Cardboard Arcade [TINKERING]

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PROJECT STEPS	WAYS OF PROBLEM SOLVING AND SHARING YOUR PROJECT		
Dream It!	**SOLOIST** We/I had no need for brainstorming ideas, we only listened to one person who had a pretty good idea	**COLLABORATOR** We/I took turns brainstorming and discussed various solutions according to our constraints and time and different perspectives	**INNOVATOR** We/I studied other ideas for inspiration, brainstormed and discussed multiple options, then came up with a unique solution
Draw It!	**EXPLORING** My model or drawing can be explained by the makers	**EVOLVING** My model drawing can be understood by anyone because it is clearly labeled, to scale	**EXPANDING** I used 3D sculpting tools, like TinkerCAD, Fusion 360
Build It!	**LOYALIST** I like sticking with one problem that I find interesting for a deeper understanding of a problem.	**POLLINATOR** I like to try lots of different ideas in a short amount of time for a diverse exposure to ideas.	**SLOW COOKER** It takes me a while to experiment with different ideas but then I like to spend a lot of time on one until it's great!
Share It!	**PEER CRITIQUE** Share your project with someone who did not make it, ask them for their feedback and suggestions on how to improve the design	**COMMUNITY SHOWCASE** Share your project in a school wide or online family share showcase where you can explain the process of how you made your design	**DIGITAL CITIZEN** Why not share things you have made that you are proud of, like your latest project, slime recipes or invention? TikTok, Instagram, Tumblr and Twitter are good places to start if you are over 13
Expand It!	**SOLOIST** I took my design and tried various changes to its design based on my testing	**COLLABORATOR** After documenting, testing, and listening to the feedback of others, I changed my design and it is better with the help of others	**INNOVATOR** I created something that we have never seen or mashed together different crazy Ideas to make something new.
Makers Choice Is there a criteria that you feel your project or efforts should be evaluated on that is not listed yet? If so, write it here:			

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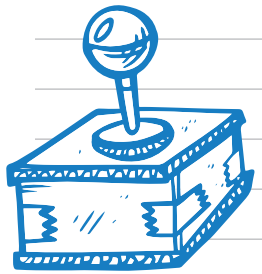
RATE THIS PROBLEM:

How hard was this project over all? (Check appropriate box)

1	2	3	4	5	6	7	8
EASY							HARD
☐	☐	☐	☐	☐	☐	☐	☐

REFLECT ON YOUR PROBLEM:

What made it hard (lack of ideas, knowledge, time, materials, help, tools, etc.)?



All designers and engineers get stuck when making something for the first time. When I got stuck or needed inspiration what did I do?

- ☐ Did I use a tutorial? (listen and watch to learn)
- ☐ Did I discuss my ideas with others in person or online? (discuss to learn)
- ☐ Did I start to build even before I totally knew what I was doing? (tinker to learn)

1. The best games are challenging without being too impossible. What about your game made it fun to play?

2. Cardboard is a magical material for prototyping what might become a more long term solution to a design. What are the limits of cardboard and what makes it so great for quick prototyping?

3. Getting a ball to move around the play field is all physics. Which of Newton's laws are illustrated well by a game such as a pinball machine?