FCJ Primary School

Science Policy

Mission Statement

Teach the children with all the kindness and gentleness possible.

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Article 28 - Every child has the right to an education.

The FCJ Governors are committed to safeguarding and promoting the welfare of children and young people at every opportunity and expect all staff and volunteers to share this commitment.

1. Aims and Objectives

At FCJ, we believe that science provides the foundations for understanding the world through the specific disciplines of biology, chemistry, and physics. Science has changed our lives and is vital to the world's future prosperity. All pupils should be taught essential aspects of the knowledge, methods, processes, and uses of science.
Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave and analyse causes.
At FCJ, we aim to ensure that all pupils:

- develop **scientific knowledge and conceptual understanding** through the specific disciplines of biology, chemistry and physics
- develop understanding of the **nature, processes and methods of science** through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the **uses and implications** of science today and for the future.

2. Roles and Responsibilities

The **subject leader** is responsible for:

- preparing policy documents, curriculum plans and schemes of work for science
- reviewing changes to the National Curriculum and advising teachers on the implementation of these
- monitoring the learning and teaching of science, providing support for staff where necessary
- addressing gaps in the curriculum and liaising with class teachers to address these
- ensuring the continuity and progression from year group to year group
- helping to develop colleagues' expertise in science
- organising the deployment of resources and carrying out an annual audit of all related resources
- liaising with teachers across all phases
- liaising with the SENCO about support for pupils with SEN
- communicating developments in the teaching of science to all teaching staff and the SLT as appropriate
- leading staff meetings and providing staff members with the appropriate training
- organising, providing and monitoring CPD opportunities in science
- ensuring common standards are met for recording and assessing pupil performance
- advising on the contribution of science to other curriculum areas, including cross-curricular links and extra-curricular activities
- *collating assessment data and setting new priorities for the development of science in subsequent years. *Researching, implementing and guiding assessment techniques
- ensuring the science laboratory is sufficiently resourced to enhance teaching and learning experiences

The **classroom teacher** is responsible for:

- acting in accordance with this policy

- ensuring the progression of pupils' knowledge and working scientifically skills, with due regard to the National Curriculum
  ensuring lessons engage and meet the needs of all pupils (Rosenshine)
- planning lessons effectively and ensuring a range of teaching methods are used to cover the content of the National Curriculum
- sharing and displaying pupils' work in a way that enhances the learning environment and promotes a variety of ideas and designs
- liaising with the subject leader about key topics, resources and support for individual pupils
- monitoring the progress of the pupils in their class and reporting this to parents and/or carers on an annual basis
- reporting any concerns regarding the teaching of science to the subject leader or a member of the SLT
- undertaking any training that is necessary to effectively teach science
- evaluating short and long-term planning
- informing the science lead when specialist resources are required

The **SENCO** is responsible for:

- liaising with the subject leader to implement and develop specialist science-based learning throughout the school
- organising and providing training for staff regarding the curriculum for pupils with SEN
- advising staff on how best to support pupils' needs
- advising staff on the inclusion of science in pupils' learning support plans (LSPs)
- advising staff on the use of TAs to meet pupils' needs.

3. Teaching and Learning

Science lessons are delivered weekly for pupils in Key Stage 1 and Key Stage 2. It is down to the discretion of the class teacher if the lessons are taught in two short or one longer session. All pupils have 1.5 hours per week allocated to Science. The school uses a variety of teaching and learning styles in science lessons that are matched to the activity and ability of pupils. The main aim of these lessons is to develop pupils' knowledge and scientific enquiry skills. Teaching and learning styles are adapted to support pupils with SEN to ensure these pupils continue to have their confidence and self-esteem raised. Teachers ensure pupils apply their knowledge and skills of scientific enquiry when carrying out investigational tasks. The school uses a mixture of whole-class teaching, group work and individual activities. Pupils are given the opportunity to work on their own and collaborate with others, listening to the ideas of others and treating these with respect.

Principles for effective teaching include:

- setting tasks in the context of pupils' prior knowledge – revisiting prior learning
- promoting active learning
- inspiring, exciting and motivating pupils to know more.

Strategies for effective teaching include:

- ensuring the teaching methods used suit the purpose and needs of the pupils
- providing a meaningful context and clear purpose for science enquiry
- using focused teaching of scientific enquiry skills
- ensuring enquiry work builds a body of knowledge.

The classroom teacher will work with the subject leader to ensure that the needs of all pupils are met by:

- setting tasks which can have a variety of creative and innovative responses

- providing resources of differing complexity, according to the ability of the pupils
- setting tasks of varying difficulty, allowing challenge for all
- utilising support staff to ensure that pupils are effectively supported.

Evidencing work is essential as it is a record of individual pupils' experiences and ideas throughout a year and key stage and will be seen as evidence for assessment and reporting purposes. Work can be evidenced through the following:

- photographs
- videos
- displays
- written work / typed work in science ebooks
- notes; discussion points on post-it notes can be displayed on the Science working wall display
- class blog/social media page.

4. Cross Curricular Opportunities – overview

English

Science enhances English through **spoken language** by pupils:

- participating in discussion, taking turns and listening to what others say
- asking relevant questions to extend their knowledge and understanding
- listening and responding appropriately to adults
- giving verbal descriptions and explanations
- considering and evaluating different opinions
- using discussions as a way to explore ideas and viewpoints.

Science enhances English through **writing** by providing opportunities for pupils to:

- write for real purposes and audiences
- develop descriptive writing based on first-hand experience
- write instructions about how to carry out a scientific process e.g. separating materials
- write about their science learning using appropriate text types.

Mathematics

Science enhances **mathematics** by providing opportunities for pupils to:

- use appropriate standard and non-standard measures
- use a range of measuring equipment
- convert between different units of measure
- record data in a range of tables, charts and graphs
- interpret data to answer science enquiry data.

Computing

Science enhances **computing** by giving pupils opportunities to:

- use technology purposefully to create, organise, store, manipulate and retrieve digital content e.g. photographs
- use technology to collect and present data e.g. using a datalogger
- use software to present data e.g. using a spreadsheet to present data as charts and graphs
- use technology for research
- use Ebooks, which will allow pupils to evidence their learning in different ways (recording / photos / dictated notes etc). This will be done in a safe and secure way.

Art and Design

Science enhances **Art and Design** by providing a context for pupils to:

- create sketch books to record their observations and use them to review and revisit ideas

- improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay].

Design and Technology
Science enhances **Design and Technology** by giving pupils the knowledge:

- to select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics
- to use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- to use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- of a healthy and varied diet
- of seasonality, and where and how a variety of ingredients are grown.

Geography
Science enhances **Geography** by giving pupils opportunities to:

- identify seasonal and daily weather patterns
- use simple fieldwork and observational skills to study the geography of their school and its grounds.

History
Science enhances **History** by giving pupils opportunities to:

- investigate products past and present; exploring the materials used
- learn about how scientific ideas have changed over time
- learn about a significant person/people in their locality linked to science.

5. Planning

The school creates long-term, medium-term and short-term plans for the delivery of the science curriculum. These are as follows:

- long-term – includes the sequence of topics studied through the year and coverage within each topic
- short-term – includes the coverage within each lesson, including key vocabulary.

- The subject leader is responsible for reviewing and updating long-term planning and then communicating feedback to teachers.
- Class teachers are responsible for reviewing and updating short-term plans, building on the long-term plans, taking into account pupils' needs and identifying the most appropriate strategies to cover the National Curriculum statements.
- All relevant staff members are briefed on the school's planning procedures as part of their staff training.

- Short-term plans (science flipcharts) will have clear learning intentions or enquiry questions which are shared and reviewed with pupils.

- Short-term plans will specify key vocabulary to be used in each lesson. This vocabulary will come from the Jersey Curriculum for science.

- Issues of health and safety are addressed in the short-term planning and delivery of the science curriculum.

- There will be a clear focus on direct, instructional teaching and interactive oral work with the whole class and targeted groups.

- Short-term planning will be used flexibly to reflect the intention of the lesson, the success criteria and the aims of the next lesson.

6. Assessment for Learning

- Pupils will be teacher assessed both before, during and at the end of a specific unit of study, and their progression recorded, in line with the school's Assessment Policy. Big questions will be used in each unit of study to assess pupils' knowledge.

- By the end of each key stage, pupils are expected to know, apply and understand the knowledge, skills and processes specified in the relevant programme of study.

- An EYFS profile will be completed for each pupil in the final term of the year in which they reach age five. This will include reporting on characteristics of effective learning.

