	Turn	Power	Rotations
	0		

	Turn	Power	Rotations
	0		

	Turn	Power	Rotations
	55		1

	Turn	Power	Rotations
	55		1

	Turn	Power	Rotations
	-55		1

	Turn	Power	Rotations
	55		1

	Turn	Power	Rotations
	0		

	Turn	Power	Rotations
	0		

	Turn	Power	Rotations
	0		

	Turn	Power	Rotations
	0		

	Turn	Power	Rotations
	0		

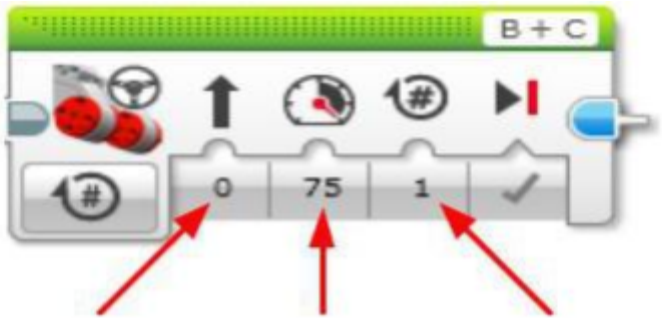
	Turn	Power	Rotations
	0		

Name:_____

The Move Steering Block

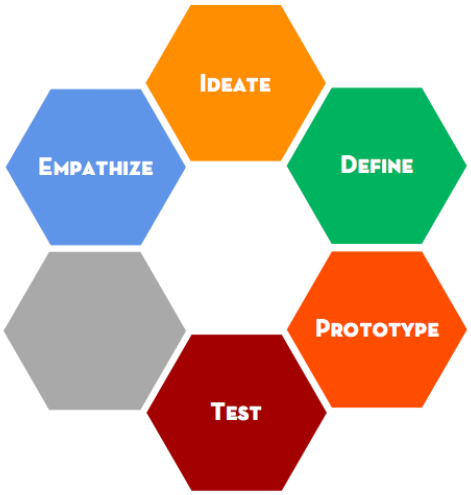
In the EV3 software, moving and turning are programmed using the **Move Steering** block.

There are three parts to the **Move Steering** block. Label them below.



_____ _____ _____

DESIGN THINKING



EMPATHIZE: _____

_____

_____

DEFINE: _____

_____

_____

IDEATE: _____

_____

PROTOTYPE: _____

_____

TEST: _____

_____

devBots Sumo

Building the ultimate sumo robot

Your job is to design a sumo wrestling robot. Before you begin building, you must go through the design thinking process to design and create the best sumo wrestling robot. The three most important aspects you should consider are: defense, offense, and simple attachments. That means your robot should be able to defend itself from attacking robots, effectively knock over, wedge, or push its opponent, and be able to clip its attachments on and off in less than 3 minutes.

EMPATHIZE

Watch the robot battle then answer the following questions.
What happened in your battle? What problems did you encounter?

DEFINE

WHAT PROBLEM ARE YOU SOLVING?

IDEATE

Develop a game plan for building your robot. Sketch a sample of your attachments below. (*What type of attachments does your robot need? Will that help defend your robot from attackers? How can your robot attack other robots?*)

PARTNER IDEATE

With your partner, develop an idea that uses the best parts of each design.

PROTOTYPE

Time to finalize your design! Grab a robot parts box and build a prototype of your design. Then, write a paragraph explaining how your design includes defense, offense, and simple attachments.

Explain your design in the space below:

TEST

Let's put your design to the test! We will battle other groups in a mini sumo competition.

1. How did your attachments hold up during the competition? Did any parts fall off?

_____

_____

2. Were your defense attachments able to protect your robot from its opponent?

_____

_____

3. How did your offense attachments perform in attacking the other robot?

_____

_____

4. Are you able to rebuild your robot in less than 3 minutes?

_____

_____

Compare the move blocks

Look at the image below and answer the questions.

1. In the example above, which move block is similar to what you have used so far?

2. What is different about the two move blocks above?

3. How do you think that difference changes the move block?

Working on your Code

devBots Sumo Wrestling

Let's take a few minutes to reflect on our sumo wrestling robot and see if there are ways to improve our code. Talk through the questions below with your group.

1) Did your robot find the other robot first?
2) Was your robot able to attack before the other robot saw it?
3) What sensors are on your robot?
4) Do they work properly?
    a) If not, what is not working?
5) What is slowing down your group during the competition? Typing? Waiting for ultrasonic sensor to see a robot? Getting stuck in a jam?

Now, let's think about ways to improve our code.

Offense - How can we update our coding offense to better attack other robots?

1) What can you adjust in the code so your sensors work better or faster?

_____

_____

2) Can you change anything for your robot to be quicker and more powerful when attacking? _____

_____

Defense - How can we improve our defense to protect ourselves?

1) How can you keep the other robot from attacking you? _____

_____

2) How can you fix the part that most slowed you down during the competition?

_____

_____

Working on your Build

devBots Sumo Wrestling

Let's take a few minutes to reflect on our sumo wrestling robot and see if there are ways to improve our build. Talk through the questions below with your group.

1) Did the robots get jammed or tangled?
    a) Where did it get jammed?
2) Did your robot get lifted off the ground?
    a) If so, which side?
3) Were you able to push or lift the other robot? How?
4) Was the opposing robot able to knock you over? How?
5) Did any of your parts fall off?

Now, let's think about ways to improve our build.

Offense - How can we build our offense for sumo wrestling?

1) What can you build to better attack or push the other robot?

_____

_____

2) Can you build anything to lift the other robot?

_____

_____

Defense - How can we improve our defense to protect ourselves?

1) How can you prevent your robot from being lifted off the ground?

_____

_____

2) What can you build to protect areas of your robot that get jammed?

_____

_____

Robotics Iteration Log

Our goal is... _____

Test #	What worked well?	What needs to be fixed?