

Blueprint is a big ideas, mastery curriculum for science. It offers outstanding preparation for all GCSE courses, STEM careers, and 21st century lives.



Think of GCSE as

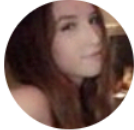

The visible matter is the 'content' statements. But recall is only worth 40% of the marks.

a Universe of marks



60% of marks are for 'Dark Matter'. These require students to think:

- **Apply knowledge**
- **Analyse knowledge**

We know many students perform poorly in GCSE because they cannot apply their knowledge. Why?




 **Kitty B**
@kittydb12 

When you've been doing osmosis with potatoes for two years and aqa decides to throw some carrots in there

 **alice**
@alicegodwinn 

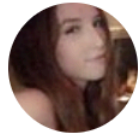
when it says "use the physics equation sheet" but you can't figure out what equation you're meant to use [#aqaphysics](#)

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Too many curricula focus on content.
Students learn disconnected knowledge
they can't apply.



Kitty B

@kittydb12



When you've been doing osmosis with potatoes for two years and aqa decides to throw some carrots in there



alice

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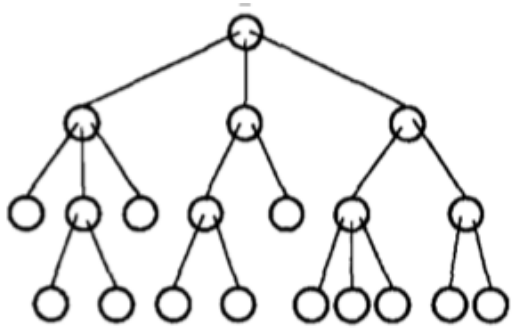
 Follow

when it says "use the physics equation sheet" but you can't figure out what equation you're meant to use [#aqaphysics](#)

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big ideas



Experts can apply knowledge because their knowledge is organised around a small number of powerful principles.



The curriculum needs to be organised in the same way.

Blueprint was built from first principles around big ideas and offers a 5-year progression to GCSE.


Big Idea		1	2	3	4
 Forces	Forces predict motion	Contact forces <ul style="list-style-type: none"> Balanced & unbalanced Friction Density 	Moving & turning <ul style="list-style-type: none"> Speed Moments 	Acceleration <ul style="list-style-type: none"> Vectors Newton's 1st law Acceleration 	Newton's laws <ul style="list-style-type: none"> Newton's 2nd law Stopping distance Momentum
	Fields produce forces	Gravity <ul style="list-style-type: none"> Weight Gravitational force Solar system 	Magnetism <ul style="list-style-type: none"> Magnetic force Current & magnetism 	<p>each concept builds on the previous one</p>	

14 big ideas




5-year curriculum map: Physics

Area	Big Idea	1	2	3	4	5
 <p>Forces</p>	Forces predict motion	Contact forces <ul style="list-style-type: none"> Balanced or unbalanced Friction Density 	Movement <ul style="list-style-type: none"> Speed Motion graphs 	Acceleration <ul style="list-style-type: none"> Vectors Newton's 1st law Acceleration 	Newton's laws <ul style="list-style-type: none"> Newton's 2nd law Stopping distance Momentum 	
	Fields produce forces	Gravity <ul style="list-style-type: none"> Weight Gravitational force Solar system 	Magnetism <ul style="list-style-type: none"> Magnetic force Current & magnetism 		Force fields <ul style="list-style-type: none"> Non-contact forces Motor effect 	
 <p>Energy</p>	Energy is conserved	Energy transfers <ul style="list-style-type: none"> Energy Wasted energy Heat & temperature 		Heating <ul style="list-style-type: none"> Thermal transfer Specific & latent Pressure 		Energy conservation <ul style="list-style-type: none"> Kinetic & potential Work
	Electricity transfers energy	Electric circuits <ul style="list-style-type: none"> Electric current Resistance 	Electrical energy <ul style="list-style-type: none"> Electric charge Potential difference 		Home electricity <ul style="list-style-type: none"> Energy resources Ohm's law Power 	
	Radiation transfers energy		Light <ul style="list-style-type: none"> Reflection Refraction 	Sound & waves <ul style="list-style-type: none"> Longitudinal & transverse Wave properties 	E.m. radiation <ul style="list-style-type: none"> Electromagnetic spectrum Wave energy 	Radioactivity <ul style="list-style-type: none"> Atomic model Radioactive decay

