FARINGDON COMMUNITY COLLEGE

Year 9 Science Outline Programme of Study

	Each group will study the following topics in a different order for the first 4 terms									Term
Big ideas/ topics	Inheritance and selection	Fit and Healthy	Plants	Environmental Chemistry	Metals and Reactivity	Gravity and Space	Energy and Electricity	Pressure and Moments	Speeding Up	Revis for e of k stag test
Key Knowledge	How variation arises in a population. The discovery of DNA and how this relates to the structure of the chromosome. How variation brings about evolution and how changes in the environment can lead to evolution or extinction. How it is important to maintain biodiversity and conserve species.	The skeletal and muscular systems including naming the major bone and muscles and how antagonistic muscles work. The structure of the lungs and their function and changes that occur during exercise. The health implications of smoking, drugs and alcohol.	The structure of plants including the leaves and roots. Photosynthesis and testing leaves for starch. The equation for photosynthesis and the uses of glucose. How plants both respire and photosynthesise. The need for plant minerals.	The structure of the Earth. The Earth's current atmosphere and the Earth's early atmosphere and why the changes have occurred. What combustion is and how to write the word equation for combustion. What acid rain is, the issues with acid rain and how it can be reduced. The carbon cycle-linking photosynthesis as the process for removal of carbon dioxide and the processes that release carbon dioxide. Global warming and its impacts. How rubbish is disposed of, discussing the advantages and disadvantages of different methods.	The properties of metals. How metals react with water and with acids. How to write a word equation and balanced symbol equation for these reactions. The reactivity series of metals. What a displacement reaction is and how to identify which reaction will occur. What a metal oxide is and how it reacts with acids. What a metal carbonate is and how it reacts with acids. Carry out chemical reactions safely and write observations for the reactions.	Recap of year 7 unit, The relationship between gravity, mass and weight, satellites and types of satellite, distances in space	Stores of energy, What is Voltage in a circuit, electrical power, cells and batteries, general circuit rules	Calculating pressure using our feet and the pressure equation, moments and practice calculations, levers	Measuring speed, balanced and unbalanced forces, stopping distance, free fall and parachutes	

Further information and reading list
• BBCbitesize • Educake • Focuselearning • CGP revision guide • Richard Dawkins book the magic of reality • Tim Peak book • https://www.docbrown.info/ • What if? Randal Munroe
Ways to support and extend student learning in this subject

- kurzgesagt youtube
- Veritasium youtube
- Ask your child what they are studying in science
- Cook a meal
- Go to a science museum
- https://scienceoxford.com/
- Gardening