

PhyzCompetition X

BroomBall Relay 1.0

ACCELERATION COURSE

PERIOD	1.	
TEAM	2.	
	3.	

• Objective •

The objective is to propel a medicine ball through a pre-drawn course in the least amount of time. The ball is to be propelled by a broom (operated by a contestant). The best scoring teams will earn BroomBoon. Record the BroomBoon in the space below.

• Equipment •

- ___ medicine ball (~5 kg / 12 lb.)
- ___ sweep broom
- ___ access to pre-drawn course on a reasonably level surface

• Rules •

The competition must be carried out in a safe and fair manner at all times!

1. Follow the written and spoken instructions of the referee (teacher) at all times. Failure to do so is grounds for disqualification.

2. Each team shall have three **broomers**. Teams with fewer than three members will need to have one or more members take two turns at the broom.

3. Officials will be volunteers from all groups with more than three members. No more than one official will be taken from each group. (Officials are guaranteed BroomBoon, but in a smaller amount.) Officials will be involved with timing and foul-calling.

4. A teams score is the sum of two values. Low score wins.

i. The first value is the number of seconds it takes for the team's three broomers to propel the medicine ball through the acceleration course.

ii. The second value is the number of fouls committed by the team during its turn.

5. Fouls.

i. The medicine ball must stay within the path of the acceleration course during the team's turn. If the medicine ball leaves the path of the acceleration course, the team is charged with a foul. Out of bounds medicine balls must be returned to the course by the contestant using only the broom.

ii. Only the broom is to be used to propel or guide the ball. If a broomer uses something other than the broom (hands, feet, squirrels, etc.) on the ball, the team is charged with a foul.

6. The ball must pass through the complete course. No section of the course may be skipped.

• Play •

1. The first broomer takes his/her position at the start line. Nothing (broomer, broom, or medicine ball) crosses the start line before the start signal is given.

2. The time starts when the start signal is given. The broomer begins guiding the ball through the course at this point.

3. Officials will count fouls as the broomer completes the course.

4. When the first broomer crosses the finish line, he/she passes the broom to the second broomer. The second broomer must broom the ball to the start line and complete the course.

5. The process is repeated for the third broomer.

6. Timing is stopped when the third broomer crosses the finish line.

• **Results** •

1. What was YOUR team's time?

2. What was the best time in the class?

• **Post-Game Analysis** •

1. What is the strategy for getting the best time with the fewest fouls? Answer using words **and** pictures.

2. Which sections are more difficult for a broomer, uniform motion sections or accelerated motion section? Explain.

3. How do you broom the ball around a corner? The diagram to the right shows the ball before, during, and after turning a corner. The **velocity** before and after the turn is shown. Draw an arrow to show the direction of the broom **force** needed change the ball's direction when the ball is in the corner (in the dashed circle).

