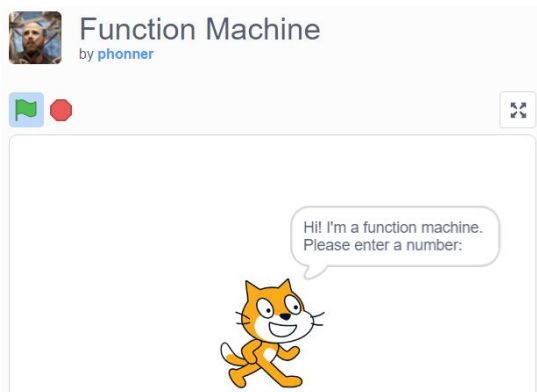


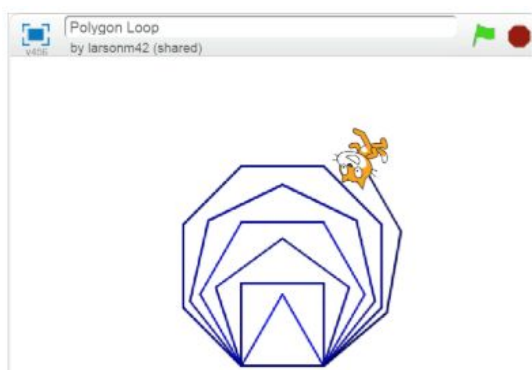
Coding Math at a Distance

Topic 1: Functions (click the link to explore the Scratch code)



In this lesson students will play with a variety of mathematical functions programmatically as they learn to examine input variables being passed through a formula to achieve an output.

Topic 2: Playful Polygons (click the link for a guided tutorial)



This low-floor, high-ceiling task has students use the computational thinking pillar of pattern recognition to examine progressions of exterior angles, and extends all the way though how to use variables and algebraic thinking to create an “N-gon” maker.

Topic 3: Probability and Data Science (click the link for a guided tutorial)

trial_results	successes	probability
1	6	0.2
2	2	0.2
3	4	0.2
4	2	0.2
5	2	0.2
6	3	0.2
7	6	0.2
8	2	0.2
9	3	0.2
10	4	0.2

length 10 =

Probability Formula:

$$P(A) = \frac{\text{Number of favorable outcomes to A}}{\text{Total number of outcomes}}$$

In this lesson students will gain insights into the coded structure of simulation, calculating basic probability, and algorithms behind foundational data science topics like measures of center.



Additional Resources

- [Scratch Studio](#) from Patrick Honner
- [Function-Based Project Ideas](#)
- [CMA CS Academy](#) (Carnegie Mellon's MS and HS CS curricula)
- [Scratch](#)
- [Trinket.io](#) (Browser-based Python)
- [30 Day Challenge of Python](#) Coded Math Tutorials from CSandMath