# ADAPTATION: DESIGN A SPECIES – Teachers' Notes

**Who is it for?** 11-14 year olds

**How long will it take?** The activity is ideal as a 1 hour session. The 'Design a Species' activity could be set as a homework project.

**Learning outcomes:** Students will learn about how animals are adapted to survive in different habitats

## What do you need?

- Interactive whiteboard or projector
- Computer to connect to whiteboard or projector
- ARKive's Adaptation classroom presentation (PowerPoint)
- Internet access for students – allow one computer per group of students
- A3 paper
- Felt tip pens or colouring pencils
- Set of habitat cards
- Set of predator / prey cards
- Set of expansion task habitat cards

## Summary

This creative activity is designed to teach 11-14 year olds about the concept of adaptation – the process whereby a species evolves characteristics that enable it to survive in a particular habitat.

Using the marine environment as an example, students learn about how different species are adapted physically or behaviourally to survive in a particular type of habitat.

Working in groups, students are allocated a habitat (desert, polar or rainforest) and either a predator or prey species. Using the ARKive website (www.arkive.org), students research predator or prey species in their allocated habitat and list the physical and behavioural adaptations found.

Based on this research, groups then design and create their own new species of animal or plant. Students then present their new species to the rest of the class for discussion.

## Preparation guidelines:

1. Read through the instructions to make sure you understand the activity.
2. Print and cut out a set of habitat cards. For a class of 30 students you will need to print out 10 habitat cards.
3. Print and cut out a set of predator / prey cards. For a class of 30 you will need to print out 10 predator/prey cards.
4. Download the Adaptation PowerPoint presentation.
5. Arrange computer and internet access for students. You will need one computer per group of 2-3 students.

## How to run the session:

1. Begin by introducing the concept of adaptation by working through the Adaptation PowerPoint presentation. Using marine habitats as an example, discuss what physical and behavioural adaptations marine species have evolved to survive in the marine environment. See slide notes on the Powerpoint presentation for further guidance and information.

2. Introduce the Design a Species activity explaining that in groups the students will be allocated a particular habitat (desert, polar, rainforest) and either a predator or prey and be asked to design a new species adapted to survive in that habitat.

3. Use 'spiny skipper' a prey species adapted for the marine environment on the adaptation PowerPoint as an illustrative example.

4. Suggest what things students will need to think about when designing their own species such as what it eats, how it moves etc.

5. Introduce the students to ARKive (www.arkive.org) and demonstrate how to use the search. Use combinations of keywords to perform a more powerful search such as 'marine+predators'. When students look at an individual species page they will find information about the species physical appearance, biology (including behaviour), habitat and more.

6. Divide students into small groups of 2-3.

7. Provide each group with a habitat card (desert, polar or rainforest) and a predator or prey card.

8. Using ARKive (www.arkive.org) groups should research predator or prey species in their allocated habitat and list the behavioural and physical adaptations found.

9. Using this research, groups should then design their own new animal or plant species adapted for their given habitat using the A3 paper and pens provided. Students can be as imaginative as they like! The different adaptations featured on their species should be annotated. Allow 30-40 minutes for research and design of the species.

10. Students should then present their made-up species to the rest of the class, emphasising why particular adaptations were selected and what species on ARKive inspired them.

## Suggestions for extension activities:

- Introduce additional habitat cards such as the deep sea, rocky shore or mountains.

- Discuss the potential impacts of environmental factors such as climate change or human activities such as habitat destruction or pollution on particular habitats and the species that live there.

- Discuss how some species such as the giant panda have become too specialist within a particular habitat and how this now threatens their survival.