

# Science at Sheen Mount



Katie Adams: Science Subject Lead and School Based Adviser for Science

# My role



achieving  
for children



STEM  
LEARNING



- Year 6 teacher
- Science Lead at Sheen Mount
- AfC School Based Adviser for primary science across Richmond and Kingston boroughs
- Professional Development Leader for STEM Learning
- Co-lead an Enthuse Partnership of 8 local schools
- Responsibilities include:
  - Developing and monitoring the science curriculum at Sheen Mount and supporting science leads from other schools to do the same
  - Leading CPD for teachers within and beyond the school
  - Leading network meetings for Richmond and Kingston science subject leaders
  - Researching and organising science enrichment opportunities
  - Keeping up to date with the latest research and best practice in primary science education

# Intent

At Sheen Mount, we aim to treat all children as scientists by:

- allowing them to develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- developing understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- equipping children with the scientific knowledge required to understand the uses and implications of science, today and for the future
- building science capital by raising awareness of STEM careers and how science learning links to real life
- immersing children in wider science opportunities through visits and visitors, extra-curricular activities and home learning



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# Curriculum

[Science Curriculum Map 2023-24](#)



# Progression

Progression of knowledge, skills and vocabulary throughout the school is carefully planned.



# Progression example: materials

**Reception**: investigate and explore materials through hands-on experiences e.g. floating and sinking, melting and freezing.

Vocabulary: float, sink, ice water





# Progression example: materials

Year 1: sort objects and materials using a range of properties.

Vocabulary: hard, soft, stretchy, stiff





# Progression example: materials

Year 2: use properties to explain why a material is suitable or not suitable for a particular purpose.

Vocabulary: transparent, opaque, reflective



# Progression example: materials

Year 3: compare and group different types of rock on the basis of their appearance and physical properties.

Vocabulary: permeable, igneous, metamorphic



# Progression example: materials

Year 4: compare and group materials according to whether they are solids, liquids or gases.

Vocabulary: state, melting, freezing, evaporation



# Progression example: materials

Year 5: observe what happens when materials in different states are combined and how those combinations can be separated.

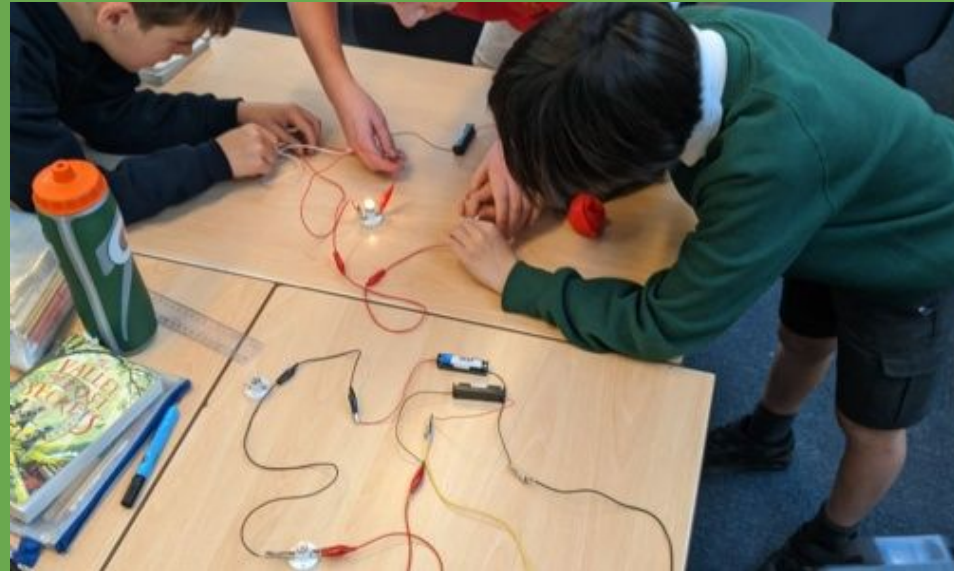
Vocabulary: dissolve, solution, reversible, irreversible



# Progression example: materials

Year 6: apply knowledge of the properties of materials to support their understanding of light, electricity and fossil formation.



