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**All in the Family: Evolution Student Sheet– From PBS Learning**

Visit the following website and click Launch: <http://illinois.pbslearningmedia.org/resource/tdc02.sci.life.evo.allinthefamily/all-in-the-family/>

**Part 1: Wolf, Shark and Dolphin**

1. What type of organism gave rise to life 3.8 billion years ago? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What is one of the elephant’s closest living relatives? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Which 2 animals do you predict are most closely related?

(Dolphin, Shark, Wolf)

* 1. Go to Appearance:
		1. Which 2 are the most similar in appearance? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. Go to Anatomy:
		1. Which 2 have the most similar limbs? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		2. Which 2 have the most similar jaws? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		3. Which 2 have the most similar cranium? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
1. What is the common ancestor of Dolphins, Wolves and Sharks? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Part 2: Bear, Opossum and Raccoon**

1. Which 2 animals are most closely related? (Opossum, Bear, Raccoon)
	1. Go to Appearance
		1. Which 2 appear the most similar? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. Go to Anatomy
		1. Which has a pouch? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	3. Go to Development
		1. Which 2 have a placenta? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		2. Which 2 are the most developed at birth? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	4. Go to Molecular
		1. Which 2 Pairs have the most similar DNA sequence?
			1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
			2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Part 3: Human, Sponge and Tunicate**

1. Which 2 species are most closely related? (Human, Sponge, Tunicate)
	1. Go to Appearance
		1. Which 2 appear the most similar? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. Go to Anatomy
		1. Which 2 have a brains? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	3. Go to Development
		1. Which 2 have a notochord? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		2. Which 2 have gill arches? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	4. Go to Molecular
		1. Which 2 Pairs have the most similar DNA sequence?
			1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
			2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Part 4: Research and Analysis** (no longer on the website)

1. What are some structures (other than appearance) that you can look at to determine how closely related different species are?
	1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Write down one of your favorite animals. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	1. What other species do you think might be it’s closest relatives? \_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* 1. Do some research online, who are the closest relatives? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Why do you think they call it the Tree of Life?

**Evolution: All in the Family - Student Companion Sheet**

Visit the following website and click Launch: <http://illinois.pbslearningmedia.org/resource/tdc02.sci.life.evo.allinthefamily/all-in-the-family/>

**Part 1: Wolf, Shark and Dolphin**

1. What type of organism gave rise to life 3.8 billion years ago? 1 Celled organisms
2. What is one of the elephant’s closest living relatives? The hyrax
3. Which 2 animals do you think are most closely related?

(**Dolphin**, Shark, **Wolf**)

* 1. Go to Appearance:
		1. Which 2 are the most similar in appearance? Dolphin and Shark
	2. Go to Anatomy:
		1. Which 2 have the most similar limbs? Dolphin and Wolf
		2. Which 2 have the most similar Jaws? Dolphin and Wolf
		3. Which 2 have the most similar Cranium? Dolphin and Wolf
1. What is the common ancestor of Dolphins, Wolves and Sharks? Lamprey

**Part 2: Bear, Opossum and Raccoon**

1. Which 2 animals are most closely related? (Opossum, **Bear, Raccoon**)
	1. Go to Appearance
		1. Which 2 appear the most similar? Opossum and Raccoon
	2. Go to Anatomy
		1. Which has a pouch? Opossum
	3. Go to Development
		1. Which 2 have a placenta? Bear and Raccoon
		2. Which 2 are the most developed at birth? Bear and Raccoon
	4. Go to Molecular
		1. Which 2 Pairs have the most similar DNA sequence?
			1. Bear and Raccoon
			2. Opossum and Echidna

**Part 3: Human, Sponge and Tunicate**

1. Which 2 species are most closely related? (**Human**, Sponge, **Tunicate**)
	1. Go to Appearance
		1. Which 2 appear the most similar? Sponge and Tunicate
	2. Go to Anatomy
		1. Which has a brain? Human and Tunicate
	3. Go to Development
		1. Which 2 have a notochord? Humans and Tunicate
		2. Which 2 have gill arches? Humans and Tunicate
	4. Go to Molecular
		1. Which 2 Pairs have the most similar DNA sequence?
			1. Humans and Tunicates
			2. Sponges and Choanoflagellate

**Part 4: Research and Analysis** (no longer on the website)

1. What are some structures (other than appearance) that you can look at to determine how closely related different species are?
	1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Write down one of your favorite animals. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	1. What other species do you think might be it’s closest relatives? \_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* 1. Do some research online, who are the closest relatives? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Why do you think they call it the Tree of Life?