The “Heart” of the Jungle

Your group has been challenged to develop the next generation of medical technology for your local zoo. As you know gorillas have been suffering from increased rates of cardiovascular problems, especially heart disease. The first step to combatting heart issues in gorillas, as in humans, is to make sure that we have proper monitoring procedures and technologies in place.

As such, your group has been tasked to create a wearable heart health monitor for a gorilla that the gorilla will be able to wear for at least one continuous day at a time in order to get the best information about the gorilla’s heart health. Your group must follow the criteria put forth by the zoo and must consider all the things that the primate keepers have put on their “think about this” list.

When your deadline arrives you will have to present your design for the monitor as well as explain the justification for your design and why you made the choices you did. Like any researcher, you will also write an individual reflection that would enable you to go back and see your own thoughts as well as your group’s thoughts during the design process.

**Criteria:**

* Must be wearable by a gorilla for at least 24 hours at a time
* Must be durable enough to remain functioning while the gorilla wears it.
* Must be comfortable for the gorilla
* Must be able to monitor ECG and/or pulse automatically (no buttons need to be pressed etc.)
* Must be worn in a location that will accurately monitor the gorillas heart

**Think about this…**

* The gorilla habitat at the zoo contains water and many of the gorillas like to climb trees.
* Male gorillas beat their chest to display dominance
* Gorillas are extremely curious and will try to interact with anything that makes noise or displays a light.

Your presentation must be created using emaze or prezi and must include…

* A picture of what your design would look like
* Why your design fits the criteria
* A description of what your device is designed to monitor and how the ECG and/or pulse sensor works
* How you considered the zookeepers list and factored their thoughts into your design

Your reflection must include answers to the following questions…

* What was your group’s final definition of the problem to be solved?
* Why is this an important problem to consider?
* What was the most difficult thing about designing your health monitor and why?
* What issues did you run into as a group trying to decide on final design plan? How did you go about solving those issues?
* How would you plan to test your design?
* What possible flaws in your design can you already determine?
* What might make your design better in the future?

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| **Requirements** | **4** | **3** | **2** | **1** | **0** |
| **Accuracy/**  **Appropriateness**  **(40%)** | - Correct in its entirety.  - Appropriate explanations, using good support, thoughtful conclusions with details, and organized information showing a logical train of thought. | - Has all components completed, but may have a few incorrect parts.  - Mostly appropriate but is lacking some support and details, has basic conclusions, and mostly well-organized information that mostly follows a good train of thought. | - Some parts which are correct and some that are not or missing important components.  - Somewhat appropriate but lacks details, has little support, poor conclusions, and is not organized well, showing a scattered train of thought. | -Many incorrect or incomplete components.  -Not appropriate or has no support or details, no conclusions, and is very unorganized and hard to follow. | - Not complete or content unrelated to topic.  - Responses make no connection to content. |
| **Level of**  **Understanding**  **(30%)** | - Demonstrates a high level of understanding, demonstrating both the intermediate and basic levels of understanding but additionally able to go further with the information; an ability to evaluate information and use it for creation of information; thoughtful connections are made to new situations and viable predications are made; judgments are argued with proper support. | - Demonstrates a moderate level of understanding, demonstrating a basic level of understanding as well as the ability to apply information to situations and analyze information given; shows information being used in new situations not previously discussed and shows that ability to look at a situation and use the information to find answers to further questions; goes further than the question to make connections between information learned and new information. | *-* Demonstrates a beginning level of understanding; terminology is used appropriately, who-what-where-why information is answered, and basic connections between concepts are made; identification of already learned information are present. | - Demonstrates a need for more practice.  - Attempt at terminology but out of context, limited connections to subject matter and concepts, minimal reflection to information already learned. | - Demonstrates no evidence of understanding the material. |
| **Theme and**  **Planning**  **(20%)** | Sticks to an obvious theme throughout project.  Well planned out/designed to captivate interest of reader.  Attention to detail is superior. | Evidence of a theme throughout the project.  Planning is apparent but lacking in some respects.  Attention to detail is above average. | Obvious attempt to stick to a theme throughout the project but not completely upheld.  Planning is apparent but lacking.  Attention to detail is satisfactory. | Theme is present but not stuck to throughout project due to poor planning.  Attention to detail is below average. | No concrete evidence of a theme being supported throughout the project.  Pieced together in a random fashion because of insufficient planning. |
| **Creativity/**  **Originality**  **(10%)** | -Took a risk…unusual and unique.  - Utilized 21st century technology tools in new and creative ways. Highly creative and insightful.  “Wow” factor—high! | Played it safe…stuck to something they knew would work.  Utilized 21st century technology. Creative and insightful.  “Wow” factor—above average. | Based on something well known and adapted to meet needs of topic.  Little or no creative use of 21st century technology. Evidence of some creativity and insight.  “Wow” factor—average. | Mimics something well-known.  Graphic representations are all simply copied from internet sources.  Lacking creativity and insight. No “wow” factor | No evidence of creativity or insight. |

Averaged Score: