

How does the Drawbot project align to the Next Generation Science Standards?

NGSS

The Drawbot Project

3-PS2-1: Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.

Students will experiment with balanced and unbalanced forces by adjusting their drawbot's design and investigating the results (Section 1 and Section 2).

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 adapt their drawbot to produce a specific type of drawing, using only the materials given (Section 2).

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 investigate multiple solutions in order to design a drawbot that can produce new patterns (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 adjust multiple variables in their drawbot, test the design, and make changes based on the results (Section 2).