



## Curriculum Links Key Stage 3

e-Bug Pack Content	Biology	PSHE*
<p><b>1. Introduction to Microbes</b></p> <p><b>1.1 An Introduction</b></p>	<p><u>Working Scientifically</u> Experimental skills and investigations</p> <ul style="list-style-type: none"> <li>ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience</li> </ul> <p><u>Structure and Function of Living organisms</u> Cells and Organisation</p> <ul style="list-style-type: none"> <li>the functions of the cell wall, cell membrane, cytoplasm, nucleus, vacuole, mitochondria and chloroplasts</li> <li>the structural adaptations of some unicellular organisms</li> </ul> <p>Nutrition and digestion</p> <ul style="list-style-type: none"> <li>the importance of bacteria in the human digestive system</li> </ul> <p><u>Genetics and Evolution</u> Inheritance, chromosomes, DNA and Genes</p> <ul style="list-style-type: none"> <li>differences between species</li> </ul>	<p><u>Core Theme 1: Health and Wellbeing</u> - how to assess and manage risks to health and to stay, and keep others, safe</p>
<p><b>1. Micro-organisms</b></p> <p><b>1.2 Useful Microbes</b></p>	<p><u>Working Scientifically</u> Scientific Attitudes</p> <ul style="list-style-type: none"> <li>pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility</li> <li>evaluate risks</li> </ul> <p>Experimental Skills and investigations</p> <ul style="list-style-type: none"> <li>ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience</li> <li>make predictions using scientific knowledge and understanding</li> <li>select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables, where appropriate</li> <li>use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety</li> </ul>	

\*Taken from PSHE Association Programme of Study (Key Stages 1-4), supported by the Department for Education.

	<ul style="list-style-type: none"> <li>• make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements</li> </ul> <p>Analysis and Evaluation</p> <ul style="list-style-type: none"> <li>• present observations and data using appropriate methods, including tables and graphs</li> <li>• interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions</li> <li>• present reasoned explanations, including explaining data in relation to predictions and hypotheses</li> <li>• evaluate data, showing awareness of potential sources of random and systematic error</li> <li>• identify further questions arising from their results</li> </ul> <p><u>Structure and Function of Living Organisms</u></p> <p>Nutrition and digestion</p> <ul style="list-style-type: none"> <li>• the importance of bacteria in the human digestive system</li> </ul> <p><u>Material cycles and energy</u></p> <p>Cellular respiration</p> <ul style="list-style-type: none"> <li>• the process of anaerobic respiration in humans and micro-organisms, including fermentation, and a word summary for anaerobic respiration</li> </ul>	
<p><b>1. Micro-organisms</b></p> <p><b>1.3 Harmful Microbes</b></p>	<p><u>Working Scientifically</u></p> <p>Experimental skills and investigations</p> <ul style="list-style-type: none"> <li>• ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience</li> <li>• make predictions using scientific knowledge and understanding</li> </ul> <p>Analysis and Evaluation</p> <ul style="list-style-type: none"> <li>• present reasoned explanations, including explaining data in relation to predictions and hypotheses</li> </ul>	<p><u>Core Theme 1: Health and Wellbeing</u></p> <p>-how to maintain physical, mental and emotional health and wellbeing including sexual health</p> <p>-how to assess and manage risks to health and to stay, and keep others, safe</p> <ul style="list-style-type: none"> <li>• the importance of taking increased responsibility for their own personal hygiene</li> <li>• the purpose and importance of immunisation and vaccination</li> <li>• that certain infections can be spread through sexual activity and that barrier contraceptives offer some protection against certain STIs</li> </ul>
<p><b>2. Spread of Infection</b></p> <p><b>2.1 Hand Hygiene</b></p>	<p><u>Working Scientifically</u></p> <p>Scientific Attitudes</p> <ul style="list-style-type: none"> <li>• pay attention to objectivity and concern for accuracy,</li> </ul>	<p><u>Core Theme 1: Health and Wellbeing</u></p> <p>-how to maintain physical, mental and emotional health and wellbeing including sexual health</p>

	<p>precision, repeatability and reproducibility</p> <ul style="list-style-type: none"> <li>• evaluate risks</li> </ul> <p>Experimental skills and investigations</p> <ul style="list-style-type: none"> <li>• ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience</li> <li>• make predictions using scientific knowledge and understanding</li> <li>• select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables, where appropriate</li> <li>• use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety</li> <li>• make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements</li> </ul> <p>Analysis and Evaluation</p> <ul style="list-style-type: none"> <li>• present observations and data using appropriate methods, including tables and graphs</li> <li>• interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions</li> <li>• present reasoned explanations, including explaining data in relation to predictions and hypotheses</li> <li>• evaluate data, showing awareness of potential sources of random and systematic error</li> <li>• identify further questions arising from their results</li> </ul>	<p>-how to assess and manage risks to health and to stay, and keep others, safe</p> <p>-how to make informed choices about health and wellbeing matters including drugs, alcohol and tobacco; maintaining a balanced diet; physical activity; emotional health and wellbeing and sexual health</p> <ul style="list-style-type: none"> <li>• the importance of taking increased responsibility for their own personal hygiene</li> </ul>
<p><b>2. Spread of Infection</b></p> <p><b>2.2 Respiratory Hygiene</b></p>	<p><u>Working Scientifically</u></p> <p>Experimental skills and investigations</p> <ul style="list-style-type: none"> <li>• ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience</li> <li>• make predictions using scientific knowledge and understanding</li> <li>• select, plan and carry out the most appropriate types of</li> </ul>	<p><u>Core Theme 1: Health and Wellbeing</u></p> <p>-how to maintain physical, mental and emotional health and wellbeing including sexual health</p> <p>-how to assess and manage risks to health and to stay, and keep others, safe</p> <ul style="list-style-type: none"> <li>• the importance of taking increased responsibility for their own personal hygiene</li> </ul>

