Muscles of Mastication Group

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Team: Jensen Weik - jweik@wisc.edu (Leader)
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Problem Statement

In veterinary anatomy education, there is a notable absence of interactive, hands-on models that illustrate the muscles of mastication for both carnivores and herbivores. This gap limits students' ability to engage in effective learning and understanding of the complex relationships between muscular and bony structures. Our goal is to develop two models that accurately replicate the anatomy of mastication muscles in two carnivores and herbivores allowing for the visualization of muscle function and clearly define individual muscles to enhance educational outcomes.

Brief Status Update

Summary of Weekly Team Member Design Accomplishments

- Team:
  - Completed the preliminary report
  - Brainstormed other designs and materials for the muscles
- Jensen Weik:
  - Complete the preliminary report
- Kaiya Merritt:
  - Completed the preliminary report
  - Gave myself and group members mid semester feedback in Feedback Fruits
  - Researched more about the capabilities of springs and how we can incorporate those and a printed material (TPU) as our muscle material
- An Hua:
  - Completed preliminary report
- Noah Kalthoff:
  - Completed the preliminary report

    - Gave me and my fellow group members adequate feedback for the assignment
    - Researched a new way to create our muscles which combined using springs and 3d printed muscles
- Leah Nelson:
    - Completed the preliminary report
    - Met with the makerspace to discuss the project and questions we had about certain aspects of it

Weekly/Ongoing Difficulties

The MakerSpace informed us that TPU will not be elastic enough for the muscle. We are now looking into a design with springs and hard shells shaped as muscles.

Upcoming Team and Individual Goals

- Team:
    - Download STL files and split apart the skulls
    - Print the carnivore and herbivore skulls at the MakerSpace
- Jensen Weik:
    - Talk with Dr. Christa Wille about her ACL model that shows the movement of tendons.
- Kaiya Merritt:
    - Split apart the skull STL files to print at the MakerSpace
    - Print skulls
    - Come up with a new 3D print resin to use with the springs
- An Hua:
    - Brainstorm new materials for the new design
- Noah Kalthoff:
    - Talk to group members and come up with a collectively agreed new muscle model
    - Start fabricating new idea
- Leah Nelson:
    - Brainstorm new muscle models that would work with the project

Project Timeline

Project Goal	**Deadline**	**Team Assigned**	**Progress**	**Completed**
Meet with client	9/6	All	100%	9/13

Product Design Specification	9/19	All	100%	9/19 (ongoing with edits)
Preliminary Presentations	10/4	All	100%	10/4
Preliminary Report	10/9	All	100%	10/9
Show and Tell	11/1	All		
Poster Presentations	12/6	All		
Final Deliverables	12/11	All		

Expenses

Item	Description	Manufacturer	Part Number	Date	QTY	Cost Each	Total	Link
Component 1								
Component 2								
Component 3								
TOTAL:								**$0.00**