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| Session title         | Plastic Planet                                                                                                                                                                                                                                         |  |  |
| Key Question          | How does plastic pollution affect organisms and the environment and what can we do to help?                                                                                                                                                            |                                                                                     |  |
| Session description   | Discover the main sources of plastic pollution and the problems this is causing for wetlands. Explore the dangers of microplastics, focusing on how they can lead to the accumulation of toxic materials through a food chain. What we can do to help? |                                                                                     |  |
| Key Stage suitability | KS3                                                                                                                                                                                                                                                    |                                                                                     |  |
| Duration              | 1 hour                                                                                                                                                                                                                                                 |                                                                                     |  |

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| <b>Curriculum links</b> | <p><b>Curriculum for Wales</b></p> <p><b>Science and Technology</b></p> <p>Being curious and searching for answers is essential to understanding and predicting phenomena</p> <ul style="list-style-type: none"> <li>▪ Progression step 4 <ul style="list-style-type: none"> <li>○ I can explain how the impact of our actions contribute to the changes in the environment and biodiversity.</li> </ul> </li> </ul> <p>The world around us is full of living things which depend on each other for survival</p> <ul style="list-style-type: none"> <li>▪ Progression step 4 <ul style="list-style-type: none"> <li>○ I can describe the interdependence of organisms in ecosystems and explain how this affects their chances of survival.</li> <li>○ I can explain the threats to the development and health of organisms and describe how the effects of these are reduced by natural defences, preventions and treatments.</li> </ul> </li> <li>▪ Progression Step 5 <ul style="list-style-type: none"> <li>○ I can evaluate the factors which affect the development and health of organisms.</li> </ul> </li> </ul> <p><b>Humanities</b></p> <p>Our natural world is diverse and dynamic, influenced by processes and human actions</p> <ul style="list-style-type: none"> <li>▪ Progression step 4 <ul style="list-style-type: none"> <li>○ I can understand and explain how human actions affect the physical processes that shape places, spaces, environments and landforms over time.</li> <li>○ I can understand and explain the range of factors that affect the interrelationships between humans and physical processes.</li> <li>○ I can describe and explain why spatial patterns of places, environments and landforms may change over time in my locality and in Wales, as well as in the wider world.</li> <li>○ I can describe and explain how places, spaces, environments and landforms have changed over time and outline the processes that cause these changes in the natural world</li> </ul> </li> <li>▪ Progression step 5 <ul style="list-style-type: none"> <li>○ I can explain and analyse the wide range of interrelationships and interdependencies between the human actions and physical processes that shape places, spaces, environments and landforms over time</li> <li>○ I can evaluate the extent to which economic, social, political, cultural, religious and non-religious beliefs, practices and actions have led to changes to the natural world.</li> <li>○ I can give comprehensive explanations for the distinctive features of places, spaces and landscapes at a variety of scales in my locality and in Wales, as well as in the wider world, along with the processes at work in them.</li> <li>○ I can give comprehensive explanations for the spatial patterns of places, environments and landforms at a range of scales and predict how patterns and</li> </ul> </li> </ul> |
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|                          | <p>trends may continue or change in the future in my locality and in Wales, as well as in the wider world.</p> <ul style="list-style-type: none"> <li>○ I can give comprehensive explanations and analysis of how and why places, spaces, environments and landforms have changed over time</li> </ul> <p>Informed, self-aware citizens engage with the challenges and opportunities that face humanity, and are able to take considered and ethical action</p> <ul style="list-style-type: none"> <li>▪ Progression step 4 <ul style="list-style-type: none"> <li>○ I have an understanding of my own and others' environmental, economic and social responsibilities in creating a sustainable future.</li> <li>○ I can analyse and explain the impact of decisions made by individuals, local, national or global governance, and non-governmental organisations on people, their rights and the environment</li> </ul> </li> <li>▪ Progression step 5 <ul style="list-style-type: none"> <li>○ I have built a detailed understanding of what it is to be an ethical, informed citizen and can critically evaluate my role as one, recognising my responsibilities and those of others towards society, the environment and creating a sustainable future.</li> <li>○ I can explain the importance of the role played by groups, governments, businesses and non-governmental organisations in the creation of a sustainable future, and how they impact on people and their rights and on the environment.</li> </ul> </li> </ul> |               |                                                                                                                                 |
| <b>Learning outcomes</b> | <b>All learners</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               | <b>More able learners</b>                                                                                                       |
|                          | <ul style="list-style-type: none"> <li>▪ Recognise that there are many everyday items made from plastic some of which may not be immediately obvious</li> <li>▪ Understand the problems that plastic pollution causes for wetland wildlife and habitats</li> <li>▪ Recognise that plastics take a long time to break down</li> <li>▪ Understand that microplastics can be passed through a food chain</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |               | <ul style="list-style-type: none"> <li>▪ Understand that plastic pollution in wetlands comes from a range of sources</li> </ul> |
| <b>Key vocabulary</b>    | Pollution<br>Bioaccumulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Microplastics | Decomposition                                                                                                                   |

| <b>Session Outline</b>                                                                                                             | <b>Time</b>    |
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| <b>Introduction</b>                                                                                                                | <b>5 mins</b>  |
| Learners are introduced to the session title and what we will be focussing on in today's session                                   |                |
| <b>Activity 1: What is the issue?</b>                                                                                              | <b>15 mins</b> |
| Learners investigate different items that create plastic pollution and where these come from                                       |                |
| <b>Activity 2: What problems does this cause?</b>                                                                                  | <b>10 mins</b> |
| Learners look at the impact this has on wildlife including how microplastics can be passed through a food chain                    |                |
| <b>Activity 3: How long does the problem last?</b>                                                                                 | <b>15 mins</b> |
| Learners investigate how long different materials take to decompose and how plastics can remain in the environment for a long time |                |

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| <b>Activity 4: What can we do to improve the situation?</b>                                                                | <b>10 mins</b> |
| Learners explore some of the alternatives to plastic and some of the small steps they can take to reduce plastic pollution |                |
| <b>Plenary</b>                                                                                                             | <b>5 mins</b>  |
| Learners review what they have learnt and have a chance to ask any questions they may have                                 |                |