Science Pedagogy: How do we ensure pupils retain knowledge?



Prior Learning and key vocab	Flashback Four	Enquiry	Working Scientifically	Observe and Identify	Memory Mole	End of unit Quiz	Review and Re-teach
The prior learning slide is used consistently to outline the key knowledge areas that the lesson will cover and the prior learning that will help the pupils to be successful. Explicitly teach new vocabulary and its meaning. (SEND pupils will have had this tricky vocabulary pre-taught to them)	In Science, we use the flashback 4 questioning model to help to retain knowledge. The pupils are given: -2 questions from the previous unit/year group (long term memory check) -2 questions from the previous lesson	Children will use different types of enquiry approaches to find out answers to investigable questions. • comparative / fair testing • research • observation over time • pattern seeking • identifying, grouping and classifying • problem solving	Explicitly teach the knowledge and skills required to work scientifically, guiding pupils to apply this in practice, with opportunities for discussion and reflection.	Check, reflect, respond! In the moment assessments- (including whole class mid-session marking from Year 2 upwards). Identify who needs support (individual or group) Extra teaching/further scaffolding within lesson Instant intervention	The memory mole slide will be used consistently at the end of each lesson to check that key knowledge has been retained by the pupils. Specific Kagan questioning used so that all pupils share their learning.	This will help to check knowledge retention at the end of each unit. The quiz will help the teacher to complete the knowledge checker and will give immediate feedback regarding pupil outcomes.	Teacher completes knowledge checker and identifies any common areas of 'knowledge' weakness to reteach. **Application Activity** Pupils that have fully understood the key knowledge will complete an application task
Questioning approaches					**Modelling and resources**		

• Kagan questioning used throughout the lesson. • Open ended questioning used to encourage deeper thinking and discussion. • Mainly class teacher instruction, however, in group tasks, a pupil leader may be appointed to encourage more child-led learning. • Peers will feedback on each other's Kagan discussion answers in all lessons and their written work (where appropriate). • Where possible skills required will be taught prior to the lesson e.g. the use of a tape measure, the class teacher will initially teach and model this in a maths lesson.	Adaptive teaching in Science will include: • Pre-teaching of key lesson vocabulary for 1:1 SEND pupils (where appropriate). • Adapted investigations • Kagan pairings to support children where needed • Adapted worksheets • Further adult support (where possible) • Personalised planning where appropriate for SEND pupils