

# COMP ANAT: A VERTEBRATE STRUCTURAL GRADE

**Examine** the skeletal materials assembled here today.

**Compare** the male and female pelvises. Determine which is which; indicate how you know. [Hint: the birth canal passes through the large opening defined by the sacrum and two “hip bones.”]

**Locate** the opossum skeleton and **find** the pair of bones that it possesses and is absent from other quadruped skeletons. **Speculate** on the function of these bones. **Name** them.

**Consider** the following pairs of skeletons.

1. fish - salamander	A. salamander - frog
2. salamander - alligator	B. alligator - snake
3. alligator - rat or monkey	C. alligator - turtle
4. alligator - bird	D. monkey - human

**Consider** the numbered pairs as being along a structural grade beginning with fish and culminating in mammals. (fish—>amphibian—>reptile—>mammal). **Recognize** that no species of fish today is ancestral to any amphibian; yet every amphibian today had a fish ancestor. With those ideas in mind **contrast** the members of each pair in terms of features gained, lost, remodeled or fused.

**Consider** the lettered pairs as comprising a more primitive and a more derived member who share a common ancestor. (e.g. the (more primitive) alligator is more like the common ancestor that it shares with the (more derived) snake). **Contrast** the members of each pair in terms of features gained, lost, remodeled or fused.

**Determine** whether you are more like an Old World Monkey or a New World Monkey based on your dental formula. The first digit in each series indicates the number of incisors, the second the number of canines, the third the number of bicuspid (premolars) and the fourth the number of tricuspid (molars). These dental formulae show just half of each upper and lower jaw:

Old World Monkey:	2-1-2-3	New World Monkey:	2-1-3-3
	2-1-2-3		2-1-3-3

**Select** five skulls with heterodont dentition (mammals) and record the dental formula of each; in many cases this is possible even when teeth are missing from the specimen. Any surprises?

In a timed race against the other side of the room, assemble a team and then **assemble** one disarticulated skeleton in a supine position with palms facing upward on a lab table. You don't need to assemble either a hand or a foot, but other parts of the appendicular skeleton should be correctly positioned with respect to left/right, dorsal/ventral, and superior/inferior orientations.