

| Subject | Y9 Threshold Knowledge – Autumn/Spring/Summer term | How to support students' learning |
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| Science - Biology | <p>Autumn Term</p> <ol style="list-style-type: none"> 1. Describe eukaryotes and prokaryotes. 2. Recall the structure of animal and plant cells. 3. Recall what cell specialisation is and why it is necessary. 4. Describe what cell differentiation is. 5. Understand microscopy. 6. Understand stem cells. 7. Understand culturing microorganisms. <p>Spring Term</p> <ol style="list-style-type: none"> 8. Describe the 3 stages of the cell cycle. 9. Describe why mitosis is important. 10. Describe the process of diffusion. 11. Describe the process of osmosis. 12. Describe the process of active transport. 13. Compare diffusion, osmosis, and active transport. 14. Investigate the effect of a range of concentrations of salt or sugar solutions on the mass of plant tissue. <p>Summer Term</p> <ol style="list-style-type: none"> 15. Describe the roles of the organs which make up the digestive system. 16. Describe the nature of enzyme molecules and relate their activity to temperature and pH changes. 17. Link enzymes to the breakdown of specific substances including the products. 18. Investigate different foods using food tests. 19. Know the structure of the heart. 20. Know the structure of the lungs. 21. Describe the different types of blood vessels and why they have those features. 22. Know the functions of each of the blood components. 23. Understand Coronary Heart Disease. 24. Describe how to treat coronary heart disease. 25. Describe the relationship between health and disease and the interactions between different types of disease. 26. Describe different risk factors and their related diseases. 27. Describe cancer as the result of changes in cells that lead to uncontrolled growth and division. 28. Explain how the structure of root hair cells, xylem and phloem are adapted to their functions. | <ul style="list-style-type: none"> • Use BBC bitesize: https://www.bbc.co.uk/bitesize/subjects/z4882hv • Get pupils to set themselves quizzes on Educake (The Science Department's homework platform) to help them revise topics they are trying to understand. • Talk about science at home and what students have learnt today. As well as discuss new scientific advances in the news. • Watch David Attenborough documentaries about the planet e.g., Blue planet. • Watch BBC Four's 'Chemistry: A volatile history' documentary. • Watch 'Into the universe with Stephen Hawking' documentary. Use the link below to help find lessons you need to refresh and want to revise; https://continuityoak.org.uk/lessons • For topics that exceed the national curriculum you may need to look at the GCSE topics to. |

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| | 29. Describe the process of transpiration and translocation, including the structure and function of the stomata. | |
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