

Name:

/7 K/U

/20 T/I

/4 A

10/ C

## Diversity - Classification and Taxonomy

### Location: Americas Pavilion

During your visit to the Americas pavilion today you are going to observe several different species belonging to the Animalia kingdom. We will look at the phylum Chordata (all vertebrates belong to this phylum), and the classes: Aves, Amphibia, Reptilia, Bony fishes and Mammalia.

First, we will look at the Aves class (birds).

<b>Birds</b>	<b>Taxonomy</b>	<b>Learning goal</b>
<b>Location</b> Blue and yellow macaw at the start of the Americas Pavilion	Kingdom: Animalia Phylum: Chordata Class: Aves (birds)	<ul style="list-style-type: none"><li>To know the characteristics all members of the Aves class share</li></ul>

As you enter the American pavilion you will find the blue and yellow macaws. Observe the birds and answer the following:

Body covering (there are 2)	
Number of legs	
Do they all have wings?	
Can they all fly? (think about other birds not seen here)	
Ectothermic (cold-blooded) or endothermic (warm-blooded)	
Live birth or eggs?	

1. Using the information you gathered above complete the following **(5 marks T/I)**

All birds have the following characteristics;

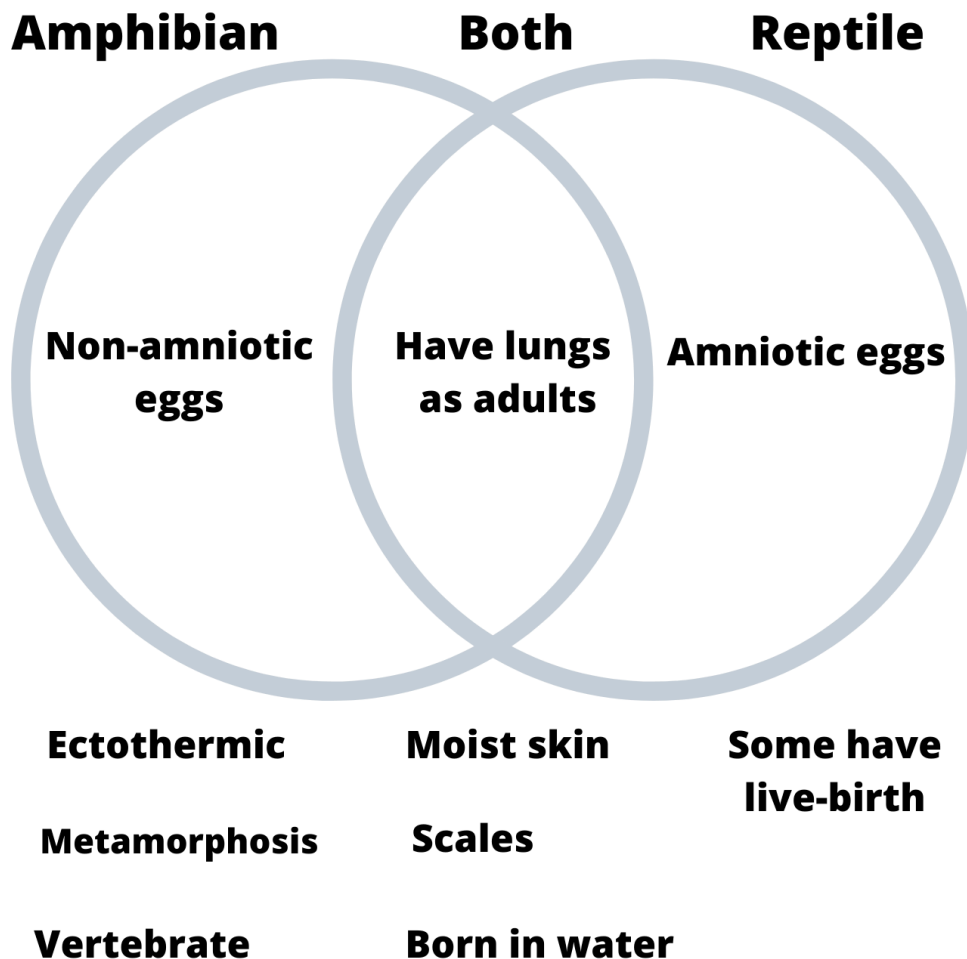
- Four chambered heart
  - Lungs
  - Toothless beak
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The class Aves have many adaptations that allow them to inhabit all continents. They have hollow bones to make them light for flight. They have feathers to keep them warm and aid in flying. Their ability to fly enables birds to migrate long distances which helps them to find food and appropriate weather to help them survive.

