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| **Biology 11****Chordate Project** | **Name:Date:****Block:** |

With a partner you are to create a visual scrapbook to compare and contrast the five classes of vertebrates.

Specifically you will compare and contrast **two** of the following (if working in a group of 3 then you will be comparing three of the following):

* Amphibian (frog) or Mammal (rat)
* Fish, bird or reptile (be sure to pick a specific animal)

As a part of this project, you will be involved in dissecting a frog or a rat. During the lab, it is important you are taking pictures of the dissections. Ensure you have **pictures** **for each body system** **with a ruler** to ensure actual size is indicated. Students will need to research and provide labeled images for both organisms.

Dissection Group (4): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

We will be dissecting: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Project partner(s): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Project comparison: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Be sure to include the following:**

1. General characteristics of all animals belonging to the Phylum Chordata
2. Summarize key characteristics and evolution of fish, mammals, reptile, birds and amphibians.
3. With the aid **diagrams/photos** (from the lab, any diagrams taken from online must be referenced and labeled by you!) **compare and contrast** the following systems (of the two organisms).
	1. Digestive system – structures, what it eats, how does it get good, herbivore, omnivore, carnivore, etc.?
	2. Circulatory system (internal transport) – structures, does it have blood, open/closed circulatory system, how many heart chambers, how is the blood pumped, how are nutrients pumped to the body, etc.?
	3. Respiratory system – structures, how is oxygen delivered to the body, how is waste removed, etc.?
	4. Nervous system – structures, how does it respond to stimulus, etc.?
	5. Excretory system – structures, how does it excrete waste, etc.?
	6. Reproductive system – structures, internal/external fertilization, mating habits (finding mate), eggs/live birth, etc.?
4. Sources – include a list of references in APA-style bibliography (in alpha order using authors last names)

APA-style bibliography guide:

For books:

Author, A. A. & Author, B. B. (Year of publication). Title of book. Location: Publisher.

For journal articles:

Author, A. A. & Author, B. B. (Year). Title of article. Title of Periodical, volume number (issue number), pages.

For a website:

Author, A. A. & Author, B. B. (Date of publication). Title of document. Retrieved from <http://webaddress>

**Assessment**

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|  | **Beginning** | **Developing** | **Competent** | **Accomplished** |
| **Content (x8)** | Information presented is incompleteMany required elements missing, making the text difficult to follow and understand  | Some information presented is not accurate and well explained The explanations are not in logical orderThere is a lack of information  | Information presented is somewhat accurate and fairly well explained The explanations are in logical orderThe text is comprehensible All required elements are present  | Information presented is accurate, detailed and well explained. The text is easy to follow and understand.All required elements are present to show further understanding. |
| **Visual Aid (x6)** | Messy and incomplete.Very few pictures included.Visuals do not support information presented. Not attractive.There is a lack of effort. | Not very neat or clear.There is a lack of labeling and/or pictures.Some visuals do not support information presented. Not very attractive.Minimal effort  | Somewhat neat and clear. Labeled images included.Most visuals support information presented.Demonstrates a good effort. | Detailed, clear and neat.Labeled visuals for every body system included.Visuals support information presented.Demonstrates a considerable effort. |
| **Sources (x1)** | Unreliable or limited sources are used and/or a bibliography is not included. | Questionable sources are used, but they are cited in a bibliography. | 2 or more reliable sources have been used and cited in a bibliography. | 2 or more reliable sources have been used and cited in an APA-style bibliography. |

Total: /60

This project will be due on: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_