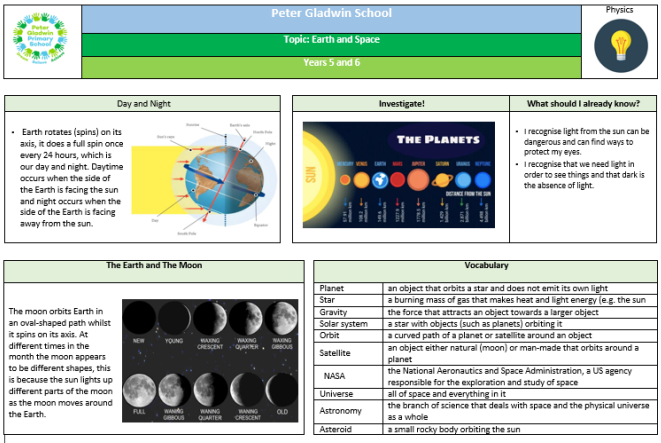
Intent – what do we want our pupils to learn in Science at Peter Gladwin?

At Peter Gladwin, we want our pupils to gain an understanding of the world around them, become inquisitive scientists, by asking questions, observing and noticing patterns and links between different areas of the curriculum.

Pupils at Peter Gladwin learn Science through a spiral curriculum. This means pupils learn topics at in Key stage 1 (Year 1 and Year 2), then later revisit the same topics, building on their prior knowledge of the subject and study in greater depth further up the school.

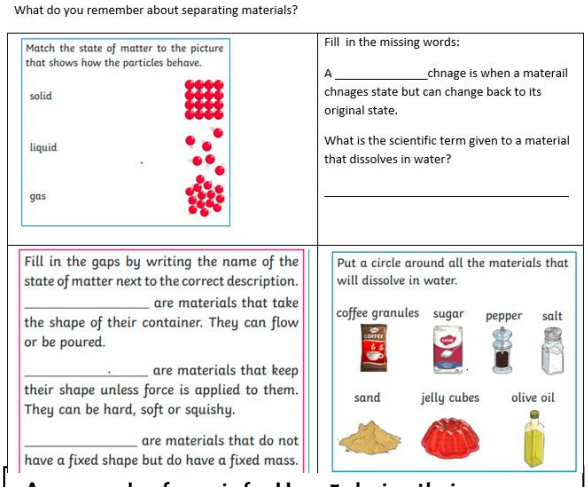
Pupils gain an understanding of scientific vocabulary through the explicit teaching of new words. In addition to this, for every Science topic, children have a 'Knowledge Organiser' which explains the key words and concepts within the subject area. Knowledge Organisers reflect the content being taught: in Key stage 1, they are more picture based with a few key words, whereas in Key stage 2, more detailed definitions of scientific vocabulary and diagrams are shown.

Science in EYFS – where children learn about 'Growing' through planting bulbs in time for Spring!



Examples of 'Knowledge Organisers' used across the school for every Science topic.

Learning in Science is revisited and recapped often, so children gain a better understanding of what they have learnt. Teachers make quizzes for their classes to test their knowledge of the topic and understanding of new vocabulary. Quizzes support the pupils to reflect on what they know already and how to progress their learning further.



An example of a quiz for Year 5 during their Properties and Material topic.

Implementation – how do our pupils learn Science at Peter Gladwin?

Hypothesis/ question

Peter Gladwin follows PlanBee Science scheme, which supports teachers with overviews, planning and resourcing alongside teachers using their own creative ideas to provide their class with high-quality and engaging lessons.

Prediction

At Peter Gladwin, we believe that pupils learn best when practical, hands-on investigations are used to support children's understanding of concepts. For example, pupils in Year 5 are taught about soluble and insoluble materials through investigating whether substances can dissolve in water. We aim to offer children in every class at least one practical, experimental lesson during every Science topic.

Year 2 using Peter Gladwin's outdoor environment to find microhabitats.

Diagram

Pupils are introduced to symbols to represent each stage of their scientific enquiry. This is a whole school approach which begins in Key stage 1 and is revisited every time children conduct investigations.

Method

We are also very fortunate to have an amazing outdoor area and a large school field, which can be used during Science lessons. In Year 2, children learn about microhabitats by observing animals in their own microhabitats on the school grounds.

Conclusion

Impact – what have our pupils learnt in Science at Peter Gladwin?

Results

Pupils at Peter Gladwin know that Science involves understanding the world around them. They enjoy learning Science because of the rich, practical investigations, which provide them with excitement and challenge. A Year 5 pupil said, "Doing experiments makes the learning enjoyable".

2023 STEAM day – Marble runs

Example of symbols used to represent each part of investigations.

Across the school, from pupil book studies (Alex Bedford) it was found that pupils are using accurate scientific vocabulary, which has been taught to them explicitly through high-quality teaching. Pupils are given a range of activities within the Science lesson: retrieval questions, recap of previous learning or quizzes, the opportunity to implement vocabulary taught in the lesson and then complete an independent or group task.

In addition, every year, all pupils at Peter Gladwin take part in a STEAM (Science, Technology, Engineering, Art and Maths) day where they are faced with a challenge and work together to complete an exciting, practical task. For example, in 2023, every child was asked to design and make a functional marble run, using their previous knowledge and learning from all STEAM subjects. In 2024, all pupils were tasked with designing and building a boat to float with a weighted object on.