

# **Farm Robotics Challenge Preparation Instructions Self-Guided Tractor**

## **Course Preparation Materials:**

- 24" x 36" flat area
- 3 obstacles made from white Lego® pieces
- White butcher paper (if using the line reader capabilities)
- Wide permanent marker (if using the line reader capabilities)
- Flashlight (if using the follow the torch capabilities)

## **Course Preparation Instructions:**

- Find a flat area (floor or table) to represent a farm field. Place 3 white Lego® obstacles onto the farm field. If using the line reader capabilities, place white butcher paper onto the farm field and draw a path for the robot to follow with a wide permanent marker.

## **Possible Design Options:**

- Edison robot without modifications
- Edison robot with Legos added to simulate a fertilizer spreader attachment

## **Possible Challenge Solutions:**

- Program a path through the farm field and use the obstacle detection commands.
- Program a path through the farm field using the line reader and obstacle detection commands.
- Program a path through the farm field using the follow a torch and obstacle detection commands.

# **Farm Robotics Challenge Preparation Instructions Moving Hay Bales**

## **Course Preparation Materials:**

- 24" x 36" flat area
- 4 hay bales made from Lego® pieces with sandpaper attached to the bottom with hot glue (the sandpaper allows the EdDigger bucket to pick up the Lego®)
- Barn outline with a 6" opening made from Lego® pieces

## **Course Preparation Instructions:**

- Find a flat area (floor or table) to represent a farm field. Create a barn outline with Legos®. Leave a 6" opening in the barn outline to allow the robot to enter the barn. Place 4 Lego® hay bales onto the farm field.

## **Possible Design Options:**

- EdDigger

## **Possible Challenge Solutions:**

- Using the EdDigger, program a path to pick up a hay bale in the farm field and carry it into the barn area.