



## Teaching Science at KJA

The teaching of Science at Kensington Junior Academy promotes our pupils to become curious, creative and critical thinkers, equipping them with skills to understand and contribute to the modern world.

The learning at KJA is rooted in the five Learning Behaviours and combines practical skills with greater knowledge, which will prepare pupils for life in a world where understanding, adaptability and transferable skills are critical.

Our core intent is to enable all pupils to:

- Develop an enthusiastic and positive attitude towards Science.
- Gain an understanding of scientific methodology.
- Critically evaluate both their own and others work, extending and improving their ideas.
- Promote co-operative and social skills, enabling successful teamwork.
- Be aware of the historical and social perspective of science that has formed the modern world.

Science is taught, where possible, as part of a cross-curricula model with staff following a process model to ensure pupils become adept at '**Thinking like a Scientist.**'

# A Process Model for Science

## #1 Investigate & Research

- Recall of prior knowledge
- Research particular topic.
- Ask relevant questions
- Consider ideas.

## #2 Plan

- Plan an enquiry.
- Define resources and methods.
- Make predictions and consider variables..

Think like a  
**Scientist**

## #3 Enquiry

- Practical skills
- Measuring & controlling variables
- Teamwork.
- Observations and data recording.

## #4 Conclusion and Evaluation

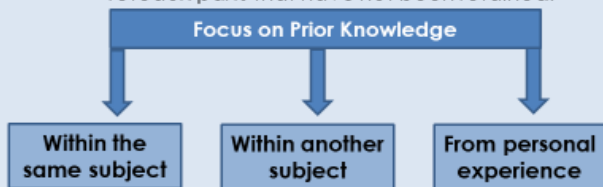
- Form conclusions to answer the enquiry.
- Use scientific vocabulary.
- Reflect and revise

In order to **'Think like a Scientist'** pupils will work through four distinct areas:

### Link It

#### Focus on Prior Knowledge

- Be proactive in helping pupils to **recall prior learning** from previous units of learning within the subject or from other subjects.
  - Give time to, and respect, any **personal experiences** pupils may bring to the learning.
- Ensure **pupils are secure in their prior knowledge** within the subject before starting new unit of learning.
- Where appropriate, use a diagnostic assessment to check on retention and then reteach parts that have not been retained.



### Learn It

- **Present new learning to pupils in small chunks** to prevent cognitive overload.
  - Effectively the **composite and component** examples work for this.
- **Provide effective modelling** and plan time for guided and independent practice.
- Ensure there are opportunities for pupils to **develop their substantive knowledge** alongside **disciplinary knowledge**.
- Start with an activity to focus on **being a scientist, historian or a geographer (artist, technologist)**
  - Ensure you have **rehearsed any new concepts** and checked understanding.
    - **Use talk for learning** to comprehend new concepts and vocabulary.
  - **New Vocabulary**
- Ensure that there are opportunities for pupils to learn new vocabulary (speaking frames, etc).

### Check It

- **Create checkpoints** throughout the lesson to ensure that pupils have understood the current learning.
- **Mark in the moment** and provide instant feedback to pupils. Ensure you **pick up on pupils who are falling behind**.
- When possible, **provide rapid intervention** for those pupils that need it.
- Use retention assessments to help you **gain a picture of any gaps** that may be occurring.

Use the information from above to target intervention through peer support and teacher and TA support.  
Identify individuals who need additional challenge.

### Show It

- Ensure that there are opportunities for pupils to **showcase** their learning.
- Ensure that this **links the disciplinary with the substantive knowledge**. For example, in history ensure that you link in the impact the period studied had on our lives today. Give pupils time to challenge the quality of the evidence.
- Maximise opportunities to **develop cross curricular activities**, independent writing, knowledge displays, group activities that could be filmed and shared as well as through debate and drama.
- Provide ample opportunity to showcase their new skills and new knowledge in a **variety of ways**.
- In addition, provide **opportunities to use the new vocabulary** they have acquired in other areas of the curriculum.

## Outcomes of Learning