Reptiles and Birds
Objectives

- **Explain** the traits that allow reptiles to live on land.
- **Describe** the characteristics of an amniotic egg.
- **Name** the four groups of modern reptiles, and give an example of each.
- **Describe** two kinds of feathers.
- **Describe** how a breathing, muscles, and skeleton help it fly.
- **Identify** the differences between flightless birds, water birds, perching birds, and birds of prey.

I. Characteristics of Reptiles

A. Reptiles are well adapted for life on land.

B. **Thick Skin:** Reptiles have thick skin that forms a watertight layer that keeps cells from losing water.

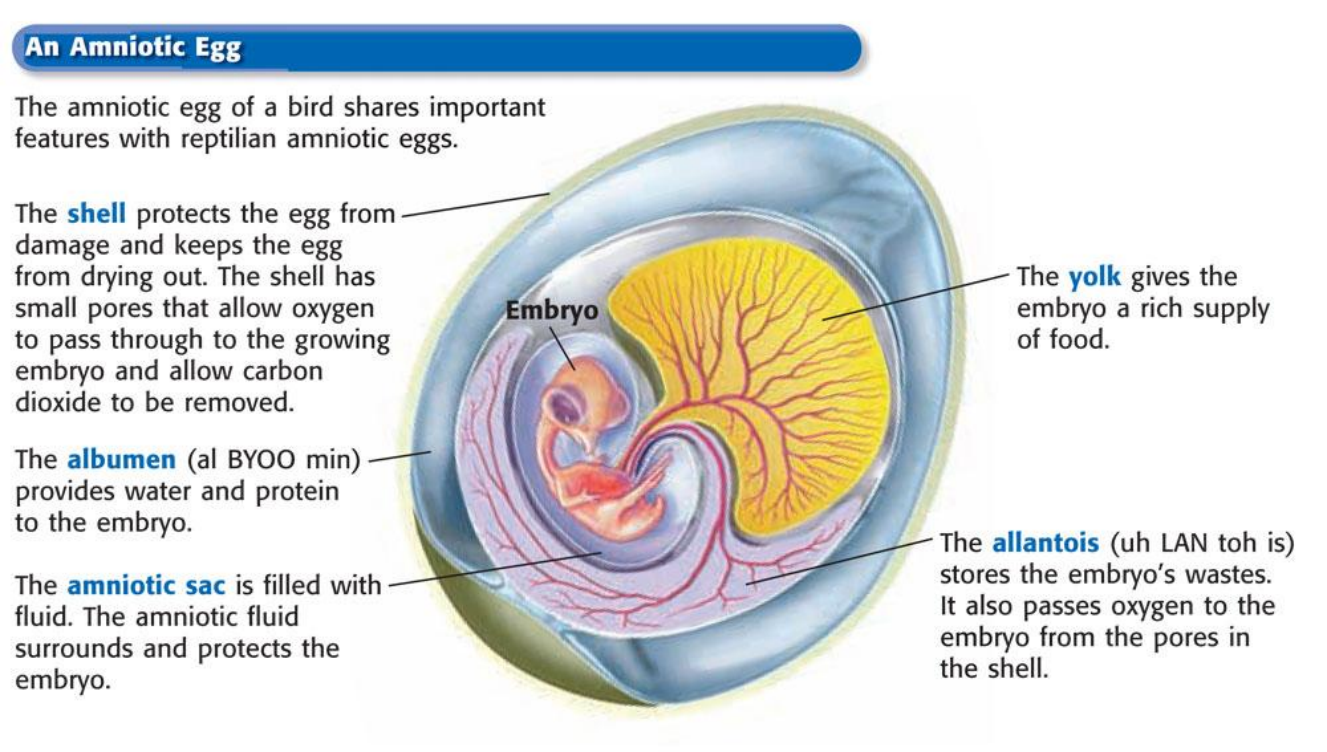
C. **Body Temperature:** Nearly all reptiles are ectotherms. They are active when it is warm outside, and they slow down when it is cool. They do not live in very cold environments.

