

Session Plan – Fantastic Fossils (KS1 & KS2)

This session lasts one hour and is suitable for a maximum of fifteen children.



Learning outcomes

- Children understand that our landscapes have changed enormously over huge periods of time
- Children understand that many creatures which are now extinct have lived in what is now Norfolk
- Children understand that to study the creatures which inhabited ancient landscapes we must study the remains they left behind

Curriculum Links

KS1 – Life processes and living things

Pupils should be taught:

- 4b. to group living things according to observable similarities and differences

KS1 – Geography

Pupils should be taught to:

- 3c. recognise how places have become the way they are and how they are changing

KS2 – Life processes and living things

Pupils should be taught:

- 4c. that the variety of plants and animals makes it important to identify them and assign them to groups

KS2 – Geography

Pupils should be taught to:

- 3d. to explain why places are like they are
- 3e. to identify how and why places change
- 3g. to recognise how places fit within a wider geographical context

- 4a. recognise and explain patterns made by individual physical and human features in the environment
- 4b. recognise some physical and human processes and explain how these can cause changes in places and environments

Safety Considerations

Refer to relevant risk assessments for session and site. In particular bear the following points in mind:

- Children must clearly understand that they may never be closer to the sea than the leader.
- Children must clearly understand that they may never climb onto the cliffs or go closer to the cliffs than the leader.
- Adults accompanying the group must ensure that children stay in a close group at all times and listen very carefully to the leader as communication on the beach can be very difficult.

Introduction

Explain the session to the group, covering safety considerations, especially those mentioned above. Explain to the children that they are going to learn about the landscapes which have been found in what is now Norfolk over many millions of years and about the organisms which lived in them.

Activities

This session has four sections, based on the four time periods which can be observed in the beach and cliffs. For each section, lead the children to the part of the beach where the relevant substrate can be seen. Hand the relevant fossils around to the children and encourage them to guess which creatures' remains they are. Explain what they are, how they lived and what the landscape they inhabited was like. The children should be encouraged to participate with their ideas and to imagine, on the basis of the fossil evidence, how the landscape must have been.

Key information to transfer includes the following:

- Norfolk has an excellent fossil record covering many millions of years. There have been huge changes in flora and fauna over this period.
- Changes in vegetation over millions of years can be charted by studying fossil pollen in the layers of soil beneath us. Pollen is very tough so it is easily fossilised

and each plant's pollen is very distinctive. It is therefore possible to see which plants were here in the distant past.

- In the beach and the cliffs at West Runton four major time periods are represented.
- The first period from around 70 to around 100 million years ago is represented in the chalk and the flints. At this time, the area was covered by a warm, shallow sea, inhabited by sea creatures of which fossils are common on the beach.
- The second period, between one and a half and three million years ago is represented in the rocks known as crag. At this time, the area was coastal. The land was covered by rich temperate forests inhabited by many plants and animals which today are extinct in Europe. There were also many recognisable creatures in the sea. A good fossil record also exists from this period.
- Between 300,000 and 700,000 years ago, a broad, muddy river flowed out to sea here but there were also forests and grasslands. These habitats were inhabited by many animals which still exist in Europe today in addition to many which are found elsewhere in the world. The remains of this landscape, containing many fossils from the mud at the bottom of the river, may be seen in the dark band of peat along the bottom of the cliff, known as the Cromer Forest Bed. West Runton is among the best sites in the world for finding fossils from this period.
- Around 300,000 years ago the first Ice Age began. Since then, at least three glaciations have ended their southward movement in our region. At the height of the glaciations no animals could live here but between them the landscape was characterised by open tundra and steppe and inhabited by animals we find in these habitats elsewhere in the world today.
- The cliffs at West Runton are composed of debris pushed here from the north by advancing glaciers.
- The last glaciation retreated around 11,000 years ago.

Conclusion

In this session it is less important to teach the children lots of facts than to inspire them to think about how ancient our world is and how it has been inhabited, and continues to be inhabited, by such fascinating animals and plants. Encourage the children, especially if they are younger, to imagine what life would have been like.

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