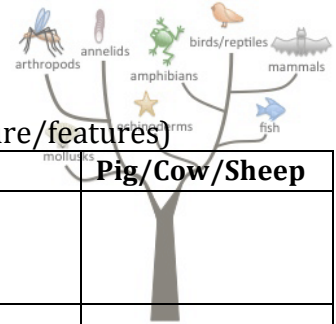


Predicting Evolutionary Relationships (Adapted from: NOVA Science Now)

Names: _____ Date: _____ Period: _____



Step 1a. Similarities and differences between humans and (anatomical structure/features)

Tuna	Whale	Turtle	Rhesus Monkey	Chicken	Pig/Cow/Sheep
Similar:					
Different:					

Step 1b. What are **some** of the criteria scientists might use to infer relationships between organisms?

Step 2. Based on features and anatomical structures, what organisms listed above are humans most closely related to? Explain . . .

Step 3. Read #3 on the Student Handout. Use the highlighter to mark all amino acids that differ from the human sequence. **Record** the **letter** differences below.

4. Tuna differences _____

Whale differences _____

Turtle differences _____

Monkey differences _____

Chicken differences _____

Pig differences _____

Questions:

1a. Based on the amino acid sequence data you collected, which organism are humans most closely related to? Explain.

1b. Which organisms are humans most distantly related to? Explain.

2. What additional data or information might help you confirm the statement you made above?

3. Explain how your answer in **Question 1a** above match the prediction you made in **Step 2**.

4. Explain how amino acid sequence data can help scientists infer patterns of evolutionary relationship between species.