

## Adaptations (wild animals kept as pets) – Teacher Resource

Slide	Focus	Sequence of activities and content	Further notes / Resources
1 (title)	Born Free	Born Free is a wildlife charity dedicated to wild animal conservation and welfare. Each year we get many reports of animals being kept in horrendous captive conditions, including zoos, circuses and other captive facilities, in addition some are even kept as pets.	<ul style="list-style-type: none"> <li><a href="#">Born Free</a></li> </ul>
2	Learning Objectives	<ul style="list-style-type: none"> <li>Explain the different adaptations animals use / have evolved in order to survive</li> <li>Be able to identify how these adaptations provide an advantage in their natural habitat</li> <li>Explain why some animals are not suitable as pets</li> </ul>	<p><b>Evolution:</b> The theory of gradual biological change over a long period by the natural selection of heritable traits among those animals slightly better adapted to their environment, and more likely to produce descendants</p>
3	Physical adaptations	<p>Wild animals have complex social, physical and behavioural needs. They have <b>evolved</b> to live in specific environments by developing adaptations that offer them a better chance of survival in that environment.</p> <p><u>Examples of physical adaptations include:</u></p> <ul style="list-style-type: none"> <li><b>Flight:</b> using wings <ul style="list-style-type: none"> <li>Feathers are also used by many species but their structure varies – some are for flight (e.g. eagles), others are to help regulate body temperature helping them to keep warm or cool (e.g. ostriches) and some help the species to ‘fly’ through water (e.g. penguins). In addition feathers are not always necessary for flight (e.g. bats and insects)</li> </ul> </li> <li><b>Camouflage:</b> a colouring that helps an animal to hide in its natural environment using skin, feathers, hair or scales. In addition some animals can actively change their colour and sometimes even shape to hide from predators (e.g. octopus) while others cover themselves with a coating or housing that allows them to blend in with their environment (e.g. hermit crab, cased caddis fly larvae).</li> </ul>	<p><b>More advanced:</b></p> <p><b>Flight cont.:</b> Some scientists define flight as controlled decent which would mean wings are not always necessary (e.g. flying squirrels, flying fish, ornate flying snake).</p> <p><b>Camouflage cont.:</b> Some species also use chemical camouflage (e.g. filefish which pick up the smell of the coral they feed on) to mask themselves from predators that use smell to track down prey. In addition,</p>

		<ul style="list-style-type: none"> <li>• <b>Resource conservation:</b>, this allows them to travel long distances or last long periods of time without drinking helping them to survive in arid and dessert environments (e.g. camels)</li> <li>• <b>Artificial size:</b> making oneself look bigger than one is, used to deter competitors (e.g. lion’s mane) or predators (e.g. puffer fish)</li> <li>• <b>Mimicry:</b> to hide (e.g. stick insect), deter predators (e.g. making themselves look like a different but poisonous or dangerous species)</li> <li>• <b>Swimming:</b> using webbed feet, gills, scales, blowholes (e.g. whales) as well as fins and sometimes even wings and feathers (e.g. penguins)</li> <li>• <b>Running:</b> using long muscular legs, lightweight skeletons, flexible bodies and claws</li> <li>• <b>Heat regulation:</b> some animals are able to regulate their own body temperature (mammals) while others rely on the sun to warm them up (lizards and snakes). Those that regulate their own body temperature have physical adaptations that help, for example large ears to cool down (elephants), thick fur (polar bears) or blubber (whales) to keep warm.</li> <li>• <b>For physical defence:</b> Some animals have a natural physical defence against predators such a hard shell (e.g. turtle) or defensive spikes (e.g. hedgehog)</li> <li>• <b>For diet:</b> in order to eat certain foods specific physical adaptations are required, such as a strong beak to break open nut and seed pods (e.g. parrot – herbivore), large teeth and claws to help capture prey (e.g. tiger – carnivore), opposable thumbs and dextrous fingers to strip bark and pick out the best leaves (e.g. gorillas – herbivores)</li> </ul>	<p><i>aposematic</i> colouring is used to warn others that they’re poisonous/ dangerous.</p> <p><b>Mimicry cont.:</b> some species use mimicry to lure prey (e.g. crab spider looking like a flower)</p> <p><b>Diet cont.:</b> Some species have specially adapted digestive systems (e.g. koalas can detoxify the poisonous chemicals in the leaves of gum trees)</p>
4	Social adaptations	<p><u>Social adaptations include:</u></p> <ul style="list-style-type: none"> <li>• <b>Solitary living:</b> enables the individual to live in areas of scarce resources as there is less competition for food or space (e.g. tigers, polar bears)</li> <li>• <b>Communal living:</b> this can be used to increase safety as larger groups of animals are safer from predators (e.g. wildebeest), promote emotional wellbeing (e.g. primates, hyenas), enable cooperative</li> </ul>	<p><b>More advanced:</b></p> <p><b>Communication:</b> This could be acoustic (sound), bioluminescence (light), chemical (smell) or tactile (touch) depending on the species and</p>

## Born Free Foundation, May 2018

		<p>hunting (e.g. orca) and provide warmth (e.g. penguins) – sometimes a species will gain multiple benefits from an adaptation.</p>	<p>allows individuals to find mates, establish dominance, defend territory, coordinate group behaviour and care for young.</p>
5	Behavioural adaptations	<p><u>Behavioural adaptations include:</u></p> <ul style="list-style-type: none"> <li>• <b>Migration:</b> the seasonal movement of a species from area to another for mating and/or to seek increased food availability (e.g. swallows, Canada geese)</li> <li>• <b>Hibernation:</b> to conserve energy while resource availability (food) is low over the winter months (e.g. bears)</li> <li>• <b>Attracting a mate:</b> a mating dance or display can be used to indicate physical fitness to a prospective mate</li> <li>• <b>Activity:</b> some species are active during the day (diurnal, e.g. robins) and some are active at night (nocturnal, e.g. bats) this can be for many reasons including to avoid the extreme heat of the day time in deserts for example or to reduce competition <ul style="list-style-type: none"> <li>○ Nocturnal animals have special adaptations to allow them to see, forage and attract mates in the dark</li> </ul> </li> <li>• <b>Home:</b> some species live in trees to avoid ground predators (arboreal), others live on the ground, for example grass eating species (ground dwelling) while others live completely airborne (some sea birds only come ashore to nest) or completely underground (moles)</li> </ul>	<p><b>More advanced:</b></p> <p><b>Relationships:</b> some animals live symbiotically (cooperatively for mutual benefit such as clown fish and sea anemones) while others are parasitic (one species living off another to the detriment of one);</p>
6	Wild animals kept as pets	<ul style="list-style-type: none"> <li>• <b>Wild</b> animals do not have a history of domestication and individuals are likely to have been sourced directly or within a few generations from wild populations.</li> <li>• <b>Pet:</b> a pet is considered as an animal kept within a domestic setting, where its main purpose is for personal interest, entertainment, or companionship.</li> <li>• <b>Wild animals kept as pets:</b> may be considered any animal of a species that is not domesticated in the UK, and that is bred, sold or</li> </ul>	<ul style="list-style-type: none"> <li>• Endcap – <a href="#">Exotic Pets (EU)</a></li> <li>• Born Free and Blue Cross – <a href="#">One Click Away, The Online Trade (UK)</a></li> <li>• Born Free – <a href="#">Primates as Pets (UK)</a></li> </ul>

		kept as a pet (e.g. snake, big cat, hedgehog)	
7	Case Study 1: African grey parrot	<ul style="list-style-type: none"> <li>African grey parrots (<i>Psittacus erithacus</i>) are classified as 'Endangered' by the International Union for the Conservation of Nature (IUCN): yet they are "one of the most popular avian pets in Europe, the United States, and the Middle East due to their long life span and unparalleled ability to mimic human speech and other sounds".</li> <li>They are both bred in captivity and caught from the wild -it is thought that over a million birds have been taken from the wild so far.</li> </ul>	<p>The number taken from the wild has resulted in their listing on CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) Appendix II, limiting their legal trade.</p> <p>The trade in wild caught wild animals kept as pets causes suffering to millions of individuals - for every wild animal captured and sold as a pet, many more may die in transit or during capture. In addition, the legal trade in wildlife (such as African grey parrots) can increase the demand for animals through illegal trade routes.</p> <ul style="list-style-type: none"> <li>Endcap – <a href="#">Exotic Pets (EU)</a></li> <li><a href="#">IUCN Red List</a></li> <li><a href="#">Wildlife Trade</a></li> </ul>
8	Adaptations	<p><b>Key adaptations:</b></p> <ul style="list-style-type: none"> <li>A strong beak for eating seeds and fruit</li> <li>Wings and feathers to enable flight - allowing them to move, escape predators and search the tree tops for food</li> <li>Feet that allow them to hold food and grip branches high up in the canopy</li> <li>They live in large flocks (roosts) that can contain as many as 10,000 individuals</li> </ul>	

## Born Free Foundation, May 2018

		<ul style="list-style-type: none"> <li>○ Although it is more common to see groups of around 30 birds feeding together</li> <li>● In some areas they also move from one area of forest to another (migration) during the dry season</li> </ul>	
9	Natural habitat	<p><b>Environment:</b></p> <ul style="list-style-type: none"> <li>● They are native to (found in) west, central and eastern Africa.</li> <li>● They usually live in dense forest, but they can also be found at forest edges, clearings and wooded savannahs</li> </ul>	
10	Case Study 2: Roque the tiger	<p><b>Roque's story:</b></p> <ul style="list-style-type: none"> <li>● He was rescued from a Spanish pet shop in 1998 after being seen for sale in the window</li> <li>● He now lives in Born Free's Tiger Sanctuary in India – he cannot return to the wild as he has not learnt how to survive from his mother but we can provide the next best thing:             <ul style="list-style-type: none"> <li>○ The correct climate</li> <li>○ The correct food</li> <li>○ Space in a semi natural environment (forest)</li> <li>○ Privacy from humans</li> </ul> </li> </ul> <p><b>ART: How are tigers adapted to their environment?</b></p> <ul style="list-style-type: none"> <li>● <i>Provide a copy of the 'Student Resource' to each student.</i></li> <li>● <i>Task: use the sheet to illustrate any physical (or other) adaptations tigers have that allow them to survive in their natural habitat.</i></li> </ul> <p>Helpful notes:</p> <ul style="list-style-type: none"> <li>● Solitary to reduce competition for resources</li> <li>● Camouflaged, they have stripes so that they can hide amongst the trees</li> <li>● Large size (up to 3m long) with powerful legs, jaw and paws to help them hunt             <ul style="list-style-type: none"> <li>○ In fact tigers are the biggest of the big cats. The term 'big cat'</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● <a href="#">Adopt Roque</a></li> <li>● <a href="#">Tigers</a></li> </ul>

## Born Free Foundation, May 2018

		<p>is usually used to describe the four largest members of the Panthera genus, namely: tigers, lions, leopards and jaguars. In addition snow leopards, pumas and cheetah are also sometimes included in this group.</p> <ul style="list-style-type: none"> <li>○ Big cats all have the following things in common: <ul style="list-style-type: none"> <li>▪ Their size</li> <li>▪ They are carnivores</li> <li>▪ They have fur that is coloured or patterned which acts as camouflage</li> <li>▪ They have retractable claws (although cheetah do not have the protective sheath for their claws to retract into, so they are always partially visible).</li> <li>▪ They roar (with the exception of cheetah and snow leopards)</li> </ul> </li> </ul>	
11	Case Study 3: King the lion	<p><b>King, the lion cub</b>, was found in a small cage in a Paris apartment in October 2017... he was being kept as a pet.</p> <p><b>Discussion:</b> Thinking about what you have learnt, why is this not a suitable environment for King to live in?</p> <ul style="list-style-type: none"> <li>• <b>Physical adaptations:</b> Adult lions are large with powerful legs, jaw and paws to help them hunt (this includes sharp claws and teeth)</li> <li>• <b>Social adaptations:</b> Lions are the most social of the big cats living in prides of 4 to 6 adults - all the females in the pride will be related to one another</li> <li>• <b>Behavioural adaptations:</b> Lions are most commonly active at night when it is cooler</li> <li>• <b>Space:</b> Their territory is, on average, just under 50 square miles per adult (that is over 18,000 football pitches each)</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Lions</a></li> </ul>
12	Discussion	<ul style="list-style-type: none"> <li>• What have we learnt about animal adaptations?</li> <li>• How is life as a pet different to life in the wild?</li> <li>• Why do you think people keep wild animals as pets?</li> <li>• <u>Possible additional question:</u> Do you think people should keep wild</li> </ul>	

## Born Free Foundation, May 2018

---

		animals pets?	
13	Appeal	Remember King... well he was rescued by the police and a local charity and given a temporary home in Belgium. Unfortunately, like Roque, King cannot be returned to the wild but Born Free hopes to offer him a new, permanent home in Born Free's Big Cat Sanctuary in South Africa in the next few months.	<ul style="list-style-type: none"> <li>• <a href="#">Appeal</a></li> </ul>
14	A new home		<ul style="list-style-type: none"> <li>• <a href="#">Sanctuary</a></li> </ul>
15	What you can do	<ul style="list-style-type: none"> <li>• Tell people what you have learnt today</li> <li>• Fundraise for King's move</li> <li>• Adopt a rescued animal</li> <li>• Become a member of Wild Crew via <a href="http://www.bornfree.org.uk">www.bornfree.org.uk</a> - it's our free kids club!</li> </ul>	