

Differentiation strategies – Secondary Science example

Lesson component	Description										
Differentiation element(s)	Content and Process										
Stage	Stage 5										
Subject	Science										
Outcomes	<p>A student:</p> <ul style="list-style-type: none"> analyses interactions between components and processes within biological systems SC5-14LW 										
Content statement	<ul style="list-style-type: none"> Multicellular organisms rely on coordinated and interdependent internal systems to respond to changes in their environment. <ul style="list-style-type: none"> c. outline some responses of the human body to infectious and non-infectious diseases. 										
Purpose of lesson	'Flip' the classroom so students can explore background knowledge about the human body's response to an infectious disease. They use this to build and inform a disease profile in collaboration with other students.										
Strategy(ies)	<p>Core strategies Students will:</p> <ul style="list-style-type: none"> 'Flip Classroom'- read an article for homework about how the body responds to a pathogen. Create a glossary, mind map or summary notes in preparation for the next lesson. discuss in class the cause, transmission, symptoms of a disease and briefly outline the first, second and third lines of the body's defence to disease. <p>Students will often have different answers within their group and must convince each other of the accuracy of their response.</p> <p>Differentiation strategies Students will:</p> <ul style="list-style-type: none"> work in groups based on demonstrated understanding from the previous lesson. Each group is allocated a particular disease. Give students resources for their allocated disease or access to the internet. <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Group 1: chicken pox</td> <td style="width: 50%;">Group 6: Hendra virus</td> </tr> <tr> <td>Group 2: whooping cough</td> <td>Group 7: bird flu</td> </tr> <tr> <td>Group 3: poliomyelitis</td> <td>Group 8: Ebola</td> </tr> <tr> <td>Group 4: AIDS</td> <td>Group 9: chicken pox, malaria and AIDS</td> </tr> <tr> <td>Group 5: malaria</td> <td>Group 10: whooping cough, polio and Ebola</td> </tr> </table> <p>The information for each group should be of increasing complexity, with group 1 having information that is easier to locate and group 8 having more complex information.</p> <ul style="list-style-type: none"> in their group, answer the following questions about their allocated disease, recording 	Group 1: chicken pox	Group 6: Hendra virus	Group 2: whooping cough	Group 7: bird flu	Group 3: poliomyelitis	Group 8: Ebola	Group 4: AIDS	Group 9: chicken pox, malaria and AIDS	Group 5: malaria	Group 10: whooping cough, polio and Ebola
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	<p>their answers on scaffolds:</p> <ol style="list-style-type: none"> 1. What is the cause of the disease? 2. How is it transmitted? 3. What are the symptoms of the disease? 4. How does the body defend itself? How do you know that the body is responding to the disease? 5. Where in the world is this disease usually located? What is the distribution of the disease? 6. Who does it generally affect? Who is at risk? 7. Is there a vaccine available? Are there any other preventative methods or treatments available? 8. What would be the impact of this disease if located worldwide? 9. How much scientific research is conducted on this disease? Why/why not? <ul style="list-style-type: none"> • share their findings with another group or the class.
Resources	<p>http://www.abpschools.org.uk/page/modules/infectiousdiseases_immunity/immunity2.cfm?coSiteNavigation_allTopic=1</p> <p>http://www.s-cool.co.uk/gcse/biology/defence-against-disease/revise-it/how-does-the-body-fight-back</p> <p>http://www.merckmanuals.com/home/infections/biology_of_infectious_disease/defenses_a_gainst_infection.html</p> <p>http://www.bbc.co.uk/bitesize/ks3/science/organisms_behaviour_health/disease/revision/5/</p> <p>http://www.sciencelearn.org.nz/Contexts/Fighting-Infection/Science-Ideas-and-Concepts/The-body-s-first-line-of-defence</p> <p>http://www.sciencelearn.org.nz/Contexts/Fighting-Infection/Science-Ideas-and-Concepts/The-body-s-second-line-of-defence</p>