

Biology > Big idea BHD: Health and disease > Topic BHD1: What are health and disease?

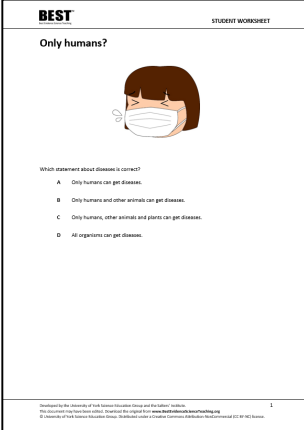
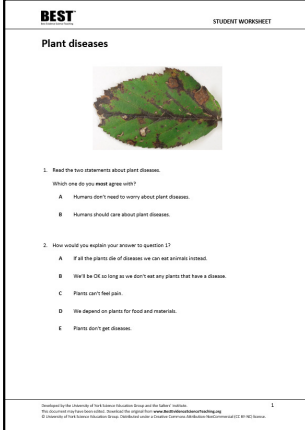
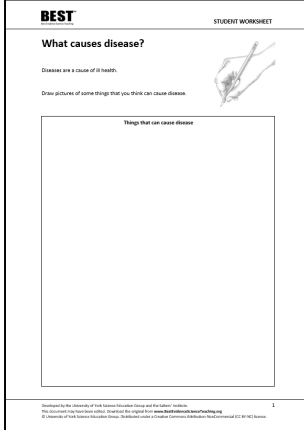
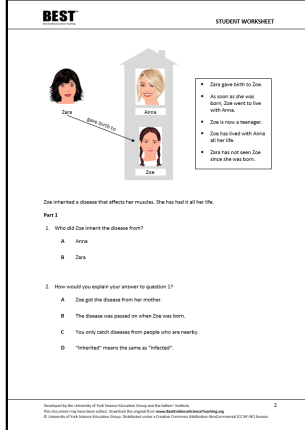
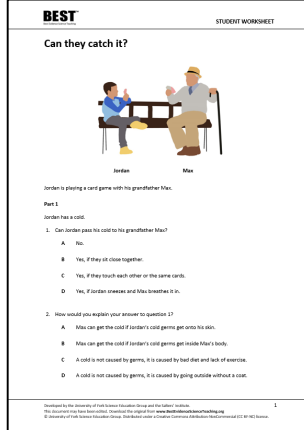
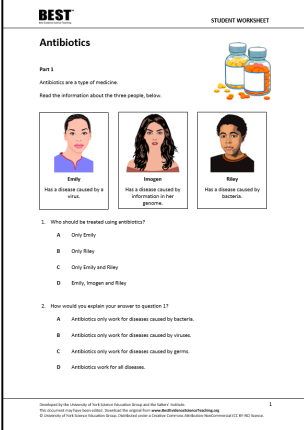
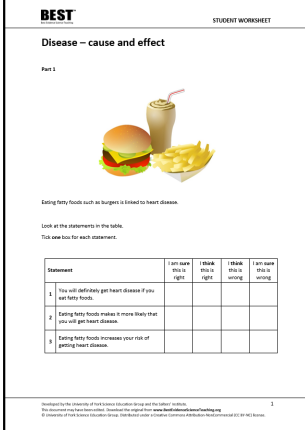
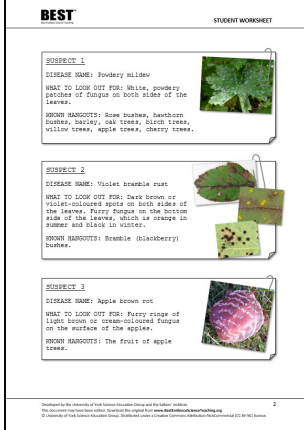
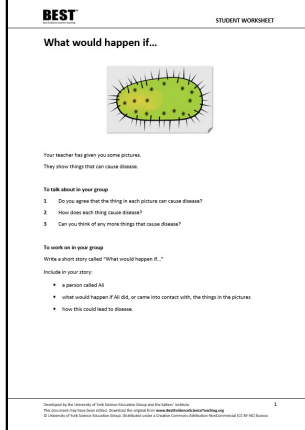

**Progression toolkit: Disease**

<b>Learning focus</b>	The good health of organisms can be compromised by infectious and non-infectious diseases, which can be caused by germs, lifestyle, environment, or information in the genome.				
<b>As students' conceptual understanding progresses they can:</b>					
<b>As students' conceptual understanding progresses they can:</b>	Recall that the good health of all organisms can be compromised by diseases. <span style="background-color: #4F7942; color: white; padding: 2px;">P</span>	Recall that diseases can be caused by germs, lifestyle, environment or information in the genome.	Distinguish between infectious and non-infectious diseases.	Explain that medicines, including antibiotics, can be used to treat the cause or symptoms of some diseases.	Apply the idea that some factors increase or decrease the risk of disease.
<b>Diagnostic questions</b>	Only humans? <hr/> Plant diseases	What causes disease? <hr/> Passing it on	Can they catch it?	Antibiotics	Disease – cause and effect
<b>Response activities</b>	Plant disease detectives	What would happen if...		Antibiotics and resistance	

Key:

P Prior understanding from earlier stages of learning

B Bridge to later stages of learning

<h3>Only humans?</h3>  <p>Which statement about diseases is correct?</p> <ol style="list-style-type: none"> <li>Only humans can get diseases.</li> <li>Only humans and other animals can get diseases.</li> <li>Only humans, other animals and plants can get diseases.</li> <li>All organisms can get diseases.</li> </ol> <p>Simple multiple choice</p>	<h3>Plant diseases</h3>  <p>Read the two statements about plant diseases.</p> <ol style="list-style-type: none"> <li>Humans don't need to worry about plant diseases.</li> <li>Humans should care about plant diseases.</li> </ol> <p>How would you explain your answer to question 1?</p> <ol style="list-style-type: none"> <li>If all the plants die of disease we can't eat animals instead.</li> <li>We'd be OK to long as we don't eat any plants that have a disease.</li> <li>Plants can't feel pain.</li> <li>We depend on plants for food and materials.</li> <li>Plants don't get diseases.</li> </ol> <p>Two-tier multiple choice</p>	<h3>What causes disease?</h3>  <p>Draw pictures of some things that you think can cause disease.</p> <p>Things that can cause disease</p> <p>Drawing</p>	<h3>Passing it on</h3>  <p>Die inherited a disease that affects her muscles. She has had it all her life.</p> <p>How did Die inherit the disease from?</p> <ol style="list-style-type: none"> <li>Anna</li> <li>Die</li> </ol> <p>How would you explain your answer to question 1?</p> <ol style="list-style-type: none"> <li>Die got the disease from her mother.</li> <li>The disease was passed on when Die was born.</li> <li>You only catch diseases from people who are nearby.</li> <li>'Inherited' means the same as 'infectious'.</li> </ol> <p>Two-tier multiple choice</p>	<h3>Can they catch it?</h3>  <p>Jordan is playing a card game with his grandfather, Max.</p> <p>Part 1</p> <p>Can Jordan pass his cold to his grandfather Max?</p> <ol style="list-style-type: none"> <li>No.</li> <li>Yes, if they sit close together.</li> <li>Yes, if they touch each other or the same cards.</li> <li>Yes, if Jordan sneezes and Max breathes it in.</li> </ol> <p>How would you explain your answer to question 1?</p> <ol style="list-style-type: none"> <li>Max can get the cold if Jordan's cold germs get onto his skin.</li> <li>Max can get the cold if Jordan's cold germs get inside Max's body.</li> <li>A cold is not caused by germs, it is caused by bad diet and lack of exercise.</li> <li>A cold is not caused by germs, it is caused by going outside without a coat.</li> </ol> <p>Two-tier multiple choice</p>																				
<h3>Antibiotics</h3>  <p>Emily has a disease caused by a virus.</p> <p>Imogen has a disease caused by information in her genes.</p> <p>Riley has a disease caused by bacteria.</p> <p>Who should be treated using antibiotics?</p> <ol style="list-style-type: none"> <li>Only Emily</li> <li>Only Riley</li> <li>Only Emily and Riley</li> <li>Emily, Imogen and Riley</li> </ol> <p>How would you explain your answer to question 1?</p> <ol style="list-style-type: none"> <li>Antibiotics only work for diseases caused by bacteria.</li> <li>Antibiotics only work for diseases caused by viruses.</li> <li>Antibiotics only work for diseases caused by germs.</li> <li>Antibiotics work for all diseases.</li> </ol> <p>Two-tier multiple choice</p>	<h3>Disease – cause and effect</h3>  <p>Eating fatty foods such as burgers is linked to heart disease.</p> <p>Look at the statements in the table.</p> <table border="1"> <thead> <tr> <th>Statement</th> <th>I am sure it's right</th> <th>I think it's right</th> <th>I think it's wrong</th> <th>I am sure it's wrong</th> </tr> </thead> <tbody> <tr> <td>1. You will definitely get heart disease if you eat fatty foods.</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2. Eating fatty foods makes it more likely that you will get heart disease.</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3. Eating fatty foods increases your risk of getting heart disease.</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Confidence grid</p>	Statement	I am sure it's right	I think it's right	I think it's wrong	I am sure it's wrong	1. You will definitely get heart disease if you eat fatty foods.					2. Eating fatty foods makes it more likely that you will get heart disease.					3. Eating fatty foods increases your risk of getting heart disease.					<h3>Plant disease detectives</h3>  <p>SUSPECT 1 DISEASE NAME: Powdery Mildew WHAT TO LOOK OUT FOR: White, powdery patches of fungus on both sides of the leaves. SYMPTOM INDICATORS: Same leaves, hawthorn, hollyhock, ladybird, oak trees, Birch trees, willow trees, apple trees, cherry trees.</p> <p>SUSPECT 2 DISEASE NAME: Violet bramble rust WHAT TO LOOK OUT FOR: Dark brown or purple-coloured spots on both sides of the leaves. Furry fungus on the bottom side of the leaves, which, if rubbed in forms a black, 1:1 powder. SYMPTOM INDICATORS: Bramble (blackberry) bushes.</p> <p>SUSPECT 3 DISEASE NAME: Apple brown rot WHAT TO LOOK OUT FOR: Furry rings of light brown to cream-coloured fungus on the surface of the apple. SYMPTOM INDICATORS: The fruit of apple trees.</p> <p>Fieldwork</p>	<h3>What would happen if...</h3>  <p>Your teacher has given you some pictures. They show things that can cause disease.</p> <p>Include in your story</p> <ol style="list-style-type: none"> <li>Do you agree that the thing in each picture can cause disease?</li> <li>How does each thing cause disease?</li> <li>Can you think of any more things that cause disease?</li> </ol> <p>To write on in your group</p> <p>Write a short story called "What would happen if..."</p> <ul style="list-style-type: none"> <li>a person called Ali</li> <li>what would happen if Ali ate, or came into contact with, the things in the pictures</li> <li>how this could best be avoided.</li> </ul> <p>Discussion</p>	<h3>Antibiotics and resistance</h3>  <p>WHO posters</p> <p>WHO infographics</p> <p>Challenge to thinking, media</p>
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