Thursday, May 16, 2019 Your Learning Goal: SWBAT compare relationships between species to place them on a modified family tree called a cladogram.

Lines of Descent- 49 L + R

### <u>Catalyst 49 L</u>:

1. What do the zebra and the horse have in common?

- 2. Are the zebra and horse related?
- 3. What is your evidence?



### Table of Contents

<u>Date</u> 4/23/19 5/2/19 5/9/19 5/13/19 5/16/19 Assignment Condor Genetics The Fossil Record Transitions Present Day Vertebrates Lines of Descent Pg # 45L + R 46 L + R 47 L + R 48 L + R 49 L + R



#### Catalyst:

1.What do the zebra and the horse have in common?2. Are the zebra and horse related?3. What is your evidence?

#### LEAF:

**49L** 



**49**R

5/16/19

Lines of Descent

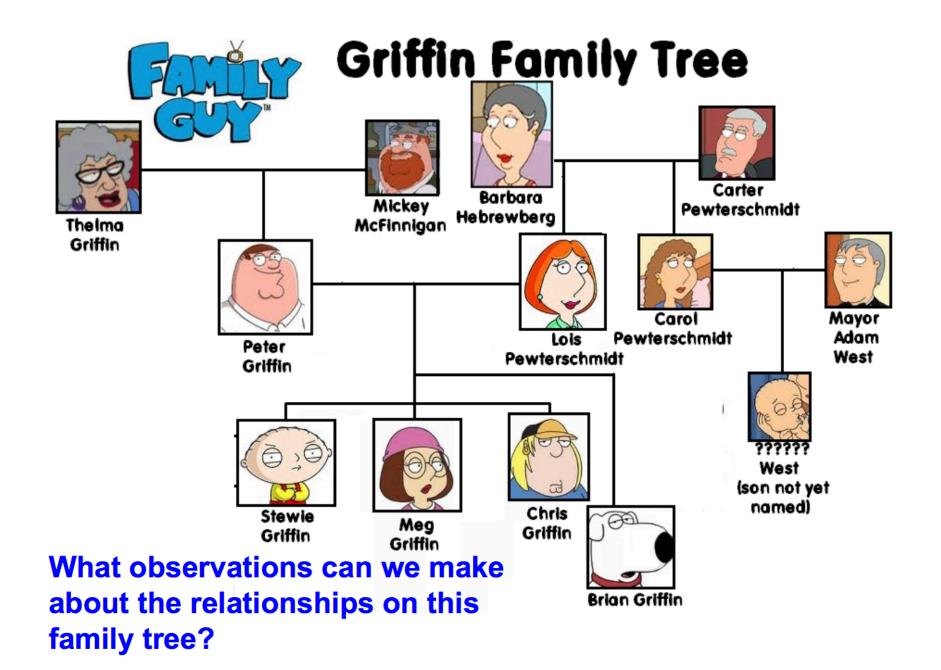


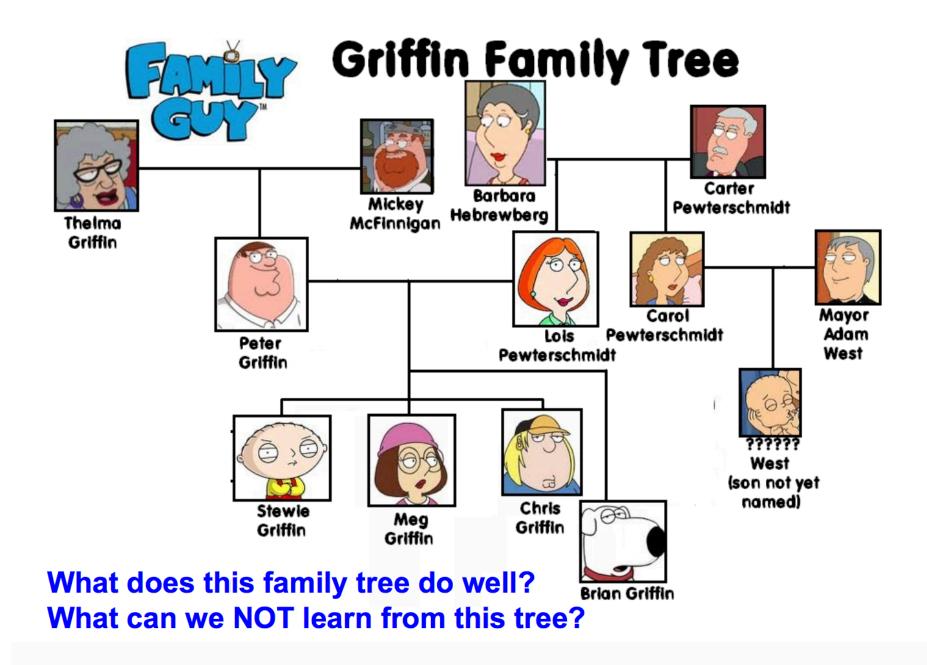
- 1. What do the zebra and the horse have in common?
- 2. Are the zebra and horse related?
- 3. What is your evidence?
  - **49**R

## Focus question

• How can a model help us understand the relationships among organisms?







#### Catalyst: 1.What do the zebra and the horse have in common? 2. Are the zebra and horse related? 3. What is your evidence?

L

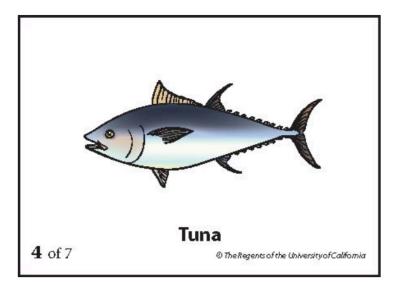
LEAF:

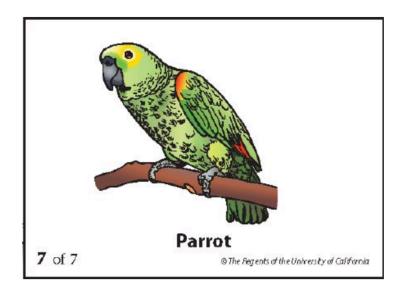
|                  | 5/16/19      |  |  |  |  |
|------------------|--------------|--|--|--|--|
| ines of Descent  |              |  |  |  |  |
| <u>Alligator</u> | Bird         |  |  |  |  |
|                  |              |  |  |  |  |
| Frog             | <u>Human</u> |  |  |  |  |
|                  |              |  |  |  |  |
| <u>Rabbit</u>    | <u>Shark</u> |  |  |  |  |
|                  |              |  |  |  |  |
| <u>Tuna</u>      |              |  |  |  |  |
|                  |              |  |  |  |  |
|                  | <b>49</b> R  |  |  |  |  |
|                  |              |  |  |  |  |



# **Classification Cards**

Sort the cards into groups that you think represent close relationships.







