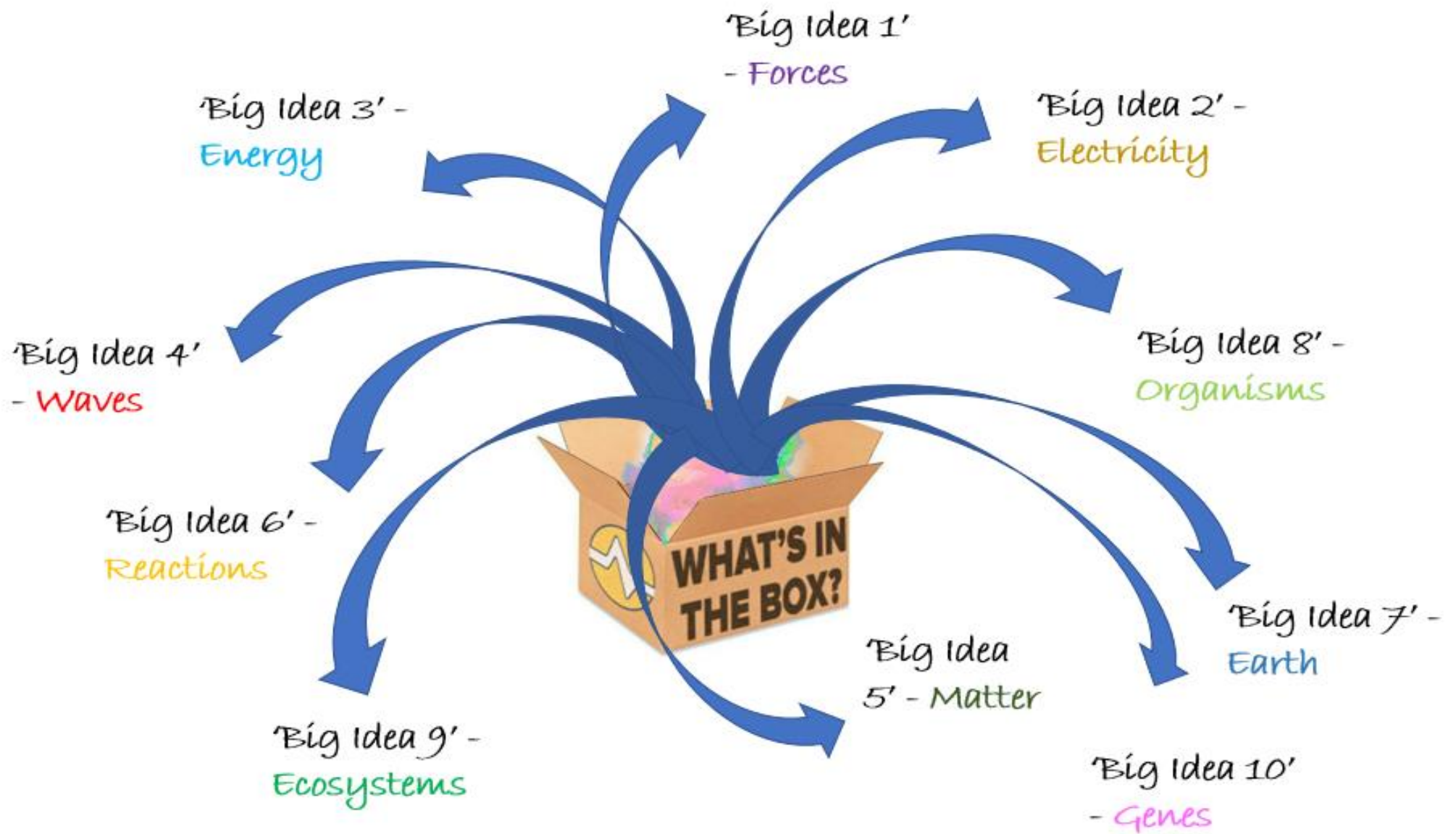


A 3D illustration of a purple box with white panels. Each panel features a large, stylized question mark cutout. The box is shown from a perspective that highlights its depth and the repeating pattern of the question marks.

LYFS - Science
'Big Ideas Curriculum'
What's in the box?



Rationale - intent

The KS3 Science Curriculum introduces the 10 'Big Ideas' in science, which are further broken down into 'Little ideas'. These ideas are covered in years 7 and 8 and can be taught in any order. This allows the opportunity to provide spacing between related topics. The teacher can then use recall techniques at intervals, both in individual lessons or across multiple lessons to aid recall as well as using interleaving.

The KS3 curriculum has been designed so that the big ideas provide the necessary 'building-blocks' for years 9, 10 and 11, where the 'Big Ideas' are revisited and built on.

A curriculum map allows students to see where the 'Big Ideas' link-in with topics covered in years 9, 10 and 11. As such, it is a 5-year curriculum plan where students can develop their knowledge and skills as they progress through, with many opportunities for repetition to re-enforce memory retention, but also to allow them to recognise where a particular skill is relevant to the question being asked.

In addition, the curriculum is designed to test the student's ability to demonstrate the 3 assessment objects of Knowledge, Application & Analyse. These AO's are interwoven throughout the curriculum allowing for repetition and therefore recall and application.

The 10 'Big Ideas' in Science - implementation

'BIG IDEAS' in Science	KS3 'BIG IDEAS' in science can be taught in any order, but provide the foundation to build on in years 9, 10 and 11.			
	Part 1		Part 2	
BIG IDEA 1 - FORCES	Speed	Gravity	Contact forces	Pressure
BIG IDEA 2 - ELECTRICITY	Potential difference & Resistance	Current	Magnetism	Electromagnetism
BIG IDEA 3 - ENERGY	Energy costs	Energy transfers	Work	Heating & cooling
BIG IDEA 4 - WAVES	Sound	Light	Wave effects	Wave properties
BIG IDEA 5 - MATTER	Particle model	Separating mixtures	Elements	Periodic table
BIG IDEA 6 - REACTIONS	Acids & Alkalis	Metals & non-metals	Types of reaction	Chemical energy
BIG IDEA 7 - EARTH	Earth's structure	Universe	Climate	Earth's resources
BIG IDEA 8 - ORGANISMS	Movement	Cells	Breathing	Digestion
BIG IDEA 9 - ECOSYSTEMS	Interdependence	Plant reproduction	Respiration	Photosynthesis
BIG IDEA 10 - GENES	Variation	Human reproduction	Evolution	Inheritance

Feedback – Checking Impact

- Immediate ‘low-stakes’ feedback through Q& A’s during lesson
- Formative assessment ‘medium-stakes’ - Summary questions to check lesson objectives at end of lesson
- Summative ‘high-stakes’ assessment at the end of each section to check students knowledge, skills and interpretation.
- Provide structured & bespoke feedback to each student for all of the above and how they can improve, using ‘Strengths & Targets’ marking policy.
- Data collection & regular reporting to students and parents to inform them of progress.

Summary – Why this curriculum style?

- Logical sequencing that allows students to make clear cognitive links from KS3 through to KS4.
- Provide students with the confidence to build on knowledge, skills & concepts learnt from day 1.
- To allow interleaving, where different disciplines are taught across the same week.
- To cross reference disciplines to avoid 'ring-fencing' topics and encourage a greater level of cognition that can be applied in more challenging questions.
- Remove the 'glass ceiling' for students regardless of setting – progress opportunities for all.
- Students know what they are going to learn and when, avoiding confusion and allowing them to forward plan.