

The ARKive Darwin KS4 education materials cover a number of subjects in KS4 Biology, such as Darwin, evolution, natural selection, classification and variation, using Darwin and his theory of evolution by natural selection as the exploratory vehicle.

Included within the package are: an ARKive themed classroom presentation, a number of classroom activities and links to additional ARKive internet multi-media resources. All the resources provided can be used alongside your existing teaching material, individually or as a complete set.

In addition, the ARKive website contains a wealth of multi-media that teachers can tailor to the specific needs of their individual teaching group. The material ARKive has put together is intended to give an idea of how ARKive can be used to help teach a variety of subjects.

The components of the ARKive Darwin education materials for KS4 are detailed below:

Class presentation

- KS4 Classroom presentation - Charles Darwin and Natural Selection.ppt
- MyARKive scrapbook of images: Charles Darwin and natural selection:
www.arkive.org/charles-darwin-and-natural-selection

Activity themes:

Evolution: Descent with modification

- KS4 Activity - Evolution - Descent with modification - classroom material.ppt
- KS4 Activity - Evolution - Descent with modification - handout.pdf
- MyARKive scrapbook: Evolution - Descent with modification:
www.arkive.org/evolution-descent-with-modification
- KS4 Activity – Evolution – Descent with modification – teacher's notes: see below

Evolution: Family ties

- KS4 Activity - Family ties - classroom material.ppt
- KS4 Activity - Family ties - handout.pdf
- MyARKive scrapbook: Family ties:
www.arkive.org/family-ties
- KS4 Activity - Family ties - teacher's notes: see below

Evolution: Peppered moth - A modern example of evolution

- KS4 Activity - Evolution - Peppered moth - classroom material.ppt
- KS4 Activity - Evolution - Peppered moth - handout.pdf
- ARKive link to peppered moth:
www.arkive.org/peppered-moth

KS4 Activity - Evolution

Part 2 - Answers

Question 4.

Platypus

The distinctive features that make the platypus so instantly recognisable are its duck-like bill, dense, waterproof fur, webbed feet, and broad, flattened tail. Although, the characteristic muzzle of the platypus resembles that of a duck, it is actually soft and rubbery, and contains no true teeth.

Pichi

Like other armadillos, the upper surface of the pichi's body, including much of the head, back, sides, and tail, comprises flexible skin overlaid with armour-like bony plates and tough horny skin. Fine blackish hairs and long yellow, brown and white bristles protrude between the individual plates on the back, while coarse yellowish hairs cover the soft skin on the underside of the body.

KS4 Activity - Family ties

Answers

1. Old world monkeys have a non-prehensile tail, or no tail, and downward facing nostrils.

New world monkeys have outward facing nostrils and some groups have a prehensile tail.

2. Gibbons and orang-utans have long arms and legs with the ability to rotate the arm in the shoulder, allowing them to 'swing' or brachiate through the trees. All gibbons and orang-utans have grasping hands and feet and no tail.

3. Whilst on the ground gorillas and chimpanzees are generally quadrupedal, walking on the knuckles of their forelimbs and the soles of their feet.

4. Behavioural similarities between chimpanzees and humans:

Tool use

Meat eaters - using group cooperation to hunt

Communication - expressions, postures and calls

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