


Session title	Ready for take off	
Key question	How have birds evolved to be able to fly?	
Session description	Investigate the adaptations birds have evolved to enable them to fly and observe these adaptations in action. What is about their physiology that enables them to fly?	
Key Stage suitability	KS3	
Duration	1 or 2 hours	

Curriculum links	<p><b>Curriculum for Wales</b></p> <p><b>Science and Technology</b></p> <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 explain how reproduction, mutations and the environment can lead to variation and adaptations within organisms which can affect 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 explain how variation of organisms within a changing environment leads to natural selection which drives evolution.</li> <li>○ I can explain how biological processes and control mechanisms enable organisms to function, develop, reproduce and survive.</li> <li>○ I can evaluate the factors which affect the development and health of organisms</li> </ul> </li> </ul>		
Learning outcomes	All learners	More able learners	
	<p>All learners will be able to describe at least three physical adaptations that enable birds to fly.</p> <p>All learners will be able to explain how ducks' feet are adapted for both swimming and landing.</p> <p>All learners will be able to name up to three behaviours that help birds maintain their ability to fly.</p>	<p>A few learners will be able to identify up to three species of wild British birds.</p>	
Key vocabulary	Adaptation Streamlined Thrust Lift Hollow Preening	Webbed feet Waterproof Energy Down feathers Insulation	Aerodynamic Aerofoil Keel bone Migration Barb Barbule Bone marrow

Session Outline	Time
Introduction	5 mins
Learners are introduced to the centre, staff and volunteers running the session and the key question, explaining what we will be focusing on today.	
Section 1: How are birds adapted for flight?	5 mins

Discussion Stage – learners offer suggestions of how birds are able to fly when many other animals cannot.	
Section 2: Exploration	20 mins
Learners explore the different body parts, observing the adaptations and how these help with flight.	
Section 3: Observatory	10 mins
Learners visit our observatory hide to observe a wetland habitat. Learners discuss what it is that birds need from their habitat/what they need to do to be able to continue flying.	<i>This section can be extended during a 2 hour session</i>
Section 4: Collection Walk	15 mins
Learners observe our collection birds, including many endangered species and some that rely on migration to survive. They discuss why some birds choose to migrate.	<i>This section can be extended during a 2 hour session</i>
Plenary	5 mins
Learners will review what they have learnt and ask any further questions.	