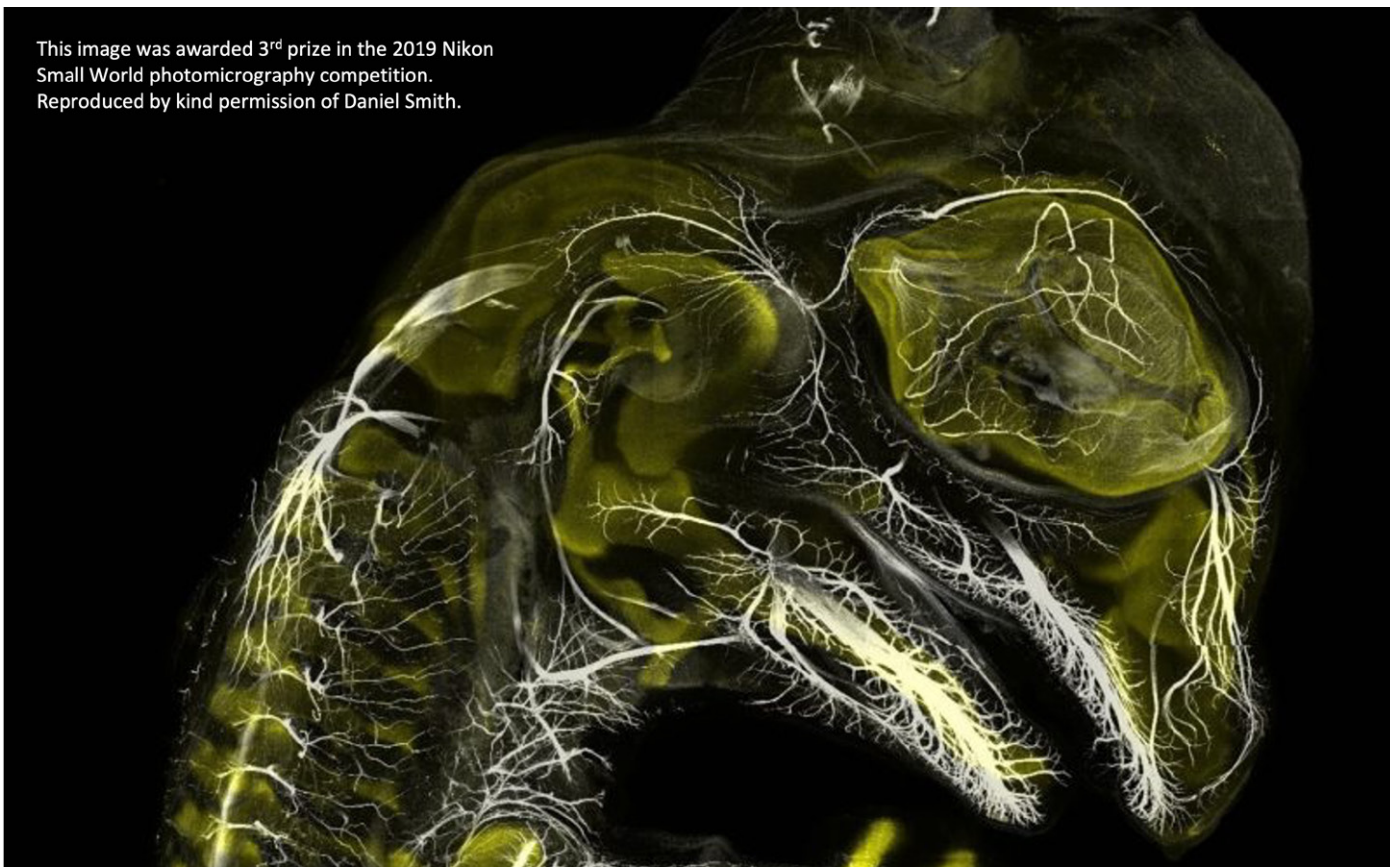


# Free resources

## *Picture for talk*

This image was awarded 3<sup>rd</sup> prize in the 2019 Nikon Small World photomicrography competition. Reproduced by kind permission of Daniel Smith.



Click to download image

Fig. 1

A picture can be a very good stimulus for children to engage in effective talk in science.

Using pictures is an inclusive approach which facilitates high levels of participation. Pictures can also be used as a starting point for enquiry. The discussions the children have will generate questions that they want to investigate.

Asking the children carefully chosen questions about the picture will support them with learning to:

- Construct explanations and link their ideas with evidence
- Make confident challenges to the ideas of others
- Explore scientific terminology and use it with genuine understanding

Pictures for talk in science activities are designed to be very open ended and usable with children of any age. The activities can be done as a quick ten-minute starter, or extended into a longer and more in-depth lesson.



