

**Classification Notes****Classification**

groups organisms according to

- physical characteristics (homologous structures)
- modern method : biomolecular information (DNA + protein seq.)

Classification tells us an organism's evolutionary history &amp; relationships

PHYLOGENY

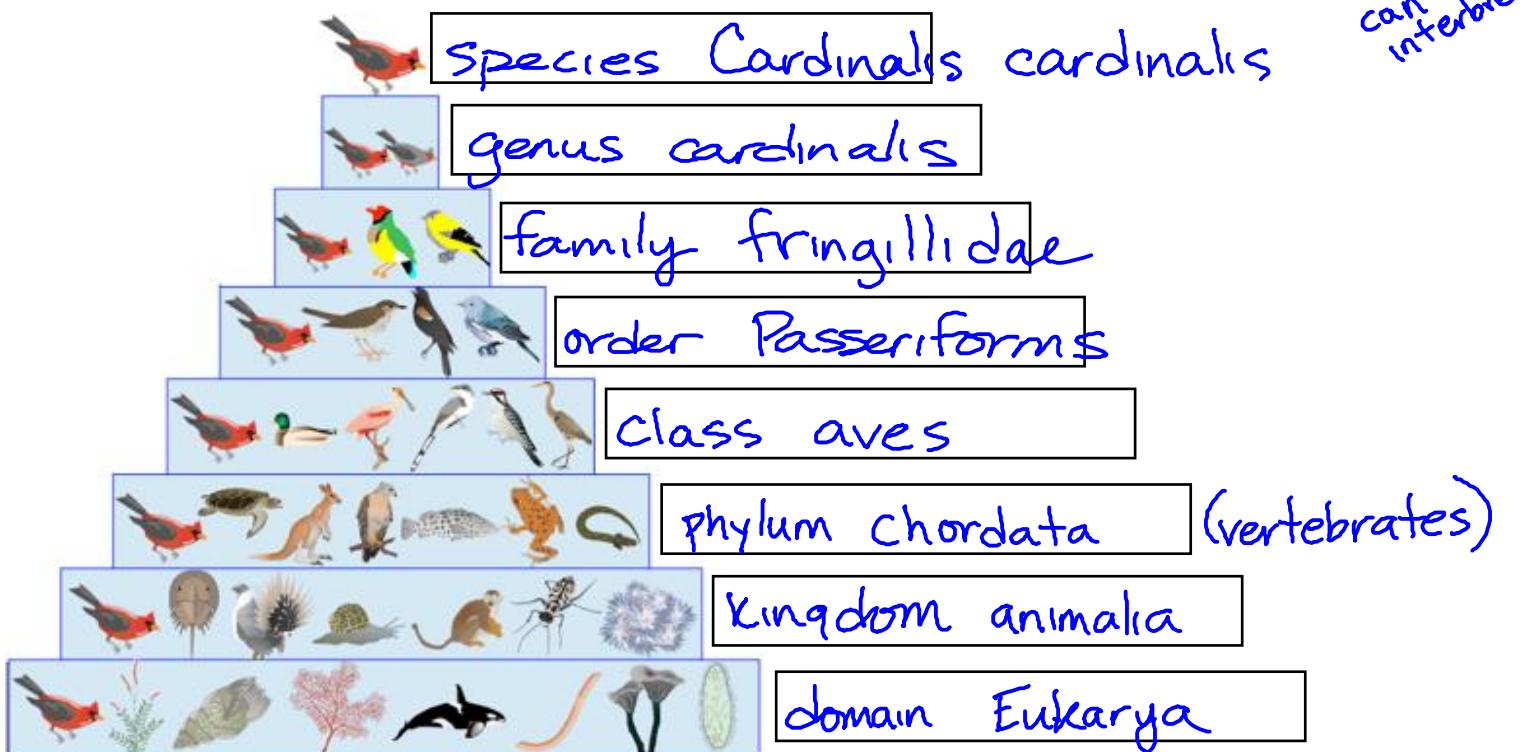
3 scientific tools of classification: taxonomy, dichotomous keys, cladograms  
(phylogenetic trees)Taxonomy

- Invented by Carl Linnaeus

- Organisms' scientific names: 1st name: genus, last name: species

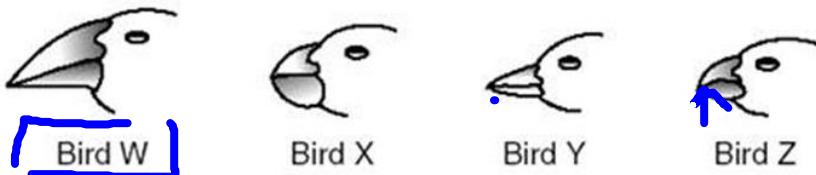
binomial nomenclature

Domain	Dumb	least specific	largest group	most diverse
Kingdom	King			
Phylum	Phillip			
Class	Came			
Order	over			
Family	for			
Genus	great			
Species	spaghetti.	most specific	smallest group	least diverse ↑ can interbreed



