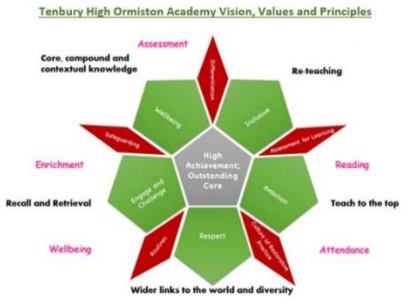
TENBURY HIGH
ORMISTON ACADEMY



Curriculum Overview for Biology
Year 10

<table>
<tr>
<td rowspan="4">Half Term 1: Infection and Response and Bioenergetics

Substantive Knowledge:
• Communicable diseases – Spread methods, reduction and prevention, reproduction.
• Viral diseases – Measles, vaccinations, HIV and the immune system, Tobacco mosaic virus and impact on plants.
• Bacterial diseases – Salmonella effects and causes, Gonorrhoea treatment, causes, spread.
• Fungal diseases – Rose black spot effects and treatment.
• Protist diseases – Malaria spread and prevention.
• Human defence – Non-specific and WBCs.
• Vaccination – How it works, why we do it.
• Antibiotics and painkillers – Use, how they work, fact that painkillers don’t kill pathogens.
• Monoclonal antibodies (Triple) – Production, use, benefits.
• Plant disease (Triple) – Detection methods, identification, infection types, effects.

Disciplinary Knowledge:
• Drug discovery and development – Plants and microorganisms, pharma industry synthesis, trials and testing. The importance of testing
• Analysis of graphical data – antibody levels
• Process of identifying plant disease</td>
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<td>Triple only:
Monoclonal antibody
Hybridoma
Diagnose
Deficiency
Nitrate
Magnesium
Physical barrier
Chemical defence
Mechanical defence</td>
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<td rowspan="2">Half Term 2: Bioenergetics

Substantive Knowledge:
• Photosynthesis reaction
• Rates of reaction for photosynthesis
• Limiting factors of photosynthesis
• Investigating rates of photosynthesis
• How plants use glucose</td>
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<tr>
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<td colspan="2">Photosynthesis
Chlorophyll
Oxygen
Carbon dioxide</td>
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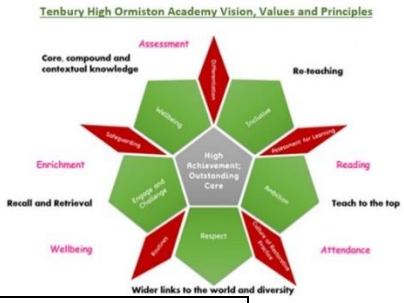

• Aerobic and anaerobic respiration • Impact of exercise on respiration • Metabolism **Disciplinary Knowledge:** • Describing chemical reactions • Writing word and symbol equations • Balancing symbol equations • Graph analysis • Calculating rates of reaction • Higher tier: calculating rates using a tangent on a graph • Required practical: investigating rates of photosynthesis		Reaction Rate Limiting factor Variable Accurate Trend Insoluble Glucose Respiration Aerobic Anaerobic Lactic acid Muscle Fatigue Oxygen debt Metabolism Enzyme Energy