## What to do

Download the image in fig.1 by following the link and either display on a whiteboard or give out printed copies. Ask the children to discuss, in groups of three, the following questions:

**What can you see in this picture?**

**What animal do you think it is?**  
**Why do you think this?**

**What do you think the yellowy/green parts are?**

**What do you think the white parts are?**

After the children have shared their ideas, explain that this is a picture is of an embryo of an American alligator at around 20 days of development. It has been specially stained to show the development of its nerves (these appear white) and its skeleton (this appears yellow/green). The skeleton is currently cartilage, but by the time the alligator hatches, it will mostly have become bone. You might want to show the children a picture of an adult alligator at an appropriate point in their discussions.

### Other questions to generate and promote thinking and explaining

- Where can you see most of the nerves (white) developing? Why do you think this is?
- Which other features of the alligator can you identify?
- What do you know about other animals and their development? How is this the same as the alligator? How is it different?
- Download the image in fig. 2 to compare the embryo of the alligator with the embryos of a turtle, a chicken, a rabbit, and a human.

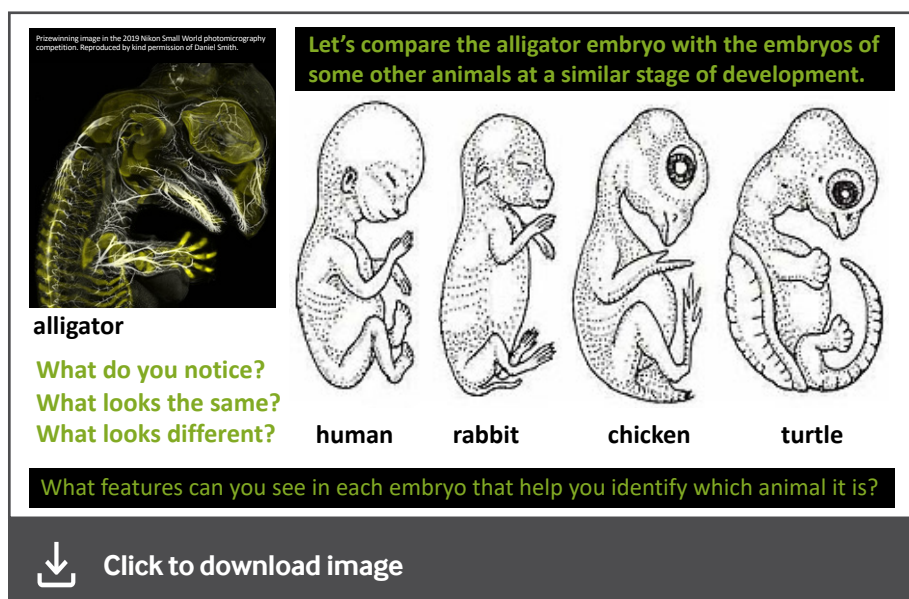


Fig. 2. Comparison of animal embryos

### Background information

Alligators are reptiles – after mating in the early summer, the female builds a huge nest and then lays 40-50 eggs and covers them up with vegetation. The alligators take 9 weeks to develop inside the eggs. When they are ready to hatch, they make loud squeaking noises inside the egg and the mother then knows she needs to uncover the nest. When the baby alligators hatch, they are about 15cm long. They stay with their mothers for at least two years, and it takes more than 12 years to become an adult. When they are fully grown, females can be up to 2.6m long, and males up to 3.4m long.

Alligators are carnivores. They have extremely strong jaws – strong enough to crack the shell of a turtle. They usually live in and around rivers, and they catch and eat other animals at the water's edge. These include fish, birds, frogs and mammals. They swallow small prey whole, and if they catch a large mammal they will often drag it under the water to drown it before shaking it apart, or they will bite it into smaller pieces that they can swallow. An alligator's teeth get worn down with use, so they constantly grow new ones. They have up to 80 teeth in their mouth

at any one time, and in its lifetime an alligator might go through up to 3,000 teeth. This explains the huge network of nerves supplying an alligator's mouth, which can be seen in the developing embryo in the picture.

### Follow-on discussion ideas

What do other vertebrate animal embryos look like at a similar stage of development?

➡ [Click here to download a slideshow of the development of vertebrate embryos.](#)

These slides are arranged like a quiz, starting with images of early embryos and then images from later stages are added to subsequent slides. At each stage, there are questions to encourage the children to identify similarities and differences between the embryos, and to see if they can work out what animal each embryo will become. The answers are revealed on the last slide.

➡ [How is an alligator different from a crocodile? Find out more here.](#)

➡ [Watch a baby alligator hatch from its egg and call for its mother.](#)