Progression in Comparative/ Fair Testing

Comparative / fair testing
Changing one variable to see its effect on another, whilst keeping all others the same.

Year 1	**Materials** Testing Materials for different properties	**Seasons** Does the amount of rain change across the seasons?		
Year 2	**Materials** Testing Materials for different properties Investigating which material is the most stretchy Investigating which materials are waterproof	**Plants and Trees** Do plants grow healthier in the light or dark?		
Year 3	**Forces and Magnets** Investigating different surfaces on distance travelled	**Rocks and Soils** To investigate which soil absorbs the most water	**Plants** How does the number of seeds affect plant growth	**Light** Does the distance from a light source affect the size of a shadow?
Year 4	**Electricity** To investigate what affects bulb brightness	**Sound** To investigate the relationship between volume and distance		
Year 5	**Forces** Does the size of a parachute affect the time it takes for it to fall to the ground?	**Materials** To investigate thermal conductors and insulators		
Year 6	**Electricity** To investigate how voltage affects bulb brightness	**Animal's Including Humans** To investigate how exercise impacts heart rate	**Light** To investigate the relationship between distance and shadows	

Research
Using secondary sources of information to answer scientific questions.

Progression in Research

Year 1				
Year 2	**Living Things and Their Habitats** Research which animals live in different habitats	**Animals Including Humans** Research what animals need to survive		
Year 3	**Animals Including Humans** Research Animal Diets			
Year 4	**Living Things and Their Habitats** Research a human impact e.g. deforestation on habitats	**States of Matter** Research Climate change		
Year 5	**Forces** Streamlined animals in relation to water resistance.	**Earth and Space** Research facts about the planets	**Living Things and their Habitats** Research different animal lifecycles	
Year 6	**Evolution and Inheritance** Research Charles Darwin and his theory. Research adaptations in animals	**Living Things and Their Habitats** Who was Carl Linneus?	**Electricity** Renewable energy sources	**Animal's Including Humans** Researching healthy food choices

Observation over time
Observing changes that occur over a period of time ranging from minutes to months.

Progression in Observation Over Time

Year 1	**Seasons** How does the temperature change across a year? Does the amount of rain change each season?		
Year 2	**Plants and Trees** Observe the changes in seeds as they grow	**Animal's Including Humans** How much food and drink do I have over a week?	
Year 3	**Plants** What happens to celery when it is left in a glass of coloured water?	**Light** Is the sun the same brightness all day?	
Year 4	**Sounds** When is our classroom the quietest?	**States of Matter** Observe how temperature changes over time (melting and boiling) How does the level of water change in a glass when left on the windowsill?	**Animals Including Humans** Observe the impact of drinks on teeth (eggshells)
Year 5	**Materials** How does a sugar cube change as it is put in a glass of water?	**Earth and Space** Observe how the moon changes over time Observe how the sun 'moves' across the sky	**Living Things and Their Habitats** How the growing food grows food over time
Year 6	**Living Things and Their Habitats** What happens to a piece of bread if you leave on the window?	**Animals Including Humans** How does my heart rate change over the day? How much exercise do I do in a week?	**Light** How does my shadow change over the day?

Pattern-seeking
Identifying patterns and looking for relationships in enquiries where variables are difficult to control.

Progression in Pattern Seeking

Year 1	**Seasons** Does the wind always blow the same way?	**Plants and Trees** Is there a pattern to where we find moss growing in the school grounds?	**Animals Including Humans** Do the oldest children have the longest feet?
Year 2	**Living Things and their Habitats** Which microhabitat do _____ prefer? Where do we find the most minibeasts in school?		
Year 3	**Forces and Magnet s** Does the size and shape of a magnet affect how strong it is?		
Year 4	**States of Matter** Is there a pattern in how long it takes different ice lollies to melt?	**Sound** Is there a link between how loud it is in school and the time of day? If there is a pattern, is it the same in every area?	
Year 5	**Animal Including Humans** Is there a relationship between a mammal's size and their gestation period?	**Forces** Do all objects fall through water the same way?	
Year 6	**Evolution and Inheritance** Is there a pattern between the size and shape of a bird's beak and the food it will eat?	**Animals Including Humans** Is there a pattern between what we eat for breakfast and how fast we run?	

Progression in Identifying, Grouping and Classifying

Identifying, grouping and classifying
Making observations to name, sort and organise items.

Year 1	**Materials** Group materials according to their properties	**Plants and Trees** Group plants and Trees according to their properties (plants or trees/ evergreen or deciduous)	**Animals Including Humans** Groups animals into groups (mammals/reptiles/birds etc) Group animals into carnivores/herbivores/omnivores	
Year 2	**Materials** Group materials according to their properties	**Living Things and Their Habitats** Group Living things according to their characteristics (dead or alive) Group animals into habitats		
Year 3	**Rocks and Soils** Group rocks according to their properties	**Forces and Magnets** Group materials according to whether they are magnetic or not	**Light** Group materials :opaque, translucent of transparent Group materials by whether they are light sources	**Animals Including Humans** Group food into their food groups
Year 4	**Living Things and Their Habitats** Group living things in different ways Using classification keys	**States of Matter** Group materials as to whether they are solids, liquids or gases	**Electricity** Grouping materials to whether they are conductors or insulators	
Year 5	**Materials** Grouping materials according to their properties Grouping materials according to whether they are soluble or insoluble			
Year 6	**Living Things and Their Habitats** Categories and group living things into a broad range of categories	**Living Things and Their Habitats** Use and create classification systems to identify plants (in local environment)	**Evolution and Inheritance** Group species by variation (e.g fur colour/ wingspan)	