I. Characteristics of Reptiles

D. **The Amazing Amniotic Egg:** An egg that holds fluid that protects the embryo is called an **amniotic egg.** Reptiles, birds, and mammals have amniotic eggs.

E. Reptiles eggs also have a shell. The shell protects the embryo and keeps the egg from drying out.

F. A reptile's eggs can be laid under rocks, in the ground, or even in the desert.



II. Kinds of Reptiles

A. **Turtles and Tortoises**
Generally, tortoises live on land, and turtles spend all or much of their lives in the water. However, even sea turtles come on land to lay their eggs.

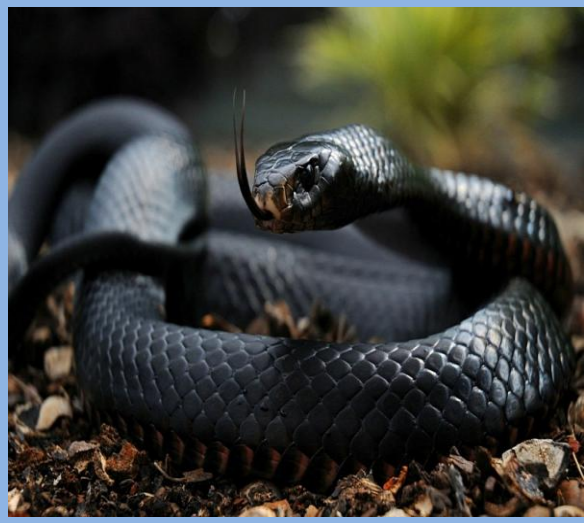
1. The trait that makes turtles and tortoises so unique is their shell. The shell gives them protection, but also makes them slow and inflexible.

II. Kinds of Reptiles

B. **Crocodiles and Alligators:** Crocodiles and alligators spend most of their time in the water. Because their eyes and nostrils are on the top of their flat heads, they can hide with most of their body under water.

II. Kinds of Reptiles

C. Snakes and Lizards Today, the most common reptiles are snakes and lizards.



1. Snakes have many adaptations for hunting. They can “taste” if their prey is nearby.
2. Some snakes have venomous fangs for killing prey. Other snakes squeeze their prey until they suffocate it.
3. Snakes swallow their prey whole.
4. Most lizards eat small insect and worms, but some lizards eat plants.
5. Many lizards can break their tails off to escape predators and then regrow new tails.

II. Kinds of Reptiles

D. Tuataras Tuataras live on only a few islands off the coast of New Zealand.

1. Although they look similar to lizards, the two reptiles have some obvious differences. Tuataras do not have visible ear openings.

2. Unlike other reptiles, tuataras are most active when the temperature is low.

III. Characteristics of Birds

A. Birds share many characteristics with reptiles such as being vertebrates, having scales on parts of their bodies, and laying amniotic eggs with shells.

B. Birds have unique characteristics such as laying eggs with hard shells, and having feathers, wings, and a beak.

C. Birds can also maintain a constant body temperature.

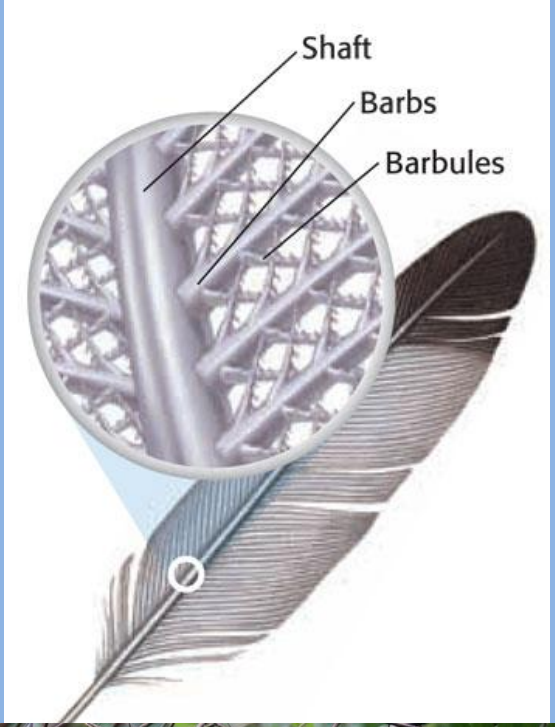
IV. Feathers

A. Feathers help birds stay dry and warm, attract mates, and fly.

B. Preening and Molting Birds take good care of their feathers. They use their beaks to spread oil on their feathers in a process called **preening**. Preening helps waterproof the feathers and keep them clean.

