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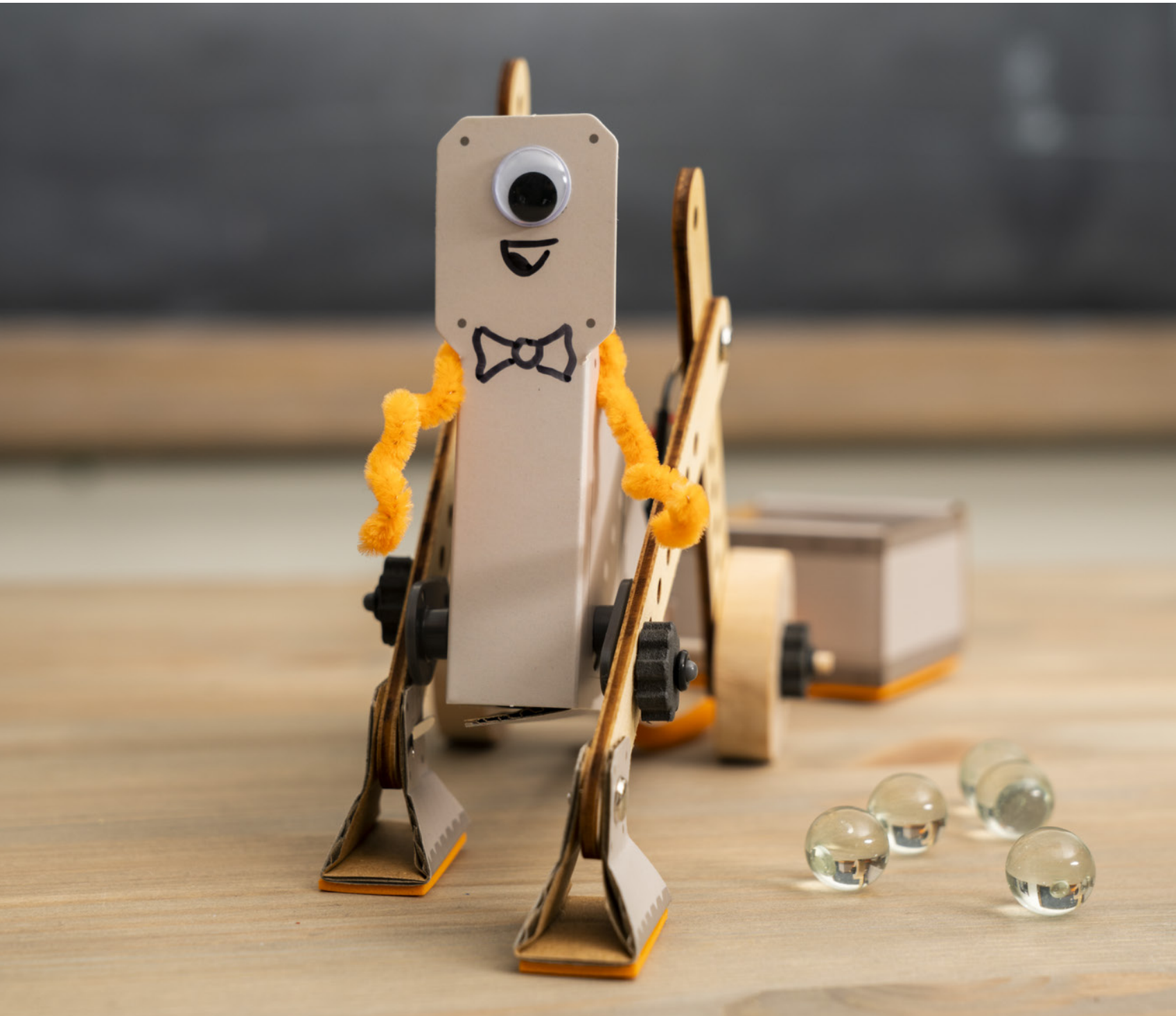
Robot Crawler

Next Generation Science Standards



How does the Robot Crawler project align to the Next Generation Science Standards?

NGSS	The Robot Crawler Project
4-PS3-4: Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.	*Students will build, modify, and optimize a robot crawler that uses electrical energy to walk. (Sections 1, 2, 3)*
3-5-ETS1-1: Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.	*Students will use the given materials to create a robot that can walk forward or backward for a period of time and be used for experimentation. (Section 1)*
3-5-ETS1-2: Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.	*Students will adapt the robot crawler to walk as fast as possible by modifying the legs and cranks. (Section 2)*
3-5-ETS1-3: Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	*Students will investigate multiple variables and improve their robot crawler's design to pull as many marbles as possible. (Section 3)*