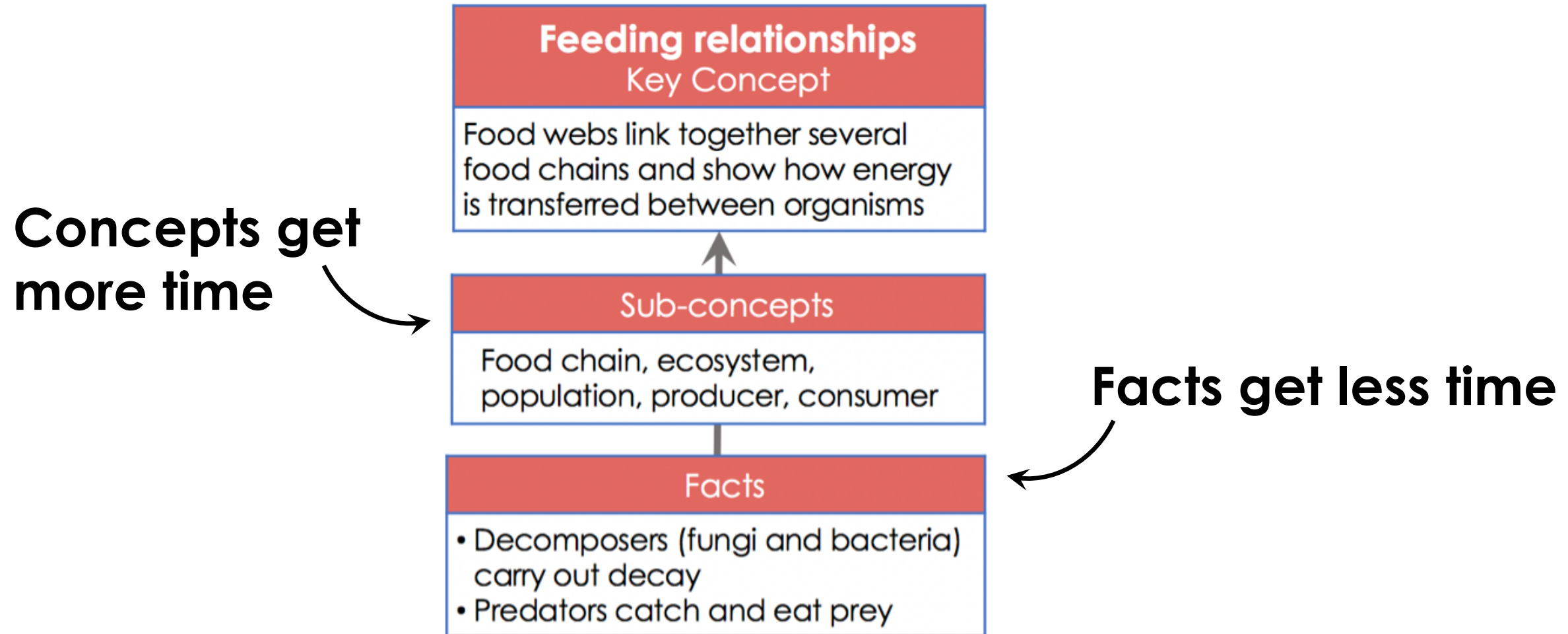
5-year curriculum map: Chemistry

Area	Big Idea	1	2	3	4	5
 <p>Matter</p>	Structure determines properties	Substances & particles <ul style="list-style-type: none"> • Particle model • Mixtures • Solutions 	Elements & compounds <ul style="list-style-type: none"> • Elements or compounds • Simple or giant 	Periodic table <ul style="list-style-type: none"> • Periodic patterns • Subatomic particles 	Structure & bonding <ul style="list-style-type: none"> • Bonding types • Structure & properties • Electrolysis 	Carbon chemistry <ul style="list-style-type: none"> • Hydrocarbons • Refining
	Reactions rearrange matter	Changing substances <ul style="list-style-type: none"> • Chemical & physical • pH scale • Neutralisation 	Reactants & products <ul style="list-style-type: none"> • Oxidation • Thermal decomposition • Acid reactions 	Matter & energy <ul style="list-style-type: none"> • Atom conservation • Combustion • Bond energy 	Controlling reactions <ul style="list-style-type: none"> • Reaction rates • Equilibrium 	Making substances <ul style="list-style-type: none"> • Making salts • Amount of substances
	Earth systems interact		Earth systems <ul style="list-style-type: none"> • Rock cycle • Water cycle 	Using resources <ul style="list-style-type: none"> • Reactivity series • Potable water • Product life-cycle 	Atmosphere <ul style="list-style-type: none"> • Changing atmosphere • Climate change • Air pollutants 	

