

A variety of strategies, including questioning, discussion and concept mapping and marking, are used to assess progress within a block. This will inform future planning.

Attention should be paid to Science vocabulary with key words displayed on the whiteboard and written in books. Teachers should use the key vocabulary frequently and encourage children to use it. Vocabulary should be evident on the plan and on the IPC Working Wall.

Teachers should model how to carry out tasks and encourage safe practice where appropriate. Teachers should also model scientific writing and other forms of presentation such as graphs, tables, flow charts, diagrams and annotations.

II. Differentiation

When preparing the lesson, teachers should aim to differentiate the lesson according to the necessary ability groups. This must be evident on the plan.

III. Skills

There will be a particular focus on teaching skills. A Science skill relevant to each class should be one of the Success Criteria included in each Science lesson. For example:

- Planning
- Questioning
- Predicting and hypothesising
- Observing
- Measuring
- Experimenting and devising a fair test
- Communicating
- Interpreting
- Concluding
- Presenting evidence and evaluating

IV. ICT

ICT should be used as a tool to enable the development and consolidation of the specified skills. Groups of children should use learning zones within the classroom as often as possible. ICT use should be evident on the plan.

V. Observations

Observations will take place throughout the year either as part of learning sweeps or performance management observations. Classes will be observed for a maximum of 25 minutes. When being observed by the IPC Leaders or by other assessors, an IPC lesson plan should be provided.

HEALTH AND SAFETY

1. It is the responsibility of the teacher to ensure that no pupils are put in danger during a Science lesson.
2. Teachers must make sure that if any other adults are supervising a Science activity that they are aware of any relevant safety issues.
3. Teachers follow the guidelines set out in the ASE publication 'Be Safe' which gives guidelines to aspects of safety in school Science and technology in Key Stage One and Two. These are kept in the Science cupboard.
4. Teachers must not allow pupils who are behaving dangerously to continue with the lesson
5. Pupils should always be shown how to use the apparatus correctly.

6. Teachers need to ensure pupils wear safety glasses during experiments if necessary.
7. Teachers should follow the appropriate health and safety guidelines relating to school trips and visits if taking part in Science trips.

RESOURCES

Teachers will have access to this policy, information about planning and assessment, an overview of themes covered by each year group and Science Learning Goals for each year group. It will also contain an inventory of resources in the Science cupboard and a list of websites and ICT Science resources available at school.

All other resources will be stored in the Science cupboard. All resources should be returned to the cupboard after use and put back where they were found.

The quality and availability of resources must be maintained and children should be taught to value the schools equipment. As funding allows, the range of resources will be updated and extended as necessary.

If resources are broken or do not work, please tell the Science coordinator as new equipment can be reordered.

If additional resources are required, please tell the Science coordinator.

Checklist for teachers

Planning

1. Learning intention (Skills to be taught. These should be the ones in bold lettering as shown on planning)
2. Process success criteria (knowledge/understanding. These may come from the Learning Goals not in bold as shown on planning)
3. Key vocabulary
4. ICT use of learning zones
5. Differentiation
6. Skills covered to be highlighted

Lessons

Starter activity or review of prior learning / clarification of misconceptions

New content - whole class input

Consolidation (group or individual work) - pre-planning play, planning using planning poster and post-it notes, investigating, problem solving or writing activity including methods, reports, conclusions, poems, science stories, drama activities, PowerPoint presentations, short films, photographs

Plenary - what have we learnt? Focus on process success criteria and skills, giving children the opportunity to feedback their learning and giving teacher the opportunity to assess and clarify any misconceptions

Assessment

1. Mind maps and knowledge harvest - to be added to with coloured pencil
2. Children's rubrics
3. Further information to follow on new assessment procedures

If any teachers have any questions or clarifications, please see IPC Leaders and/or check Science folders.

Review

The science policy will be review annually by the IPC leaders and senior leadership team.

Last reviewed: January 2018

Next review: January 2019

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