

Designs for Life - adaptations and survival



Summary

This factfile serves as a handy check sheet when observing how animals are adapted to their habitats. It also summarises and consolidates some of the other factfiles.

Adapt or die

All animals have special physical and behavioural features or adaptations that help them to survive in particular habitats. When observing animal adaptations, the following features and questions serve as a handy checklist.

FEATURE	CHECK LIST
Head	Its shape, position on the body. Is there an eye stripe for camouflage? 
Ears	Bird ears are covered with feathers. Many water animals have ears that are small and sited near the top of the head (like Water Voles and Hippos).
Eyes	Where on the face? Ducks have sideways facing eyes to spot danger. Many predators have forward facing eyes. Water animals like Hippos, Crocodiles and Frogs have eyes on top of the head. What colour is the eye? Is there an eyestripe? Are there eye lashes? 
Mouth	Is it large and gaping like a frog's mouth? Is the tongue long, short, rough or smooth?
Bill	What shape and size is it? What job does it do? Are there jagged edges (serrations) or minute grooves (lamellae) as with many wildfowl? 
Teeth	Only mammals have true teeth. Is it a herbivore, carnivore, omnivore?
Limbs	How many legs? Two? Four? Six (insects)? Eight (spiders)? More? Are they shaped as paddles, oars or flippers? Are there fins? Are the legs long or short in relation to the rest of the body? How does the animal move on land and in water?
Wings	Wings are forelimbs. What shape are they? How does the bird (or insect or bat) fly? Look at bird feathers - can you see primary and secondary feathers? Look at the downy feathers of ducklings. 

FEATURE	CHECK LIST
Speculum	Ducks like Mallards have an iridescent patch on their wings to attract a mate or to keep flocks together in flight. 
Colour and pattern	For hiding or recognition? Used in display? Do males and females look different? Is this true for the entire year?
Feet	Are they webbed? Are they webbed and lobed (like Coot feet)? 
Skin	Hairy? (mammals), feathered? (birds), dry and scaly? (reptiles) moist and unscaly?(amphibians). Is it waterproof? Is there an external skeleton? (insects - especially water beetles etc.) Is there a shell? (water snails) or larval case? (cased caddisflies)
Gills, noses and external breathing structures	Amphibian tadpoles have external gills. Look for fish gill coverings. Freshwater shrimp gills are attached to swimming limbs. Water Scorpions and Mosquito larvae have long breathing tubes, enabling them to breathe air whilst underwater. Mammals like Hippos, Otters and Seals have closeable nostrils on top of the head.
Tail	Vertical (e.g. Stickleback, tadpole) or horizontal (eg Beaver)? Is it rudder-like? 
Size and shape	How big is your water bird compared to, say, a sparrow, duck or heron? Is the shape streamlined? What are the relative proportions of the legs and neck to the body? Is the shape elongated (dabbling ducks) or rounder (diving ducks)?
Behaviour	What is the animal doing? Is it by itself or in a group? Is it resting, moving, feeding, chasing off rivals, interacting with companions, mating, displaying?