- The progress and development of pupils within the EYFS is assessed against the early learning goals outlined in the Statutory framework for the early years foundation stage.

- The progress and development of pupils within Key Stage 1 and Key Stage 2 is assessed against the descriptors outlined in the National curriculum in England: science programmes of study: key stages 1 and 2.

- Throughout the year, teachers will plan on-going assessment opportunities in order to gauge whether pupils have achieved the key learning objectives.

- Assessment will be undertaken in various forms, including the following:

    - listening to how pupils make decisions about their enquiry work
    - watching how pupils use their working scientifically skills
    - questioning
    - discussions
    - marking work
    - peer and self-evaluation.
    - Big question mind maps at the start of a new unit of study
    - Adding to the mind maps throughout / at the end of a unit of study

- Formative assessment, which is carried out informally throughout the year, will be used to identify pupils who are secure or not secure with the knowledge and working scientifically skills covered, in order to inform lesson planning.

- Summative assessments of knowledge are made at the end of a topic. Teachers will make a judgement about the learning of each pupil in relation to the National curriculum in England and record assessments using the school tracking system.

- Summative assessment of the working scientifically skills are made at the end of the year based on the formative assessment throughout the year.

- End-of-year assessments will be passed to relevant members of staff, such as the subject leader and future teachers, in order to demonstrate where pupils are at a given point in time. Where pupils are identified as not being secure in particular scientific enquiry statements, teachers look for opportunities later in the year to cover this knowledge again.

- Parents and/or carers will be provided with a written report about their child's progress during the summer term every year. This will include information on pupils' attitudes towards science as well as their knowledge and skills of scientific enquiry.

- Verbal reports will be provided at parents' evenings during the Autumn and Spring terms.

- The progress of pupils with SEN will be monitored by the class teacher and SENCO.

7. Marking

- Feedback is given in line with the Marking and Feedback Policy.
- Children are encouraged to edit and improve their work using their 'Purple Pen' to show that this process has taken place.
- Through our marking and feedback, we identify the strengths and weaknesses in students' scientific understanding; in turn identifying progression to appropriately adapt future planning to both challenge and support all pupils.

8. Displays

Displays of work are used to celebrate achievement and support teaching and learning. The school promotes displays of work in the Science Laboratory, classrooms and corridors to influence how pupils feel about their environment, promote high expectations and raise self-esteem. Displays are used to communicate ideas, stimulate interest, celebrate pupils' work, reflect the ethos of the school and respond to pupils' interests.

9. Resources

- The school has a selection of centrally stored consumables and equipment so that the pupils have the resources they require.

- The school library contains resources and topic books to support pupils' research.

- The subject leader shares appropriate resources, including websites, with class teachers.

- The science budget covers the cost of consumables and replacement equipment.
- Class teachers are responsible for informing the subject leader if consumables and equipment is needed a term prior to teaching the topic, to give adequate time for these to be ordered if required.
- Class teachers are responsible for collecting and returning resources to the central store.
- Class teachers are responsible for reporting any broken or damaged equipment.
- Pupils may occasionally be asked to bring materials from home if they can. However, to provide all pupils with the same opportunities, the school will provide for pupils who are unable to do this.
- At the start/end of each school year, the subject leader will assess the school's science consumables and equipment to ensure there is sufficient for the pupils.

10. Health and Safety

Teachers will seek and follow health and safety guidance from CLEAPSS/local authority to ensure that they, and their pupils, are safe during practical work. Teachers check equipment before use to ensure it is safe to use. Pupils will be taught to use scientific equipment safely during practical activities.
Reference to health and safety will be included on the teacher-made flipcharts (the school's short-term planning) where necessary.

11. Monitoring and Review

- The subject leader will monitor science through learning walks, work samples and pupil voice and report to the headteacher and members of the SLT.
- The subject leader will write an action plan at the beginning of each academic year and review the progress at two points: Spring 1 and Summer 2.
- The subject leader will produce a report, using evidence from their action plan, which will be shared with governors.
- This policy will be reviewed every two years by the subject leader and headteacher.
- Any changes made to this policy will be communicated to all members of staff.
- All members of staff directly involved with teaching science are required to familiarise themselves with this policy.
- The next scheduled review date for this policy is **Autumn 2026**