Flag Fen
Archaeology Park

Flag Fen, Fossils & Jurassic Peterborough

Information for Teachers

If you have booked the Big Fossil Dig or Jurassic Explorers session, much of the information here will be relayed to the children during their time at Flag Fen but we hope the following will also be useful to you prior to your visit as background information. Please use what information you think would be useful to the children as a way of introducing their upcoming trip.

Oxford Clay

The Oxford Clay, a geological formation found in the local area, dates back to the Jurassic period, around 160 million years ago. This marine clay deposit is famous for its exceptionally well-preserved fossils, particularly those of marine reptiles, invertebrates, and prehistoric fish. The presence of these fossils provides crucial insights into the ancient marine ecosystem that once covered much of Britain.

In the Big Fossil Dig and Jurassic Explorers learning programmes, pupils will have the opportunity to excavate fossils from Oxford Clay donated to Flag Fen from a local quarry.

What Fossils Can Be Found in the Oxford Clay?

1. Marine Reptiles including;
    - Ichthyosaurs: These dolphin-like reptiles were top predators of the Jurassic seas, feeding on fish and squid. Their large eyes and streamlined bodies made them highly adapted to life in the water.
    - Pliosaurs: Large, short-necked relatives of plesiosaurs, known for their powerful jaws and massive teeth. These formidable predators were among the apex hunters of their time.
    - Plesiosaurs: Long-necked marine reptiles that used their four flippers to glide through the water, preying on fish and small marine creatures. Their distinctive body shape has made them one of the most famous prehistoric marine reptiles.
    - Crocodiles: Jurassic crocodiles, including species like Metriorhynchus, lived in the seas and were adapted for marine life, with paddle-like limbs and streamlined bodies for efficient swimming.

2. Invertebrates
   - Ammonites: Extinct relatives of modern squid and octopuses, ammonites had coiled shells and were common in Jurassic seas. These fossils are excellent indicators of geological time.
   - Belemnites: Another type of extinct cephalopod, similar to modern squids, but with a hard internal skeleton called a rostrum. Belemnites were an important food source for many Jurassic marine predators.
   - Brachiopods: These shelled marine animals resembled clams but belonged to a different plankton from the water. Their fossils are commonly found in the Oxford Clay.

3. Prehistoric Fish
   - Fossils of bony fish and early sharks have been discovered in the Oxford Clay, showcasing the diversity of life in Jurassic seas.
   - Some fossilised fish show evidence of predation, providing insight into the complex food chains of the Jurassic period.

4. Dinosaurs
   - While the Oxford Clay was primarily a marine environment, occasional dinosaur fossils have been found, likely representing land-dwelling species washed out to sea after storms or floods.
   - Fossil footprints and isolated bones provide rare glimpses of the interactions between land and sea creatures during this period.

Must Farm Quarry – A Local Fossil Hotspot

Just under a mile from Flag Fen, within the Flag Fen Basin, is Must Farm Quarry, a site of great paleontological significance. The quarry is frequently visited by palaeontologists who have made remarkable discoveries of Jurassic marine reptiles such as plesiosaurs, ichthyosaurs, and crocodiles. The clay deposits in this area have preserved these fully articulated creatures in remarkable detail.

The importance of Must Farm Quarry extends beyond fossil finds, as it provides a rare window into an ancient seabed where prehistoric creatures thrived. The fossils unearthed here contribute to our understanding of Jurassic marine life.

Why the Oxford Clay is important:

- The fossils provide a snapshot of life in Jurassic seas, helping scientists understand ancient ecosystems and climate change over millions of years.
- Many specimens from the Oxford Clay are housed in national museums and continue to contribute to scientific research, offering insights into the evolution of marine reptiles and other prehistoric creatures.
- The fossils offer an exciting way to engage children with Earth's prehistoric past, connecting them to the time when much of Britain was covered by a warm, shallow sea teeming with life.

Fossils & Learning:

You can use fossils from the Oxford Clay to introduce key curriculum topics, such as:

- Evolution and adaptation, exploring how prehistoric creatures evolved to survive in different environments.
- Food chains and marine ecosystems, demonstrating the predator-prey relationships of Jurassic seas.
- Fossilisation and geological time, helping students understand how fossils are formed and what they tell us about Earth's past.
- The differences between extinct and modern marine life, comparing ancient species to their present-day relatives.

Encouraging children to think about the past environments of their local area can inspire curiosity and excitement about palaeontology, geology, and natural history. The presence of Must Farm Quarry so close to Flag Fen makes this region a unique location for studying both prehistory and the deep past, providing invaluable learning opportunities for students of all ages.

We hope you enjoy your visit and please let us know if any other information would be useful as pre-visit information.