

# Racing Game (Two Dice)

## Suggestions

Several games can be based on this applet. Possible math goals of each game are indicated in parenthesis.

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**Game 1** (introduction of multiple-outcome events; set operations; computing particular probabilities)

Set the controls on the applet in such a way that Player 1 wins if the sum of the dice is 5, and Player 2 wins if it is 7. Also, set the number of steps to one. The game is not fair. Just how unfair is it? Simulate many games to find out the chances of each racer winning. Change the winning numbers for the racers. How often do you expect each player to win? Run the program many times. Are the players winning as often as you expected?

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**Game 2** (multiple-outcome events; set operations; probability intuition)

Reset the controls so it takes two steps to get to the finish instead of one step, as in Game 1. What happens to the chances of winning? Reset controls to more steps (4, 5, 10). What happens to the chances of winning? Why?