

## ***Craps Game for Ozobot***

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### ***Introduction***

Craps is a favorite casino game for many. While the casino version, with all of its nuances, may be challenging to beginning players, Ozobot will be playing the simplest form of the game of Craps. Here are the rules for Ozobot Craps:

The game consists of two phases, “come-out” and “point”. In the “come-out” phase, you roll a pair of ordinary six-sided dice. If the sum of the faces up is:

- 7 or 11 (a “natural”), then you win the game.
- 2, 3, or 12, then you have “crapped-out” and lose the game.
- 4, 5, 6, 8, 9, or 10, then this roll becomes your “point” and you go on to the “point” phase.

In the “point” phase, you keep rolling the pair of dice until you roll a 7 or you roll your point.

- If you roll a 7 before rolling your point, you are said to “seven-out” and you lose the game.
- If you roll your point before rolling a seven, then you win the game.

### ***Running the OzoBlockly Program with Bit***

1. Select *OzobotBitCrapsGameFinal.ozocode* and load the program onto your Ozobot Bit. Bit will provide all numeric program output by blinking its top light.
2. With Bit turned off, double-press Bit’s button. Bit’s top light should then be green. The OzoBlockly program has started running.
3. Quickly place Ozobot on the start location on the OzoMap shown on the last page of this document, facing the direction shown by the arrow.
4. Ozobot will move to the first blue diamond and indicate the result of rolling a pair of dice, with Bit blinking the roll value.
5. Bit will then follow the “Natural”, “Point”, or “Crapped Out” branch, dependent on the result of the roll.
6. Any time that Bit reaches “WIN!!!”, he will do a quick disco animation, spin around in joy, and then turn off.
7. Any time that Bit reaches “Lose”, he will do a police light animation, display a green top light, and then turn off.
8. The player with the greatest number of game wins, in an initial agreed upon number of games to play, is the overall winner. In the event of ties, a runoff round can be held.

### ***Running the OzoBlockly Program with Evo***

1. Select *OzobotEvoCrapsGameFinal.ozocode* and load the program onto your Ozobot Evo. Evo will provide all numeric program output by speaking the numbers.
2. With Evo turned off, press Evo's button. When all of Evo's lights turn blue, then double-press Evo button. The top light will turn green, indicating that the OzoBlockly program has started running.
3. Quickly place Evo on the start location on the OzoMap shown on the last page of this document, facing the direction shown by the arrow.
4. Evo will move to the first blue diamond and indicate the result of rolling a pair of dice by speaking the roll value.
5. Evo will then follow the "Natural", "Point", or "Crapped Out" branch, dependent on the result of the roll.
6. Any time that Evo reaches "WIN!!!", he will do a quick disco animation, spin around in joy, and then turn off.
7. Any time that Evo reaches "Lose", he will do a police light animation and then display a green top light, and then turn off.
8. The player with the greatest number of game wins, in an initial agreed upon number of games to play, is the overall winner. In the event of ties, a runoff round can be held.

### ***Programming Challenge***

Students of computer science for decades have been given the assignment of writing a program that simulates a Craps game. Writing such a program for Ozobot is a challenging project. It is probably best to make it a take-home project. Provide the student with the Ozomap on the next page and indicate that the program should be written to work with that Ozomap, and should follow the game rules and "Running" instructions above.

# Craps

# Game

