Science Policy Palfrey Junior School

Aims and Objectives

Our main objectives are to engage, enjoy and achieve in Science.
As a school we aim to:

- To teach Science from the children's personal experiences out to the wider world (From Little Acorns to Mighty Oaks).
- Pupils will use sticky knowledge to help focus their learning.
- Stimulate and excite pupils' curiosity about changes and events in the world.
- Satisfy this curiosity with knowledge.
- Engage pupils as learners at many levels through linking ideas with practical experience.
- Help pupils to learn to question and discuss scientific issues that may affect their own lives.
- Help pupils develop, model and evaluate explanations through scientific methods of collecting evidence using critical and creative thought.
- Show pupils how major scientific ideas contribute to technological change and how this impacts on improving the quality of our everyday lives.

Teaching and Learning

All lessons have a clear learning challenge question, which is shared and discussed with pupils effectively.
Children will self-assess using the same format as for all other subjects:
Year 3 draw a happy, neutral or sad face
☺ 😐 ☹
Year 4 draw a happy, neutral or sad face with accompanying comment
☺ I've got it.
😐 I'm nearly there.
☹ I need more practice.
Year 5 create their own sentence to show their learning using sentence starters as a scaffold depending on the lesson. Eg:
I am able to...
I am starting to...
I need more support in order to...
Year 6 create their own sentence to show their learning.
They will complete this using a green pen.

This will also allow the teachers to have a clear understanding of the children that understand, or those that need to re-visit their learning.

A variety of strategies, including questioning, discussion, self-assessment and marking are used to assess progress and inform future planning.

Activities inspire the pupils to experiment and investigate the world around them and to help them raise their own questions such as:
Why?
How?
What happens if?

Activities should develop the skills of enquiry, observation, locating sources of information selecting appropriate equipment and using it safely, measuring and checking results, making comparisons and communicating results and findings.

Lessons make effective links with other curriculum areas and subjects especially literacy, numeracy, ICT, Art and Design Technology.

Activities are challenging, motivating, engaging and enjoyable whilst extending pupils' learning.

Pupils have frequent opportunities to develop their skills in and take responsibility for: planning investigative work, selecting relevant resources, making decisions about sources of information, carrying out activities safely and deciding on the best form of presenting or communicating their findings.

<u>Science Planning</u>
Teachers will plan using the Focus Learning Challenge questions to produce a medium term and weekly plan. This covers the New Curriculum for each year group.
A long-term overview of science topics covered as year groups is included in the policy.
Children will be provided with adequate time for developing their scientific skills which will be approximately 2 hours per week.
The planning will have an adaptive approach so that all children including SEND can access the curriculum.

The contribution of Science to teaching in other curriculum areas:

The teaching of Literacy and Numeracy is promoted strongly through Science with ICT being integrated as it is in other subjects.

Literacy

Children are encouraged to develop their writing skills when recording their planning what they observe and what they find out. They will be expected to use their literacy skills at the level they are using in their Literacy lessons. They will complete a minimum of 1 piece of writing per half term that will be marked in detail using the marking criteria.

Numeracy

Pupils are expected to use their knowledge and understanding of their numeracy skills applying them when needed. They will also be expected to complete a minimum of 2 Numeracy based Science lessons per half term.

Computing

The pupils' ICT skills are applied as identified in the medium-term planning. This includes pupils using ICT to locate and research information (internet), record findings (using text data and tables), to gain confidence in using digital cameras and iPads, as well as computers. The use of this equipment is indicated on medium-term planning and must be used. This forms an important part of the entitlement of all pupils in ICT.

Art and Design Technology

Pupils have the opportunity to link Science to Art and Design Technology lessons. Enabling a more creative, engaging and enjoyable curriculum to be taught.

Spiritual development

Spiritual development is encouraged through reminding pupils of the wonders of Science and the effect of scientific discoveries on the modern world. Topical scientific are also discussed as appropriate.

Personal, social and health education

Health education is taught as part of the units:

Year 3- How can Usain Bolt move so quickly?

Year 4- What happens to the food we eat?

Year 5-Do all animals and plants start life as an egg?

How different will you be when you are as old as your grandparents?

Year 6- What would a journey through your body be like?

British Values

Children should be given the opportunity to develop their self-knowledge, self-esteem and self-confidence in Science. They should be encouraged to respect other people and their opinions. They need to understand of how they can influence decision-making through the democratic process and that everybody has a right to share their thoughts.

Health and Safety in Science:

Safe practice must be promoted at all times. Teachers must also take into account the school's Health and Safety policy. Particular attention must be given to avoiding the use of anything that aggravates individual pupils' allergies. Safety issues are identified in medium-term planning and risk assessments should be completed in weekly planning, when activities are identified that are unusual and beyond the scope of normal safety practice.

Teaching Science to children with Special Educational Needs:

Teachers will include all children in the weekly Science lessons. All children will benefit from aspects of the lesson, such as discussion, and other children communicating and sharing ideas. However, a pupil whose difficulties are severe may need to be supported by a Teaching Assistant or teacher in addition to appropriately adapted learning tasks given by the teacher.

EAL Learners:

Teachers should plan language opportunities for all children but make specific reference to EAL learners. Speaking frames should be used and sentences openers to support their writing. Pictures/Visual aids should be used wherever appropriate to reinforce their understanding of language taught.

More Able Pupils:

More able children will be challenged and motivated by differentiated work given by the teacher appropriate to his/her needs. They will be given the opportunity to develop their deeper thinking through reasoning and questioning such as:

This happened because we…….

If we changed……this would happen because?

The teacher will also use questions to allow the more able child to maintain their involvement in the lesson and demonstrate their knowledge and abilities.

Assessment and Recording:

Assessment will be continuous as the teacher and TA mark children's work throughout the lesson. Children will complete their self-assessment after each lesson. Also in depth marking by the teacher allows the teacher to have a good understanding of what each child has understood. This allows the teacher to plan to address any misconceptions. After each topic, teachers will complete the Science assessment relevant to the topic covered. This will help teachers to complete their end of year assessment they have add to the Arbor system. Children will also self-assess after each topic covered using the sticky fact sheet in their books. Teachers will then check these and mark if they agree to enable them to know how much of the topic the children have understood.

Resources:

The main Science resources are stored in the science store cupboard in Year 6 next to class 11. We as a staff are responsible for returning Science equipment when we have finished using it. Any damaged equipment should be reported to the Science subject leader as soon as possible. Consumable items, such as batteries, should be tested before the start of the topic and reported/replaced as necessary. We aim that the quality and availability of resources is maintained and that children should value the school's equipment and use it carefully. The range of resources will be updated as necessary when funding allows.

Monitoring and Review:

Science is regularly monitored and reviewed throughout the school year and this includes:

- Book trawls
- Lesson observations
- Monitoring planning
- Learning walks
- Pupil interviews

The subject leader is responsible for reporting to the Senior Leadership Team (SLT) about the quality of its implementation and its impact on standards.

November 2024

Review November 2027 or sooner should changes occur.