Automata Rubric

Objectives	Advanced 3 Points	Intermediate 2 Points	Beginner 1 Point	Points
Design Process	Demonstrates some understanding of two-dimensional design principles. Attempts to apply spatial reasoning skills but struggles to visualize how two-dimensional shapes can be assembled into three-dimensional moving structures. Develops one design which may or may not be successful.	Demonstrates an understanding of two-dimensional design principles. Applies spatial reasoning skills to visualize how two-dimensional shapes can be assembled into three-dimensional moving structures by developing one or two successful designs to test.	Demonstrates a good understanding of two-dimensional design principles. Excels at applying spatial reasoning skills to visualize how two-dimensional shapes can be assembled into three-dimensional moving structures by developing multiple successful designs to test.	
Mechanisms of Movement	Is able to identify the basic mechanisms of movement in automata, including cams, cranks, gears, and driveshafts. Can articulate how each impacts movement and their design.	Is able to identify the basic mechanisms of movement in automata, including cams, cranks, gears, and driveshafts.	Is able to identify some of the basic mechanisms of movement in automata, including cams, cranks, gears, or driveshafts.	
Prototyping	Plan, test, and adjust multiple different cam-and-gear configurations to engineer desired movements. Excels at real-world problem solving and creative exploration. Creates and tests multiple new designs.	Plan, test, and adjust a few different cam-and-gear configurations to engineer desired movements. Showcases real-world problem solving and creative exploration. Creates and tests one or more entirely new designs.	Adjust one cam-and-gear configuration to engineer desired movements.	
Creative Thinking & Storytelling	Apply creative thinking and storytelling techniques to design and construct dynamic scenes that harness movement to convey a narrative and theme. Generates and compares multiple solutions to determine best final design.	Apply creative thinking and storytelling techniques to design and construct dynamic scenes that harness movement to convey a narrative or theme. Evaluates and iterates upon their designs based on feedback and testing. Generates and compares several solutions.	Applies some creative thinking and storytelling techniques to design and construct scenes that harness movement to convey a narrative or theme. Generates one design.	
Communication & Feedback	Articulates the design choices, mechanical principles employed, and storytelling elements in their creations. Is able to communicate all constraints and excels at identifying additional problem solving solutions. Is able to give, receive, and incorporate constructive feedback. Actively seeks feedback from peers and instructors.	Articulates the design choices, mechanical principles employed, or storytelling elements in their creations. Does not recognize all constraints or is unable to identify problem solving solutions. Is able to give, receive, and/or incorporate constructive feedback.	Can communicate some design choices and how one or two constraints impacted their design or the use of their invention kit. Does not give, receive, or incorporate constructive feedback.	
Point Key:	**11 - 15 Points**	**6 - 10 Points**	**1 - 5 Points**	Total: