

PokéBot GO!

DESCRIPTION: Team Driving involving a team of two or more members. The team will consist of two robots on the mat at the same time. The robots may work together or separately on the tasks. Size of the field will be approximately 20' X 15'. All Robots will need to fit inside a box 18" X 18" X 18" at the time the game begins.

Rules

1. Participants will have 5 minutes to gain experience points. All team members may have hands on time in controlling the bots.
2. All team members may walk around most of the playing surface during the event. Off limit areas will be marked. The "Incubator" will not be directly visible so drivers will need to view the video monitor when navigating there. No additional video feeds will be allowed.
3. PokéBots must navigate to various location and complete designated tasks.
4. Each completed task receives experience points as specified below.

YOUR MISSION: Gain experience as a Pokémon trainer by 1) activating Pokéstops, 2) capturing Pokémon, 3) delivering Pokémon eggs to the Incubator, and 4) delivering captured Pokémon into the Gym for battle.

Field Setup: The field will be approximately 15 feet by 20 feet and bound by PVC pipe. Five Pokéstops and three Pokémon will be located at various positions, along with an Incubator and Gym in two corners of the field.

- 1) "Spinning" a Pokéstop will release three items which are either Pokéballs or Pokémon Eggs. To spin the Pokéstop a PokéBot must push a PVC bar 180 degrees around a stand. The PVC bars will be at different heights ranging from 5" to 15" off of the ground, and turn in different directions.
- 2) Three Pokémon will be located within circles of various sizes on the field. To capture a Pokémon and gain experience, a Pokéball must be flung by the PokéBot and hit the Pokémon. The PokéBot **must remain outside the circle surrounding the Pokémon**. "Flinging" includes any manner of sending the Pokéball such as pushing, batting, or throwing.
- 3) Eggs which get dispensed from Pokéstops need to be delivered to the Incubator. The Incubator is elevated and must be entered by driving up a ramp. The inside of the Incubator is not directly visible. An overhead camera will provide a video feed to a TV monitor for observation. The Egg must be dropped into a hole in the Incubator to gain experience points.
- 4) Captured Pokémon may be guided by a PokéBot to the Gym for additional experience points. The entry to the gym is blocked and will require one PokéBot to pull a rope to hold it open while the other PokéBot delivers the Pokémon.

