RUSHCLIFFE
SPENCER ACADEMY

SUBJECT	**Science**	YEAR	**8**

Why do we study Science? We study Science so that we can understand the physical and natural world around us and so that we can make the world a better place by working and thinking like a scientist.

What you will learn this year	**What you have learned before**	**Where you can read more**
Periodic table and elements		
Substances have different properties depending on the elements that they contain. Elements in a group react in a similar way and sometimes show a pattern. The groups across the periodic table show patterns in physical properties.	The different states of matter and their properties. Heating substance and changes of state. The difference between a pure substance and a mixture. How to separate mixtures.	Catalyst magazine Sciencemag.org Popsci.com Ks3 revision guides from cgp
Sound and light		
Sound consists of vibrations that travel as a longitudinal wave. Amplitude and frequency affect the sound. Light can be reflected, absorbed or reflected.	Light is needed to see and dark is the absence of light. Light reflects off surfaces and how shadows form. How sounds are made and how pitch affects a sound.	Catalyst magazine Sciencemag.org Popsci.com Ks3 revision guides from cgp
Contact forces and pressure		
When resultant force is zero and objects motion is unaffected. A force can cause compression or extension. Pressure in a fluid acts in all directions. Objects sink or float depending on upthrust.	How forces affect the motion of an object. Measure and calculate speed. How mass and weight are different. The effect of gravity and it's strength.	Catalyst magazine Sciencemag.org Popsci.com Ks3 revision guides from cgp
Climate and Earth resources		
Carbon is recycled through natural processes. Human activity causes global warming and greenhouse gases trap in heat. Useful resources such as metals can be extracted from the Earth.	The types of rocks the Earth is made of and the rock cycle. How models for the solar system have developed. The structure of the universe.	Catalyst magazine Sciencemag.org Popsci.com Ks3 revision guides from cgp
Acids, alkalis, metals and non-metals		
Metals and non-metals react with oxygen to form oxides which are either bases or acids. Metals can be arranged in a reactivity series. The pH of a solution depends on the strength of an acid.	Uses of everyday metals and their properties. The action of acids on bicarbonate of soda.	Catalyst magazine Sciencemag.org Popsci.com Ks3 revision guides from cgp
Respiration and photosynthesis		
Respiration is a series of chemical reactions, in cells, that breaks down glucose to provide energy and form new molecules. Plants have specially adapted organs that allow them to obtain resources needed for photosynthesis.	How different organisms' populations depend on each other and how they form food webs. How plants are adapted to disperse seeds and how plants reproduce.	Catalyst magazine Sciencemag.org Popsci.com Ks3 revision guides from cgp
Breathing and digestion		
The mechanism of breathing and the importance of gas exchange. The body needs a balanced diet to be healthy. The digestive system is adapted to break down food and absorb nutrients.	The role of the parts of the human skeleton. How antagonistic pairs of muscles work. The role of cells within organisms and types of specialised cells.	Catalyst magazine Sciencemag.org Popsci.com Ks3 revision guides from cgp
Work, heating and cooling		
Work is done when a force moves an object. Levers and pulleys are examples of simple machines. The difference between thermal energy and temperature.	Energy can be stored or transferred in different forms. Where our energy comes from and how energy is used in the home.	Catalyst magazine Sciencemag.org Popsci.com Ks3 revision guides from cgp