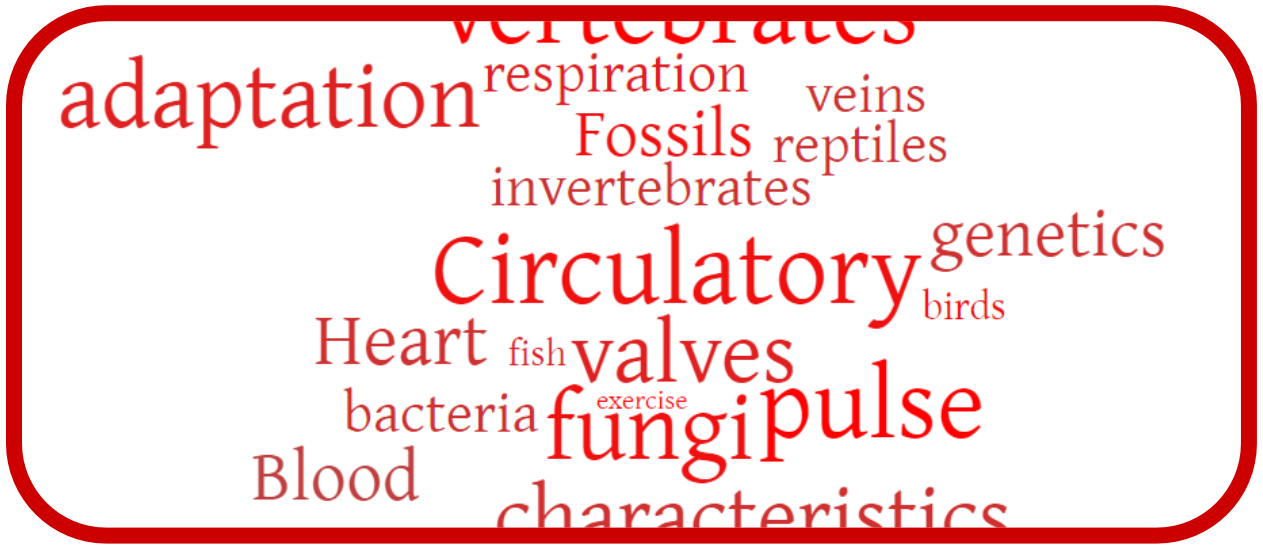
Science

At

Kingswood Primary Academy



KINGSWOOD PRIMARY ACADEMY CURRICULUM INTENT

VALUES	RESPECT Our Environment & Community RESPECT Each Other RESPECT Yourself
INTENT	At Kingswood Primary Academy, we aim to provide all pupils with a stimulating and inclusive educational environment in which everyone feels safe, respected and supported to grow and develop to their full potential. Our purposeful curriculum is therefore designed to give children the entitlement to: • **Knowledge** - develop a rich and deep subject knowledge • **Skills** - secure basic skills in reading, writing and maths • **Nurture** – be supported to grow and develop new skills and independence through a variety of contexts and enrichment experiences • **Curiosity** -be curious learners who fully engage in learning, enjoying challenges and develop a lifelong thirst for knowledge • **Ambition** – become independent, responsible citizens who fulfil their potential and are prepared for life in modern Britain • **Diversity** - gain an understanding of fundamental British Values and use these to inform their own moral code 
SKILLS FOR LIFE	The curriculum entitlement supports the development of individual essential skills for life through the Skills Builder aspects: 1. Listening 2. Speaking 3. Problem Solving 4. Creativity 5. Staying Positive 6. Aiming High 7. Leadership 8. Teamwork 

Overview

At Kingswood Primary Academy, our science is delivered through a dynamic, progressive programme called Kapow Science. This programme is packed with inspirational resources, designed to deliver outstanding science throughout our school.

Intent

Kingswood Primary's Science curriculum aims to develop a sense of excitement and curiosity about natural phenomena and an understanding of how the scientific community contributes to the past, present and future.
At Kingswood Primary Academy we want our pupils to develop a complex knowledge of biology, chemistry and physics but also adopt a broad range of skills in working scientifically and beyond. The scheme of work is inclusive and meaningful so all pupils may experience the joy of science and make associations between their science learning and their lives outside the classroom. Studying science allows pupils to appreciate how new knowledge and skills can be fundamental to solving arising global challenges.

