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## **Baldwin Park Unified to Announce Winners in 21st Century Challenge**

### 11 elementary schools compete in innovative design contest

**BALDWIN PARK** – Balls of all sizes rumbled down ramps, flew from catapults, toppled CD cases, spun a Ferris wheel and leapt from a rat trap as elementary students across Baldwin Park Unified assembled simple machines into complex Rube Goldberg devices.

And they didn't stop there. A roll of toilet paper launched a spaceship, a tether ball spun to knock over blocks and boats were pushed across tubs by a fan, a plastic-spoon propeller or even shoved by a stick.

In each case, the result was met with a singular sound: Cheering students.

Welcome to the 21st Century Challenge, a competition among Baldwin Park Unified elementary students to design complex, 10-foot-by-10-foot devices that use levers, wheels, wedges, screws, inclined planes and pulleys to launch a message.

"It's amazing to see what our students came up with," said Sue McNamara, who developed the contest for Baldwin Park Unified. "Some of these machines almost defy belief, using toothpicks to create bridges or plastic spoons to make a propeller. The creativity is off the charts."

Teams of students at 11 Baldwin Park Unified elementary schools worked for nearly four months to assemble the Rube Goldberg devices – named for a cartoonist and engineer known for his whimsical drawings of overly complex machines – using mostly common objects found in their classrooms or around their homes. Points were awarded for creativity, design, artistry as well as humor – which frequently popped up in the messages launched.

Winners will be revealed on **Thursday, April 26**, during a special showcase of videos created by the students to demonstrate the devices.

But even more impressive, McNamara said, is how the teams grew in their collaborations, with students spurring each other to achieve new accomplishments and discover new strengths.

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“In the end, it all came back to the collaborative spirit and the friendships these students forged over the last few months,” she said. “That’s a lesson and a benefit beyond all the engineering.”

Teams at each school created their own approaches to the project.

At Elwin Elementary, students first developed machines independently – focusing on creating wonders of the ancient world. The result: A collection of pyramids, a ziggurat and other items they then assembled into a journey across time in 22 steps. Their message: Don’t forget the coffee creamer.

“We separated into groups to decide who would be in charge of the beginning and the middle and the end. We would come up with our individual ideas and then come up with a connecting piece to take those two individual ideas and make them into one piece,” fifth-grader Sierra Villagran said.

“Everyone had a chance to express themselves through each part,” said Sierra, who became the group’s ramp specialist.

Sierra said the Elwin team tested its design 70 times before getting all pieces to work.

“One part would work and then down the line something would not set off, and then we’d have to set it all up again. The next time we tried, that part would work, but the next step wouldn’t,” she said. “It was really frustrating.”

Then, finally, everything worked.

“It was a very happy moment and relieving,” she said.

At Walnut Elementary, students developed their overall concept first and then constructed a 19-step device in stages to achieve their goal. Their device, which used pulleys, dictionaries and yardsticks as well as a sliding monkey, represented a home. The message? More toilet paper!

Fourth-graders Frida Alvaradejo and Paola Tamayo teamed up on the last three steps of the project. The girls said they enjoyed solving problems together but were stumped when they couldn’t keep two cans together.

So they turned to their classmates.

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“Some people asked for our advice and that helped them make the machine better, and they helped us with our steps,” Frida said.

The duo said they valued the trust their classmates put in them.

“I felt good about myself because they counted on us,” Paola said.

“It felt awesome,” Frida added.

## **PHOTOS**

**BPUSD\_CHALLENGE\_1:** Students at Baldwin Park Unified’s Walnut Elementary School reset parts of their 19-step Rube Goldberg device shortly before their first successful test as part of the second annual 21st Century Challenge.

**BPUSD\_CHALLENGE\_2:** Students at Baldwin Park Unified’s Pleasant View Elementary stand by their 10-step machine during a day of testing for the second annual 21st Century Challenge.

**BPUSD\_CHALLENGE\_3:** Students at Baldwin Park Unified’s Elwin Elementary stand outside their 22-step Rube Goldberg device, which bears a warning in hieroglyphics, as part of the second annual 21st Century Challenge.