

## Driving School Part 2 Arduino

Time required: 120 minutes

Please read all the directions carefully before beginning the assignment.

1. Comment your code as shown in the tutorials and other code examples.
2. Follow all directions carefully and accurately.
3. Think of the directions as minimum requirements.

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### Understanding

Demonstrate understanding of:

#### libraries, functions

Charge your batteries. Calibrate your robot with the **CalibrateMovement** program.

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### Assignment

- Use **Movement.h** for your movements.
- Assign each shape to a different remote control button.
- Open the **DrivingSchool** program you created in the earlier exercise. Save the sketch as **DrivingSchool2**.

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### Requirements

1. **ForwardReverse** - Move forward 12", turn 180°, move backwards 12" (which will be the same direction), turn 180° again, and then continue to move forward 12". The robot should move in one direction, but do part of the trip moving backwards.
2. **Octagon** - Move a 12" octagon. Each turn is a 45° angle. Start and end in the same place and the same orientation.
3. **Equilateral Triangle** - Move in a 12" equilateral triangle. Start and end in the same place and the same orientation. An equilateral triangle has an inside angle of 60 degrees. Subtract that from 180 degrees to find out how far the robot should turn for each side.
4. **5-Point Star** - Trace a 5-point 12" star. Start and end at the same location and orientation. Look up the inside angle and subtract from 180 degrees.

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### Extra Credit Challenges

1. Modify the program to trace the outline of a pentagon.
2. Modify the program to trace the outline of a hexagon.

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### Assignment Submission

- **All students** → Attach finished programs to the assignment in Blackboard.
- **In class assignment submission** → Demonstrate in person.
- **Online submission** → A link to a YouTube video recording showing the assignment placed in the submission area in BlackBoard.