

Science



Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
CURRICULUM CONTENT - Organisms - detailed analysis of cells, describing functions of organelles. Giving examples of specialised cells. Looking at the digestive system and the role of the heart and blood. Look at the role of cells and tissues in plants, focusing on transpiration. Matter - Discover the history of the atom. Look at the structure of an atom and the subatomic particles. Look at the periodic table in greater detail looking at groups within it. Study techniques to separate mixtures. PRIOR/NEW LEARNING - In year 8 digestion, breathing and factors that could lead to an unhealthy lifestyle were looked at. In year 8 students looked at the development of the periodic table and classified substances as elements, compounds and mixtures. LINKS TO THE KEY THEME - Link to how the heart and digestive system work, and how enzymes can be damaged by the wrong pH and temperature.	CURRICULUM CONTENT - Energy- Look at different types of energy stores. Define and calculate specific heat capacity and calculate the efficiency of identify useful and wasted energies and therefore calculate efficiency. Calculate the specific heat capacity of a substance and why this may be useful. Link energy and power and compare national and global energy resources. Revision for the Christmas assessments. PRIOR/NEW LEARNING –In year 7 students found out about the different types of energy and what efficiency is. Students also learnt about energy resources and were able to group them as renewable and non renewable. LINKS TO THE KEY THEME - Discuss careers related to science and the options post-16.	CURRICULUM CONTENT - Matter - Use particle models to describe kinetic theory of solids, liquids and gases. Define and calculate densities of regular and irregular shapes. Understand what internal energy is and understand particle movement and calculate latent heats of vaporisation and fusion. Matter- look at the atom and link it to radioactivity and half life. Identify types of decay and background radiation. PRIOR/NEW LEARNING - In year7 students looked at particle arrangement and changes of state. Students looked at the transfer of heat energy in Y8. Students have also studied the structure of the atom in an earlier topic this year, and found out about protons, neutrons, electrons and what isotopes are. LINKS TO THE KEY THEME - Look at scientific developments over time and how they were reported. Look at the problems with science going against religion and theories not being accepted. See how female scientists had their research ignored and the recognition given to male scientists instead.	CURRICULUM CONTENT - Reactions-energy changes. Looking at Exothermic and endothermic reactions and looking at the changes in energy associated with reactions. Earth and beyond - Study the development of the earth's atmosphere. Look at how climate change is occurring and the processes that are contributing. Define and explain carbon footprint. Look at sources of common pollutants. PRIOR/NEW LEARNING- Yr 8 students looked at simple chemical reactions and exothermic reactions like combustion. Students studied the structure of the Earth and the atmosphere in year 7 LINKS TO THE KEY THEME - Incorporate key scientists from across the world that have made significant developments in the fields of science. An opportunity for research or project-based work.	CURRICULUM CONTENT - Cycles and interactions - Photosynthesis and factors that affect it's rate, aerobic, anaerobic respiration and fermentation Cycles and interactions - Studying communities and the biotic and abiotic factors that can affect them. Looking at how materials are recycled and how we can maintain biodiversity in our world. Looking at humans' impact on our ecosystems. PRIOR/NEW LEARNING - Students looked at interdependence in year 7 and 8. This can now be linked to biodiversity and interdependence in ecosystems. Students studied photosynthesis and respiration in y8. LINKS TO THE KEY THEME - Climate change, driven by human activity, affects crop yields and water availability, often hitting developing nations hardest—nations that contribute least to the problem. This creates a cycle of environmental discrimination, where some populations are more vulnerable due to geography and socio-economic status	CURRICULUM CONTENT - End of year revision for the assessments. Stem project - students are given opportunities to develop scientific skills in areas of stem not focused in on the national curriculum. PRIOR/NEW LEARNING - Consolidation of all topics learnt in this year. LINKS TO THE KEY THEME - Information on how to revise opportunity to see different techniques, revisit their learning styles. Be shown a variety of revision techniques.