

Science Intent.

In St. Patrick's, we strive to provide our pupils with engaging and practical experiences to nurture their curiosity and sense of wonder. We aim to ensure that children leaving St. Patrick's are well equipped with the skills and knowledge needed to explore and investigate the world around them.

Our children hold a natural curiosity about the world we live in and all staff within our school should strive to provide each child with the key knowledge and skills to allow them to hold a better understanding of our ever-changing world.

We also work to equip our pupils with the confidence and skills to ask and answer questions through the scientific disciplinary skills and substantive knowledge we provide as a school. Our focus as a school is to provide engaging lessons that embed key knowledge to allow the children to independently make links and connections.

Our intent can be seen through our curriculum which reflects that of the National Curriculum.

Pupils should:

- 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 scientific enquiries that help them to answer questions about the world around them.
- be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.
- be provided with opportunities to create links and embed key knowledge.

We believe that through our exciting curriculum and memorable learning experiences we provide our pupils with the desire to explore.

Science Implementation.

Our science curriculum is taught each term at St. Patrick's. Units are taught through discrete lessons each week allowing children time to become immersed in the subject. Teaching is whole class based and supported through appropriate differentiation where class teachers deem necessary.

In Foundation Stage, science should be a part of child-initiated learning. This may be seen through Discovery Time or outdoor learning, rather than through topic specific teaching. This provision reflects the areas of learning and development in the Early Years Framework under "Understanding the World" which involves guiding children to make links and sense of their physical world and their local area through opportunities to explore, observe and investigate.

Within our school, long term curriculum planning for Science is created with the use of PZAZ Science Scheme to allow us to ensure each unit is covered in accordance with the National Curriculum.

Year Overview.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Foundation	The seasons - Biology	Materials - Chemistry	Animals - Biology	Plants- Biology	Plants- Biology	
Year 1	Seasonal Changes - Biology	Everyday Materials - Chemistry		Biology / Animals incl humans - Biology	Plants- Biology	Day length/weather around the world. Seasonal Change- Biology
Year 2	Living things and their habitats- Biology	Animals including humans - Biology	Uses of everyday materials - Chemistry	Uses of everyday materials- Chemistry		Plants- Biology
Year 3	Rocks and Fossils- Chemistry	Forces/ Magnets- Physics	Animals incl Humans - Biology	Plants- Biology	Plants- Biology	Light- Physics
Year 4	Sound- Physics	States of Matter- Chemistry	Animals Incl Humans- Biology	Electricity- Physics	Living Things/ Habitats- Biology	Living Things/ Habitats- Biology
Year 5	Forces- Physics	Forces- Physics	Properties and changes of materials - Chemistry	Properties and changes of materials- Chemistry	Space- Physics	Animals including humans Living things and their habitats - Biology
Year 6	Living Things/ Habitats- Biology	Light- Physics	Animals incl Humans- Biology	Electricity- Physics		Evolution/ Inheritance- Biology

Science Lesson Structure

Starter:

Each lesson starts with a “Long Term Memory Activity”. This includes three questions or concepts –

1. From the same unit taught in the previous year (or linked unit).
2. A question from the beginning of the unit.
3. A question from lessons taught the week previous.

This weekly retrieval practice will aid in the building of a web of schema, allowing the children to make links and embed their learning from working memory to long term memory. If pupils struggle with this activity, intervention or a focus group will be needed before moving on.

Long term memory questions can be found for each year group on Pzaz under Science Co-ordinator section.

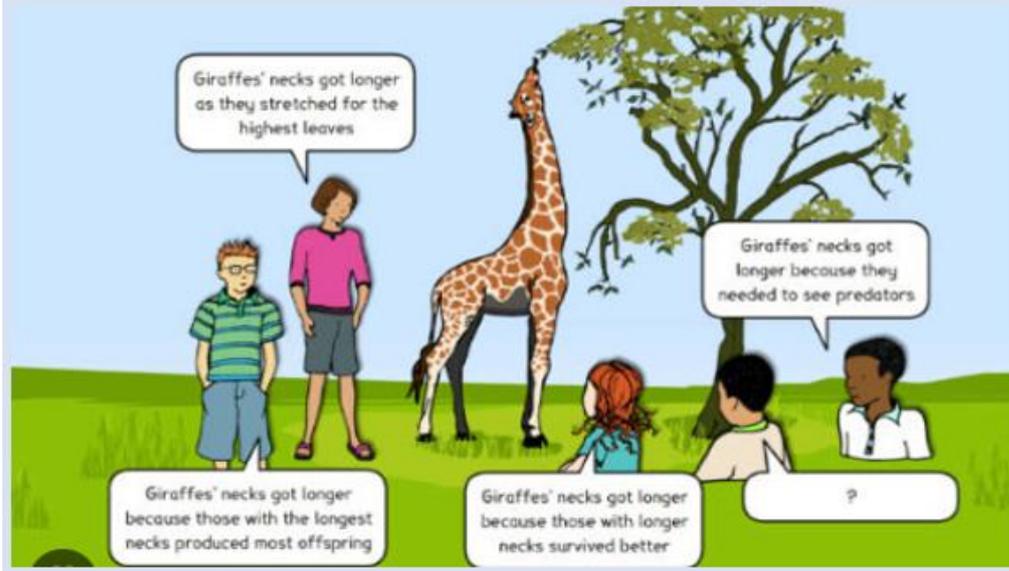
This activity should take no more than 10 minutes at the start of the lesson and can be done a variety of ways, bellow are a few examples:

Which is the odd one out?



1 2 3

How did the giraffe adapt?



You have 3 minutes to draw the life cycle of an animal!



Prompting conversation-

Use Explorify to prompt discussion and model scientific questioning and thinking. Videos, concept cartoons and zoom in zoom out activities available on Explorify.

<https://explorify.uk/en/activities>

Pzaz lesson:

Before beginning the lesson, the pupils should be made aware if they are learning Biology, Chemistry or Physics. If working on disciplinary knowledge (working scientifically) children need to be told which skill you are working on within that lesson. Each Pzaz lesson plan covers two lessons and provides numerous investigation activities.

When planning ensure that lessons cover both substantive knowledge and disciplinary knowledge. Pzaz is a resource feel free to add/remove as you see fit for your class. Each Pzaz lesson gives many different activity opportunities – please choose one or two from the lesson plan.

KS1 – Record work / evaluations in Big Books

KS2 – Record work in Science Books.

Working Scientifically:

Please see “Working Scientifically Progression” attached for each year group. Disciplinary skills should be taught explicitly and modelled to children. At the beginning of the lesson children will be made aware of which they are working on.

Planning an enquiry:

We want to provide the children with skills to plan and evaluate their investigations and enquiries.



To plan an enquiry, children can use the “Enquiry Wheel”.

The “Enquiry Wheel” does not have to be used in any particular order, and some learning will focus only on one or two of the components at any time.

Assessment:

Post assessments can be found under each unit on Pzaz. These post assessments can be edited for your class. Post assessments review substantive knowledge while teacher judgement will be used for disciplinary knowledge.

KS1 :

Yr 1 – can be completed in small groups and filed in folders.

Yr 2 – can be completed independently and filed in folders.

KS2 – printed and stuck into Science Books.

During Summer Term we will host a Science Day! The whole school will be given the same big question to explore. Pupils will have the opportunity to display their disciplinary skills to be assessed by class teacher.

Useful tips:

For long introductory text – change it to role play by using ChatGPT