**Rat/Pig and Frog Comparative Anatomy Dissection Write Up**

You are a team of scientist that have recently discovered two different types of animals living in the same region around your home. You are tasked with finding out as much as you can about these two different animals, and then comparing them to see how they might have evolved differently over time.

Paper Format: **Paper needs to be TYPED, 12 pt font, and double spaced. (5 pts)**

**Title Page (by itself, nothing else but these 4 things on it) (5 pts)**

**Title**: Give your paper a title

**Author**: Your name

**School**: Chino Hills High School

**Date**: February , 2020

Let’s first start out by looking at how scientific journals are written. You can typically find these sections in a journal:

Abstract (Honors only)

Background

Methods/Procedure

Data

Conclusions

You will be writing a paper with all of these sections. You are going to write like a TRUE SCIENTIST!

**Abstract (10 pts, honors only):** The abstract is written last. This is meant to be a preview of your entire paper and is meant to be quick and to the point. One large paragraph hitting on a key point or two from each section. Include the Why you’re doing it, how you’re doing it, and briefly what you found with the methods you used.

**Background(20 pts):**

This section is to let the reader know what you’re doing this, what’s been studied before, and what you’re hoping to find. These are some specific questions you may want to answer, in addition to other info you want to share.

What are you doing?

Why are you doing it?

What are you looking at? (NOT what you found…think about the parts of the packet where I asked “what do you THINK you’re going to find? And why does all of this matter?)

What do you already know about this topic? Tell me what you thought about your specimens before you dissected them.

DO NOT WRITE ABOUT WHAT YOU SAW, FOUND, INFO ON THE ANIMALS YOU LEARNED, ETC. THIS IS MEANT TO BE DONE **BEFORE** YOU START THE DISSECTION.

**Methods (20 pts):**

Break down the method in the step by step by step for both the rat/pig and the frog. Tell me everything you did, where you made cuts, how you were able to see what you saw (note: HOW you were able to see things, for example:

Step 5) Made a cut at the top of the stomach and the end of the colon

Step 6) Removed the digestive system organs to see that back of the abdomen

Have a section for materials (don’t forget the two specimens here).

**Data (20 pts):**

You are going to create two tables. One for the Frog anatomy, one for the Rat anatomy. Fill in EVERYTHING you find. Do not write any info. Just list what you found.

**Discussion:**

This is where you draw all of your conclusions. You’re going to have three sections for this: Frog, Pig/Rat, Comparative Anatomy.

**Frog Section (20 pts):**

Tell me everything you were able to **figure out (meaning don’t tell me what you found, but rather what you learned about the animal from what you found)**. For example, if I were dissecting a pig, I might say

“I noticed the frog had a dark body on the top of the body and a light color on the bottom. This is likely a type of camouflage. The color of greens, blacks, and overall dark colors tells me it blends in with dark colored objects. However, the fact he has a light belly tells me that he may spend time near the water as this is a type of camouflage where light colors are harder to see from under water when looking up. This tells me the frog likely lives by the water.”

This section doesn’t have right or wrong answers. I’m not asking you to look everything up that you find. I’m asking you to use what you see, use what you know, and see if you can make good guesses about what their bodies tell me inside and out. This is about you CRITICALLY THINKING about the way your specimen is put together. This is about inferences. Remember when we did “I see smoke, so I think there’s a fire”...it’s the same thing. What did you see? What do you think that means? Connect some dots! For example, what did the tongue, mouth, and stomach contents tell you about how they eat?

**Rat Section (20 pts):**

**Same criteria as the Frog above.**

**Comparative Anatomy (20pts):**

This section is about comparing the two specimens.

What was similar:

Tell me about all of the similarities you found. What homologous structures did you find between the two? How do you know? Did they look similar? Different?

What was different:

Tell me all about the differences that you found. Any analogous structures?

Evolutionary path:

What environmental changes would have happened to make them evolve the way they did? For example, how did the frog evolve to have webbed feet vs claws? Why does the rat have external ears and a frog doesn’t? Again, looking for critical thinking.

**Final thoughts** (10 pts):

What are your final thoughts on the dissection? Were your initial questions from your Background answered? What remaining questions do you still have? Anyone you want to give credit to for their help?