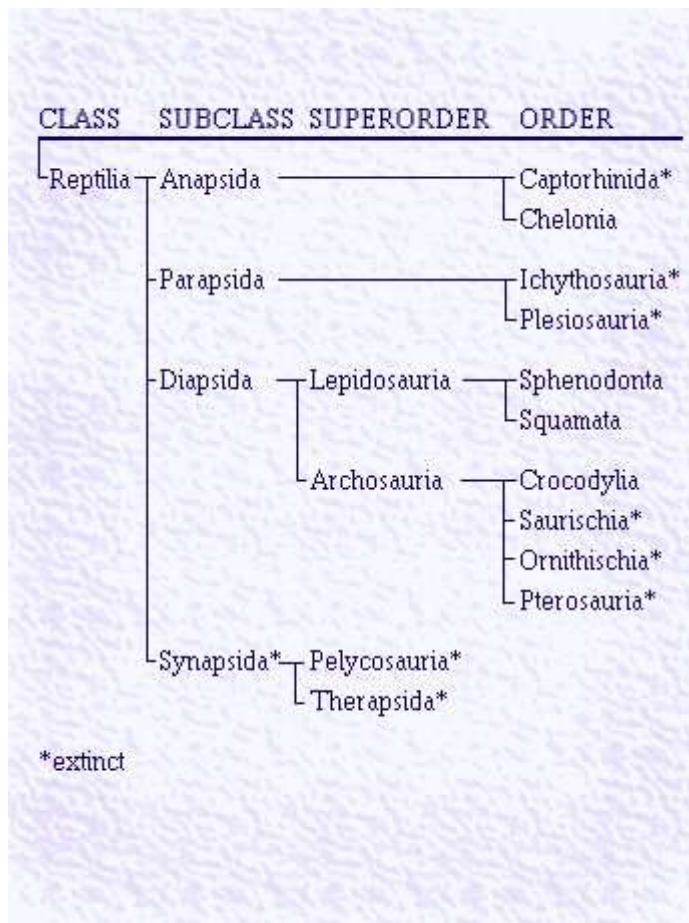


## Classification of the Subphylum Vertebrata: *Reptilia*



**Subclass Anapsida** Skull has no temporal opening

### **Order Testudines (Chelonia): Turtles** (250 species)

The reptiles that comprise the order Testudines are easily recognizable.

1- No other vertebrate has the hard shell that surrounds and protects the organs of turtles. Turtle shells consist of two basic parts, the top shell which is referred to as a carapace, and a bottom shell that is known as a [plastron](#). The two parts of the shell are connected on each side by a portion of the shell known as the bridge. Turtle ribs and vertebrae, with the exception of the neck and tail, are fused to form the carapace (Pough et al., 1998). The outer surface of turtle shells are comprised of keratinized [scutes](#) or [laminae](#). The Latin word-root "test" is synonymous for shell, and the order name "Testudines" is Latin for turtle.

2-Turtles are [oviparous](#) and have internal fertilization. Fertilization is accomplished by a penis which is an outgrowth of the cloacal wall. Turtle eggs are buried in a nest and left to incubate and hatch.

3-Another feature of Testudines is the lack of teeth. The jaws of many Testudines are sharp-edged or serrated

to provide a cutting surface. The beak is covered by a horny layer of keratin.

4-A final characteristic we will mention here is the lack of holes in the temporal region of the skull, a condition known as [anapsis](#). This feature is unique among living reptiles

**Subclass Diapsida** - Skull has two temporal openings for muscle attachment

**Order Squamata** (5700 species)

Squamata (scaled reptiles) is the largest recent order of [reptiles](#), including [lizards](#) and [snakes](#).

1- Members of the order are distinguished by their skins, which bear horny [scales](#) or shields.

2- They also possess movable [quadrate bones](#), making it possible to move the upper jaw relative to the [braincase](#). This is particularly visible in snakes, which are able to open their mouths very widely to accommodate comparatively large prey.

3-The male members of the group Squamata are the only vertebrates with a [hemipenis](#).

4-This is also the only reptile group in which can be found both [viviparous](#) and [ovoviviparous](#) species, as well as the usual [oviparous](#) reptiles.

Classification of Squamata

Classically, the order is divided into three suborders:

- [Lacertilia](#), the lizards;

Characteristics that distinguish Lacertilia from the group Serpentes are

1- the presence of four limbs (there are some lizards species elsewhere that lack limbs)

,2- visible ear openings,

3-and movable eyelids. These three characters alone should allow you to readily recognize lizards.

- [Serpentes](#), the snakes;

Snakes have several unique characteristics that should allow you to readily identify them as members of the group Serpentes.

1-All snakes lack limbs; there are however, some species that have vestigial limbs in the form of small spurs (e.g. the rubber boa).

2- All snakes lack eyelids; there are some lizard species that lack eyelids

.3- Snakes have no external ear opening; some burrowing lizards lack ear openings as well.

