**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:**\_\_\_\_\_\_\_\_\_\_**