



**Learning Together, Aiming High, Proud to be Ourselves**

**POLICY NAME: Science Policy**

**DATE ADOPTED: 9<sup>th</sup> February 2021**

**DATE GOVERNORS AGREED POLICY: 9<sup>th</sup> February 2021**

**REVIEW PERIOD: 3 years**

**REVIEW RECORD: February 2024**

## **RATIONALE**

Science begins at John Ray Infants in the Foundation Stage through the 'Understanding the World' area of learning and development. It then continues as a core subject through Key Stage 1. It plays a crucial part in the development of our understanding of the world around us and an appreciation of science as a part of everyday life. Children can develop concepts based on first-hand experiences, exploration and discovery, which enables them to explain and develop skills of enquiry, problem solving, creative thinking, information processing, reasoning, evaluation, communication, social and emotional aspects of learning.

## **AIMS**

All children should:

- Have the opportunity to achieve their full potential in their knowledge, skills and understanding through first-hand experience and investigations.
- Be curious about things they observe and experience, and explore the world around them using all their senses.
- Be encouraged to and develop an interest, enjoyment and enthusiasm in all areas of science.
- Relate science to everyday life through the use of everyday materials and situations.
- Use their experiences to develop their understanding of key scientific ideas and make links between different phenomena and experiences.
- Acquire and develop 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.
- Develop a respect for the environment and living things and for their own health and safety.

## **OUR SCIENCE CURRICULUM**

Our science curriculum is developed from the National Curriculum 2014 objectives for KS1 and the EYFS Framework in Foundation Stage. Science objectives are taught alongside the skills progression.

## **PLANNING**

Children in the Foundation Stage work towards achieving the early learning goals in Understanding the World. Teachers plan specific topics and build upon and develop children's own interests and curiosity about the world they live in.

In order to embed children's skills to work scientifically investigations are planned regularly, a practical investigation each half term.

Each year group has access to its own science resources which are used to support scientific skills.

Teachers plan their topics to ensure coverage of the Science objectives for each year group as identified in the National Curriculum. (See medium and long term Planning). Science is delivered through class based activities, using the outdoor classroom (school grounds, Forest school) Science Week and school trips. Use of outside agencies or visitors e.g. Mad Science.

## **CONTINUITY AND PROGRESSION**

The Science Curriculum objectives have been broken down into Year 1 and Year 2 expectations to show progression and skills development. These build upon the Early Learning Goals achieved at the end of Foundation Stage. Investigative skills that develop the children's ability to work scientifically are fostered throughout all scientific learning.

## **TEACHING AND LEARNING STRATEGIES**

- Effective practical work
- Questioning
- Linking the 'big ideas' in science
- Learning in purposeful, relevant contexts linked to the real world
- Building on prior learning to ensure progression in both knowledge and skills
- Assessment for learning - identifying and addressing misconceptions
- Constructive feedback and marking
- Research skills
- Use of computing skills
- Developing literacy and maths through science

## **CROSS CURRICULAR LINKS**

- Spiritual, Moral, Social and Cultural - Science provides opportunities to promote this and is addressed to some extent in Scientific Enquiry. Children need to be given opportunities for example, to explore ethical issues in science and learn how to treat the environment and living things with care and sensitivity. Children are also encouraged to work as part of a team.
- DT - forces, electricity and materials
- Maths - problem solving, graphs, patterns
- English - explaining, text types, vocabulary
- Speaking and Listening - communication, discussion, questioning, reporting back, precise use of vocabulary
- Reading - following instructions, comprehension - use of scientific language within texts, researching,
- Writing - planning, labelling, instruction writing, spelling and grammar and punctuation
- Geography - environmental issues, weather
- Computing - communication, the internet, exchange and store information both directly and through electronic media (Smart boards, cameras)
- History - development of things in everyday life

- Music - sound, materials
- PE - forces and movement

## **EQUAL OPPORTUNITIES AND INCLUSION**

We ensure that all pupils will have equal access to a broad and balanced curriculum regardless of age, gender, race and ability.

All children will participate in Science activities. Tasks and resources will be differentiated to provide appropriate challenges to specific individuals and groups. Adult support will be used when appropriate. (See SEN and Single Equality Policies)

## **HEALTH AND SAFETY**

Activities are planned with due regard to our Health and Safety Policy. Risk assessments are undertaken as appropriate and a copy is kept with the planning. A copy of any risk assessment is kept with this policy.

When working with tools, equipment and materials in practical activities and in different environments, pupils should be taught:

- about hazards, risks and risk control;
- to recognise hazards, assess consequent risks and take steps to control the risks to themselves and others;
- to use information to assess the immediate and cumulative risks;
- to manage their environment to ensure the health and safety of themselves and others;
- to explain the steps they take to control risks.

## **ASSESSMENT, RECORDING AND REPORTING**

Teacher assessments are carried out as part of every classroom activity and is a continuous process. Through teacher/ LSA observation of children undertaking activities and teacher/LSA discussion and questioning with the child. This practical assessment informs planning and ensures that teachers are aware of children's needs and strengths, or weaknesses. Assessment and feedback are used in different ways to monitor children's progress and inform next step planning.

Year 1 and 2 teachers assess against a 'Skills based Assessment sheet' as part of the ongoing assessment procedure. At the end of each term the children will be assessed to see how much progress they have made and be given a judgement of Entering, Developing, Securing and Mastery.

Yearly reports to parents and interim Termly Learning Reviews inform parents of their child's progress, and gives them the opportunity to discuss their child's learning.

## MONITORING AND EVALUATION

- The Science co-ordinator will monitor teaching, learning and assessment during co-ordinator release time and non-contact time through observations, work scrutinies, looking at planning, evaluations, discussions with the children, learning walks and discussion with the Science Governor. At times there will be some support from the science team.
- Termly written evaluations will be made by the Science co-ordinator.
- There are termly updates for staff/co-ordinator feedback during a staff meeting.

## PROFESSIONAL DEVELOPMENT

- Termly Science Co-ordinator update sessions with Chelmsford Network.
- Networking with local school Science leaders.
- Inset and support for staff by Science Co-ordinator.

## RESOURCES

Science is well resourced with in the school and is regularly reviewed and updated by the Science co-ordinator with the support of the class teachers. The science budget allows for re-ordering of damaged resources or new resources as and when identified. Each Year group has its own bank of relevant reference books for staff, and science resources relevant to topics and activities which are kept within the classrooms or with the Year group leaders. The children make good use of the ICT facilities using both CD-ROMs, the Internet, DVDs and Smart Boards.

We also value the expertise found within our staff, amongst our parents and outside providers e.g. Mad Science.

Approved by Governors.....

Date.....