

<p>Class Notes</p> <p><i>Phylum Chordata</i></p> <p>Questions/Main Idea:</p>	<p>Name: _____</p> <p>Period: _____</p> <p>Date: _____</p> <p style="text-align: center;">Notes:</p>
<p>What is a vertebrate?</p> <p>Examples:</p> <p>Humans!</p>	<ul style="list-style-type: none"> • Phylum Chordata • Internal skeleton (endoskeleton) • Includes jawless fishes, carilaginous fishes, bony fishes, amphibians, reptiles, birds, and mammals • All have (<i>at some point</i> in their life cycle) <ul style="list-style-type: none"> – gill slits – nerve chord in their backs (often becomes spinal cord) – notochord (often becomes the spinal column)
<p>Subphylum Tunicata</p> <p>Examples:</p> <p>Tunicates</p>	<ul style="list-style-type: none"> • Named for the tough “tunic” surrounding the adult • As adults they are sessile filter feeders living solitary or in colonies • Larvae are tadpole-like an have all chordate characteristics!
<p>Subphylum Cephalochordata</p> <p>Examples:</p> <p>Lancelets</p>	<ul style="list-style-type: none"> • Lancelets are small (3-7 cm), transparent, fish-like animals that lack a distinct head • Their tentacles help filter food from the water • Display the basic chordate characteristics in a simple and obvious form because of their transparency
<p>Subphylum Vertebrata</p> <p>Examples:</p> <p>Humans!</p>	<p>General Characteristics:</p> <ul style="list-style-type: none"> • Backbone (vertebral column) • Cephalization (with brain development) • Gaseous exchange in gills and lungs • Closed circulatory system • Excretory system consolidated in a pair of kidneys • Two pairs of limbs • One pair of image forming eyes • Separate sexes
<p>Temperature regulation</p>	<p>Ectotherms = Regulate temperature from the outside (basking, finding shade, slowing down when cold, can tolerate a wide range of internal temperatures)</p> <p>Eendotherms = Regulate temperature from within (very narrow range of internal temperature change) by use of metabolism</p>
<p>Class Agnatha - Jawless fish</p> <p>Examples: lamprey</p>	<ul style="list-style-type: none"> • No jaw, no vertebrae, skeletons are of fiber and cartilage • Ectotherms
<p>Class Chondrichthyes – Cartilaginous fish</p> <p>Examples: sharks</p>	<ul style="list-style-type: none"> • Endoskeleton made of cartilage (cartilage is lighter and more flexible than bone; allows them to float and be more agile) • Paired fins, scales, gills, carnivorous, ectotherms • Includes sharks, rays, skates, ratfish

<p>Class Osteichthyes - Bony Fish</p> <p>Examples:</p>	<ul style="list-style-type: none"> • Skeleton of true bone; ectotherms • Fins are finer and provide greater maneuverability • Suck water over their gills for gas exchange • Air bladder allows for the fish to remain stationary at any depth • Their body is covered with flattened scales. The skin contains numerous mucous glands which makes the fish slimy
<p>What is unique about the Coelocanth?</p>	<p>The “lobe-finned” fish is the source of evolution to the land vertebrates; lobe fins later evolved into legs/feet of land animals.</p>
<p>Class Amphibia - Amphibians</p> <p>Examples:</p> <p>Poison dart frog</p>	<ul style="list-style-type: none"> • Amphibian means “double life” because they live in water as larvae and on land as adults • Larvae breathe through skin and gills • Most adult species breathe with lungs, lack scales and claws, have moist skin with mucous glands • Reproduce through laying eggs without shells • Still tied to water for respiration and reproduction • Exctothermic
<p>Class Reptilia - reptiles</p> <p>Examples:</p> <p>Alligator</p>	<ul style="list-style-type: none"> • Conceive, live, and die on land • Adapted with specialized organs for land survival • Skin is dry with protective scales made of keratin that reduce water loss • Internal fertilization • Egg laying on land -- eggs are porous, leathery, and complete with food and fluids • Ectothermic • Most are carnivorous
<p>Class Aves - Birds</p> <p>Examples:</p> <p>Eagle</p>	<ul style="list-style-type: none"> • Closely related to reptiles • Scales on the legs of birds are like the scales of a reptile • Feathers made of keratin, evolved from scales • Light skeleton (many bones are hollow) • No urinary bladder – solid and liquid waste are together • Enlarged breast bone <ul style="list-style-type: none"> – allows them to posses a large keel (muscle attachment) • Endothermic <ul style="list-style-type: none"> – adapted to many environments
<p>Class Mammalia - Mammals</p>	<ul style="list-style-type: none"> • Hair made of keratin • Heterodonts: have differently shaped teeth • Sweat and scent glands • Improved sense of smell due to larger nasal cavity • 4 chambered hearts • Flexible backbone • Endothermic
<p>Mammalian reproduction and development</p>	<ul style="list-style-type: none"> • Internal fertilization • Internal development (except for monotremes) • Females have separate urinary and reproductive tract • Feed their young with milk made in mammary glands

<p>What is a monotreme? Examples:</p>	<ul style="list-style-type: none"> • 5 species in the order Monotremata <ul style="list-style-type: none"> – Four species of echidna and one species of the duck-billed platypus • All live in Australia or New Guinea • Lay eggs, but have hair and nurse young
<p>What is a marsupial mammal? Examples:</p>	<ul style="list-style-type: none"> • Fetuses do not fully implant in the simpler uterus • Adult females have a belly pouch (marsupium) • Newborns stay inside, attached to a nipple, for months • Examples: Possum, kangaroo, koala bear
<p>What is a placental mammal? Examples:</p>	<ul style="list-style-type: none"> • Grow embryos in uterus • True placenta formed by fetus and mother <ul style="list-style-type: none"> – Joins the embryo to the mother within the mother's uterus – Embryo is nurtured by blood from the mother • 95% of all mammals
Summary:	

Complete the Venn Diagram by comparing two other classes of animals to Mammals:

