

Fifty million years into the future Investigating how animals become adapted to their environments

Fictional animals from 50 million years in the future have been 'invented' based on the principles of evolution. These creatures can be used to highlight how organisms become adapted to their environments.

Ask the pupils to:

- imagine what Earth might be like 50 million years in the future. Assume that mankind is extinct.
- consider the imaginary Saurantel shown on page 3. It has evolved from present day rodents and inhabits hot, wet tropical regions.

In small groups, discuss the answers to the following questions and write down your results:

- where does it live?
- what does it eat?
- how does it catch its prey?
- how does it get water?
- how does it move?
- is it fast or slow?
- how is it adapted to its environment?
- consider the imaginary Manspimon on page 3 which has also evolved from present day rodents. Answer the same questions for this creature.
- imagine an animal which is common today, 50 million years in the future in a particular environment. Choose from one of the following: hot, wet tropical rainforest; desert; hot, open grasslands; cool, open grasslands; coniferous forests; polar regions. Draw your future animal and try answering all the questions above for your new creation.



Saurantel, drawing by Nicholas Davidson, aged 8



Manspimon, drawing by Tamsin Davidson, aged 5

The back up

Title: Fifty million years into the future

Subtitle: Investigating how animals become adapted to their environments

Topic: Evolution of life - adaptations to environment and natural selection

Age range of pupils: 5 upwards

Time needed to complete activity: 20 minutes or longer depending on the animal creations!

Pupil learning outcomes: Pupils can:

- work out how two fictional animals might have adapted to their particular environments;
- realise that all organisms become adapted to the

environment in which they live;

- create fictional animals of their own and give them special characteristics which show how they are adapted to their environments;
- realise that if the environment changes, the organisms that cannot adapt will become extinct, while those with characteristics that help them to survive the new conditions, will thrive;
- appreciate that there is interdependence between animals and plants.

Context: Animals in the future will adapt to their environments just as they have in the past.

Pupils often do not appreciate that animals and plants are still evolving and adapting to their changing environments.

The Saurantel, according to Nicholas

- where does it live? *It lives in equatorial regions close to rivers.*
- what does it eat? *It eats under-water plants which it pulls up by twisting its flexible trunk around the stems.*
- how does it catch its prey? *It is a herbivore.*
- how does it get water? *There is always plenty of water in its hot, wet, tropical environment.*
- how does it move? *It walks on four legs.*
- is it fast or slow? *It is slow moving.*
- how is it adapted to its environment?
 - *green-grey body colour so it is well camouflaged;*
 - *nostrils are on a trunk enabling it to breathe while the rest of its head is under water when searching for food;*
 - *large, splayed feet for easy walking on swampy ground and on mud in the rivers;*
 - *brightly coloured head with spikes and a frill for attracting a mate;*
 - *large brush-like tail for spreading its scent and marking its territory;*
 - *big eyes because it is active at dawn and dusk and needs to be able to see in muddy water.*

The Manspimon, according to Tamsin

- where does it live? *It lives in temperate forests.*
- what does it eat? *It eats bugs that it finds on the forest floor.*
- how does it catch its prey? *It uses the paddles on its feet to sweep leaves aside to look for bugs.*
- how does it get water? *It gets water from puddles, streams and rivers.*
- how does it move? *It walks on six legs but can climb trees.*
- is it fast or slow? *It moves very quickly when it wants to catch something.*
- how is it adapted to its environment?
 - *reddish-brown body colour for camouflage;*
 - *it can flatten itself into the carpet of dead leaves to hide from predators;*
 - *long tail to wrap around branches to help it climb trees;*
 - *map of the forest on its tummy to help to find its way around;*
 - *bright hat-like top to its head to attract a Mummy Manspimon.*

Following up the activity:

- Humans may well have become extinct in 50 million years; what might have caused this extinction? (Possible reasons include: over-population leading to widespread famine, water or energy supply problems, inability to control disease, natural disasters or man-made disasters.)
- Think about how humans might evolve in the future, e.g. better developed thumbs for sending text messages?
- Pupils could draw pictures of their ideas of an alien, then work out from its characteristics, the environmental conditions of the alien's planet.