The curriculum aims to encourage critical thinking and empower pupils to question the hows and whys of the world around them.
Our Science Curriculum encourages:

- A strong focus on developing knowledge alongside scientific skills across biology, chemistry and physics.
- Curiosity and excitement about familiar and unknown observations.
- Challenging misconceptions and demystifying truths.
- Continuous progression by building on practical and investigative skills across all units.
- Critical thinking, with the ability to ask perceptive questions and explain and analyse evidence.
- Development of scientific literacy using wide-ranging, specialist vocabulary.

Implementation

- Our Science curriculum is progressive from Reception through until the end of Key Stage 2.
- Based upon the 2014 Primary National Curriculum, which provides a broad framework and outlines the knowledge and skills and taught in each Key Stage.
- We use Kapow Science as a starting point, to help build our curriculum.
- Lessons incorporate various teaching strategies from independent tasks to paired and group work including practical, creative, computer based and collaborative tasks.
- Lessons are engaging, fully inclusive and appeal to pupils with different learning styles.
- Adaptive teaching is used to ensure all pupils can access learning and opportunities to stretch or support pupils learning are planned as required.
- Knowledge organisers for each unit helped to identify prior and future curriculum links to science.
- Teaching focuses on enabling children to think as scientists, delivered by staff with a strong subject knowledge.
- Classroom environments reflect the topic the children are learning, which then immerse the children in relevant vocabulary as well as visual stimulus for their learning.

The impact of Kapow Primary's Science scheme can be constantly monitored through both formative and summative assessment opportunities. Each lesson includes guidance to support teachers in assessing pupils against the learning objectives and any relevant scientific enquiry skills. Furthermore, each unit has a unit quiz and a knowledge and skills catcher, which can be used at the beginning or end of the unit to provide a summative assessment. Opportunities for pupils to communicate using scientific vocabulary will also form part of the assessment process in each unit.Our Science Curriculum identifies the following key strands:

- Scientific knowledge and understanding of: B**iology**: living organisms and vital processes; **Chemistry**: matter and its properties; **Physics**: how the world we live in 'works'.
- Working scientifically: processes and methods of science to answer questions about the world around us.
- Science in action: uses and implications of science in the past, present and for the future.

IMPACT

We measure the impact of our curriculum through the following methods:

- Assessing children's understanding of topic linked vocabulary and knowledge before and after the unit is taught.
- Assessment of pupil understanding through discussions about their learning.
- Images of the children's practical learning.
- Interviewing the pupils about their learning (pupil voice).
- Moderation of pupil's books and opportunity for a dialogue between teachers.
- Marking of written work in books.

Curriculum Design

Kapow Primary's Science scheme is a spiral curriculum, with essential knowledge and skills revisited with increasing complexity, allowing pupils to revise and build on their previous learning. A range of engaging recall activities promotes frequent pupil reflection on prior learning, ensuring new learning is approached with confidence. The Science in action strand is interwoven throughout the scheme to make the concepts and skills relevant to pupils and inspiring for future application. Cross-curricular links are included throughout each unit, allowing pupils to make connections and apply their science skills to other areas of learning. Each unit is based on one of the key science disciplines: biology, chemistry and physics.

The National curriculum content has been grouped into six key areas of science to show progression throughout the school: Plants. Animals, including humans. Living things and habitats. Materials. Energy. Forces, Earth and space.

Working scientifically skills are integrated with conceptual understanding rather than taught discretely to provide frequent but relevant opportunities for developing scientific enquiry skills. The scheme utilises practical activities that aid in the progression of individual skills and provide opportunities for full investigations.

Key Learning Sequence	Scientific Focus and Connections
SEND – Strategies for supporting access: • Break down learning – now/then • Images to support • Specific simple instructions • Adaptive Teaching • Scaffold to support learners • Pre-learning tasks • Re-capping within lessons for all or groups of pupils • Flexible grouping • Immersive Reader • Definitions – revisit Vocabulary banks	**Enrichment** • Space Centre • Sacrewell Farm • Forest School • The seaside • School residential (scientific investigations) • The Zoo

Subject Leadership and Development

Subject Strengths	Areas to Develop
• Staff knowledge of their curriculum – progression and sequence • Collaborative approach to the planning – LTP/MTP with all staff	• Continue to develop use of knowledge organisers and quizzes • Continue to develop lesson activities for effectiveness

• Clear sequence of learning in planning and in pupil books	• Continue to access specialist training from external providers to ensure the best and most current practise.
Monitoring • T1 Focus – MTPs - Book monitoring • T2 Focus – Connections – CTs discussions – Books/pupil voice • T3 Focus – SL discussions with CTs - Book monitoring	**CPD** • Use of Kapow video CPD to improve teacher subject knowledge.