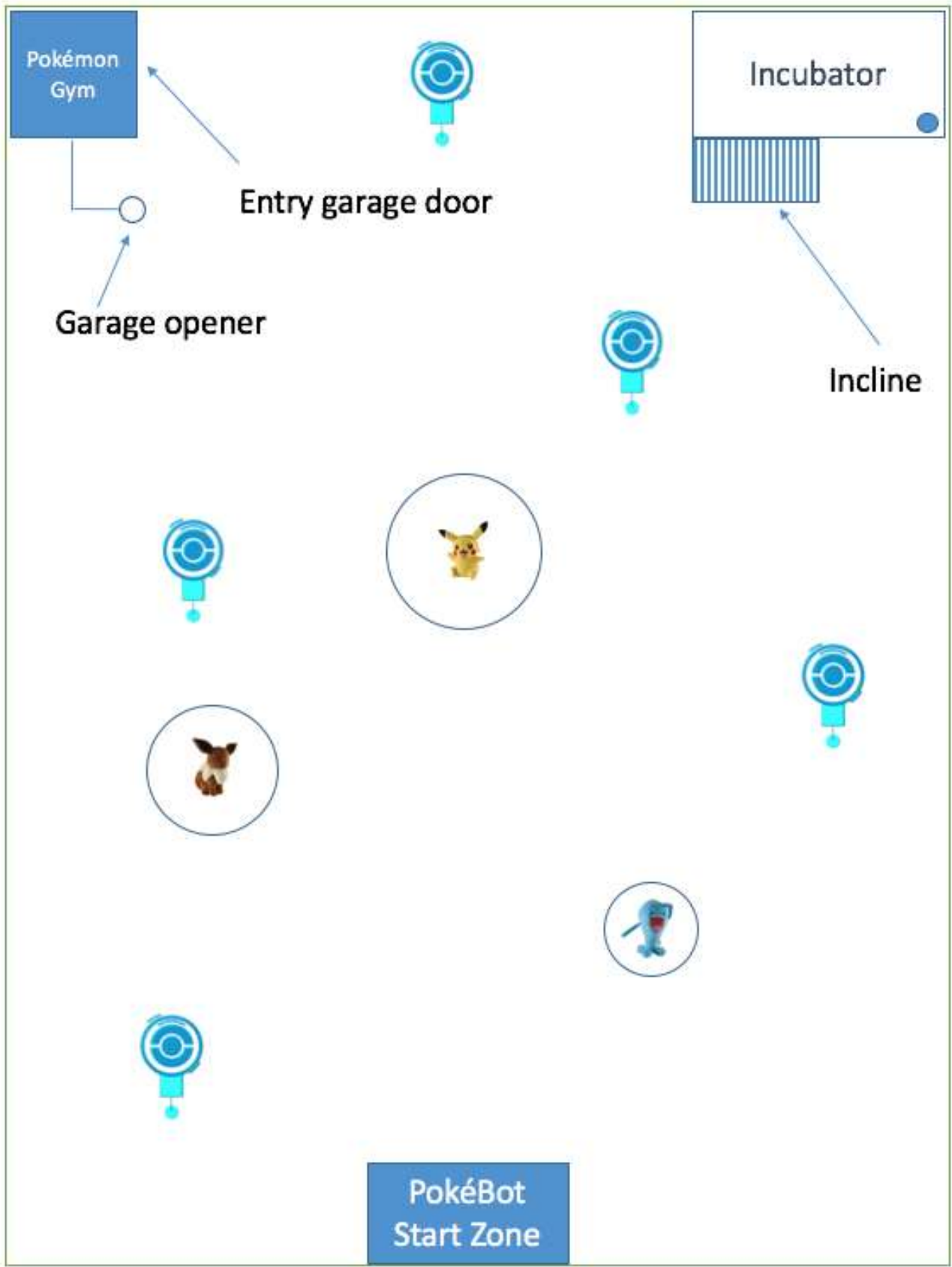
Scoring:

Activating Pokéstop:		= 50 Experience Points
Hatching Egg:		= 150 Experience Points
Capturing Pokémon:	Wobuffet	= 100 Experience Points
	Eevee	= 125 Experience Points
	Pikachu	= 150 Experience Points
Delivering Pokémon : to Gym	Wobuffet	= 100 Experience Points
	Eevee	= 125 Experience Points
	Pikachu	= 150 Experience Points

Maximum possible points: 1450

Notes:

- The diagram below shows approximate locations. Actual layout may differ on game day.
- Pokéballs and eggs that leave the field of play will not be returned during the match.
- Pokéballs that hit Pokémon accidentally (not intentionally tossed) will not count as a capture.
- If a PokéBot enters the circle around a Pokémon during a toss, a capture will not count from a Pokéball hit.
- PokéBots that become hung up and stuck can be retrieved by a judge at the request of the driver and returned to the start area. This results in a loss of 50 Experience Points.
- The height of the bar on Pokéstops will range from 5" to 15" off of the ground and may need to be turned either direction.
- The Carabiner that is pulled to open the door on the Gym is approximately 2" high, and the center point of the hole will be approximately 10" off of the ground.



