Cup Pick Up
Grade Band Elementary

Physical Science	Next Generation Science Standards
1-PS4-1	Understanding light and sound waves (sensor input could relate)
3-PS2-4	Plan and conduct an investigation on the effects of balanced and unbalanced forces.
3-PS2-4	Define a simple design problem that can be solved by applying science ideas about magnets or forces.
4-PS3-4	Apply scientific ideas to design, test, and refine a device that converts energy (motors) to motion.
5-PS2-1	Support an argument that gravitational force acts on objects, even without touching them.
Engineering Design	
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.
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.
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.

Reading	English Language Arts (Reading & Writing)
RI.1.3 to RI.5.3	Describe connections between scientific ideas and processes.
RI.2.7 to RI.5.7	Use visuals and text features to clarify understanding (e.g., diagrams of motor systems).
SL.2.1 to SL.5.1	Engage in collaborative discussions, build on others' ideas, and express clear thinking.

Writing	
W.2.2 to W.5.2	Write informative texts to explain the procedures or results.
W.3.7 to W.5.7	Conduct short research and experiments; gather and record observations.
Measurement and Data	**Mathematics**
2.MD.10 to 5.MD.2	Organize, represent, and interpret data in graphs or tables.
3.MD.1 to 4.MD.2	Measure time and weight if applied.
5.MD.5	Understand and compute volume if relevant to barrier or bunny house design.
Operations & Algebraic Thinking	
3.OA.3 to 4.OA.3	Solve problems using multiplication/division in real-world scenarios.
5.OA.1	Use parentheses and expressions to model group coordination.
Mathematical Practice Standards	**Modeling & Problem Solving**
MP2	Reason quantitatively about garden space and sensor data.
MP4	Model a real-world problem using math.
MP5	Use appropriate tools (e.g., sensors, measurement tools, graphing tools).
Computer Science	**Missouri K-5 Draft Standards**
DA.K-5.1	Collect and represent data in various ways.
AP.K-5.2	Develop programs with sequences and simple loops to solve problems.
AP.K-5.3	Decompose tasks (1 motor per person) to accomplish a larger goal (lift cup).

| AP.K-5.4 | Test and refine programs based on feedback or performance. |
| IC.K-5.1 | Understand how computing impacts daily life and the environment. |