



Causes of Human Disease: Transmitting and Fighting Infection

Scheme of Work

	Lesson 1	Lesson 2	Lesson 3
Length	Approx. 1 hour	Approx. 1 hour	Approx. 1 hour
Objectives	<p>To list known infectious diseases and think about where they are most commonly found.</p> <p>To consider the reasons behind differences in disease occurrence around the world.</p> <p>To compare the main features of bacteria and viruses.</p>	<p>To identify the main modes of infectious disease transmission.</p> <p>To research antibiotic resistance.</p> <p>To describe the problems associated with antibiotic resistance.</p>	<p>To explain the difference between the innate and adaptive immune system reactions.</p> <p>To communicate complex information about the immune system in a clear way.</p> <p>To reflect on the experience of groupwork and peer-teaching.</p>

Lesson plans for each session can be found on the following pages.

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Lesson 1 plan

<p>Starter activity</p> <p>As a class, students brainstorm as many infectious diseases as they can think of.</p> <p>When the list has been made, students consider where in the world each disease may be most common, adding locations to each disease listed.</p>	<p>Learning objectives</p> <ul style="list-style-type: none"> • To list known infectious diseases and think about where they are most commonly found. • To consider the reasons behind differences in disease occurrence around the world. • To compare the main features of bacteria and viruses.
<p>Main activities</p> <p>Individually, students attempt the 'What causes infectious disease' exercise (PDF on Step 1.3), writing down their answers. Students pair up and discuss their answers with each other. Then, hand out the answer sheet for students to assess their responses together.</p> <p>Divide the class into two groups. Explain that one group is going to focus on bacteria, and the other on viruses. The class then watches and makes notes on the video in Step 1.4: What's the difference between bacteria and viruses?</p> <p>Each group produces an informative poster on either bacteria or viruses, including the main features and examples of the diseases they can cause. This can be done in various ways, using media and drawing diagrams and images where possible.</p>	<p>Resources required</p> <ol style="list-style-type: none"> 1. PDF exercise and answers from Step 1.3 2. Pens and paper (including coloured pens and flipchart paper for bacteria and viruses exercise). <p>Assessment for Learning</p> <p>Answers to exercise and group posters produced.</p> <p>Differentiation</p> <p>SEND: Videos have subtitles. Low ability: Peer-learning. Gifted and Talented: Peer-teaching.</p> <p>Plenary</p> <p>Each group presents their poster on bacteria or viruses to the other. Recap and highlight the differences between them.</p>

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Lesson 2 plan

<p>Starter activity</p> <p>Divide students into pairs. Students read the PDF information sheet in Step 1.8 (How are diseases transmitted?).</p> <p>Each student then prepares a mini quiz of four questions each, based on the information sheet, and quizzes their partner.</p>	<p>Learning objectives</p> <ul style="list-style-type: none"> • To identify the main modes of infectious disease transmission. • To research antibiotic resistance. • To describe the problems associated with antibiotic resistance.
<p>Main activities</p> <p>Individually, students perform research on antibiotic resistance and record their findings. They can start by using the WHO article identified in Step 1.13.</p> <p>As a class, discuss the following question:</p> <ul style="list-style-type: none"> • Why is antibiotic resistance a challenge to health? <p>Then, in pairs, they roleplay the following situation:</p> <p>Imagine that you are a doctor and someone arrives in your surgery requesting antibiotics, yet their symptoms are most probably viral.</p> <ul style="list-style-type: none"> • What do you do? • What would you say to this patient having made your decision? <p>One student should play the doctor, and the other should play the patient, before swapping roles.</p>	<p>Resources required</p> <ol style="list-style-type: none"> 1. PDF information sheet. 2. Pens and paper for quizzes. 3. Devices to perform research. 4. Space for role plays. <p>Assessment for Learning</p> <p>Peer assessment in mini quiz and role play answers.</p> <p>Differentiation</p> <p>SEND: Teacher-led support. Low ability: Peer-learning. Gifted and Talented: Peer-teaching.</p> <p>Plenary</p> <p>As a class, discuss the experience of the role play.</p> <ul style="list-style-type: none"> • How did it feel to play the doctor? • How did it feel to play the patient? • What surprised you?

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Lesson 3 plan

Starter activity	Learning objectives
<p>Students recap everything they can remember about antibiotics and how they work from the previous lesson.</p>	<ul style="list-style-type: none"> • To explain the difference between innate and adaptive immune system reactions. • To communicate complex information on immune systems in a clear way. • To reflect on the experience of groupwork and peer-teaching.
Main activities	Resources required
<p>Divide the class into two groups. One group watches the video from Step 2.2 (How does our innate immune system respond to infection?). The other group watches the video from Step 2.5 (How does our adaptive immune system respond to infection?).</p> <p>Both groups take notes from the videos and can then research further to prepare a five-minute 'microteach' session on their topic for the other group. They can use poster, presentation, quiz or any other media/method they wish in order to deliver their teaching. Their session should include information on each immune system and how it responds to and fights infection.</p> <p>The groups present their sessions to each other (30 mins for preparation, 15 mins for presenting).</p> <p>In pairs, students discuss the following question:</p> <ul style="list-style-type: none"> • What are the key differences between the adaptive immune response and the innate immune response to a thorn puncturing someone's hand? 	<ol style="list-style-type: none"> 1. Devices to watch immune system videos and perform research. 2. Additional space to allow two groups to watch different videos. 3. Pens, paper and creative materials for creating lessons.
	Assessment for Learning
	<p>Microteach 'lesson plans'. Individual responses to immune system question.</p>
	Differentiation
	<p>SEND: Videos have subtitles. Low ability: Peer-learning. Gifted and Talented: Peer-teaching.</p>
	Plenary
	<p>Individually, write or record a short reflection on the experience of peer-teaching and working in groups.</p>