Underlying principles:

- All organisms are adapted to the environment in which they live.
- Organisms develop particular characteristics in particular environments.

Thinking skill development:

Listing adaptations to particular environments involves construction. Thinking of life 50 million years from now, with humans extinct, could involve cognitive conflict. Discussion in groups about adaptations to environment involves metacognition.

Resource list:

- copies of page 3
- plain paper
- pencils for drawing/colouring

Useful links:

Search for images of 'future animal evolution' using a search engine, like Google. Try to interpret what you find there.

'After Man: A Zoology of the Future' by Dougal Dixon (Granada Publishing 1981) - can be accessed from the internet.

Source: Adapted by Elizabeth Devon from an activity in the Earth Science Education Unit's 'Life on Earth', Teaching KS3 Biology.
<http://www.earthscienceeducation.com>

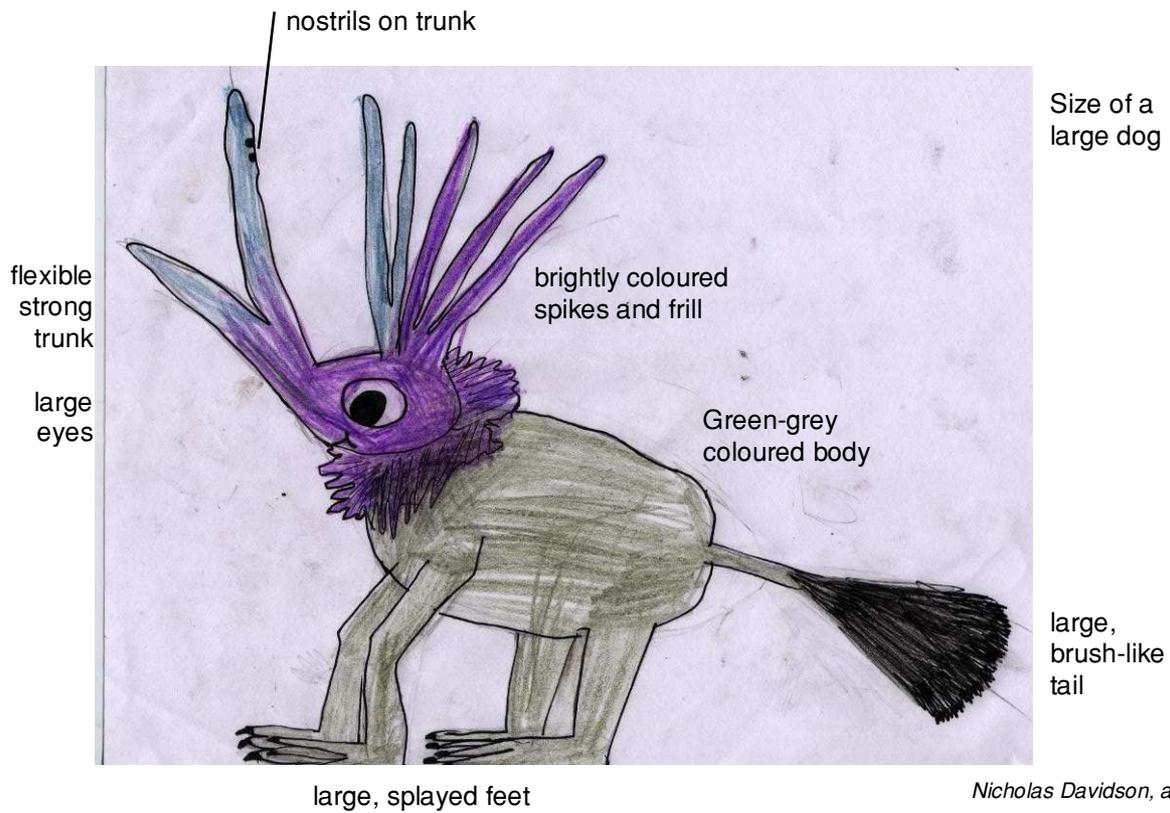
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Saurantel - plant-eater living in hot, wet, tropical areas



Manspimon - lives in temperate forests and eats bugs

