

[Loops (in Scratch)]

Let's create a program that draws polygons. Once again we'll start with our flag, and we want to be able to draw any polygon, so we'll ask the user to specify how many sides. Then to draw the polygon, each set of instructions will draw one side, so we're going to repeat the process for as many times as the user specified. Now you might recall that we can move around a polygon by moving forward a given amount, and then turning the same amount as the external angle of the polygon. And the external angle is just 360 divided by the number of sides. So at each step, we'll move forward 30 steps and then we'll turn 360 divided by the value the user gives us. So if the user inputs 4, then we're going to go forward and then turn 90 degrees each time. Now let's put in some pauses so that we can watch it being drawn and then if we want scratch to actually draw for us, we'll need to use the pen up and pen down blocks. Finally, we'll just add an extra step here at the end that will move our cat away from the polygon so that we can see it. So this program will first, ask us how many sides we want, then it'll put the pen down to draw, and it'll repeat this sequence this many times, and then once that's complete, we'll lift the pen and move away.