

**Lesson 1 - Spitfire**

**Lesson Objectives** – understand the basic principles of wing shape and design, beginning with birds:the principles of elliptical wing; identify the developments to the bi-plane and why those developments were needed; learn about the people influential in the design and production of Spitfire.

Time	Activity	Learning objective	Resources
<b>Starter</b>			
<b>5 min</b>	<ul style="list-style-type: none"> <li>Promote discussion about why some dinosaurs developed flight.</li> </ul>	<ul style="list-style-type: none"> <li>Explanation of reasons for evolutionary adaption .</li> </ul>	<ul style="list-style-type: none"> <li><b>Spitfire</b> worksheet p1.</li> </ul>
<b>10 min</b>	<ul style="list-style-type: none"> <li>In pairs students discuss why humans have a need to fly and record answers on worksheet.</li> </ul>	<ul style="list-style-type: none"> <li>Students discuss and observe wing shapes,concluding with elliptical.</li> </ul>	
<b>5 mins</b>	<ul style="list-style-type: none"> <li>Students observe differences and similarities between birds’ wing shapes and Spitfire elliptical wing shape.</li> </ul>		
<b>Main</b>			
<b>5 min</b>	<ul style="list-style-type: none"> <li>Teacher leads discussion about different habitat for birds.</li> </ul>	<ul style="list-style-type: none"> <li>Analyse different wing shape and purposes in nature and aero-engineering.</li> </ul>	<ul style="list-style-type: none"> <li>Worksheet p2</li>   <li>Worksheet p3,4,5</li> </ul>
<b>10 min</b>	<ul style="list-style-type: none"> <li>Students discuss different wing shapes and link descriptions to shape. They then discuss which wing types might be most appropriate for the variety of uses of aeroplanes.</li> </ul>	<ul style="list-style-type: none"> <li>Students read and assess information,simulating discussion.</li> </ul>	
<b>10 min</b>	<ul style="list-style-type: none"> <li>Teacher assists students in reading information about RJ Mitchell and Lady Houston.</li> </ul>		
<b>15 min</b>	<ul style="list-style-type: none"> <li>In pairs, students role play the conversation between these two characters using the information about bi-planes to discuss the necessary developments which would bring about the successful Spitfire design</li> </ul>		
<b>Plenary</b>			
<b>5 min</b>	<ul style="list-style-type: none"> <li>What have you learned today question and answer.</li> </ul>	<ul style="list-style-type: none"> <li>Clarify learning points.</li> </ul>	

<b>Extension</b>			
Time	Activity	Learning objective	Resources
<b>10 min</b>	<ul style="list-style-type: none"> <li>In pairs, students check each others’ learning and devise a humorous caption for the cartoon</li> </ul>	<ul style="list-style-type: none"> <li>Students check understanding</li> </ul>	<ul style="list-style-type: none"> <li>Worksheet p6</li> </ul>