

56.

Slope Speedway

Topic: Algebra

Number of
Players: 2 players or teams of 4 or less

Objective: To introduce slope as the ratio of the change in y to the change in x .

Materials: Gameboard, 2 different-colored pencils, paper on which to keep a record of the moves

Procedure: Each player puts a dot on the x axis at Start (keeping in the bounds of the speedway). Players take turns. The move is determined by the ratio of the given slope. Each player begins with a slope of $1/1$.

On each move, a player may increase or decrease the numerator (change in y) or the denominator (change in x) by 1. Thus, the first move may be chosen from $1/2$, $2/1$, $0/1$, and $1/0$. If $1/2$ is chosen, the player moves up 1 and over 2 from the starting point. The player makes a choice and graphs the new coordinate point. A line segment is drawn to connect points in order.

Each player keeps a record of the choice of move (slope) on a sheet of paper. On subsequent turns, players alter the slope from the previous play by increasing or decreasing the numerator or denominator.

The first player to reach the finish line wins. A player may not move to an occupied point of the graph and is disqualified if the move results in a point on or outside the boundary of the track. If a player is disqualified, the other player wins.

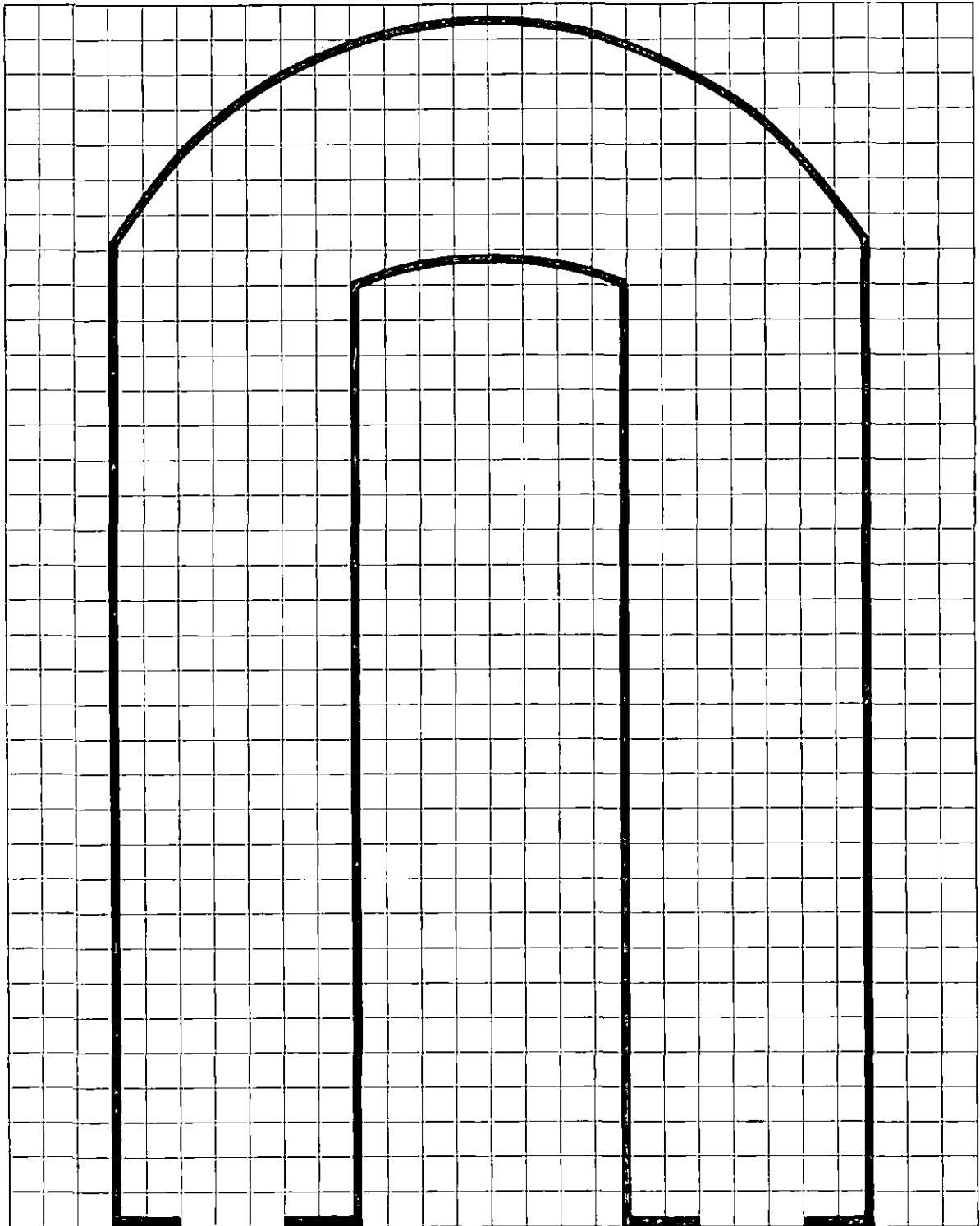
Sample Record
Card:

Player 1	Player 2
$2/1$	$1/2$
$2/2$	$1/1$
$1/2$	$0/1$

NOTE: To proceed down the right side of the track, the y value must be a negative number.

Variation: To rule out undefined slope (vertical movement) because of division by zero in the fraction form, change the increase-decrease rule so that a decrease of 1 in the denominator (when the denominator is 1) becomes -1 , not zero.

Slope Speedway



START

FINISH