	<p>scientific enquiries to test predictions, including identifying independent, dependent and control variables, where appropriate</p> <ul style="list-style-type: none"> <li>• make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements</li> </ul> <p>Analysis and Evaluation</p> <ul style="list-style-type: none"> <li>• present observations and data using appropriate methods, including tables and graphs</li> <li>• interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions</li> <li>• present reasoned explanations, including explaining data in relation to predictions and hypotheses</li> <li>• identify further questions arising from their results</li> </ul>	
<p><b>2. Spread of Infection</b></p> <p><b>2.3 Sexually Transmitted Infections (STI's)</b></p>	<p><u>Working Scientifically</u></p> <p>Experimental skills and investigations</p> <ul style="list-style-type: none"> <li>• ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience</li> <li>• make predictions using scientific knowledge and understanding</li> <li>• make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements</li> <li>• select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables, where appropriate</li> </ul> <p>Analysis and evaluation</p> <ul style="list-style-type: none"> <li>• present observations and data using appropriate methods, including tables and graphs</li> <li>• interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions</li> <li>• present reasoned explanations, including explaining data</li> </ul>	<p><u>Core Theme 1: Health and Wellbeing</u></p> <p>-how to maintain physical, mental and emotional health and wellbeing including sexual health</p> <p>-how to assess and manage risks to health and to stay, and keep others, safe</p> <p>-how to identify and access help, advice and support</p> <ul style="list-style-type: none"> <li>• the importance of taking increased responsibility for their own personal hygiene</li> <li>• that certain infections can be spread through sexual activity and that barrier contraceptives offer some protection against certain STIs</li> <li>• about how to access local health services</li> </ul>

	in relation to predictions and hypotheses	
<b>2. Spread of Infection</b>  <b>2.4 Chlamydia</b>	<u>Working Scientifically</u> Experimental skills and investigations <ul style="list-style-type: none"> <li>ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience</li> <li>make predictions using scientific knowledge and understanding</li> </ul>	<u>Core Theme 1: Health and Wellbeing</u> -how to maintain physical, mental and emotional health and wellbeing including sexual health -how to assess and manage risks to health and to stay, and keep others, safe -how to identify and access help, advice and support <ul style="list-style-type: none"> <li>the importance of taking increased responsibility for their own personal hygiene</li> <li>that certain infections can be spread through sexual activity and that barrier contraceptives offer some protection against certain STIs</li> <li>about how to access local health services</li> </ul>
<b>3. Prevention of Infection</b>  <b>3.1 The Body's Natural Defences</b>	Cells and Organisation <ul style="list-style-type: none"> <li>the functions of the cell wall, cell membrane, cytoplasm, nucleus, vacuole, mitochondria and chloroplasts</li> </ul>	
<b>3. Prevention of Infection</b>  <b>3.2 Vaccines</b>	<u>Working Scientifically</u> Experimental skills and investigations <ul style="list-style-type: none"> <li>ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience</li> <li>make predictions using scientific knowledge and understanding</li> <li>make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements</li> </ul> Analysis and evaluation <ul style="list-style-type: none"> <li>present observations and data using appropriate methods, including tables and graphs</li> <li>interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions</li> </ul>	<u>Core Theme 1: Health and Wellbeing</u> -how to maintain physical, mental and emotional health and wellbeing including sexual health -how to assess and manage risks to health and to stay, and keep others, safe <ul style="list-style-type: none"> <li>the purpose and importance of immunisation and vaccination</li> <li>about how to access local health services</li> </ul>

	<ul style="list-style-type: none"> <li>• evaluate data, showing awareness of potential sources of random and systematic error</li> <li>• present reasoned explanations, including explaining data in relation to predictions and hypotheses</li> <li>• identify further questions arising from their results</li> </ul>	
<p><b>4. Treatment of Infection</b></p> <p><b>4.1 Antibiotic Use and Medicine</b></p>	<p><u>Working Scientifically</u></p> <p>Scientific Attitudes</p> <ul style="list-style-type: none"> <li>• pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility</li> <li>• evaluate risks</li> </ul> <p>Experimental skills and investigations</p> <ul style="list-style-type: none"> <li>• ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience</li> <li>• make predictions using scientific knowledge and understanding</li> <li>• select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables, where appropriate</li> <li>• use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety</li> <li>• make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements</li> </ul> <p>Analysis and evaluation</p> <ul style="list-style-type: none"> <li>• present observations and data using appropriate methods, including tables and graphs</li> <li>• interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions</li> <li>• present reasoned explanations, including explaining data in relation to predictions and hypotheses</li> <li>• identify further questions arising from their results</li> </ul>	<p><u>Core Theme 1: Health and Wellbeing</u></p> <p>-how to maintain physical, mental and emotional health and wellbeing including sexual health</p> <p>-how to assess and manage risks to health and to stay, and keep others, safe</p> <p>-how to make informed choices about health and wellbeing matters including drugs, alcohol and tobacco; maintaining a balanced diet; physical activity; emotional health and wellbeing and sexual health</p> <ul style="list-style-type: none"> <li>• the safe use of prescribed and over the counter medicines</li> </ul>