

SHARK PALAEOLOGY WITH PROFESSOR KENSHU SHIMADA

TALKING POINTS

KNOWLEDGE

1. How many lamniform shark species currently exist?
2. How large were megalodons when they were born?
3. How did Professor Shimada determine that the megalodon specimen he was studying had died when it was 46 years old?

COMPREHENSION

4. Why are most extinct sharks known only from their teeth?
5. What information can individual shark teeth provide about an extinct shark species and its ecosystem?
6. Why does Professor Shimada study living sharks as well as shark fossils?

ANALYSIS

7. How have Professor Shimada's childhood experiences influenced his career path?
8. How has Professor Shimada made a career from his hobby? Would you want to pursue any of your hobbies into a career?

SYNTHESIS

9. How would you design an investigation to compare the lives of prehistoric lamniform sharks with modern lamniforms? What questions would you want to answer, and what types of information would you need to answer them?
10. How would you design an investigation to determine the ecosystems in which megalodon lived? What questions would you want to answer, and what types of information would you need to answer them?

EVALUATION

11. Do you believe that knowledge of prehistoric sharks can have an impact outside the field of palaeontology? Why, or why not?

CREATIVITY

12. Imagine a world in which megalodon was not extinct. How would it fit into modern marine ecosystems? How would it alter the food chain?

ACTIVITIES YOU CAN DO AT HOME OR IN THE CLASSROOM

- Research an extinct animal that used to live in the ocean. Create a fact-file about it, including: When did this species live? What role did it play in its ecosystem? Does the species have any modern relatives that are alive today?
- What fossils can be found in your local area? Research the geology and geological history of your region. Visiting natural history museums is a great way to do this. If there are fossil sites near you, check whether the public have permission to explore them. If you are allowed to, then go fossil hunting to see what you can find! Remember to be a responsible palaeontologist. Create a leaflet to inform the public about the animals that used to live where you live now, and how to preserve their fossils properly.

MORE RESOURCES

- If you cannot visit museums in person, take a look at their websites to learn about the variety of fossils in their collections. Explore the Sternberg Museum of Natural History (sternberg.fhsu.edu) where Professor Shimada also serves as Research Associate, the American Museum of Natural History (www.amnh.org/research/paleontology) or the Natural History Museum (www.nhm.ac.uk).
- The Society of Vertebrate Paleontology (www.vertpaleo.org) offers an Ask-a-Paleontologist service (www.vertpaleo.org/ask-a-paleontologist). If you have any questions about becoming a palaeontologist, or if you want help identifying a fossil, you can contact the team and they will be happy to help.
- The Paleontological Society (www.paleosoc.org) has a wealth of information about palaeontology, including educational resources (www.paleosoc.org/educational-resources).
- Find out more about the work that palaeontologists do in this article from National Geographic: www.nationalgeographic.org/encyclopedia/paleontology.