



XtraSTEM Activity- Paper Plate Pinball Machine Challenge

1. The challenge of this activity is to build a machine that will get your marble from point A to point B or keep it in play on your plate.
2. Materials: paper plate, scissors, construction paper, tape, markers, marbles, pipe cleaners, straws, timer, or other materials that you would like to choose from
3. Introduction: Show your kids short video clips of pinball machines to review the important parts of a pinball machine and the function of those parts. Here are some example video links to show your kids. You can also search Pinball Machine video clips for kids.

Vintage Pinball Machines- <https://www.youtube.com/watch?v=gnrrbKFWL3Q>

The Greatest Pinball Machines- <https://www.youtube.com/watch?v=9ssQTmZwoPg>

4. Give the kids time to draw out their design in the planning section in the recording sheet below.
5. When the children are ready, they will collect their supplies and start building their pinball machine on their paper plate. Remind the kids to label their starting point (A) and their end point (B).
6. Give the kids marbles so they can test out their machine multiple times.
7. Math Extension: When the students are ready, have them start their timer and see how long they can keep their marble in play or get their marble through their pathway (Point A to Point B). You will have the kids try this at least three times. Then, they will add the three times in seconds on their recording sheet to find the total number of seconds in play. Then, the kids will choose two of the times that they recorded and find the difference on their recording sheet.
8. Have the students pair up to share their pinball plate design. Give the students time to make changes or create a new design for the next paper plate pinball challenge that they can create in a science center in the classroom or at home.



Name: _____



Paper Plate Pinball Machine Recording Sheet

<u>My Plan</u>	<u>Math Fluency</u>	<u>New Plan</u>
	<div style="text-align: center;"><input type="text"/> <input type="text"/> + <input type="text"/> _____</div> <p style="text-align: right;">seconds</p>	
	<div style="text-align: center;"><input type="text"/> <input type="text"/> - <input type="text"/> _____</div> <p style="text-align: right;">seconds</p>	