# What PHYSICAL CHARACTERISTICS do each of these animals have







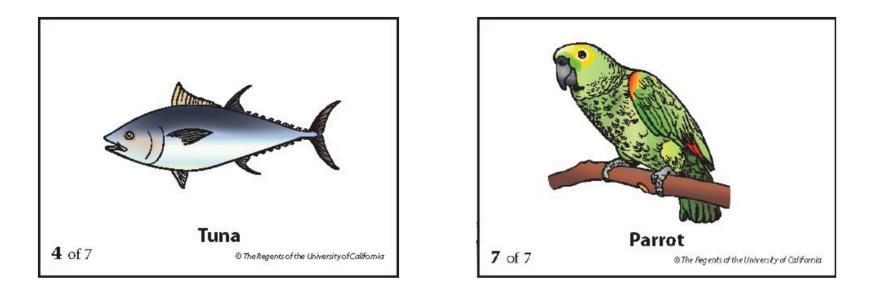




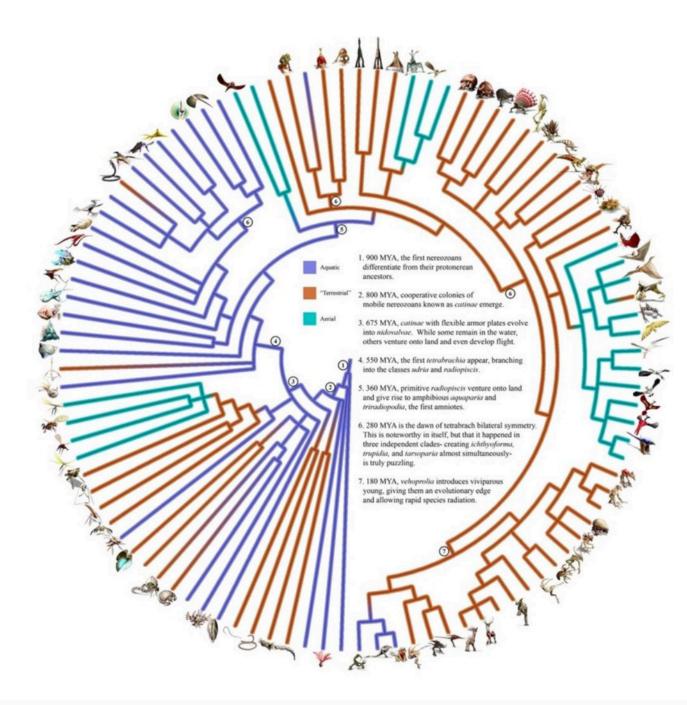


# Let's Organize

#### create your own species family tree



|           |   | ≍ो∓             | 1. What are some things we can learn from the cladogram? |
|-----------|---|-----------------|--|
| Alligator | <ul> <li>Vertebrae</li> <li>Bony skeleton</li> <li>Four limbs</li> <li>Amniotic egg</li> <li>Fossil skull with two additional openings</li> </ul> |                 | 2. What are some<br>limitations?                         |
| Bird      | <ul> <li>Vertebrae</li> <li>Bony skeleton</li> <li>Four limbs</li> <li>Amniotic egg</li> <li>Fossil skull with two additional openings</li> </ul> | │ ≍ <b>_</b> +- |  |
| Frog      | <ul><li>Vertebrae</li><li>Bony skeleton</li><li>Four limbs</li></ul>  |                 | stic   |
| Human     | <ul> <li>Vertebrae</li> <li>Bony skeleton</li> <li>Four limbs</li> <li>Amniotic egg</li> <li>Hair</li> </ul>                                      | ~               | Shared aracteri  |
| Rabbit    | <ul> <li>Vertebrae</li> <li>Bony skeleton</li> <li>Four limbs</li> <li>Amniotic egg</li> <li>Hair</li> </ul>                                      |                 | chal Chal  |
| Shark     | Vertebrae   |                 | <u>o</u>   |
| Tuna      | <ul><li>Vertebrae</li><li>Bony skeleton</li></ul>   | rganisn<br>     |  |
|           |   | ð               | əmiT   |



# **Putting it Together**

- 1. Read your assigned page as a table group: "Do you understand evolutionary Trees?"
- 2. Synthesize your learning into ONE detailed summary sentence (in your own words).
- 3. Email me your sentence: maxime.salzburg@larchmontcharter.org



#### 5/16/19

#### Catalyst: 1.What do the zebra and the horse have in common? 2. Are the zebra and horse related? 3. What is your evidence?

#### LEAF:

"Do you understand Evolutionary Trees"

Lines of Descent

Alligator

Froa

Rabbit

Tuna

Bird

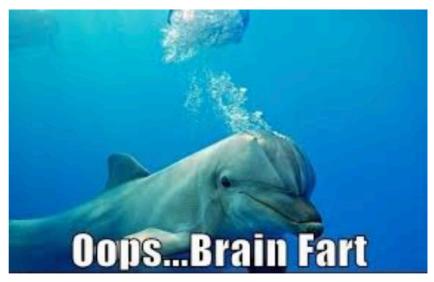
Human

Shark

Write the Class' Sentences HERE 49R



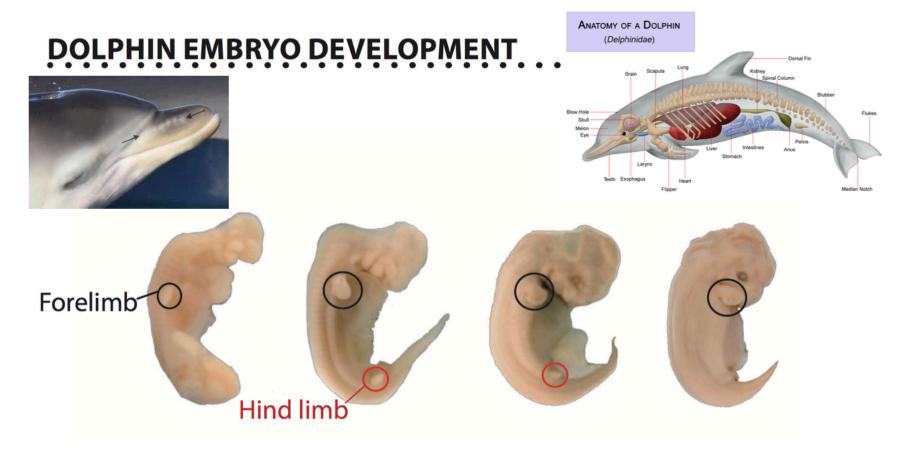
### **How Does our Thinking Change?**



- Where would we put the dolphin on our cladogram?
  - What evidence do we use to make this decision?

Add dolphin to your notebook grid and list its physical characteristics

## **Are Dolphins Mammals?**



### Place dolphin on your cladogram

#### 5/16/19

#### Catalyst: 1.What do the zebra and the horse have in common? 2. Are the zebra and horse related? 3. What is your evidence?

#### LEAF:

How are the organisms on the cladogram related?

| <u>Tuna</u> |        |  |
|-------------|--------|--|
|             | unders |  |

Bird

Human

Shark

Lines of Descent

Alligator

Froa

Rabbit

**Evolutionary Trees**"

Write the Class' Sentences HERE 49R



#### **LEAF:** How are the organisms on this cladogram related? I know organisms on the cladogram are related because...

