



Birds

# Birds through time

Age: 7-14

Topic: Palaeontology

Time: 1 hour



## What should learners already know?

- Birds are descended from dinosaurs.

## What equipment will I need?

- Computer room
- Chalk and a large area of playground to draw on

## How will learners explore this?

1. Firstly, get the class to think about what adaptations birds have to their environment (particularly, any adaptations that are different to a theropod dinosaur). They may say: flight, feathers, wings, a beak without teeth, small size, singing.
2. Divide the class into 8 groups, each of which will look at one dinosaur: Ceratosaurus, Tyrannosaurus rex, Velociraptor, Anchiornis huxleyi, Archaeopteryx lithographica, Archaeorhynchus spathula, Ichthyornis dispar, Vegavis iaai.
3. When researching these animals, children to focus on: When did it live? Did it have feathers? How big was it? Did it have wings, or long forearms? Did it have teeth or a beak, or a beak? Could it fly?
4. Once children have found answers to all these questions online, it is time to take your learning outside!
5. Start by drawing a timeline roughly charting the Mesozoic period. Now get each group to take a piece of chalk and draw on the dinosaur they were researching at the time it lived, labelling all its important characteristics.
6. Now, look at the mural. We can see that the time period starts of with more reptile-like dinosaurs and ends with more bird-like taxa, but this isn't linear - there is a mix of forms throughout! Take photos of the artwork to remember it.

## How can we show the learning?

- Challenge children by asking them about the trends in evolution that this collaborative art piece shows. Did evolution of bird characteristics happen linearly, with increasingly more bird-like taxa evolving later in time?
- No! Evolution is mosaic; while we saw a general trend of theropods becoming increasingly bird-like throughout the Cretaceous, there were still large terrestrial types like T. rex up until the mass extinction.
- What adaptations were important to allow theropods to fly? Small body size, long forearms (eventually becoming wings) and large feathers.
- Did children find any controversies (e.g disagreement about whether a certain animal had feathers or could fly) while researching these animals?
- In palaeontology, we must try and reconstruct how ancient animals lived using fossils, environmental information and comparisons to living animals.
- This means there are still lots of unanswered questions out there! We need to be creative when trying to understand how ancient animals lived.
- What do you notice about Vegavis? It looks very similar to ducks today!

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### Did you know:

The dinosaur group that birds are descended from are called the Paraves.

If you would like to develop your outdoor learning knowledge and skills, take a look at our range of training courses: [ltl.org.uk/outdoor-learning-training](http://ltl.org.uk/outdoor-learning-training)

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