Unit 5: Rover's Sensors — Application: The Winding Road

In this application, you will use Rover's color sensor to follow a curved path on paper. **A curved path on paper like the one shown below is needed for this application.

Objectives:

- Use the color sensor to detect and follow a curved path on paper

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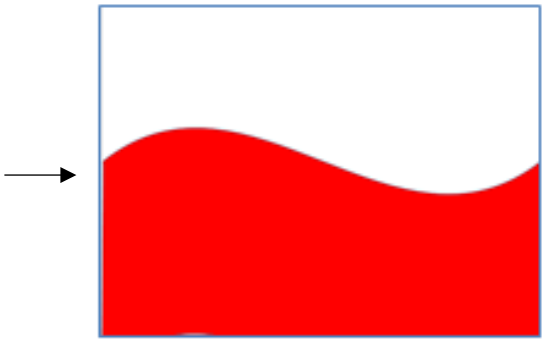
Write a program to keep Rover 'on track' to follow a curved path similar to this one:



Rover will start at the *left* edge of the page and travel to the right following the curved path across the paper.
When Rover 'sees' RED, it will turn to the left a little and move forward a little. When Rover 'sees' WHITE, it will turn to the right a little and move forward a little.

Experiment with the turning angle and the moving distance to see how the Rover reacts to the different colors.

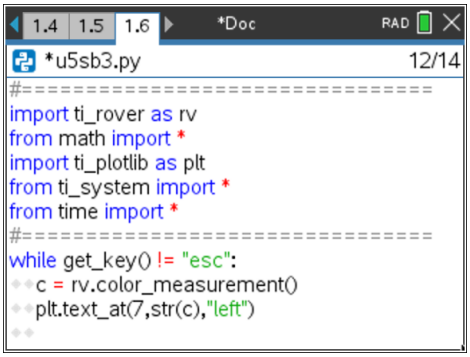
If your page is red and white as in the image above, you can use **red_measurement()** to see what values are given by each side of the paper. If you use a different color such as black, you can use **gray_measurement()** (or **green_** or **blue_**).

1. Here is the original short 'test' program from the last lesson to determine the values that the color measurement functions produce.

   Choose the color measurement type (**color_**, **red_**, **green_**, **blue_**, or **gray_**) that gives the greatest *variation* in values for your two different colors and the greatest *consistency* in values when looking at each of the colors separately.

   You can also use a more descriptive variable such as **color** instead of **c** as you did in the previous lesson:

   color= rv.color_measurement()



2. For your path-following program:
   a. Start Rover on the left or right edge of this paper near the curved path
   b. Check the color
   c. If the color is red, then turn a bit toward the white side
   d. Otherwise, turn a bit toward the red side
   e. Move forward a short distance
   f. Repeat from step b until you reach the end of the path