Pokémon Gym

Incubator

Entry garage door

Garage opener

Incline

PokéBot Start Zone

~ 20 feet

~ 15 feet



Pokéstop Activation

	Pokéstop activated (all balls released)	Total points (max 250)
Pokéstops	1 2 3 4 5 x 50 =	

Pokémon Capture

	Captured	Total
Wobuffet	100	
Eevee	125	
Pikachu	150	
	Total points for Pokémon capture (max 375)	

Pokémon Delivered to Gym

Wobuffet	100
Eevee	125
Pikachu	150
Total points for Pokémon Delivery to Gym (max 375)	

Eggs Delivered to Incubator

Eggs Delivered	1 2 3 x 150 =
Total points Eggs (max 450)	

Final Score: _____ (1450)

PokéBot GO! Build Guide

Field boundary

10 x LASCO 3/4-in Dia PVC Sch 40 Tee @ \$0.50 each

4 x LASCO 3/4-in Dia 90-Degree PVC Sch 40 Side Outlet Elbow @ \$1.60 each

7 x Charlotte Pipe 3/4-in x 10-ft 480-PSI Schedule 40 PVC Pipe @ \$2.01 each

The field boundary consists of 3/4" PVC pipe cut into 14, 5 foot sections. Corner connections are made with 90-Degree PVC Sch 40 Side Outlet Elbows, and straight joins are made with 3/4-in Dia PVC Sch 40 Tee. The "Tees" and "Elbow" are pointed down to raise the PVC boundary up off the ground. Prices and part names from Lowes as of 11/4/2016.

PokéStop

1 x Walnut Hollow 41160 Basswood Circle Panel Clock @ \$12.03 on Amazon <http://amzn.to/2evDEor>

1 x Mueller Proline 3/4-in Dia Galvanized Floor Flange Fittings @ \$7.87

1 x Mueller Proline 1/2-in Dia Galvanized Floor Flange Fittings @ \$6.84

1 x LASCO 1/2-in Dia PVC Sch 40 Adapter @ \$0.38

1 x LASCO 1-in Dia x 3/4-in Dia PVC Sch 40 Adapter @ \$1.00

2 x LASCO 3/4-in Dia PVC Sch 40 Tee @ \$0.50 each

1 x Charlotte Pipe 1/2-in x 10-ft 315-PSI SDR 13.5 PVC Pipe @ \$1.56 (only need 2' section)

1 x Charlotte Pipe 3/4-in x 10-ft 480-PSI Schedule 40 PVC Pipe @ \$2.01 (cut into one 27" section, one 18.5" section and one 9" section)

1 x LASCO 3/4-in Dia PVC Sch 40 Cap @ \$0.96

1 x 1-in x 10-ft 450-PSI Schedule 40 PVC Pipe @ \$2.56 (only need 19" section)

1 x Charlotte Pipe 2-in x 2-ft 280-PSI Schedule 40 PVC Pipe @ \$4.65

1 x 3D print of Pokéstop found at <http://www.thingiverse.com/thing:1794872>. Print as large as possible

Cable ties

1 x The Hillman Group 3-in Cotterless Hitch Pin @ \$2.82

String

Mount the flanges to the Basswood circle with screws. Screw in the PVC adaptor pieces to the flanges and then connect PVC pieces as shown in the picture. The 18.5" section of 3/4inch PVC needs to be cut into two pieces. The relative size of each piece will affect how high the turning bar is off the ground. Minimum size off the lower piece is 2", maximum is 12".

Alternative minimal Pokéstop for practice

1 x Walnut Hollow 41160 Basswood Circle Panel Clock @ \$12.03 on Amazon <http://amzn.to/2evDEor>

