5.1

* **Vertebrates** are animals with endoskeletons
	+ They have backbones
	+ **Endoskeleton** – an internal support system that grows along with the animal, allow more flexibility and ways of moving
	+ Most vertebrates are fish
		- Use gills to get oxygen
	+ Fish can be classified in 3 groups
		- Jawless fish
		- Cartilaginous Fish
		- Bony fish
			* Have **scales** – overlapping bony structures on the outside of the body of bony fish
	+ Most young fish develop inside an egg

5.2

* Amphibians and reptiles are adapted for life on land
	+ Have limbs
	+ Have moist skin and lay eggs without shells
		- Most amphibians have the following characteristics
			* Have two pairs of legs for a total of four limbs
			* They lay their eggs in water
			* They obtain oxygen through their smooth, moist skin. Many also have lungs
			* Their sensory organs are adapted for sensing on land
	+ Reptiles have dry, scaly skin and lay eggs with shells
		- Evolved after amphibians and are closely related
			* They have two pairs of legs, 4 total
			* They have tough, dry skin covered by scales
			* They obtain oxygen from air with lungs
			* Their sensory organs are adapted for sensing on land
			* They lay their eggs, which have shells, on land
	+ Body temperatures of amphibians and reptiles change with the environment
		- **Ectotherms** – animals whose body temperatures change with the environmental conditions

5.3

* Birds meet their needs on land, in water, and in the air
	+ Bird species live in most environments
		- All birds
			* Have feathers and a beak
			* Have four limbs, a pair of scaly legs and a pair of wings
			* Their eggs have hard shells
	+ Birds can maintain body temperature
		- **Endotherms** – animals that maintain a constant body temperature
			* Down feathers help maintain heat
		- Most birds can fly
			* Endoskeleton
			* Wings and feathers
			* Specialized respiratory system
			* Hollow bones
		- Birds **incubate** – use their body heat to keep their eggs warm
	+ Most birds care for their offspring

5.4

* Mammals live in many environments
	+ They are a diverse group of vertebrates
		- Mammals all have
			* Have hair during some part of their lives
			* Have teeth specialized for consuming particular kinds of food
			* Produce milk and feed their young with that milk
	+ Mammals are endotherms
		- Body fat helps maintain temperature
* Mammals have adapted to many environments
* Mammals have reproductive adaptations
	+ Development before birth
		- **Placenta** – specialized organ that transports nutrients, water, and oxygen from the mother’s blood to the developing embryo, waste from the embryo travels through the placenta and exits through the mother
		- **Gestation** – the time when a mammal is developing inside it’s mother
	+ Mammals raise their young at various degrees depending on the species