C. Molting is the process of shedding old feathers and growing new ones.

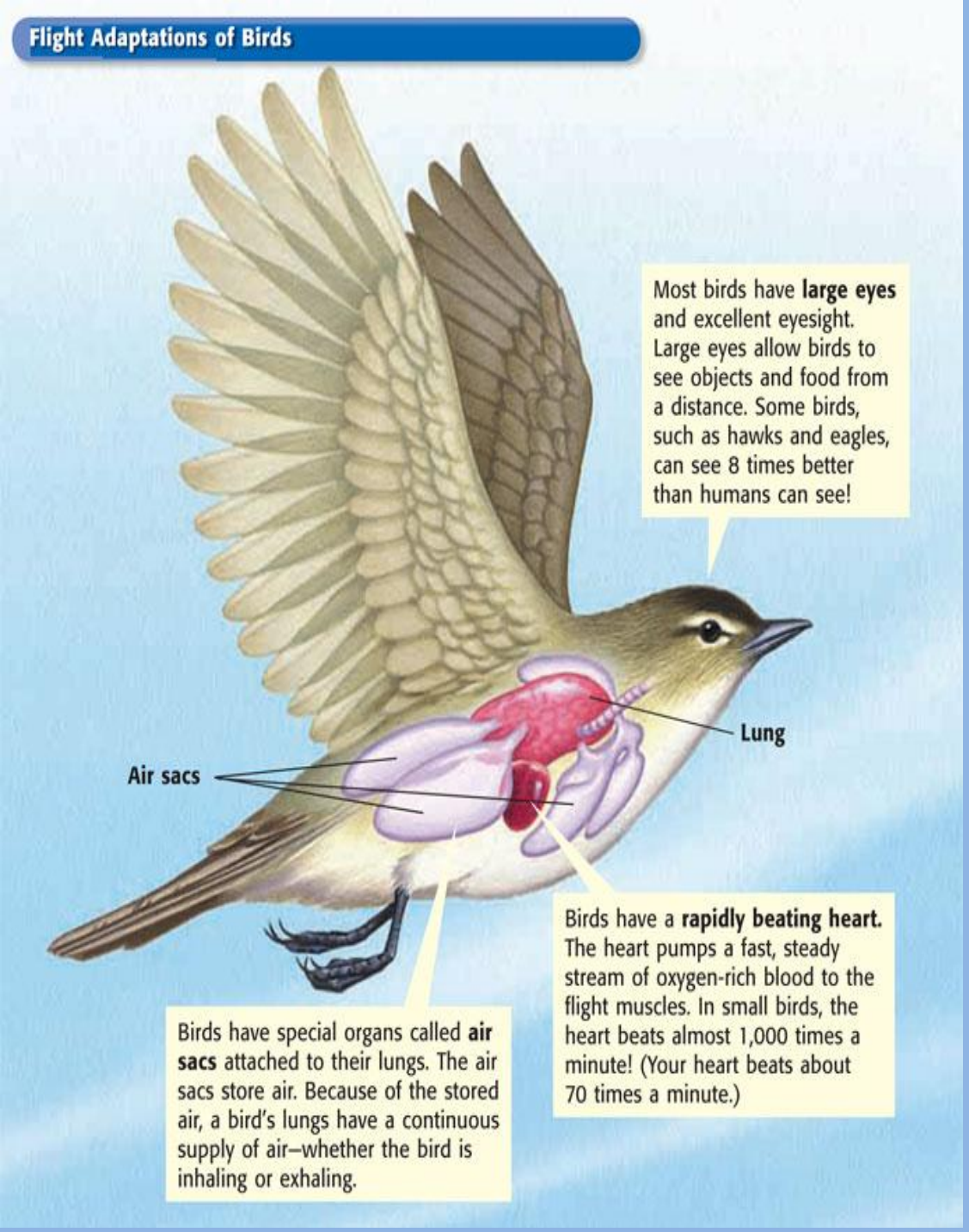
IV. Feathers



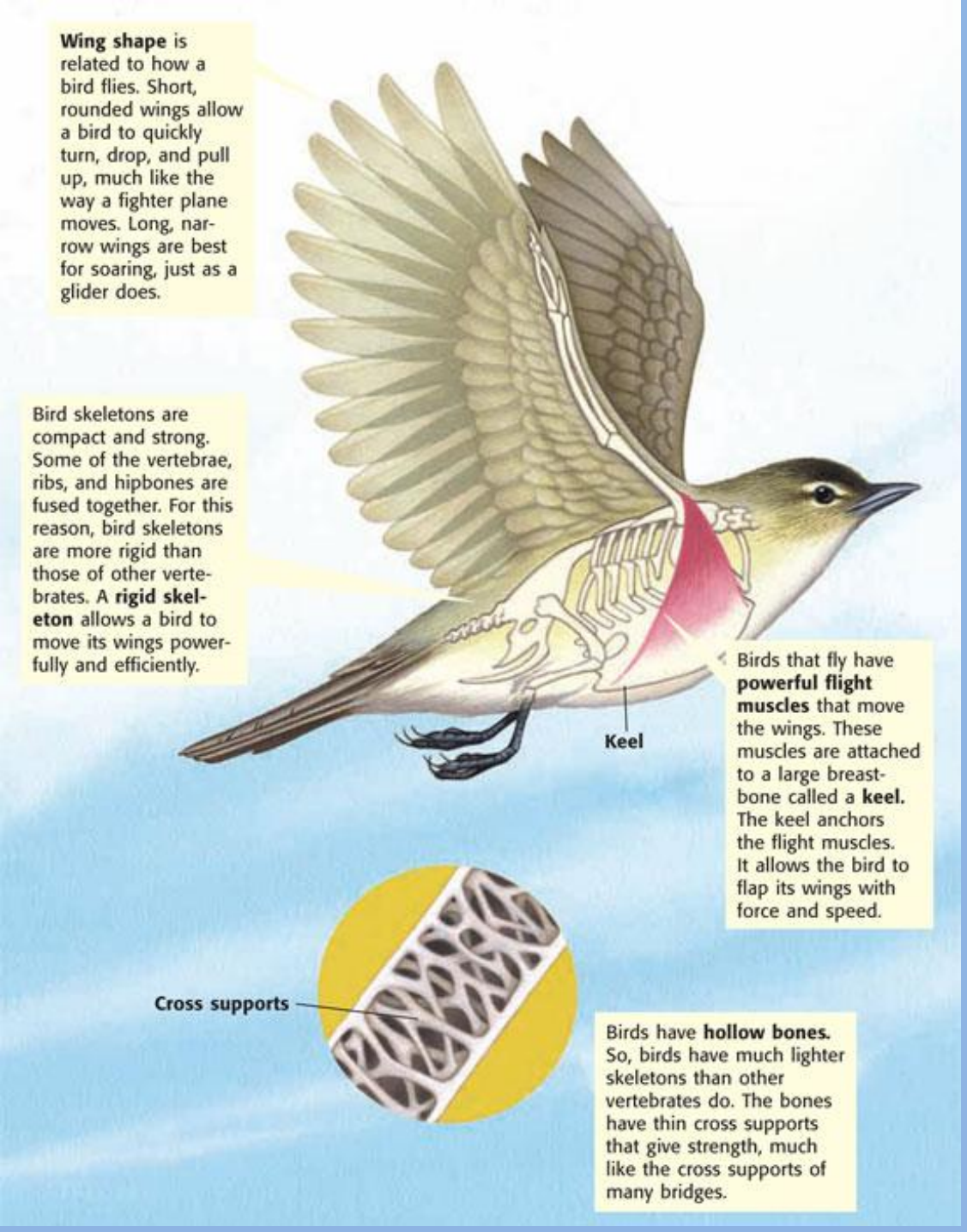
D. Two Kinds of Feathers
Fluffy feathers that lie next to a bird's body are called **down feathers**. Down feathers help birds stay warm.

E. **Contour feathers** are stiff feathers that cover a bird's body and wings. Contour feathers help some birds attract mates and fly.

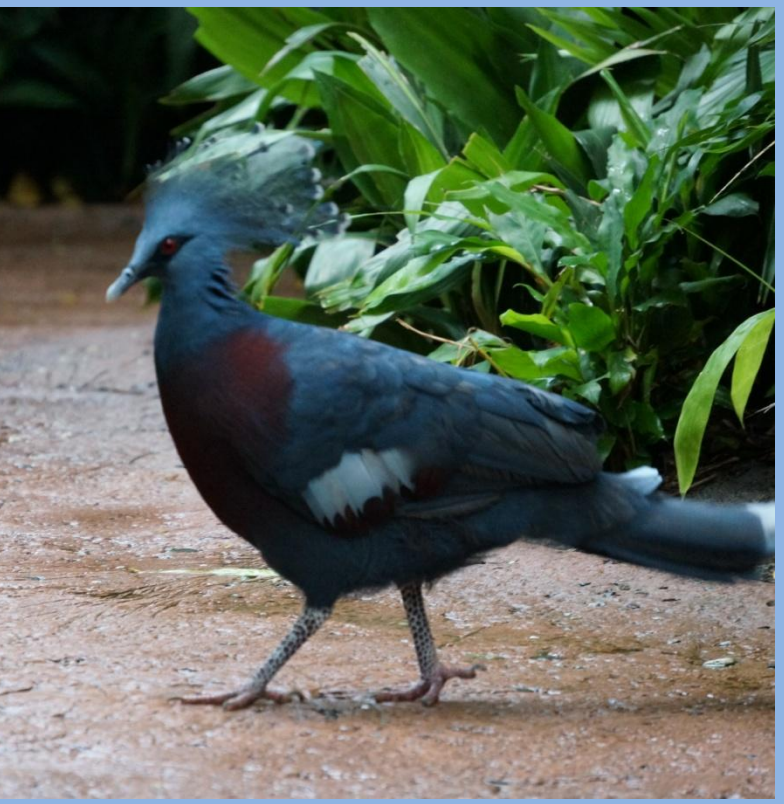
V. Flight Adaptations of Birds



V. Flight Adaptations of Birds



VI. Kinds of Birds



A. Scientist group living birds into 28 different orders. Songbirds make up the largest order.

B. Birds are often grouped into four nonscientific categories: flightless birds, water birds, perching birds, and birds of prey.

C. These categories do not include all birds, but they do show how different birds can be.

VII. Flightless Birds

A. **Running and Swimming** Not all birds fly. Most flightless birds do not have the large keel that anchors birds' flight muscles.

B. Instead of flying, some flightless birds run quickly to move around. Others are skilled swimmers.

VIII. Water Birds

A. Many flying birds are also comfortable in the water. These water birds include cranes, ducks, geese, swans, pelicans, and loons.

B. These birds usually have webbed feet for swimming or long legs for wading.

C. Some water birds have a rounded, flat beak for eating plants or small invertebrates. Others have a long, sharp beak for catching fish.

IX. Perching Birds

A. Perching birds have special adaptations for resting on branches. Songbirds, such as robins, warblers, and sparrows, make up a large part of this group of birds.

B. When a perching bird lands in a tree, its feet automatically close around a branch. Sleeping birds will not fall off the branch.

X. Birds of Prey

A. Birds of prey hunt and eat other vertebrates. These birds may eat insects or other invertebrates in addition to mammals, fish, reptiles, and birds.

B. Birds of prey have sharp claws on their feet and sharp, curved beaks. They also have very good vision.