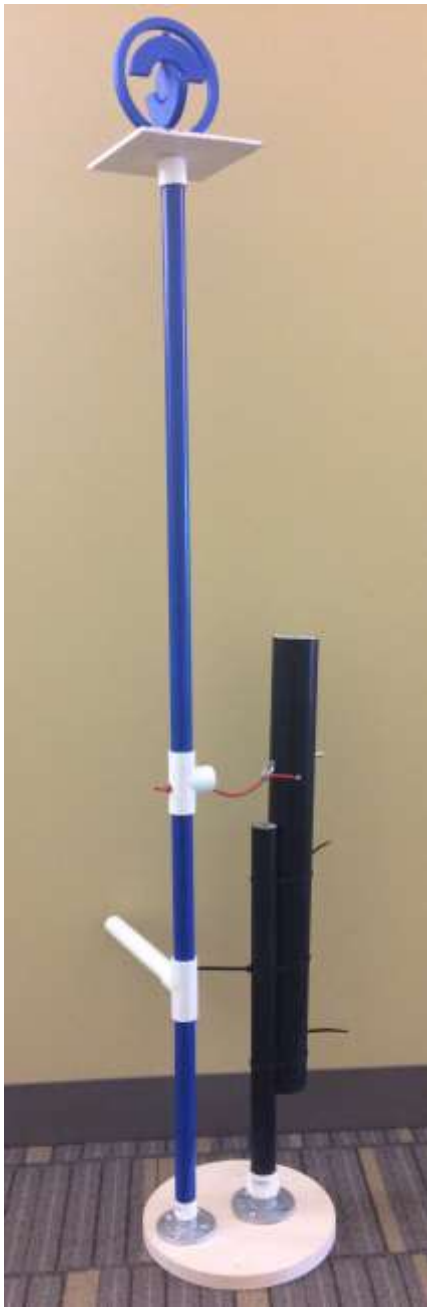
1 x Mueller Proline 3/4-in Dia Galvanized Floor Flange Fittings @ \$7.87

1 x LASCO 1/2-in Dia PVC Sch 40 Adapter @ \$0.38

1 x LASCO 3/4-in Dia PVC Sch 40 Tee @ \$0.50 each

1 x Charlotte Pipe 3/4-in x 10-ft 480-PSI Schedule 40 PVC Pipe @ \$2.01 (one 18.5" section and one 9" section)

With this minimal set up all you are building is the section that turns, mounted to a base. Functionally this allows a practice device for a Pokébot to practice "spinning".



Full Pokéstop. Pokébot many only touch white pipe to spin it 180°. The rope winds around the Tee connector and pulling out the pin to release the balls.

Minimal Pokéstop. Just the base section of the spinning part of the Pokéstop which is sufficient for practice.



Egg Hatchery

4 x Charlotte Pipe 3/4-in x 10-ft 480-PSI Schedule 40 PVC Pipe @ \$2.01 each (cut into eight 4' sections and two 2' sections)

8 x LASCO 3/4-in Dia 90-Degree PVC Sch 40 Side Outlet Elbow @ \$1.60 each

2' x 4' surface for base. Could be Plexiglas or wood and should be raised a couple of inches. Rolls of duct tape can be used to raise it

1' x 2' surface for ramp into hatchery.

Connect the PVC and connectors to build a 4'x2'x4' cube. Lay the elevated based inside the cube and attach ramp with tape.



Egg Hatchery. During the event the walls will be covered with black fabric so that the inside is not directly visible. A camera will be mounted above and viewable on a TV monitor for navigation. The hole that eggs must be dropped in to will be in lower right corner of this image.

Approximate location of hole

PokéBalls and PokéEggs

The PokéBalls are Callaway brand foam golf balls purchased at Target. PokéEggs are 2 1/2" Smoothfoam eggs purchased at Hobby Lobby.

PokéGym

- 3 x Charlotte Pipe 3/4-in x 10-ft 480-PSI Schedule 40 PVC Pipe @ \$2.01 each (cut into ten 2' sections)
- 8 x LASCO 3/4-in Dia 90-Degree PVC Sch 40 Side Outlet Elbow @ \$1.60 each
- 1 x LASCO 3/4-in Dia PVC Sch 40 Tee @ \$0.50 each
- 1 x LASCO 3/4-in Dia 90-Degree PVC Sch 40 Cross Tee @ \$2.48
- 4 pulleys
- Paracord rope
- 1 x carabineer

Connect pieces as shown in picture.



Pokémon

8" tall Pokémon on Waxman 1-1/4-in Plastic Swivel Caster (\$8.97 at Lowes)



