SCRATCH PEN

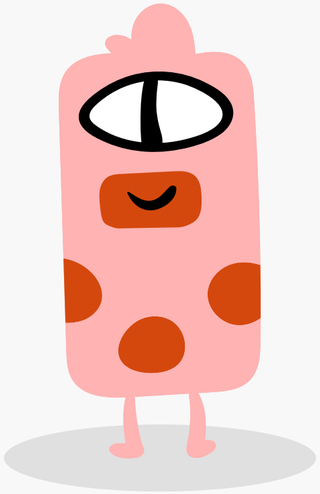
Teacher: Lucy

Hello!
Hope everyone's doing great.

Invisible Pen

Each sprite has an invisible pen which can be either up or down. If the pen is down, the sprite will draw as it moves Otherwise, the sprite moves without leaving any trace.

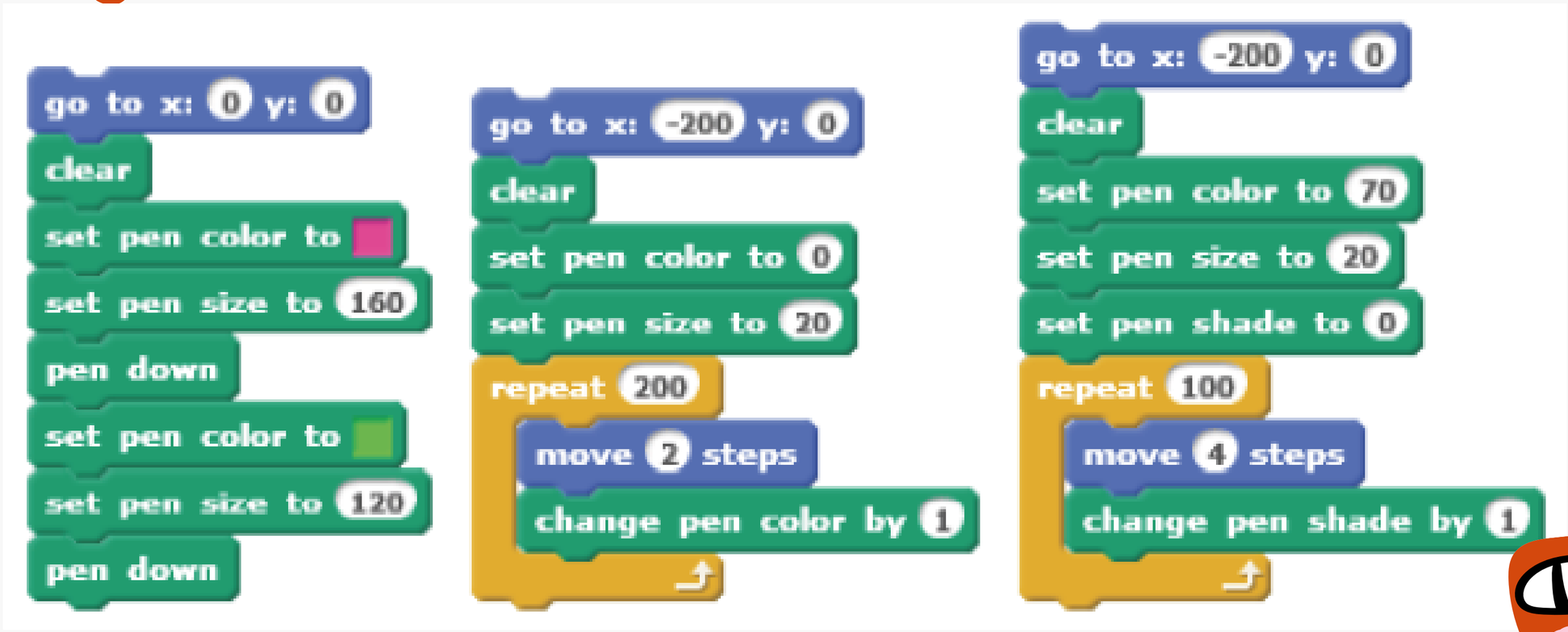
Sprite 1



Sprite 2

Sprite 3

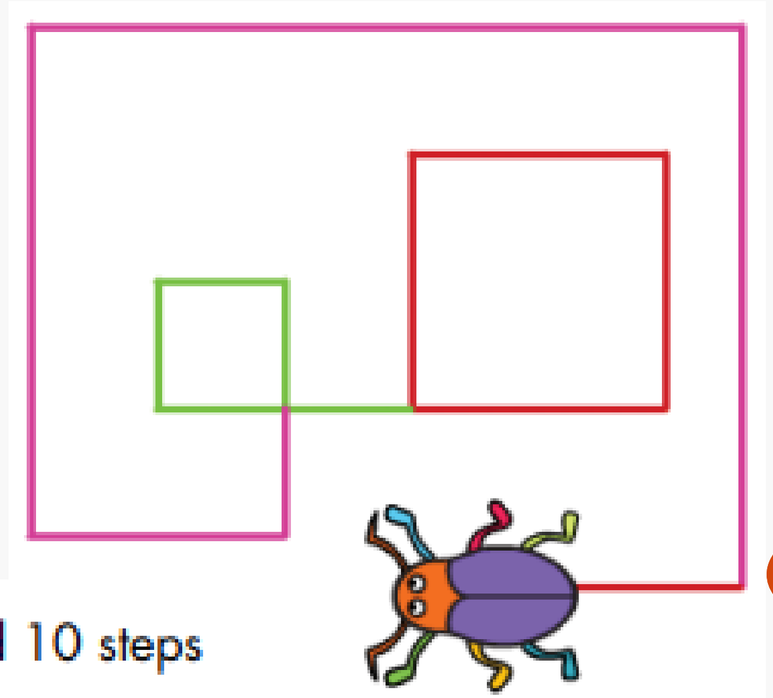
Try This Out



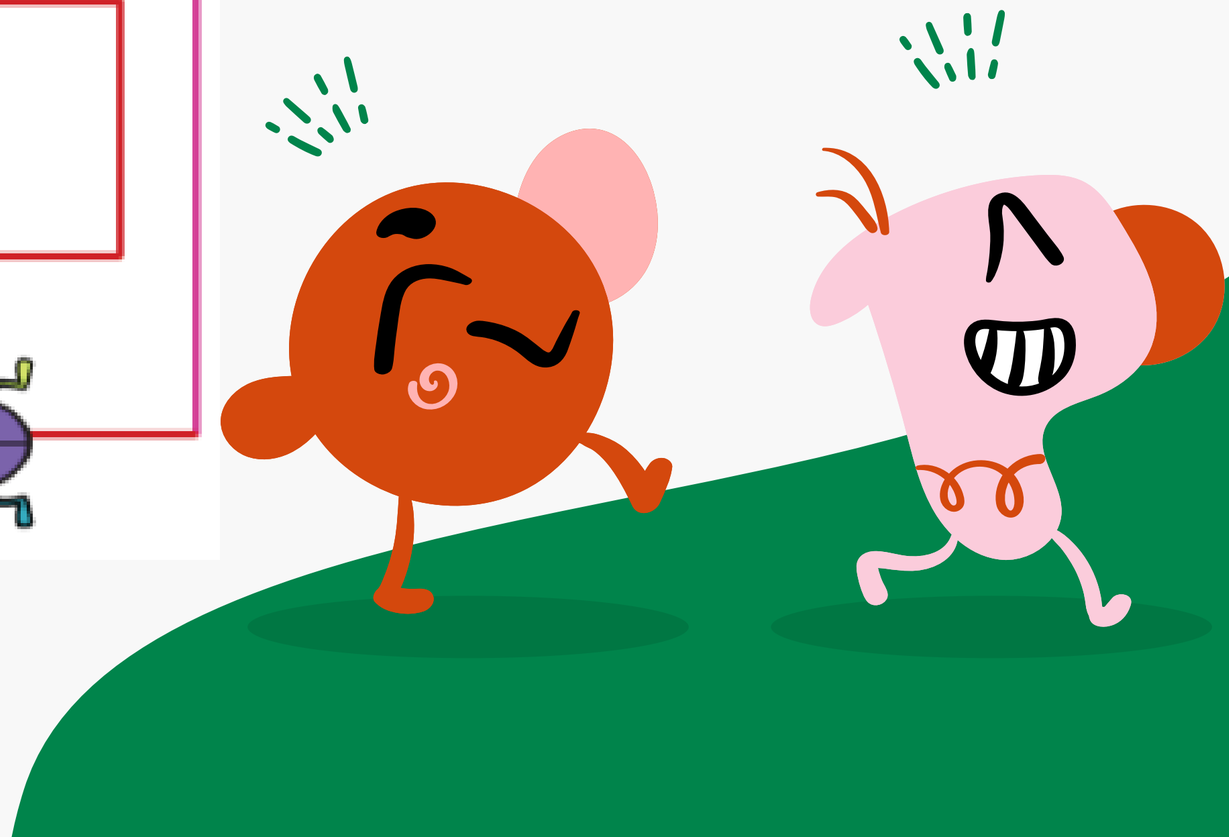
Re-create these scripts, run them, and describe the output for each! Don't forget to set the sprite's pen down before running these scripts.

