

Field Day

6th – 8th Grade: Field days are a common tradition in many elementary and middle schools. This is an outdoor event filled with competitive physical activities, often involving students in games like three-legged races, relay races, and tug-of-war. Table 1 shows the number of students who have registered to participate in each activity.

Table 1: Activity Participation

Activity	Number of Participants
Tug-of-war	132
3-Legged Race	76
Ballon Pop Race	98
Mixed-up Relay Race	82
Squirt Gun Race	165
Capture the Flag	250

1. The organizers just announced that 96.7% of the student population has registered to participate in Field Day. If students can only participate in 1 activity, then how many students are at this school? Justify your decision.

2. Students participating in the squirt gun race are tasked with filling a 3-ounce cup with water by squirting it from a distance of 5 feet. Each squirt gun has a capacity of 10 ounces. The most proficient competitors manage to land only 12% of their shots into the cup.
 - **Time to empty the squirt gun:** Approximately 30 seconds
 - **Time to refill the squirt gun:** Roughly 15 seconds

How many minutes does it take for the most skilled competitors to fill up the cup? Justify your answer.

3. Each ballon pop race requires 7 balloons filled with helium for each participant. It takes 25 seconds to fill 1 balloon. Volunteers are using 5 tanks of helium to fill the balloons. Carl claims that the volunteers will need 2 hours to fill all of the balloons. Do you agree or disagree with the volunteer's claim? Justify your answer.
