Muscles of the Arm Worksheet

Material Representation 3 rulers 1 humerus, 1 ulna, 1 radius 1 brad elbow joint (hinge) string muscles paper clips tendons (and other materials) Ends of brad (joint) bent and taped into place.	Set-up:		Vertical ruler (upper arm)
1 brad elbow joint (hinge) string muscles paper clips tendons (and other materials) Ends of brad (joint) bent and taped into place.	Material	Representation	1 !
string muscles paper clips tendons (and other materials) String (muscle) Ends of brad (joint) bent and taped into place.	3 rulers	1 humerus, 1 ulna, 1 radius	
paper clips tendons (and other materials) String (muscle) Ends of brad (joint) bent and taped into place.	1 brad	elbow joint (hinge)	
Ends of brad (joint) bent and taped into place.	string	muscles	
Ends of brad (joint) bent and taped into place.	paper clips	tendons (and other materials)	
bent and taped into place.			String (muscle)
bent and taped into place.			
bent and taped into place.			
bent and taped into place.			
		Ends of bra	ad (Olli)
	Exercises:	bent and taped	d into place. Horizontal ruler (forearm)

1. Investigate muscle origin and insertion locations and muscle moments for elbow flexion. Pull the string ~5 cm for each point and record the distance the bottom ruler moves from the horizontal location.

Muscle Origin Point	Muscle Insertion Point	Amount Forearm Moved (cm)	Comments
Top hole	Farthest from joint		
Top hole	Closest to joint		
Middle hole	Farthest from joint		
Middle hole	Closest to joint		
Lowest hole	Farthest from joint		
Lowest hole	Closest to joint		

- 2. Where can you attach the muscles to achieve the most movement with the least amount of effort?
- 3. Knowing that muscles only pull a joint, how would you extend the elbow? Try it.

Bonus:

1. Can you think of a way to modify the model to account for rotation of the forearm?