Name_____

Lesson 5: Worksheet 5.4 – Make your robot dance

In this activity, you will write a program to make your robot dance.

In most good dance performances, there are some moves or actions which are repeated. You can make your Edison repeat actions in a dance routine by using the 'for' loop.

The 'shimmy' is a dance move where you hold your body still and quickly move your shoulders back and forth.

Look at the following program which will make your Edison robot do a version of a shimmy:

```
1
2  #-------------Setup----------------
3
4  import Ed
5
6  Ed.EdisonVersion = Ed.V2
7
8  Ed.DistanceUnits = Ed.CM
9  Ed.Tempo = Ed.TEMPO_MEDIUM
10
11 #--------Your code below-----------
12
13 #Set up some variables
14 turnSpeed = Ed.SPEED_9
15 degreesToTurn = 20
16 numberOfTwists = 3
17
18 #Now shimmy!
19 Ed.Drive(Ed.SPIN_RIGHT,turnSpeed,degreesToTurn/2)
20 for i in range(numberOfTwists):
21     Ed.Drive(Ed.SPIN_LEFT,turnSpeed,degreesToTurn)
22     Ed.Drive(Ed.SPIN_RIGHT,turnSpeed,degreesToTurn)
23 Ed.Drive(Ed.SPIN_LEFT,turnSpeed,degreesToTurn/2)
24
```

This program uses variables so that it will be easy to change the turning speed, the number of twists in the dance and the degrees Edison will turn.

Both lines 13 and 18 start with '#' which means these lines are comment code lines added to make it easier for us to read the program. Remember, Edison will skip any line that starts with '#'.

Look at lines 19 and 23. In these lines, we are doing a mathematical calculation in our code to make Edison turn only half the number of degrees.

Your turn:

Write the program.

Download the program to your Edison and run it to see the dance in action.

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1. How many times does the robot turn to the left?

   _____

2. How many times does the robot turn to the right?

   _____

3. The first turn to the right is only half the distance of all the turns inside the ‘for’ loop because this line has the input parameter ‘degreesToTurn/2’. Why do want this line in the program? Try removing the maths (the /2) and run the program again. What do you notice? (*Hint:* look at how far Edison moves left compared to the start point.)

Try it!

Experiment with the program. Try changing the variables to change the way Edison dances. Change the number of degrees Edison will turn, the speed Edison will turn, the number of twists in the dance or all three!