

Video question script, Circus activity 5: Thinking like Mary Anning - A woman in a man's world"

Question/Activity	Likely response	Rationale
Here we are going to look at the wonderful fossil discoveries which a young woman made more than 200 years ago.		Preparation
Who is this? When might she have been living? Where might she have been living? <i>(Image in the public domain - copyright expired.)</i>	Mary Anning (1799 – 1846) with her dog Tray, with the cliffs and beach of Lyme Regis in the background, 1842. Mary only had a basic education, and left school when her father died in 1811, but she was a bright girl.	Concrete preparation = asking them to describe the photo.
Mary, aged 11 found fossils below the cliffs at Lyme Regis in Dorset. Why do you think Mary's discoveries were better after a good storm?	The storm would have eroded the soft mudstone cliffs and washed the fossils out onto the beach. Mary was able to collect lots of very well preserved fossils.	Thinking like Mary Anning' involves bridging between the current ideas of the pupils and the ways in which geologists may have thought in the past. By its nature, such a process also involves construction, cognitive conflict and metacognition.
When Mary and her brother Joseph discovered the skull of an Ichthyosaur – what animal do you think Mary thought it was? <i>(This image drawn by Everard Home, published in 1814, is in the public domain because its copyright has expired.)</i>	Ichthyosaur skull drawing. Most of the local people probably thought it was a relative of the crocodile, even though its large eyes surrounded by bone were very strange. They did not realise that many animals had become extinct.	
Mary found her first Plesiosaur skeleton in 1820 and another more complete one, shown below, in 1830. What do you think Mary thought this animal was? <i>(This image published by William Buckland is in the public domain because its copyright has expired.)</i>	Plesiosaur skeleton drawing. A sea monster with the very long neck, quite unlike any known living creature. Mary seldom left Lyme Regis, but famous people came to see her at home to look at or buy her fossils.	
If you get time, try drawing what you think the living animal might have looked like. <i>(Permission is granted by Dmitry Bogdanov to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.2.)</i>	A modern drawing of how Plesiosaurs might have lived in the sea.	
In 1828 Mary discovered parts of the first pterodactyl ever found in Britain and her brother Joseph drew a picture of it, below. Mary	Joseph Anning's sketch of the pterodactyl found by Mary, drawn with belemnite ink. Mary sold most of her fossils to well-known geologists, nearly all of whom were men. None of her	-

<p>thought this had been a flying reptile. Draw a picture of the way it might have looked when it was flying. (Image in the public domain - copyright expired.)</p>	<p>fossils in museums were labelled as having been found by her.</p>	
<p>A modern digital image of how a pterodactyl might have flown. (Permission is granted by Nobu Tamura to copy, distribute and/or modify this image under the terms of the GNU Free Documentation License, Version 1.2).</p>	<p>Pterodactyl reconstruction</p>	
<p>Cartoon by Henry de la Beche 40 years after Mary had died. Does this say anything about how male geologists saw Mary? (This image is in the public domain because its copyright has expired.)</p>	<p>It may have been poking fun at her. Remember that women were not expected to be scientists and they did not usually publish their work. Some women authors used a man's name, e.g. "George Eliot" wrote novels like Silas Marner but her real name was Mary Evans.</p>	
<p>Mary became famous because she was in the right place at the right time and her discoveries of fossil reptiles changed our ideas of the evolution of life. What things might have helped Mary to become famous?</p>	<ul style="list-style-type: none"> • She was encouraged by her family to collect fossils • She found lots of fossils • Many of the fossils she found could be sold to give an income to the family • Some of the skeletons of fossil reptiles she found were nearly complete • Some of the fossil reptiles were new to science • They showed that species became extinct • They gave clues to the evolution of animal life • She could read and write • She was in contact with several famous geologists • She lived in a location that was becoming a seaside resort and visited by many people • People liked collecting and buying fossils for their own enjoyment 	
<p>What things were against Mary becoming famous?</p>	<ul style="list-style-type: none"> • She was a woman at a time when it was thought that women couldn't become 'proper' scientists • She had no male family members who were scientists • She was from a very poor working class background. Even poor male geologists like William Smith found it hard to be accepted if they were not seen as "gentlemen". • She was unmarried, at a time when this was a disadvantage • She lived and worked well away from any big cities like London, where scientific discoveries were discussed • She didn't know how new scientific discoveries should be reported in scientific papers 	

<p>Lyme Regis Museum. If you get the chance, do visit this museum, which has some superb specimens of extinct marine reptiles connected with Mary Anning.</p>		
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