5-year curriculum map: Biology

Area	Big Idea	1	2	3	4	5
 Organisms	Cells are alive	Cells <ul style="list-style-type: none"> • Cell structure • Specialised cells 		Growth & differentiation <ul style="list-style-type: none"> • Stem cells • Cell transport • Cell division 		
	Bodies are systems		Tissues & organs <ul style="list-style-type: none"> • Gas exchange • Cell organisation • Digestive system 		Organ systems <ul style="list-style-type: none"> • Circulatory system • System damage • Immune system 	Feedback & control <ul style="list-style-type: none"> • Nervous system • Endocrine system • Enzymes
 Ecosystems	Organisms are interdependent	Interdependence <ul style="list-style-type: none"> • Feeding relationships • Competition • Abiotic & biotic factors 		Human interaction <ul style="list-style-type: none"> • Biodiversity • Communicable disease 		
	Ecosystems recycle resources		Respiration <ul style="list-style-type: none"> • Aerobic respiration • Anaerobic respiration 		Photosynthesis <ul style="list-style-type: none"> • Photosynthesis • Plant transport 	
 Genes	Characteristics are inherited	Reproduction <ul style="list-style-type: none"> • Sexual & asexual • Menstrual cycle • Embryo development 		Genetics <ul style="list-style-type: none"> • Genes • Monohybrid inheritance 	Controlling reproduction <ul style="list-style-type: none"> • Reproductive hormones • Genetic engineering 	
	Species show variation		Evolution <ul style="list-style-type: none"> • Variation • Natural selection • Selective breeding 			Life diversity <ul style="list-style-type: none"> • Evolutionary evidence • Adaptation

Instead of skipping from topic to topic with little connection, Blueprint units focus on 2-3 key concepts.



Blueprint provides a 5-step learning pathway for each concept. The 5A's synthesise learning theory into a mastery approach for science.

