

MORE THAN A HELPING HAND



Category	4	3	2	1	Points
Sketch	Students provide a rough sketch of the proposed robotic hand prototype that is neat, clearly labeled and representative of the final product	The rough sketch of the proposed robotic hand prototype is neat and clearly labeled but does not represent the final product	The rough sketch of the proposed robotic hand prototype is not neat nor labeled	The students do not provide a rough sketch of the proposed robotic hand prototype.	
Construction	The robotic hand prototype is sturdy, follows the plan/sketch accurately, and remains intact during operation	The robotic hand prototype exhibits 2 of the required construction elements	The robotic hand prototype exhibits 1 of the required construction elements	The robotic hand prototype exhibits none of the required construction elements	
Grasping Mechanism	The robotic hand prototype demonstrates both a grasping and releasing mechanism 5 times	The robotic hand prototype demonstrates both a grasping and releasing mechanism 4 times	The robotic hand prototype demonstrates both a grasping and releasing mechanism 3 times	The robotic hand prototype demonstrates both a grasping and releasing mechanism 2 or less times	
Demonstration	During the robotic hand prototype demonstration, the manipulator did not touch any parts of the grasping mechanism			During the robotic hand prototype demonstration, the manipulator touched parts of the grasping mechanism	
Creativity/ Attractiveness	The robotic hand prototype is exceptionally attractive in design, layout, and neatness.	The robotic hand prototype is attractive in terms of design, layout, and neatness.	The robotic hand prototype is acceptably attractive, though it may be a bit messy.	The robotic hand prototype is distractingly messy or very poorly designed. It is not attractive.	

Reflection	<p>Students reflect on:</p> <ul style="list-style-type: none"> • The engineering design process for their prototype, to include <ul style="list-style-type: none"> o How the hand works o Redesign considerations o Uses for the hand o Benefits of the hand • How the skeletal and muscular system work synergistically to perform hand motions 	Students reflect on 4 to 5 of the required elements.	Students reflect on 2 to 3 of the required elements.	Students reflect on 1 or less of the required elements.	
Musculoskeletal Abnormality	Students discuss a musculoskeletal abnormality to include the abnormality description, symptoms, diagnosis, and treatment	Students discuss 3 of the required elements	Students discuss 2 of the required elements	Students discuss only 1 of the required elements	
Sources- Quality	Students use at least 4 high quality references using the appropriate APA style referencing. Use https://www.scribbr.com/apa-citation-generator/ as a template for the reference.	Students use at least 3 high quality references using the appropriate APA style referencing. Use https://www.scribbr.com/apa-citation-generator/ as a template for the reference.	Students use at least 2-3 references using the APA style referencing, however the quality or citations are questionable. Use https://www.scribbr.com/apa-citation-generator/ as a template for the reference.	Students use at least 1 reference using APA style referencing, however the quality or citations are questionable. Use https://www.scribbr.com/apa-citation-generator/ as a template for the reference.	
Source Accuracy	Students cite the reference with no errors.	Students cite the reference with 1-2 errors.	Students cite the reference with 3-4 errors.	Students cite the reference with more than 5 errors.	