THAMES VIEW JUNIOR SCHOOL SCIENCE POLICY AND GUIDANCE

Updated September 2022

Curriculum Statement

Intent

The 2014 national curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specificdisciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science throughdifferent types of science enquiries that help them to answer scientific questionsabout the world around them
- are equipped with the scientific skills required to understand the uses and implications of science, today and for the future.

We understand that it is importantfor lessons to have a skills-based focus, and that the knowledge can be taught through this.

At Thames View Junior School, we aim to equip children with the knowledge required to use and implement Science today, tomorrow and for their futures. A high-quality Science education provides foundations for understanding the world. Therefore, building key knowledge and understanding concepts within our Science curriculum, we ensure our pupils recognise the power of rational explanation, develop a sense of curiosity about natural phenomena and develop respect for the environment and living things, including themselves and each other. Pupils are encouraged to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying, carrying out simple comparative tests, and investigating using secondary sources of information.

The majority of Science taught is embedded within the projects, however, some will be taught discretely to maximise the learning time and experience. Our curriculum is enriched with scientific enquiry using our own school environment, educational visits and whole school workshops. A Science activity week is timetabled into the year and is an opportunity for the children to apply taught skills for scientific enquiry, learning about a scientist and recording and evaluating results from experiments.

Implementation

Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all pupils are capable of achieving high standards in science. Our whole school approach to the teaching and learning of science involves the following;

- Science will be taught in planned and arranged topic blocks by the class teacher, to have a project-based approach. This is a strategy to enable the achievement of a greater depth of knowledge.
- Through our planning, we involve problem solving opportunities that allow children to apply their knowledge, and find out answers for themselves. Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom.
- Planning involves teachers creating engaging lessons, often involving high-quality resources to aid understanding of conceptual knowledge. Teachers use precise questioning in class to test conceptual knowledge and skills, and assess pupils regularly to identify those children with gaps in learning, so that all pupils keep up.
- We build upon the knowledge and skill development of the previous years. As the children's knowledge and understanding increases, and they become more proficient in selecting, using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence.
- Working Scientifically skills are embedded into lessons to ensure these skills are being developed throughout the children's school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the topics.

- Events, such as project days provide a broader provision encouraging the acquisition and application of knowledge and skills. These are purposeful, linking with the knowledge being taught in class and where appropriate involve the wider community.

Aims and Objectives

Science at Thames View Juniors aims to teach our children the skills, knowledge and understanding they needto question and understand concepts and phenomena that occur in the world around them and equips them with the motivation to seek explanations for these. Children learn the skills required for scientific enquiry and they will begin to appreciate the way science will affect their future on a personal, national and global level.

The aims of science are to enable children to:

- Ask and answer scientific questions
- Plan and carry out fair scientific investigations, using equipment including computers
- Know and understand the life processes of living things
- Know and understand the physical processes of materials, electricity, light, sound and natural forces
- Know about materials and their properties
- Evaluate evidence and present their conclusions clearly and accurately

Impact

The approach at Thames View Junior School results in a fun, engaging, high-quality science education that provides children with the foundations and knowledge for understanding the world. Our engagement with the local environment ensures that children learn through varied and first hand experiences of the world around them. Through various workshops, trips and interactions, children have the understanding that science has changed our lives and that it is vital to the world's future prosperity. Children learn the possibilities for careers in science, from a range of different scientists from various backgrounds, allowing all children to feel they are scientists and capable of achieving.

Through a positive caring environment, we provide the opportunity for children to reach their full potential.

Wider School Aims and Ethos:

This policy supports our aims of:

- To ensure all pupils have a voice in their learning and feel valued within the school community.
- To ensure that pupils continue to develop a sense of mutual respect and tolerance.
- To encourage pupils to take responsibility of their own learning to continue to be ambitious students.
- To ensure each child leaves our school prepared for the next stage in their academic journey, ready topositively embrace life in modern Britain.

Sources and references

This policy was written referencing the National Curriculum and the School Development Plan for Thames View Junior School.

Principles/Values

This policy is based on our commitment to "Strive for Excellence" and to deliver a broad, balanced andengaging curriculum which is appropriately differentiated according to the needs of the children.

