

**sequence overview**

**Structural adaptation**

ENGAGE



EXPLORE  ~~EXPLAI~~

# Background



~~N~~  ELABORATE



The SPICE resources for this sequence can be drawn together into a learning pathway for students to develop an understanding of some structural adaptations of organisms, and the function of these adaptations in the organism’s environment. The pathway is structured around a constructivist model based on the 5-E approach to learning where teachers can:

* **Engage** students’ interest and minds in the concept of structural adaptations by playing the card game, *Teeth, tails and talons!*
* Provide opportunities for students to **Explore** structural adaptations of three featured organisms and how these aid survival in challenging environments.
* **Explain** the relationship between structural adaptations and function.
* **Elaborate** on these concepts by application of knowledge to different contexts, and extend understanding by reviewing current scientific research on three featured organisms.
* **Evaluate** students’ progress through the pathway.

This pathway is designed for students of Year 11 Biology, but may also address the Australian Curriculum *Biological sciences* and *Science as a Human Endeavour* strands in Year 5, at the discretion of the teacher. The card game, presentation, video and podcasts are suitable for Year 5. However the fact sheets and worksheets are written specifically for secondary students. The teachers guide in each resource contains further information on the use of resources.

# Learning pathway

ENGAGE



EXPLORE  ~~EXPLAI~~



~~N~~  ELABORATE



*Structural adaptation 1: Teeth, tails and talons*

*Teeth, tails and talons* comprises a teachers guide, card game and procedure sheet.

This resource encourages students to consider structural features of Australian animals by building card sets that match physical features with the correct animal. See the teachers guide for detailed information on the purpose and use of this resource

ENGAGE



EXPLORE  ~~EXPLAI~~



~~N~~  ELABORATE

*Structural adaptation 2: Featured creatures*

*Featured creatures* comprises a teachers guide, presentation and student fact sheet.

Students are introduced to three featured organisms. They investigate environmental conditions where these organisms are found and explore structural adaptations these organisms require to survive. See the teachers guide for detailed information on the purpose and use of this resource.

ENGAGE



EXPLORE  ~~EXPLAI~~

*Structural adaptation 3: Structure and function*

*Structure and function* comprises a teachers guide, video and three student worksheets.

The video, *Adaptations in action*, presents structural adaptations of three featured organisms and explains functions of these adaptations in relation to environment. Students use worksheets to investigate additional structural adaptations of these organisms. See the teachers guide for detailed information on the purpose and use of this resource.

ENGAGE



EXPLORE  ~~EXPLAI~~

*Structural adaptation 4: Researching adaptations*

*Researching adaptations* comprises a teachers guide, three podcast interviews with scientists from The University of Western Australia and a worksheet.

This activity encourages students to expand their knowledge about structural adaptations of three featured organisms, and their understanding of the relationship between structural adaptations and function. The resource is also useful for exploration of scientific methodology and research practices. See the teachers guide for detailed information on the purpose and use of this resource.

# Acknowledgements



~~N~~  ELABORATE



~~N~~  ELABORATE

Designed and developed by the Centre for Learning Technology, The University of Western Australia.

Production team: Leanne Bartoll, Kim Braimbridge, Jan Dook, Alwyn Evans, Jenny Gull, Mark Lehmann, Ant Meczes, Paul Ricketts, Jodie Ween and Michael Wheatley, with thanks to Pauline Charman, Roger Dickinson and Bob Fitzpatrick.

# SPICE resources and copyright

All SPICE resources are available from the Centre for Learning Technology at The University of Western Australia. Selected SPICE resources are available through the websites of Australian State and Territory Education Authorities.

Teachers and students at Australian schools are granted permission to reproduce, edit, recompile and include in derivative works the resources subject to conditions. For details on these conditions please go to spice.wa.edu.au/usage.

All questions involving copyright and use should be directed to SPICE at UWA.

Web: spice.wa.edu.au Email: [spice@uwa.edu.au](mailto:spice@uwa.edu.au) Phone: (08) 6488 3917

Centre for Learning Technology (M016) The University of Western Australia

35 Stirling Highway

Crawley WA 6009