The 5A's

activate

Check for prior concepts or learning gaps

acquire

Develop an accurate model of the concept

apply

Transfer concept to unfamiliar situations

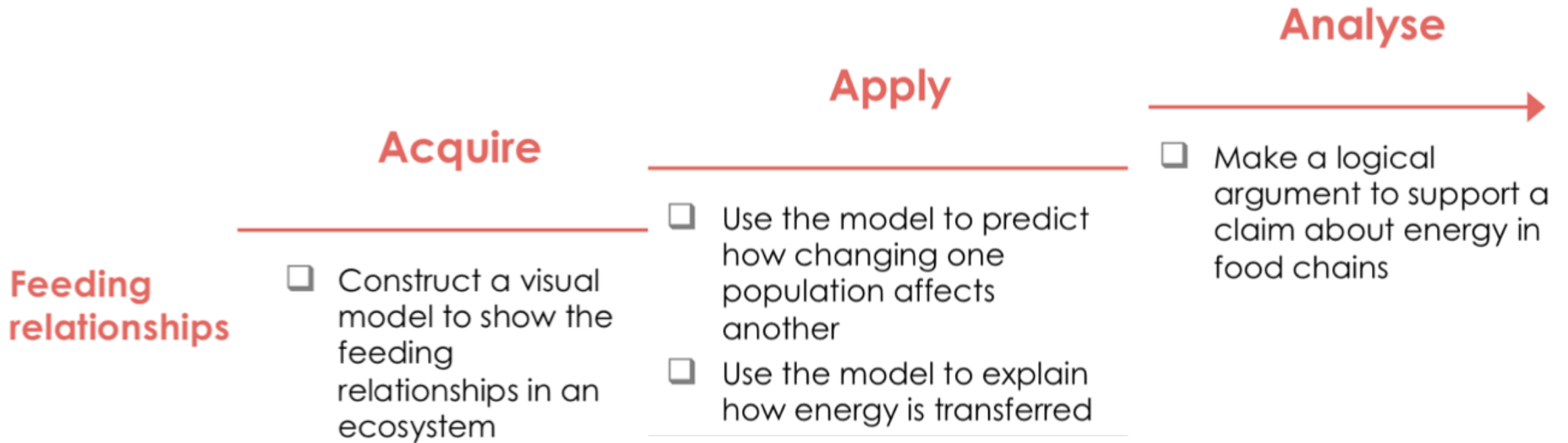
assess

Check understanding and fill in gaps

analyse

Use higher order thinking with understanding

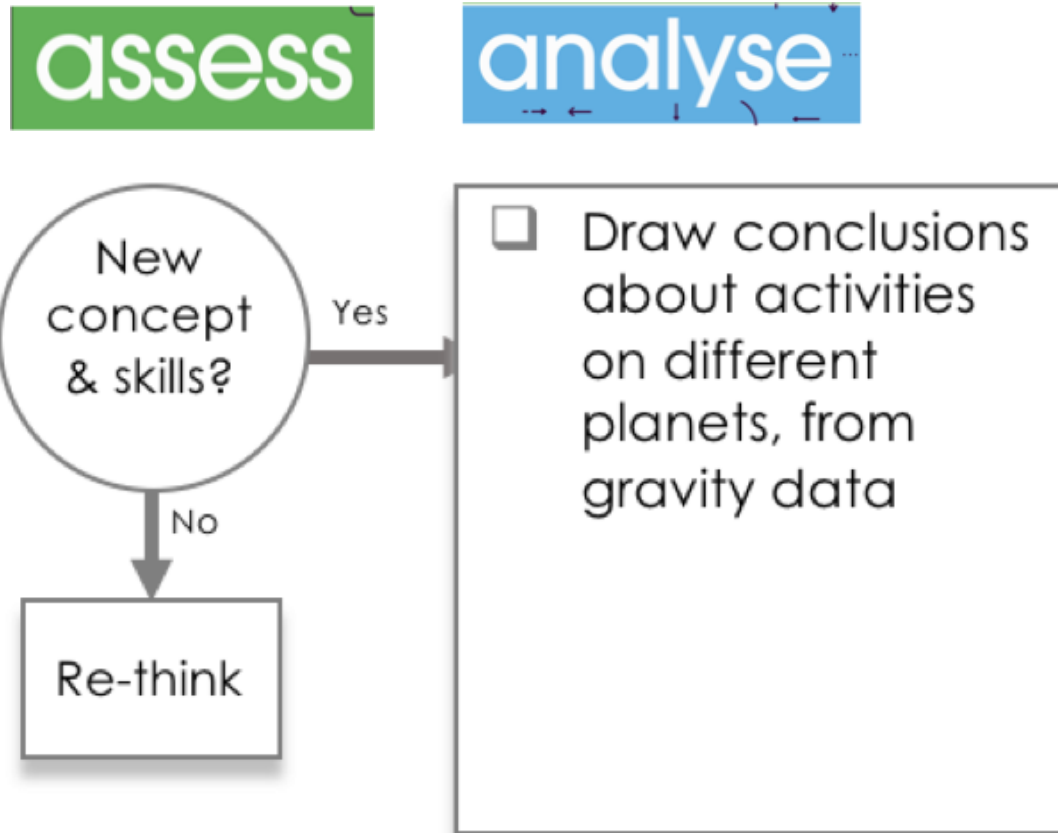
Students learn by actively constructing knowledge. The 5A's are written as learning performances that get increasingly challenging.



To help more students excel, the 5A's embeds scientific thinking skills into each objective.

	Acquire	Analyse
Weight	<ul style="list-style-type: none">☐ Compare weights on different planets to test a relationship between weight and mass	<ul style="list-style-type: none">☐ Draw conclusions from gravity data about activities on different planets

The 5A's helps more students reach mastery.



Identify students who need more learning time.

Give faster students more challenging tasks.

Blueprint reduces content overload. There is time to teach in depth as the number of concepts per year is limited and repetition has been removed.

Year	7	8	9	10	11
Concepts	25	23	24	25	13
Lessons needed	106	108	122	136	75
Time available (hours/year)	108	108	126	144	96
Basis (hours/week)	3	3	3.5	4	4

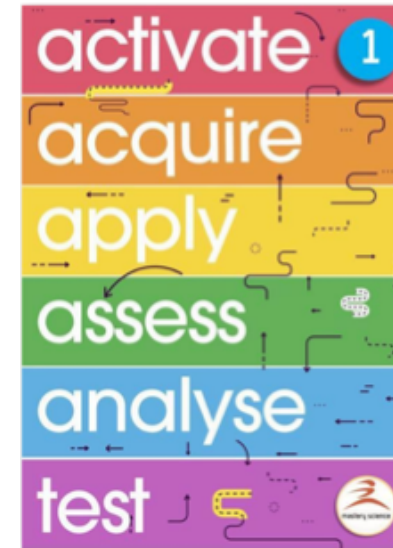
Blueprint is free and adapts to all GCSE courses. High quality professional development and teaching materials are available.



Blueprint
(free)



Professional
development



Teaching
materials