Jane Goodall's roots&shoots

Dustbowl Activity

What Animals Live in Dry and Dusty Environments?

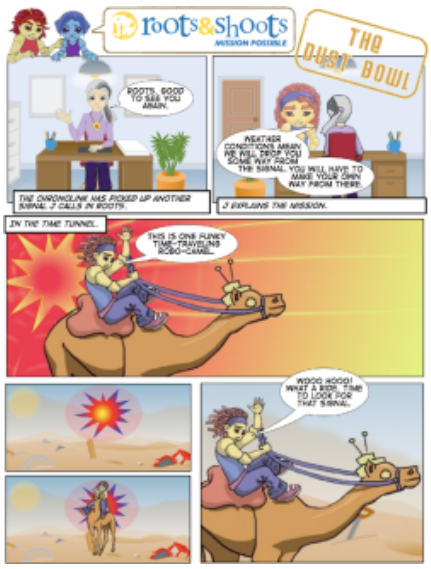
This activity is about looking at what sort of animals live in dry, dusty environments, and what special adaptations or features they have that allow them to do so.

The main things that students should take away from this activity are the differences between these animals and the ones that are native to their own local environments.

Context

This activity was provided by Jane Goodall's Roots & Shoots UK (www.rootsnshoots.org.uk) a not for profit charity run by the Jane Goodall Institute (UK).

Each Roots & Shoots activity can either stand alone or be used as part of a themed mission. Each mission is centred around a possible future that could happen if we fail to take care of people, animals and the environment today and comes with a mission briefing comic and teacher notes – find out more at http://www.rootsnshoots.org.uk/resources/.



In the Dustbowl Mission, Chrono-bot R00T5 travels to a future where crops have failed leading to dust storms, and Kent is a strange, almost lunar landscape, with little or nothing growing.

This is a big change that has happened over many years. Over time, climate changes can affect organisms in lots of different ways, and one of these is whether there are bees to pollinate the plants.

Chrono-bot R00T5 discovers that without bees to pollinate the plants, the crops fail, so R00T5 heads back to save the bees, but he needs your help too!

Jane Goodall's Roots & Shoots Awards

By completing this activity sheet you may be eligible for an award! See the end of this document for details.

How long will it take?

It is recommended that the first exercise should take no more than 1.5hrs of homework time and 2hrs of classwork time. It is recommended that the second exercise's diary be kept for at least a week.

What do I need to make it work?

Most of the background information dry climate wildlife can be found from:

- http://www.blueplanetbiomes.org/desert.htm
- http://www.blueplanetbiomes.org/desert_animal_page.htm
- http://www.desertusa.com/survive.html
- http://www.discoverychannel.co.uk/animalplanet/meerkat_manor/flash/index.shtml

If you have access to a projector with an input from a classroom computer then you may want to show your students some footage from the Discovery Channel's Meerkat Manor, documenting the lives of the Kalahari meerkat populations:

- http://www.youtube.com/watch?v=X_eVEW_Y020

It is also advised that you prepare a few pieces of A5 plain paper for each student to do a drawing of their assigned desert creature on (this will ensure that none of the pictures are too big for use later), and either some A1 or A2 pieces of coloured paper or card as a background for your class food-webs.

What things will my students create?

Each student will draw, colour and cut out a picture of a desert creature for homework. As a class they will mount these on a food-web chart.

Exercise 1 – Learn about wildlife that lives in the deserts

The first part of this activity is about identifying what sort of animals live in dry, dusty climates.

Step 1 – Class discussion and homework

Introduce the topic in class to your students. How many animals can they think of that live in dry dusty climates. Make a list of these on the board and expand your students' suggestions with some of the animals from the references above which they may not have heard of.

Try and make as large a list as you can, covering birds, mammals, insects and any other organisms that might live in such an environment. Ideally it would be good if you can have as many creatures on your list as you have students in your class.

Ask your students what sort of things might help these creatures survive in the dry climate.

Assign one or more students to each creature and have them write a one page assignment on it in their notebooks. Things they need to think about and include are:

- Where does it live?
- How does it cope with the arid climate?
- Are these physical or behavioural adaptations?
- What does it eat?
- Does anything prey on or eat it?

