Board Game Design
Mini Challenge

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Problem Scenario: You are a board game designer tasked with developing a packaging method for a new board game. You must package three marbles into each game from a large box of about 100 marbles, a mechanism designed to separate those marbles into groups of three and a container to hold the marbles within the board game box. Each marble has a diameter of 2cm.

Challenge: How can you create the ultimate, secure packaging method? What's in a package?

Criteria:
• pencil/ boxes/ art supplies
• Must be able to demonstrate that the prototype is able to hold the required number of marbles.
• The metric developed to evaluate the machine needs to take into consideration replication of the machine's job.

1. Brainstorm: Use the space below to brainstorm the design to create the ultimate, secure packaging method?

Develop at least 3 different strategies you could use to separate marbles from each other.

What characteristics of the marbles can you exploit?

Define secure packaging.

2. Design:

- Identify your best brainstorm idea and make a sketch of your machine on the provided page.
- Describe the design and how it works.
- Be sure to be as specific as possible in your design.
- Assume each box is 2cm square.

4. Evaluate: Answer the following questions to evaluate the functionality of your machine.

- Can your machine hold 100 marbles? How do you know?
- Does your machine separate the marbles into groups of three?
- How fast do you think your machine can separate the marbles?
- Evaluate your machine on a metric that you choose.
- Note the metric and your evaluation.

5. Modify:

- Pick at least one way to improve the machine.
- Use the questions you answered in the evaluate step to come up with ideas for improving your design.
- Write down at least one ideas in this box an change your model to reflect it:

3. Build:

Use available materials to build your machine. It does not have to be functional. The goal is to develop a prototype to demonstrate the functionality.

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Describe your design: