1.20 Activity: Adding Components - Fundamental

Name:	Class/Period:	Date:

Overview:

In this fundamental activity, you will mount a dry erase marker to the BaseBot and direct the robot to draw shapes on the playing field using the dry erase marker.

Duration:

30 Minutes

Materials:

Qty	Description
1	BaseBot
1	REC 1 Bundle
1	Dry erase marker
1	Elastic band
1	Playing field

Procedures:

1.20.1F: Mounting the Marker

1 Attach the gusset to the angle bar as shown below.





1.20 Activity: Adding Components - Fundamental

2 Attach the gusset assembly to the 9-hole bar. Mount the bar on the chassis and tighten the hardware as shown below.

Materials	
	Angle bar assembly from step 1
1	9-hole bar
4	8-32 BHCS x 1/4" (6.4 mm)
4	Keps nuts

3 Using the rubber band, mount the dry erase marker to the assembly as shown above.

1.20.2F: Drawing a Straight Line

- 1 Configure your BaseBot for tank control.
- 2 Verify that all motor connections are correct.

Hint: Refer to Activity 1.16 in your engineering notebook for the correct motor connections for tank control.

3 Place your BaseBot on the playing field with the cover off of the dry erase marker. Make sure the marker is in contact with the playing field surface.





1.20 Activity: Adding Components - Fundamental

- 4 Try to drive the robot so that the marker draws a straight line on the playing field.
 - How straight is your line?
 - What can you do to make the line perfectly straight?
- 5 Keep practicing until you can draw a straight line that is roughly 60 cm long.

1.20.3F: Tank vs. Arcade Control

- 1 Configure your BaseBot for arcade control.
- 2 Try to draw the same 60 cm straight line.
 - How straight is your line?
 - What can you do to make the line perfectly straight?
 - Which control method is easier for you?

The switch between the two types of controls is relatively simple. However, practice makes perfect. If you stick with one type of control, your skill will improve as time goes on.

1.20.4F: Drawing Shapes

- 1 Configure the BaseBot for the control configuration of your choice and verify that all the connections on the BaseBot are correct.
- **2** Try to draw a 45 cm square and a 45 cm triangle. The shape is important, not the exact dimension of the shape.



- If it helps, draw an outline of the shape to use as a reference. Try to keep the robot within the outline.
- Use different colored dry erase markers to help differentiate between the path of the robot and your outline.



1.20 Activity: Adding Components - Fundamental



3 When you finish, use a paper towel to remove the marks from the playing field.

1.20.5F: Engineering Notebook

Make an entry in your engineering notebook that includes:

- A sketch of the new marker attachment that you added to your BaseBot
- Notes on which control configuration you chose to draw the shapes and why you chose that option

Questions:

Write the answers to the following questions on your question sheet. Add the completed question sheet to your robotics binder.

Question 1Which was the hardest shape to draw? Why?Question 2Which driving style did you like better, Tank or Arcade? Why?