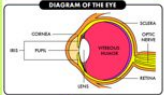



Vocabulary: conductor, insulator, sediment



# Building long term knowledge

## Knowledge organisers

Vocabulary	
Word	Definition
Light source	
Opaque	
Ray	
Reflection	
Refraction	
Spectrum	
Transparent	
Translucent	

Light – Year 6 Science Spring 1	
<b>Key learning for this topic</b>	
<b>Knowledge:</b> <ul style="list-style-type: none"> <li>light appears to travel in straight lines</li> <li>objects are seen because they give out or reflect light into the eye</li> <li>we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes</li> <li>shadows have the same shape as the objects that cast them</li> </ul>	
<b>Skills:</b> <ul style="list-style-type: none"> <li>taking measurements, using a range of scientific equipment, with accuracy and precision, taking repeat readings when appropriate</li> <li>recording data and results using scientific diagrams, labels and tables</li> <li>reporting and presenting findings from enquiries</li> </ul>	
<b>Sequence of learning</b>	
How does light travel?	
How do we see things?	
What do mirrors do to light?	
What did Sir Isaac Newton discover about light and colour?	
What happens when light passes from one material to another?	



# Building long term knowledge

Flashback

Last week in science

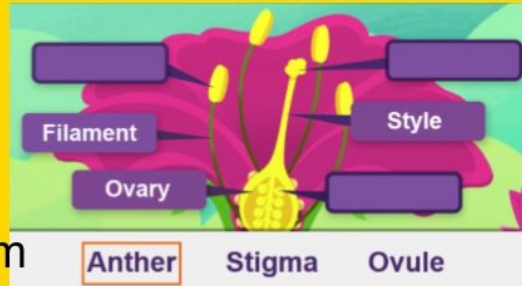
What is natural selection?

Last month in science

Do all animals become fossils when they die? Why/why not?

Last term in science

Can you add the missing words to this diagram of a flower?



Last year in science

Which of the following surfaces is likely to produce the least friction?

rubber wood grass glass



# Science visits and enrichment activities

## Whole school:

- Science take home bags
- Access to pond
- Access to school grounds including sensory garden and mature trees
- Forest trail coming soon
- NPL liquid nitrogen show for Years 2-6 on 25th March



# Science visits and enrichment activities

## Reception:

- Sheen Common seasonal walks (observing plants and animals)
- Engineering story time with a STEM ambassador (building bridges)



# Science visits and enrichment activities

## Year 1:

- Richmond Park walk (observing seasonal changes)
- Hobbledown farm trip (animal groupings, body structure and habitats)
- Trip to Brooklands Museum (comparing materials in old and new planes)





# Science visits and enrichment activities

## Year 2:

- Class butterflies (animal life cycles)
- Trip to Barnes Wetland Centre including pond dipping workshop (investigating habitats)



# Science visits and enrichment activities

## Year 3:

- Trip to Kew Gardens (plant adaptations and rainforest habitats)



# Science visits and enrichment activities

## Year 4:

- Residential field trip to Juniper Hall including small mammal trapping and nature walks (living things and their habitats)



# Science visits and enrichment activities

## Year 5:

- Science Dome (Earth and Space)
- Smallpeice Trust STEM day (forces and engineering)
- Gardening club
- Live webinar with STEM ambassador Liz Tinlin (Earth and volcanoes)

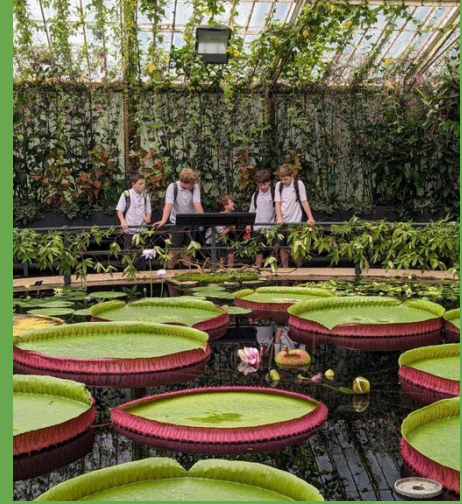




# Science visits and enrichment activities

## Year 6:

- Science Dome (evolution)
- Trip to Kew Gardens (plant evolution and adaptation)
- Heart dissection (human circulatory system)
- Gardening club
- Selected pupils participate in Royal Society Young People's Book Prize judging panel
- Selected pupils invited to NPL for an inter-school science quiz





**Any questions?**

