

ROBOGAMES

OLYMPIC EVENTS

Each day, only certain events will be held. Build and program your robot to complete the challenges the best you can. You must complete a Planning Sheet for each event you enter. Awards for 1st, 2nd, and 3rd place will be given in each event.

FIGURE SKATING

Spin around 3 times then skate toward the judges and come to a complete stop. Scoring is based on how close you are to the judges.

(Hint: A gyro sensor might work here, or base your spins on wheel rotations.)



CROSS COUNTRY

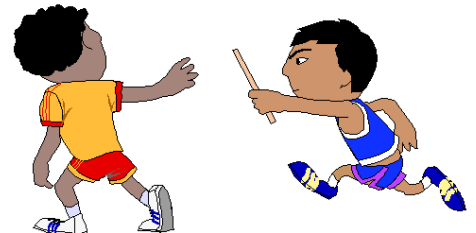
Complete the course in the fastest time. There will be one obstacle you must avoid. The rest of the course can be completed by following the marked path. Scoring is based on your finish time.



(Hint: A color sensor can follow the line. You choose how you will detect the obstacle. Be sure to keep track of your time and display this on the EV3 display when your run is completed.)

RELAY RACE

You and your partner robot must complete 4 legs. You will start and complete the first leg. You “pass the baton” to your partner by bumping into it. This should make you stop and it start the second leg. Scoring is based on your finish time.

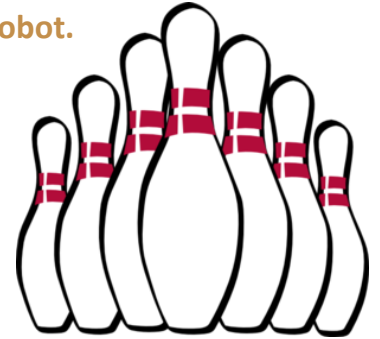


(Hint: You will defiantly need a bumper on the front and back of your bot. Keep track of your time and display this on the EV3 display when the relay is completed.)

BOWLING

Your robot must bowl three frames. The ball must be completely in your robot's grasp (off the ground) at the start. Once you start the program, your bot must release the ball from behind the foul line. Once you begin your game, you cannot make changes to your robot. Results will be based on pins knocked down during your game using standard bowling scoring.

(Hint: You need to get some force behind your roll. Maybe your robot could push the ball or have it roll down a ramp. You can choose to use the wooden balls or the pool balls.)



SHOT PUT

Follow the path to the ring. You must be completely inside the ring and pause before the throw begins. Judges will mark where the shot initially lands. To be scored, the shot must land inside the 35° sector. The longest distance of 3 puts will be used.

(Hint: The small motor will probably be needed for a "launching" arm.)



DRAG RACE

Robots must start with color sensor on the starting line. When program is run, robot must roll forward until the sensor is in front of the starting line, stop, play the "backing alert" sound, reset the timer, then race to the finish line. Robot should COAST to a stop at the finish. Scoring will be based on the fastest completion time.



(Hint: Gears would probably be a good idea. Time elapsed from the reset to the finish line must be displayed on screen.)

TUG OF WAR



Robots will go head-to-head in this competition. Rope must be attached to the back of bot. The sound sensor should trigger the beginning of the match. First to pull opponent across the center line wins and advances to the next round. If the rope becomes detached from your bot, you are disqualified. Scoring is based on advancement through the tournament bracket.

(Hint: What do you think is the best strategy... speed or power?)

SUMO WRESTLING (extra event if time allows)



Robots will go head-to-head in this competition. The sound sensor should trigger the beginning of the match. The first robot to be more than $\frac{1}{2}$ outside of the circle loses. There will be three bouts per match and the robot with the most wins advances to the next round.

(Hint: Use a color sensor to see if your bot is close to the edge. What else might give your bot an advantage?)
