

Museums & Schools Lesson Plan

Workshop Title: Science Innovation Island Digital Explorer Quiz	Venue: In school.	Key Stage: KS2 Class Size: N/a
Length of Session: 60 mins	Support Staff Required: N/a	Arrival Details / Risk Assessment: N/a

Curriculum Links and Skills

STEM	<ul style="list-style-type: none"> Improving digital literacy and confidence Using online resources to search and find knowledge and information Working scientifically: observing closely, gathering and recording data to help answer questions Examples of inventions that are based on knowledge of materials and their properties, forces and light Understand how key events and individuals in design and technology have helped shape the world
Geography	<ul style="list-style-type: none"> Locating places on the Island Types of settlement and land use The Island's different topographical zones and relationship to the mainland Economic activity including trade links Reading digital maps and using Geographical Information Systems (GIS)
History	<ul style="list-style-type: none"> A local history study Identifying similarities and differences between ways of life in different periods Understanding how knowledge of the past is constructed from a range of sources, including artefacts A study over time tracing how several aspects of national history are reflected in the locality Note connections, contrasts and trends over time and develop appropriate use of historical terms
English and Art	<ul style="list-style-type: none"> Retrieve and record information from non-fiction information pop-ups Ask relevant questions to extend understanding and knowledge Work and communicate collaboratively if undertaken in groups Observation and drawing of object from a photograph

Pre-Session

Prior Learning Required	No prior learning is necessary
Resources Required	<ul style="list-style-type: none"> Dynamic timeline materials – rolling pin, long piece of string, Before 1066 and 1700-1900 Chronologies Science Innovation Island Introductory Film Science Innovation Island Digital Explorer (interactive map) Science Innovation Island Digital Explorer Quiz KS2 (activity sheet)

	<ul style="list-style-type: none"> Materials samples – wood, stone, metal (optional) <p>Access to up-to-date computer hardware, with up-to-date browser, and good broadband/ WiFi connection. (This exercise can be undertaken individually or in groups)</p> <p><i>Card game and physical map version for settings without digital access (pick a card and find the places on a map, undertaken as a class) – from end May 2021</i></p>
Vocabulary to be Introduced	Satellite map, artefacts, documents, shipbuilding, design, powerboat, hovercraft, hypocaust, engineer, speedometer, steam-powered beam engine, constructed, submarine, reconnaissance, flying boat, wireless, signature, seismometers, seismographs, hull, invented, earthquakes
Learning Objectives / Outcomes	
ALL students	<ul style="list-style-type: none"> Understand that the Isle of Wight has a history of science invention and innovation Experience working with digital maps and GIS software
MOST students	<ul style="list-style-type: none"> Understand that artefacts in museum and archive collections are a valuable resource in the study of scientists of the past Be able to search for locations and places using GIS software
SOME students	<ul style="list-style-type: none"> Relate the places they have discovered on the map with real places in the landscape Recognise that an understanding of forces, and materials and their properties, helps solve problems in the real world
Differentiation / Extension Activities	<p>Have a go at developing their own short quiz using the map for other students to use</p> <p>Research and propose other items to add to the map, and prepare content for ‘pop-up windows’</p>
Provision for Students with Additional Needs:	This lesson plan has been designed to provide active learning that combines both individual and collaborative engagement. Students can work at individual pace and take an active role in small group/ class-based work. Use of technology supports adjustments for visual and hearing impaired. Duration of digital engagement time is focused.
Assessment Strategies	Individual completion of activity quiz sheet, classroom drawing collection, discovering the ‘Scientific’ word associated with someone from the Isle of Wight
Learner Activities / Questions & Class Organisation	
Starter 15 mins	<p>Dynamic timeline exercise. For example, rolling pins and a long piece of string, with key event/ dates/ date periods as labels tied on with string to give a relative timeline. (Use Before 1066 and 1700-1900 Chronologies provided to assist)</p> <p>Play the introductory film to the Digital Explorer and Quiz</p>
Activities 35 mins	Using the Digital Explorer resource, complete the activity quiz either individually or in pairs.

<p>Plenary 10 mins</p>	<ul style="list-style-type: none"> • View the collection of drawings created by the class • Invite students to talk about an invention they have discovered – what is it made of? What do you think it feels like? Who made it? What was it used for? Why was this material chosen? Could they have chosen another material? (Could have a display of materials to help with this: stone; wood; metal; glass) • How old is it/ would it be now? And bearing in mind materials age and deteriorate, what do you think has happened to the materials it is made from? Can you describe what they might look like now? What will have caused that? • What was the familiar word associated with scientific innovation on the Isle of Wight they discovered? Talk about why it was so important <p>The word is ‘plane’ (Princess; RNLI; Avenger; Milne; Blanchee). Several of the boat and aircraft designers on the Island were interested in how they could design the hull to lift up and ride on its bow wave as it travelled through the water. Known as ‘planing’ or riding on the ‘plane’, it reduced resistance of the water and allowed boats to travel faster (and flying boats to get up to speeds that allowed take off and safe landing)</p> <ul style="list-style-type: none"> • Where do they think these objects are now?
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