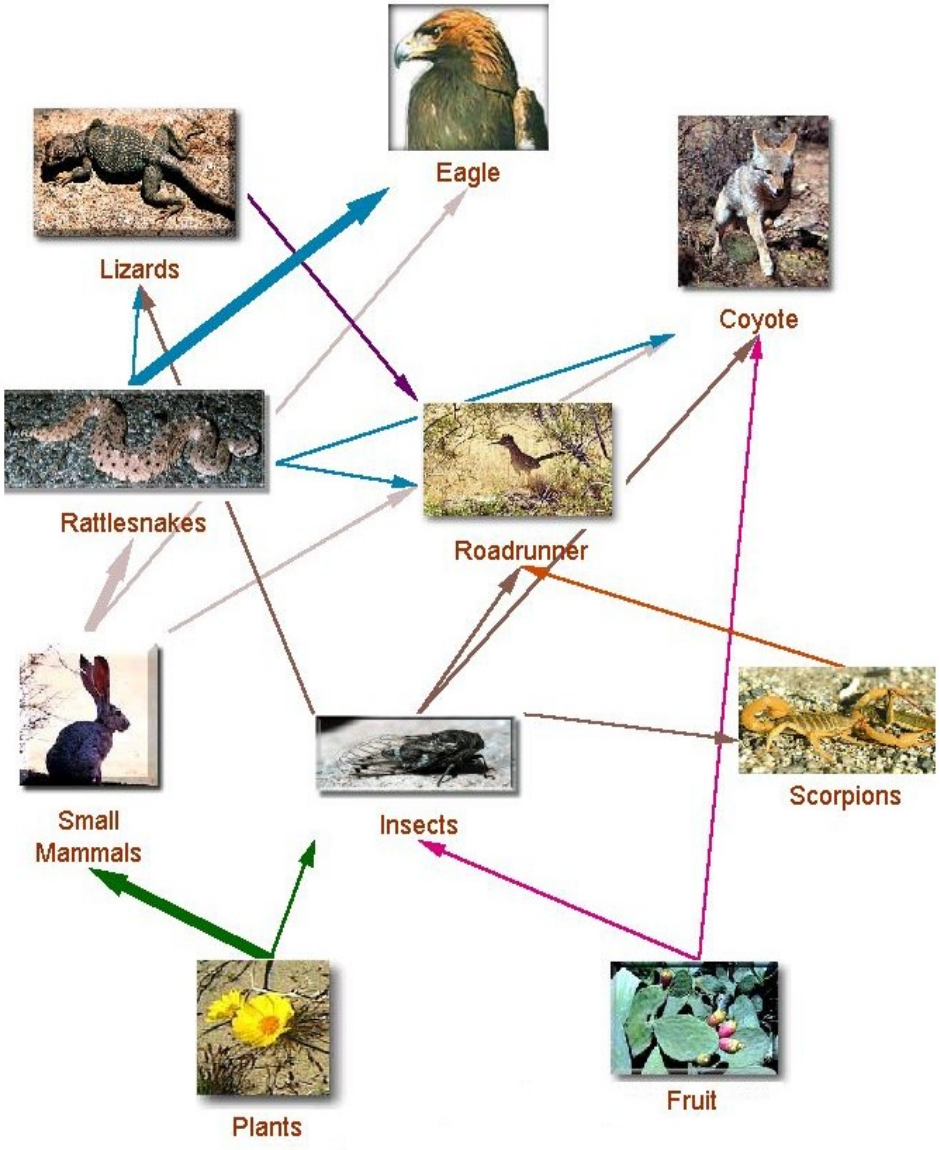
They should also each draw and colour a picture of their creature on an A5 piece of paper and cut it out.

Step 2 – Make a dry climate food web

Now that your students have learnt more about their respective creatures, help them to group their pictures by:

- Where they come from.
- Where they fit in the food-web.

Show them how to arrange their pictures as part of a food-web - a good example to show them is this:



[Adapted from :http://www.chariho.k12.ri.us/faculty/kkvre/units/adaptations/desertfood.jpg]

Using larger sheets of coloured card or paper as the background, mount the pictures of the creatures in a suitable arrangement and get the students to fill in the links between each one with arrows and labels. Display these in the classroom or elsewhere in the school.

Further work: Your class may want to give a short presentation about their findings to the rest of the school.

Exercise 2 – Nature watch!

The second part of this activity expands on the students understanding of how some creatures are specially suited to living in dry conditions and how these adaptations might help locally found creatures to cope with a change in climate.

Step 1 – Wildlife diary

Get your students to look out for and record any sightings or signs of local wildlife. Suggest that they consider looking for wildlife in the following places:

- Back gardens,
- Local parks and green areas,
- Any local waterways, ponds and lakes.

Even if they do not see any creatures, do they hear them? Can they identify local birds or animals from the sounds they make? These links can help you:

- http://www.bbc.co.uk/nature/programmes/radio/dawn_chorus/dawn_gallery.shtml
- http://www.bbc.co.uk/nature/animals/wildbritain/look_around/birds/1b.shtml
- http://www.bl.uk/collections/sound-archive/listentonature/soundsloc/o80uk.html

You can also look for droppings, signs of burrowing and evidence of feeding.

Get them to make a note of as many wildlife sightings as possible in their exercise books.

Step 2 – Class discussion

Make a list of all the local wildlife recorded by your students on the board. Against each one, get your students to suggest ways that the creature could either physically or behaviourally adapt to survive in a drier climate. Are any of the animals that are already adapted to drier, barren climates related to the local wildlife your students have observed?

The main idea your students should take away from the discussion is that if humans are careless with their use of the environment and a dustbowl climate were to happen again then, we are going to change the environments of other creatures and force them to change to survive.

Further work: In the case of physical adaptations, it might be fun for your students to imagine how the animals found locally might change to cope with arid climates. Get them to draw pictures of what they think adapted wildlife might look like.

Why not enter the Jane Goodall's Roots & Shoots Awards?

This resource was provided by Roots & Shoots UK, a not for profit charity run by the Jane Goodall Institute (UK). One of the aims of Roots & Shoots is to inspire young people to care for people, animals and the environment, and one of the ways that we like to do this is by running annual awards every December.

Every school that uploads a story about their activities to the Roots & Shoots website at www.rootsnshoots.org.uk automatically wins a bronze award certificate to display at school, and the best stories win the chance for you and your children to meet Dr Jane Goodall herself along with a host of other prizes.

See http://www.rootsnshoots.org.uk/awards/ for details about the awards and information on how to upload your 'mission update' story and win!

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