- As birds lack teeth they swallow their food whole. Research the name of the structure in the bird digestive system that helps them physically digest food (hint, it begins with a “g”) (1 mark T/I)

<b>Axolotl, frog, snake, turtles</b> <b>Location</b> Head through the pavilion, down the ramp and on the right you will find the above species	<b>Taxonomy</b> Kingdom: Animalia Phylum: Chordata Class: Amphibia & Kingdom: Animalia Phylum: Chordata Class: Reptilia	<b>Learning goals</b> <ul style="list-style-type: none"> <li>To compare and contrast the two classes of Amphibia and Reptilia</li> <li>To know the characteristics of the above classes</li> </ul>
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- Observe the members of the Amphibia class - axolotl and frog, and the snakes and turtles, members of the Reptilia class. Place each word below in the appropriate part of the Venn diagram. (7 marks T/I)



<b>Eel</b> <b>Location</b> Head through the pavilion, the eel can be found on the right	<b>Taxonomy</b> Kingdom: Animalia Phylum: Chordata Class: Osteichthyes (bony fish)	<b>Learning goals</b> <ul style="list-style-type: none"> <li>• To draw a biological diagram of a member of the bony fish class</li> <li>• To know the characteristics all fish share</li> </ul>
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4. In the space below draw a biological diagram of the eel, a member of the bony fish class. Remember the guidelines for biological diagrams: draw in pencil, in the centre of the space provided, appropriate size, labelled with a ruler, no shading. **(10 marks C)**

5. Circle the characteristics **all fish** share (4 correct answers) **(4 marks T/I)**

Live in water      Have fins      Give birth to live young      Lay eggs  
Have scales      Vertebrates      Breathe through gills

Hot fish fact - most fish are endothermic (cold-blooded) however several species of fish, such as tuna and some sharks, can create their own body heat and are actually endothermic!

<b>Primate wing</b> <b>Location</b> The primate wing can be found by the entrance to the pavilion	<b>Taxonomy</b> Kingdom: Animalia Phylum: Chordata Class: Mammalia	<b>Learning goals</b> <ul style="list-style-type: none"> <li>To know the characteristics all mammals share</li> </ul>
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Mammals use different methods to communicate with each other including:

- sounds
- scents released by glands located in the groin, face, and feet
- sexual hormones located in feces and urine
- body posture and facial expressions

6. Observe the primates. How do they communicate with each other? Write down any observations below. **(2 marks T/I)**

Species are classified into taxonomic ranks based on the characteristics they share. The table below shows the classification of three primates and a sloth.

Common name	Golden lion tamarin	Common marmoset	White-faced saki monkey	Two-toed sloth
<b>Kingdom</b>	Animalia	Animalia	Animalia	Animalia
<b>Phylum</b>	Chordata	Chordata	Chordata	Chordata
<b>Class</b>	Mammalia	Mammalia	Mammalia	Mammalia
<b>Order</b>	Primates	Primates	Primates	Pilosa
<b>Family</b>	Callitrichidae	Callitrichidae	Pitheciidae	Choloepodidae
<b>Genus</b>	<i>Leontopithecus</i>	<i>Callithrix</i>	<i>Pithecia</i>	<i>Choloepus</i>
<b>Species</b>	<i>rosalia</i>	<i>jacchus</i>	<i>pithecia</i>	<i>hoffmanni</i>

Please answer the following questions using the species' **binomial nomenclature** (scientific name). The binomial name is the species' genus and species. When writing binomial nomenclatures you should write in italics with the first letter of the first word capitalised and the second word starting with a lowercase letter. E.g. the golden lion tamarin is called *Leontopithecus rosalia*.

7. By observing the species and referring to the table answer the following:
- Which two species are most closely related? (1 mark A)
  - Which species is the least related to the others? (1 mark A)
  - From observing the animals state a characteristic they all share. (1 mark A)
  - State a characteristic that the least related species has different from the other three. (1 mark A)

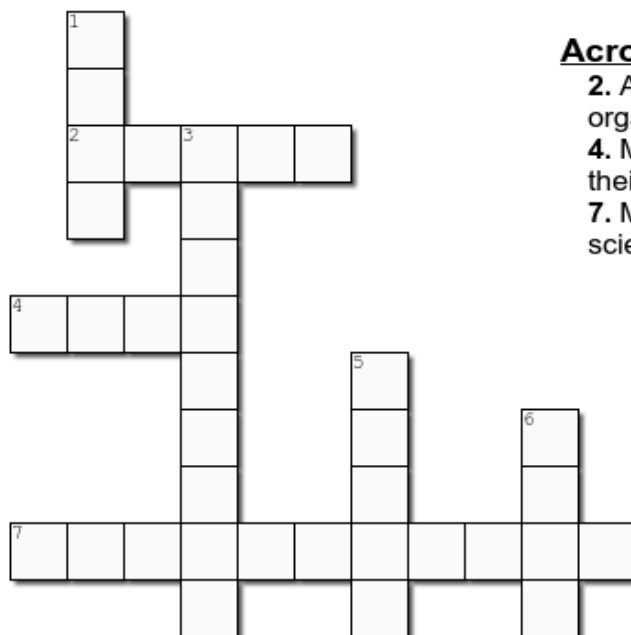
The Mammalia class is comprised of three subclasses:

- Placental (Mother and baby exchange compounds through placenta)
- Monotremes (mammals which lay eggs - duckbill platypus & echidnas)
- Marsupials (young are born early and continue development in a pouch).

8. What sub-class of mammals do humans belong to? **(1 mark K/U)**

9. What is the only marsupial found in North America? **(1 mark T/I)**

10. Complete the crossword below to discover characteristics that all mammals share **(7 marks K/U)**



### **Across**

- All mammals exchange gases in this organ
- Mammals have how many chambers in their heart?
- Mammals are warm-blooded, what is the scientific name for this?

### **Down**

- Mammals are named for their mammary glands, what substance do mammary glands produce?
- Milk provides baby mammals with immunity and.....
- The number of vertebrae in mammal's necks
- All mammals have this as a body covering