## Dichotomous Keys

- use descriptions to identify organisms



Dichotomous Key to Representative Birds	
1. a. The beak is relatively long and slender.....	Certhidea
b. The beak is relatively stout and heavy.....	go to ?
2. a. The bottom surface of the lower beak is flat and straight .....	<u>Geospiza</u> ✓
b. The bottom surface of the lower beak is curved .....	go to 3
3. a. The lower edge of the upper beak has a distinct bend .....	Camarhynchus
b. The lower edge of the upper beak is mostly flat .....	Platyspiza

Bird W:

**Geospiza**

Bird X:

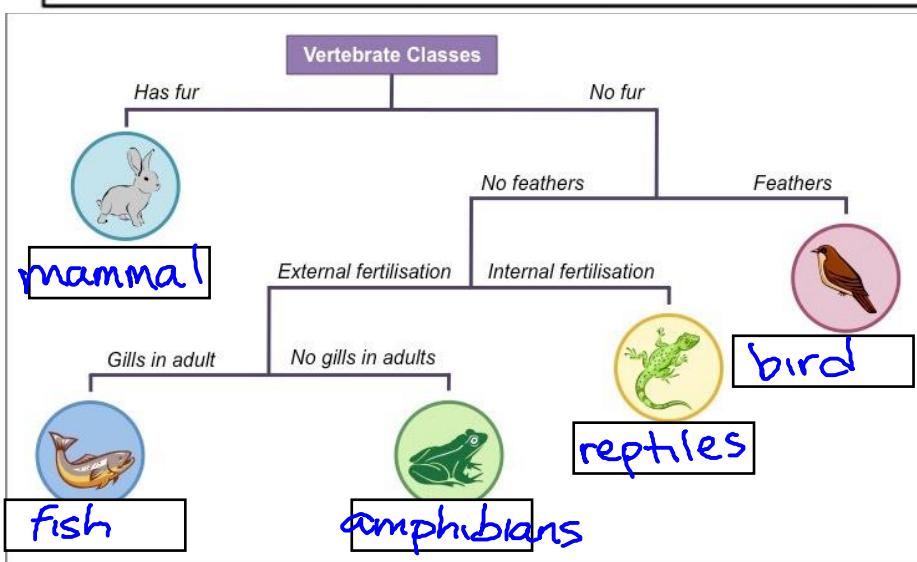
**Platyspiza**

Bird Y:

**Certhidea**

Bird Z:

**Camarhynchus**



Difference between mammals and birds?

**fur**

Difference between reptiles and amphibians?

**fertilization**

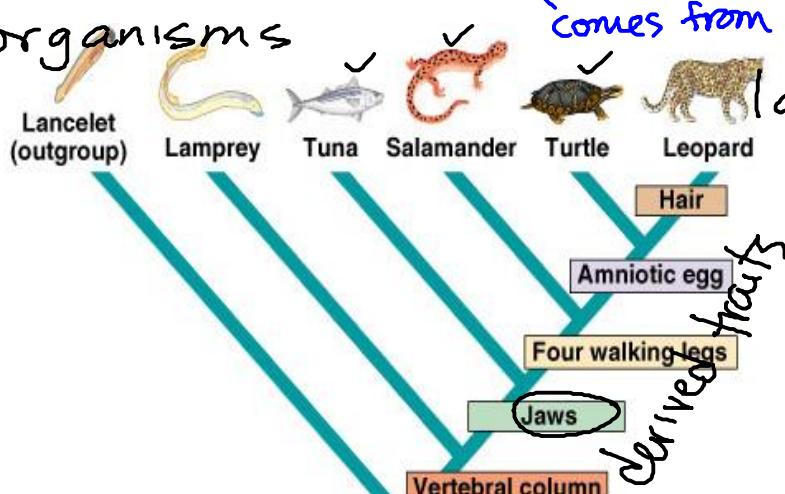
Similarity between amphibians and fish?

**external fertilization**

## Cladograms (Phylogenetic Trees)

- Show evolutionary timeline, looks like family tree
- Based on shared derived characteristics (shared traits)

organisms



comes from common ancestor

Which 2 are most closely related?

latest turtle & leopard

Which 4 have jaws?

tuna salamander  
turtle leopard

Which 4 do NOT have an amniotic egg?

tuna salamander  
lancelet lamprey

What is 1 difference between a lancelet and a lamprey?

vertebral column

What evolved first – jaws or 4 walking legs?

jaws