4-snakes have a elongate body. , there are some lizard species that are limbless and have long slender bodies, but none of these species occur in Idaho

- [Amphisbaenia](#), the worm lizards.

In newer classifications the name [Sauria](#) is used for reptiles and birds in general, and the Squamata are divided differently:

- Suborder [Iguania](#) (the [iguanas](#) and [chameleons](#))
- Suborder [Scleroglossa](#)
  - Infraorder [Gekkota](#) (the [geckos](#))
  - Infraorder [Anguimorpha](#) (the [monitors](#), [goannas](#), [Komodo dragon](#), [Gila monster](#), and [slow-worms](#))
  - Infraorder [Scincomorpha](#) ([skinks](#), [whiptail lizards](#) and common European lizards)
  - Infraorder [Serpentes](#) (the [snakes](#))
  - Infraorder [Amphisbaenia](#)

## **Order Crocodylia - Crocodiles and alligators** (21 species)



American alligator

1-All crocodylians have a similar body shape, with a head held horizontally in front of the body, four legs which project from the sides, heavy scales which function as armor, and a heavy muscular tail. Their front feet have five separate toes and their rear feet have four partially-webbed toes.

2-Their eyes are on the top of their head, close together to allow for binocular vision (the field of vision of the two eyes intersects, to provide more accurate depth perception in front of the animal).

3- The nostrils are crescent-shaped and valvular, and set at the end of the snout, which allows breathing even when the animal is almost entirely submerged.

4-Crocodylians range in size from Cuvier's dwarf caiman, which only grows to about 1.5 meters (five feet) long, to the Indopacific crocodile, which grows to 7 meters (23 feet) long. Male crocodylians are larger than females.

5-Their skin is covered with non-overlapping scales composed of the protein keratin and often studded with bony plates called scutes. (Lizard scales are similar, but lack the bony plates.) The scales are shed individually, so crocodylians do not molt (shed their skin all at once) like snakes do. This skin does not provide much insulation, preventing crocodylians from inhabiting cooler climates.

6-Crocodylians can also move like lizards, moving one foot at a time with their bellies scraping on the ground; they also use this mode of movement when sliding down a river bank when frightened and sometimes occurs when they are running and their legs get out of sync.

7-Crocodylians swim with back-and-forth movements of their tail.

8-All crocodylians lay eggs in nests made out of plant material and/or mud; the nests may dry so hard that hatchlings would be trapped inside without help. Adults, especially mothers, often guard nests. Crocodylians' senses of smell, sight, and hearing are well developed. Their ears are covered by flaps which close to prevent water from entering them.

9-Crocodylians' eyes are immobile spheres covered by three eyelids: the third eyelid, the nictitating membrane, is transparent, but protects the eye from water. They have vertical, cat-like pupils which dilate to allow them to see well in the dark. A layer of tapetum at the back of their eyes greatly increases their ability to see at night as well; this also makes their eyes glow in the dark. Crocodylians do not see well underwater.

10-Crocodylians have an elongate open-ear canal. They have two openings in their skull behind their eye sockets; it has been suggested that these openings help the attachment or functioning of crocodylians' powerful jaw muscles.

11-Their thoracic and abdominal cavities are separated by a muscular diaphragm, used in breathing. Their nostrils close when the animal dives; the nostrils are separated from the mouth by a bony palate (like mammals have, although other reptiles don't) and a valve in the back of the mouth. This allows crocodylians to breathe when their entire body except their nostrils are submerged, and also when holding prey.

12-Crocodylians' hearts have four chambers like mammals and birds, but there is a pore between the left and right ventricles which allows some mixing.

13-Crocodylians are poikilothermic (cold-blooded), and can only regulate their internal body temperature by arranging for their environment to warm them. 14-Sexual maturity is reached once crocodylians reach a certain age and size (both are important: a crocodylian not big enough to become sexually mature may not, even if it is old enough).

14-Their stomachs are the most acidic recorded for any vertebrate, allowing them to digest even the bones and shells of prey animals. Their digestion is also aided by a muscular gizzard containing stones to help break down food

15-All crocodylians have strong jaw muscles for biting and holding prey. They are all entirely carnivorous. Prey is not chewed or ground in the mouth: once it is impaled on the sharp teeth, it is swallowed whole.

### **Order Sphenodonta - Sphenodonts (1 species)**

**Sphenodontia** is an order of [lizard-like](#) reptiles that includes only one living genus, the [tuatara](#) (*Sphenodon*). Despite its current lack of diversity, the Sphenodontia at one time included a wide array of genera in several families, and represents a lineage stretching back to the [Mesozoic](#) Era.

### **Classification of Order RHYNCHOCEPHALIA / SPHENODONTIA**

- **Family Gephyrosauridae**
- **Family Pleurosauridae**

### **Family Sphenodontidae**