



Causes of Human Disease: Nutrition and Environment

Scheme of Work

	Lesson 1	Lesson 2	Lesson 3
Length	Approx. 1 hour	Approx. 1 hour	Approx. 1 hour
Objectives	<p>To define nutrition related terms (macronutrient, micronutrient, malnutrition and obesity).</p> <p>To explore what makes a good diet and produce a nutritious daily meal plan.</p> <p>To consider how to reduce obesity from an individual and government perspective.</p>	<p>To identify some environmental factors that contribute to human disease.</p> <p>To summarise the evidence that UV light is a cause of skin cancer and produce a report.</p> <p>To consider what measures could help to protect people against skin cancer.</p>	<p>To explore the contamination of water by different chemical toxins.</p> <p>To produce an informative poster detailing either heavy metals or endocrine disruptors.</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>In pairs, students produce definitions for the following terms:</p> <ul style="list-style-type: none"> • Macronutrient • Micronutrient • Malnutrition • Obesity <p>Students should give examples of macro- and micronutrients in their responses.</p>	<p>Learning objectives</p> <ul style="list-style-type: none"> • To define nutrition related terms (macronutrient, micronutrient, malnutrition and obesity). • To explore what makes a good diet and produce a nutritious daily meal plan. • To consider how to reduce obesity from an individual and government perspective.
<p>Main activities</p> <p>Students watch the video in Step 1.3 (What is a good diet?).</p> <p>In small groups, students complete the PDF exercise from Step 1.3, using the Eatwell Guide Food Plate for reference. As a class, discuss the answers to each of the questions.</p> <p>Back in their groups and using the knowledge they have gained, ask the students to choose one of the three breakfasts from the exercise and then complete a daily meal plan by designing a balanced lunch and dinner. Groups should draw their meals onto pre-prepared empty plate templates, annotating with nutrition information. Groups can research further into nutrients if needed.</p> <p>Each of the groups presents their lunch and dinner plates, outlining their nutritious benefits with reference to micro- and macronutrients, and explaining the reasons behind their choices.</p>	<p>Resources required</p> <ol style="list-style-type: none"> 1. Devices for watching video and performing research. 2. PDF exercise from Step 1.3. 3. Copies of the Eatwell Guide Food Plate for reference. 4. Blank 'plate' templates on large paper. <p>Assessment for Learning</p> <p>Answers to the exercise questions. Completed plate diagrams with nutrition information and discussions. Responses to obesity question.</p> <p>Differentiation</p> <p>SEND: Videos have subtitles. Low ability: Peer-learning. Gifted and Talented: Peer-teaching.</p> <p>Plenary</p> <p>In pairs, students write a response to the following question:</p> <p>What could be done reduce obesity on both an individual and government level?</p>

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Lesson 2 plan

<p>Starter activity</p> <p>As a class, students identify and list as many environmental factors they can think of which can contribute to human disease.</p> <p>Ensure that the following are covered: smoking, drinking alcohol, unhealthy diet, food additives, sunlight.</p>	<p>Learning objectives</p> <ul style="list-style-type: none"> • To identify some environmental factors that contribute to human disease. • To summarise the evidence that UV light is a cause of skin cancer and produce a report. • To consider what measures could help to protect people against skin cancer.
<p>Main activities</p> <p>Individually, students write a report on UV light and skin cancer. Students should use the information in Step 2.4, and the website links (Sun facts and evidence and How the sun and UV cause cancer), as well as any other sources they identify, to produce their report.</p> <p>The report should present any relevant information and statistics, and summarise the evidence that high exposure to sunlight is a cause of skin cancer. Students should consider cause and association in their report, and provide a conclusion.</p>	<p>Resources required</p> <ol style="list-style-type: none"> 1. Devices for researching. 2. Materials for producing a report. <p>Assessment for Learning</p> <p>Individual reports.</p> <p>Differentiation</p> <p>SEND: Teacher-led support. Low ability: Peer-learning in the plenary. Gifted and Talented: Peer-teaching in the plenary.</p> <p>Plenary</p> <p>Using the knowledge they have gained via research, ask the class to brainstorm answer to the following question:</p> <ul style="list-style-type: none"> • What measures could help to protect against skin cancer?

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Lesson 3 plan

Starter activity	Learning objectives
<p>Students answer the following question in small groups:</p> <ul style="list-style-type: none"> • What chemical toxins can contaminate water supplies? <p>Facilitate group conversations and add suggestions if necessary.</p>	<ul style="list-style-type: none"> • To explore the contamination of water by different chemical toxins. • To produce an informative poster detailing either heavy metals or endocrine disruptors.
Main activities	Resources required
<p>Divide the class into two groups. Group A will focus on heavy metals (using arsenic as an example) and Group B will focus on endocrine disruptors (using Bisphenol A as an example). Each group will produce an informative poster on their topic. Each poster should include a definition of the term, with at least one specific example or case study.</p> <p>To inform their research, Group A can watch the video in Step 2.7, and Group B can visit the NIH link provided in Step 2.8. Other research sources can also be used.</p> <p>When posters are ready, put on the wall and ask each group to talk through their poster with the other, answering any questions they have.</p> <p>After this, students individually complete the three questions from the PDF exercise in Step 2.9, then swap with a partner to assess using the answer sheet.</p>	<ol style="list-style-type: none"> 1. Devices for watching videos and performing research. 2. Creative materials for producing posters. 3. PDF exercise and answer sheets from Step 2.9. <p>Assessment for Learning</p> <p>Group poster on chemical toxins. Exercise questions. Individual reflections.</p> <p>Differentiation</p> <p>SEND: Videos have subtitles and teacher-led support. Low ability: Peer-learning. Gifted and Talented: Peer-teaching.</p> <p>Plenary</p> <p>Each student writes a short individual reflection on their key learning from the last three lessons on nutrition and environment.</p>