**How to Construct a Robot Part by Part Rubric**

**Task Statement:** Students will demonstrate they can construct a robot part by part.

**Task Assignment:** Students will lay out and dimension each part; consider the weight, speed, and tolerance; determine what toolsto use and how to use them; incorporate safety tips as a priority; and use appropriate materials for cost statements.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Criteria- Concepts/Skills** | **Novice – 1** | **Developing – 2** | **Exemplary – 3** | **Points**  **Earned** |
| Layout and dimension the robot part by part  **Possible 15 Points** | Pencil sketch main idea    **1-5 Points** | Complete sketch to working drawing and dimensions    **6-10 Points** | Complete working drawing, and dimension with exact measurements (\*add five extra credit points to simulate and animate the parts)  **11-15 Points** |  |
| Consider weight, speed, and tolerance of each part  **Possible 15 Points** | Correct height, width, and depth of each part    **1-5 Points** | Correct height, width, depth, weight, speed, and tolerance of each part  **6-10 Points** | Correct height, width, depth, weight, speed, and tolerance of each part to balance load for winning applications  **11-15 Points** |  |
| What tools will you use and how do you use the tools?  **Possible 15 Points** | Correct tools for the correct job.  **1-5 Points** | Correct tools for the correct job; precision and accuracy required  **6-10 Points** | Correct tools for the correct job; precision and accuracy required to save you time and effort  **11-15 Points** |  |
| What safety tips are required?  **Possible 15 Points** | Always wear safety glasses; have a clean and safe work space  **1-5 Points** | Always wear safety glasses; have a clean and safe work space; lay out stock before cutting; make all machines set up with power off  **6-10 Points** | Always wear safety glasses; have a clean and safe work space; lay out stock before cutting; make all machines set up with power off; wear proper attire; obey all safety rules; select the correct tool for the correct job  **11-15 Points** |  |
| Use only materials provided in class  **Possible 15 Points** | Select correct materials for each part  **1-5 Points** | Select the correct materials, size, speed, weight, and application for all functions  **6-10 Points** | Select the correct materials, size, speed, weight, and application for all functions and measurements to take you through the applications with ease  **11-15 Points** |  |
| Why are you using the materials selected?  **Possible 15 Points** | Ability to apply needed constraints  **1-5 Points** | Choose materials to apply the best constraints and accuracy for results and efficiencies  **6-10 Points** | Choose materials to apply the best constraints and accuracy for results and efficiencies that will accurately affect performance  **11-15 Points** |  |
| Find cost of materials  **Possible 15 Points** | To avoid Waste  **1-5 Points** | To avoid waste; and is for best business practices  **6-10 Points** | To avoid waste; and is for best business practices; and results in the efficiency of management  **11-15 Points** |  |
| **A = 73-105 Points B = 40-72 Points C = 8-39 Points D = 0-7 Points** | | | | |

\*Add five extra credit points to simulate and animate the parts:**\_\_\_\_\_\_\_\_\_\_**