Procedure and Practise

Class Teachers are responsible for:

- Planning lessons effectively which take children's prior learning and current assessment into accountand are

appropriately differentiated in order that the lessons consolidate, build upon and extend learning for all children
- Insisting on high expectations of learning and social behaviours
- Ensuring that effective direction and support is given in order that the children make good progress
- Demonstrating excellent subject and pedagogical knowledge in order to inspire children and build their understanding
- Applying a range of teaching styles which appropriately match the children's learning styles in order tosustain their concentration, motivation and application
- Using resources effectively, including other adults, to support children's learning
- Using technology and working walls effectively in order to support children's learning
- Using questioning effectively to gauge and extend children's skills, knowledge and understanding
- Encouraging children to ask and answer their own questions as often as they like
- Completing at least two investigations per half term with the focus on developing the children'sscientific skills.

Science Curriculum Lead is responsible for:

- Promote the development of science
- Ensure that learning is the core purpose of the teaching of science (Book Looks, checking, learningwalks and lesson observations)
- Foster high achievement and excellence within the Curriculum Area
- Support the professional and personal development of staff
- Foster high achievement and excellence within the Curriculum Area ensuring that students are encouraged and supported to aspire beyond their personal best
- Understand the assessment data for the science curriculum across the school

Senior Leaders are responsible for:

- Supporting and liaising with the Curriculum Lead to provide support for areas of development acrossthe school
- Monitor progress and attainment of children throughout the science curriculum, in conjunction with the Curriculum Lead

Governors are responsible for:

- To meet with Curriculum Lead discuss progress and challenges
- Review the science curriculum policy on a yearly basis
- Review the budget for the science curriculum and allocate money/resources where needed/available
- Ensuring the quality of teaching and learning across the curriculum is of a high standard by participating in lesson observations or learning walks in conjunction with the Curriculum Lead

Assessment and Recording

Teachers assess children's work formatively in science through Key Knowledge Quizzes (KKQs), observations and marking. These assessments inform the class teacher's planning for future lessons. At the end of a unit of work, the children completes the end of unit KKQ to see what progress has been made. These assessment results are recorded in the science tracking system to follow and accelerate children's progress. The school science co- ordinator monitors

progress through the school by sampling children's work at regular intervals. Children whoare not succeeding, and children who demonstrate high ability in science, are identified and supported.

Resources

The school has a range of resources to support the teaching of Science across the school and all ourresources are kept in the science cupboard. We plan to work with other local schools to share resources.

Health and Safety

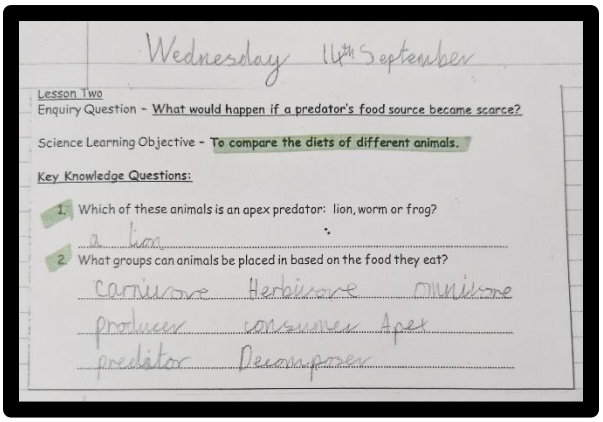
Children should be taught the correct and safe use of equipment and the carrying out of simple safety procedures as an intrinsic part of their science lessons. A risk assessment should be carried out in line with school policy in regards to any school trips or experiments out of school grounds. Safety equipment is availablein the science cupboard. It is the teacher's responsibility to ensure any investigations carried are done so in a safe way for the protection of their class – consult the "Be Safe" manual for guidance.

Monitoring and Evaluation

It is the responsibility of the Science Lead, the Head Teacher and Governors to monitor the standards of children's work and the quality of teaching in science. An action plan is written and reviewed annually. The science subject co-ordinator moderates books and assessment folders for scrutiny and evidence of progress,with feedback being given to staff on a termly basis. We are working with a cluster of schools to share ideas.

Other Documents and Appendixes

This policy should be read in conjunction with the Teaching and Learning Policy and the National Curriculum.


Wednesday 11th September

Lesson Two

Enquiry Question - What would happen if a predator's food source became scarce?

Science Learning Objective - To compare the diets of different animals.

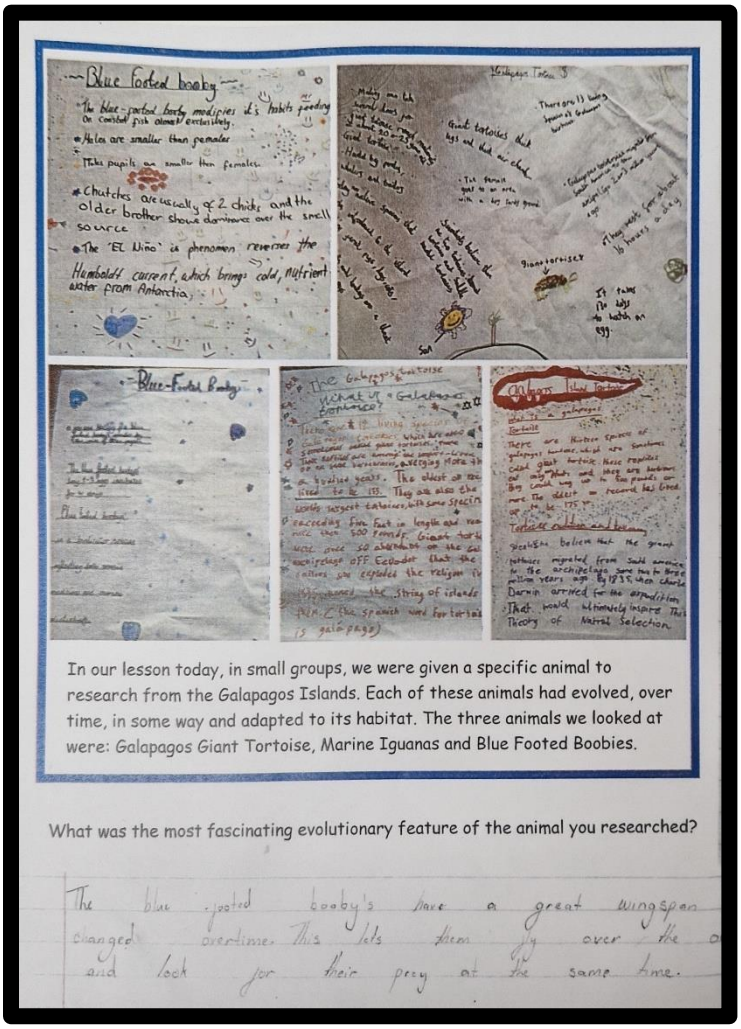
Key Knowledge Questions:

1. Which of these animals is an apex predator: lion, worm or frog?

a lion

2. What groups can animals be placed in based on the food they eat?

Carnivore Herbivore omnivore
producer consumer Apex
predator Decomposer



In our lesson today, in small groups, we were given a specific animal to research from the Galapagos Islands. Each of these animals had evolved, over time, in some way and adapted to its habitat. The three animals we looked at were: Galapagos Giant Tortoise, Marine Iguanas and Blue Footed Boobies.

What was the most fascinating evolutionary feature of the animal you researched?

The blue footed booby's have a great wingspan changed overtime. This lets them fly over the and look for their prey at the same time.

CB Wednesday 12th October 2022

Lesson four
(Science)

Enquiry question: How does adaptation relate to the term 'survival of the fittest'?
Depending on the enviroment that is suitable, that is where the animal will grow properly.
Learning Objective: To effectively evaluate a scientific enquiry.

Spicy

I have studied the adaptation of a cheetah. The reason why I have chose this fierce, mighty animal is because they use their powerful legs ≠ so they can lunge forward quickly and sprint very fast. It is very good for them to be super quick since they can easily catch their preys. A Their speed makes distinctive, as they are one of the fastest animals to live. Another feature of a cheetah, is that they have sharp claws to cut right through ~~To~~ their preys so they can eat it once they are killed. They have large paws to hold grip and to help go fast. ~~There~~ Their large paws help them with many things, so it is very useful. By having fur, they keep warm in the weather even ~~though~~ though it is usually hot in the climate. They can hear from miles away and are very loud. Cheetah are carnivores which means