
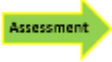




<p>This half term: Skills, Knowledge and Understanding to be developed:</p> <p>Skills (students <u>WILL BE ABLE</u> to by the end of the Learning Programme): investigate the effect of enzyme or substrate concentration as well as temperature and pH on enzyme activity. Explain the influence of temperature, pH, substrate and enzyme concentration on rate of activity and inactivation and denaturation of enzymes and the importance of buffers for maintaining a constant pH. The principles of competitive and non-competitive inhibition and the importance of immobilised enzymes and that industrial processes use immobilised enzymes, allowing enzyme reuse and improving stability; calculate rates, use standard form and give answers to a given number of significant figures in biological calculations.</p> <p>Knowledge (students <u>WILL KNOW</u> by the end of the Learning Programme): that Metabolism is a series of enzyme controlled reactions and understand the meaning of catalysis; the lowering of the activation energy; that enzymes act intracellularly or extracellularly and protein nature of enzymes; what takes place during interphase and the main stages of mitosis; the main stages of meiosis (names of subdivisions of prophase 1 not required) and cytokinesis</p> <p>Understanding (students <u>WILL DEMONSTRATE THEIR UNDERSTANDING</u> by the end of the Learning Programme): active sites, in terms of three dimensional structure and the theory of induced fit as illustrated by lysozyme; the significance of mitosis as a process in which daughter cells are provided with identical copies of genes and the process of cytokinesis; the significance of mitosis in terms of damage and disease: repeated cell renewal, damage repair and healing and unrestricted division leading to cancerous growth; the differences between mitosis and meiosis, including that meiosis produces non-identical daughter cells</p>		<p>Key Terms / Words:</p> <table border="1"> <tr> <td>Enzyme Substrate Inactivation Denaturation Buffers competitive inhibition non-competitive inhibition Metabolism catalysis</td> <td>induced fit activation energy intracellularly extracellularly active sites interphase mitosis cytokinesis substrate immobilised enzymes cancerous rates</td> </tr> </table>		Enzyme Substrate Inactivation Denaturation Buffers competitive inhibition non-competitive inhibition Metabolism catalysis	induced fit activation energy intracellularly extracellularly active sites interphase mitosis cytokinesis substrate immobilised enzymes cancerous rates
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<p>LP 1 – Week 1 & 2 Learning Outcomes:</p> <p>Lesson 1 Students will be able to describe the relationship of the fibrous and globular structure of proteins and relate them to their function.</p> <p>Lesson 2 Students will know that:</p> <ul style="list-style-type: none"> metabolism is a series of enzyme controlled reactions and understand the meaning of catalysis; the lowering of the activation energy. enzymes act intracellularly or extracellularly. the protein nature of enzymes. <p>Students will understand active sites, in terms of three dimensional structure and the theory of induced fit as illustrated by lysozyme.</p> <p>Lesson 3 Students will be able to investigate the effect of enzyme or substrate concentration on enzyme activity.</p> <p>Lesson 4 Students will be able to investigate the effect of temperature or pH on enzyme activity.</p>		<p>Success criteria: Creation of diagrams illustrating lock and key/induced fit processes. Collect and analyse data on enzyme activity. APP1 (10 marks) Answer examination questions explaining the effect of factors on enzyme activity.</p>	<p>Homework LP 2 Prepare for next lesson Read the relevant section in your A Level Biology Text Book to develop your skills, knowledge and understanding of enzymes.</p>		
<p>LP 1 – Week 3 & 4 Learning Outcomes:</p> <p>Lesson 5 Students will understand and be able to explain the influence of temperature, pH, substrate and enzyme concentration on rate of activity and inactivation and denaturation of enzymes and the importance of buffers for maintaining a constant pH.</p> <p>Lesson 6 Students will know the importance of immobilised enzymes and that industrial processes use immobilised enzymes, allowing enzyme reuse and improving stability</p> <p>Lesson 7 Students will understand the principles of competitive and non-competitive inhibition Students will apply and demonstrate new knowledge and skills in APP1 assessment</p> <p>Lesson 8 Students will understand the significance of mitosis as a process in which daughter cells are provided with identical copies of genes and the process of cytokinesis</p>	<p style="text-align: center;">  <div style="border: 2px solid blue; padding: 5px; display: inline-block; margin: 5px;">APP1</div> <div style="border: 2px solid red; padding: 5px; display: inline-block; margin: 5px;">Mark</div> </p>	<p>Success criteria: Interpret given data to determine whether an enzyme is competitive or non competitive. Answer examination questions on the process and application of mitosis.</p>	<p>Homework LP 2 Prepare for next lesson Read the relevant section in your A Level Biology Text Book to develop your skills, knowledge and understanding of enzymes.</p> <p>Homework 1 Application of enzymes</p>		



<p>LP 1 – Week 5 & 6 Learning Outcomes:</p> <p>Lesson 9 Students will know what takes place during interphase and the main stages of mitosis</p> <p>Lesson 10 Students will understand the significance of mitosis in terms of damage and disease: repeated cell renewal, damage repair and healing and unrestricted division leading to cancerous growth</p> <p>Lesson 11 Students will know the main stages of meiosis (names of subdivisions of prophase 1 not required) and cytokinesis</p> <p>Lesson 12 Students will apply and demonstrate new knowledge and skills in an end of unit exam.</p> <p>(SUMMATIVE based on 4, and 6 mark questions)</p>	<p style="text-align: center;"></p> <p style="text-align: center; border: 2px solid blue; padding: 5px;">SA</p> <p style="text-align: center; border: 2px solid red; padding: 5px;">Mark</p> <p style="text-align: center; border: 2px solid red; padding: 5px;">Grade</p>	<p>Success criteria: Correctly answer exam questions on the sources of variation provided by meiosis.</p> <p style="text-align: center; color: blue;">Summative assessment</p>	<p>Homework LP 2 Prepare for next lesson Read the relevant section in your A Level Biology Text Book to develop your skills, knowledge and understanding of the cell cycle, mitosis and meiosis.</p> <p style="text-align: center;">Revise in preparation for SA</p>
<p>LP 1 – Week 7 Learning Outcomes:</p> <p>Lesson 13 Students will understand the differences between mitosis and meiosis, including that meiosis produces non-identical daughter cells</p> <p>Lesson 14 SA review lesson.</p>		<p>Success Criteria Undertake calculation involving concentrations from past and exemplar examination questions.</p> <p>Review and respond, in red pen, to the feedback that is given on the SA.</p>	<p>Homework LP 2</p>

