

Franklin Fifth Graders Create Cardboard Arcade

The names are classic arcade: "Assassin Roulette," "Dr. Who Pinball," "Space Wars," and "Zappatron." The materials used are classic kid stuff: cardboard, tempera paint, foam dart guns, rubber bands, balloons, and plastic flowers. But teacher Dustin Brantley's "cardboard arcade" project is about way more than fun and games. It's about engineering, creativity, persistence, and learning from your mistakes.

The design challenge

Brantley, who has been teaching at Franklin Elementary School for 11 years, first introduced the arcade project to his 5th graders in 2012. The project guidelines are relatively simple: Build an arcade game that includes at least one simple machine and is 90% constructed from recyclable materials. What brings the project alive is kid ingenuity. "I am always amazed by how each kid approaches the same problem," Brantley says. "How does the ball get returned? Does it come back on a ramp? If so, what will be used for the ramp? Cardboard? Empty water bottles? One kid used a series of rubber bands that the ball would bounce against to return to the player. Another kid used a fan to blow the ball back."



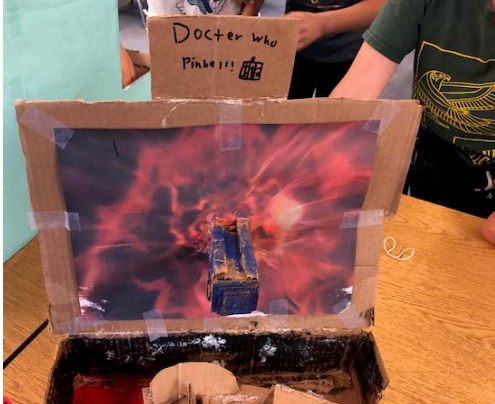
"When they explain how they built it, they have a huge sense of pride!"

Arcade Day

Once the game is built, other classes play them at the annual Arcade Day. Brantley's students stay at their station for an entire school day, and each period they teach younger students how to play, which has become a cherished Franklin tradition. "This year, as the 2nd graders were leaving the room, I asked if they had a good time," Brantley says. "One kid said with a tear in her eye, 'This was the best day of my whole life.'"



Brantley's 5th graders are usually exhausted from the end of the day, from the sheer repetition of "narrating rules, resetting the games, and going after flying parts" for hundreds of other students, Brantley says. But this teaches the students about job responsibility (e.g., no, you cannot hang an "On Break" sign on your game to go play your friends' games). It also gives quieter students a chance to come out of their shells. "It's not too often a kid gets to use their mechanical side to create something that is enjoyed by the whole school," Brantley says. Plus, as the students run the arcade, they see "how their creation is bringing thrills to others," which can help them feel more confident.



Of course, some lessons are learned the hard way. One student accidentally hot glued her hair to her game while she was trying to fix it. ("I've had to untangle/cut students' hair out of MANY, MANY mechanical parts," Brantley says.) Another created a water game out of cardboard. Brantley says he has learned to always have hot glue, duct tape, and a screwdriver ready on Arcade Day for quick fixes.

The final step of the project is a class meeting, "where we talk about everything from what it was like to stay at a job for many hours, to problems that arose and what they did to fix/improvise, and if they would have changed anything about their game now that they have seen it in action for many hours (and being handled by kindergarteners!)," Brantley notes.



Brantley himself doesn't spend a lot of time at arcades, although he has been to the Alameda Pinball Museum a few times. "I like playing the students' games much more," he says.