

## *Teachers' Notes: Primary Assembly or class session*

### **Have you ever met a Sea Dragon? Anglian Water has...**

Purpose of session:

- To understand what an Ichthyosaur is
- Learn how the remains were excavated and how complex the process is
- To understand the passage of time 'older than dinosaurs'
- To learn about the importance of Mary Anning

Length of session: 15 –20 minutes

Curriculum links:

- Living things and their habitats
- Rocks
- Evolution and inheritance
- Work of palaeontologists such as Mary Anning

***Before you start the session, please make sure you can access and play the video clips with sound.***

#### **Overview:**

The slide pack will show you the location of the 'Sea Dragon' at Rutland. How it was found, excavated and the process to preserve it on site. You will discover a little about Mary Anning and why the Ichthyosaur was named the Sea Dragon. Why the find at Rutland is so rare and important. How we know how old it is and what is happening to it now.

The Rutland Sea Dragon will be shortened to RSD in this document.

#### **Slide pack notes:**

##### **Slide 1:**

Have you ever met a Sea Dragon? Anglian Water has.

The "Sea Dragon", the fossilised remains of Britain's largest ichthyosaur, has been discovered at Anglian Water's Rutland Nature Reserve in the middle of England, nowhere near the sea!

It is the biggest and most complete skeleton of its kind found to date in the UK *which is very rare. So rare, it's believed to be the first **Temnodontosaurus trigonodon** found outside of Germany in fact!* So let us find out all about it...

## Slide 2:

Rutland is one of the largest reservoirs in Europe, in the smallest county in the UK.

The initial construction in the 1970s meant a large area was flooded to create the man-made lake to make sure there was enough water to supply the growing populations nearby, like Peterborough.

The lagoon where RSD was found is one of nine lagoons. When the reservoir was originally constructed two partial ichthyosaur skeletons were found.

Rutland Water has been an amazingly successful habitat for many species of animals, especially birds, and in the past was home to many ichthyosaurs.

## Slide 3:

The ichthyosaur was discovered by Joe Davis during routine maintenance in January 2020.

Let Joe and his colleagues explain all about it.

## Slide 4:

Let's watch the video to find out more. [Discover the #RutlandSeaDragon](#)

The fragile remains of the huge skeleton were carefully excavated in August and September 2021 by a team of expert palaeontologists assembled from around the UK.

It is the first complete skeleton to be discovered there, in addition to other archeological finds from Roman to Iron Age.

## Slide 5:

Dinosaurs are all terrestrial and lived on land.

Ichthyosaurs live in the sea, so they are not dinosaurs but marine reptiles.

## Fun Facts:

- The Rutland Sea Dragon is approximately **180 million years old**
- RSD measures around **10.5 metres in length**
- RSD skull, along with the plaster, clay and support frame to keep it safe, weighs approximately **one tonne**.
- Ichthyosaurs first appeared around **250 million years ago**
- They went extinct **90 million years ago**. That is so long ago it is hard to understand.
- They have the largest eyes of any animal species found - roughly the size of a football.

- They could swim up to **22mph, just a little bit faster than a car can be driven by the school**
- They are top of the food chain, apex predators.
- We know they gave birth to live young because of an Ichthyosaur found in China – there have since been several more pregnant ichthyosaurs found in Germany

#### **Slide 6:**

How do you excavate a sea dragon? Let's find out. Play videos

[the process of uncovering the #RutlandSeaDragon](#)

#### **Slide 7:**

Now it has been dug up by the palaeontologists, the fossil will be carefully conserved and examined by a conservation team. This will help grow the knowledge of these animals.

This image shows Dr Emma Nicholls applying consolidant to the hind fin to protect the specimen. This is one of the best-preserved parts of the skeleton. It appears to have been scavenged.

If you want to know more about this exciting find and what animal scavenged it, have look at Digging for Britain on BBC iPlayer. Series 9 Episode 4 (first shown 11<sup>th</sup> January 2021) RSD starts at 16.30 and continues at 42.16.

#### **Slide 8:**

The very first ichthyosaur was found by a 12-year-old, Mary Anning, and her brother Joseph in Lyme Regis, on the Jurassic coast. Mary made many discoveries about fossils and dinosaurs and was a leading palaeontologist.

Mary was not recognised for her amazing work when she was alive. And it took until 2010 for the Royal Society to recognized Mary as one of the ten British women who have most influenced the development of science, 163 years after she died.

Today the Natural History Museum in London showcases several of Mary's spectacular finds, including her ichthyosaur, plesiosaur and pterosaur. You might have seen some.

The Sea Dragon is the name that was given to the fossils 12-year-old Mary found, that is why the new fossil has been named the Rutland Sea Dragon, over 200 years after Mary's discovery.

#### **Slide 9:**



Discovering the Rutland Sea Dragon could not have happened without a huge team of people across many organisations. The main ones were Anglian Water, Rutland County Council and the Leicestershire and Rutland Wildlife Trust.

With scientific support from: Dr Dean Lomax, specialist consultant and affiliated scientist at the University of Manchester; Dr Mark Evans from the British Antarctic Survey, Visiting Fellow at the University of Leicester; and Nigel Larkin, Natural History Conservation.

The dig was also supported by several volunteers, including Dr Emma Nicholls from the Horniman Museum, Emily Swaby from the Open University, Paul de la Salle from the Etches Collection Museum, and the Peterborough Geological & Paleontological Group.

**And the list is growing as we look to ensure the Sea Dragon's future...**

**Slide 10:**

It will take about 18 months for the RSD to be conserved and preserved.

We look forward to the Sea Dragon returning to Rutland Water. The plans for its new home are underway at the moment.

It is tricky to make sure that it is big enough and the right conditions to conserve the pre-historic fossil.

Maybe you will visit the RSD in the future?

Further resources and activities to follow, so keep an eye out for more Rutland Sea Dragon updates.

[anglianwater.co.uk/rutlandseadragon](http://anglianwater.co.uk/rutlandseadragon)

[twitter.com/anglianwater](https://twitter.com/anglianwater)

[facebook.com/anglianwater](https://facebook.com/anglianwater)