Activity Time

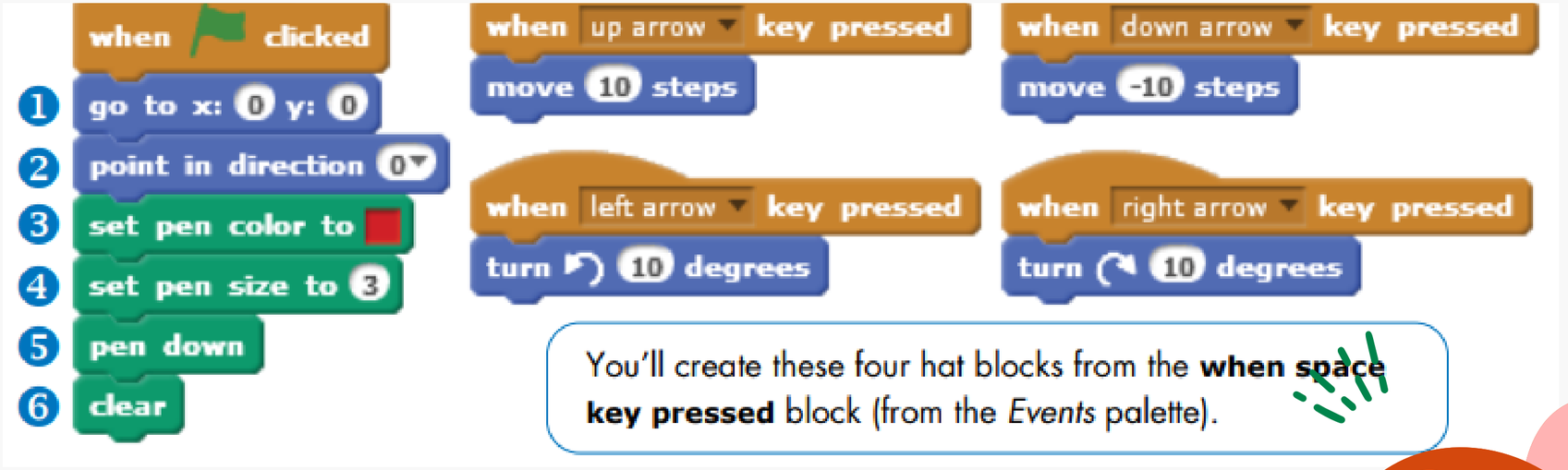
Start a new Scratch project, choose a sprite that clearly shows if the sprite is pointing left, right, up, or down.



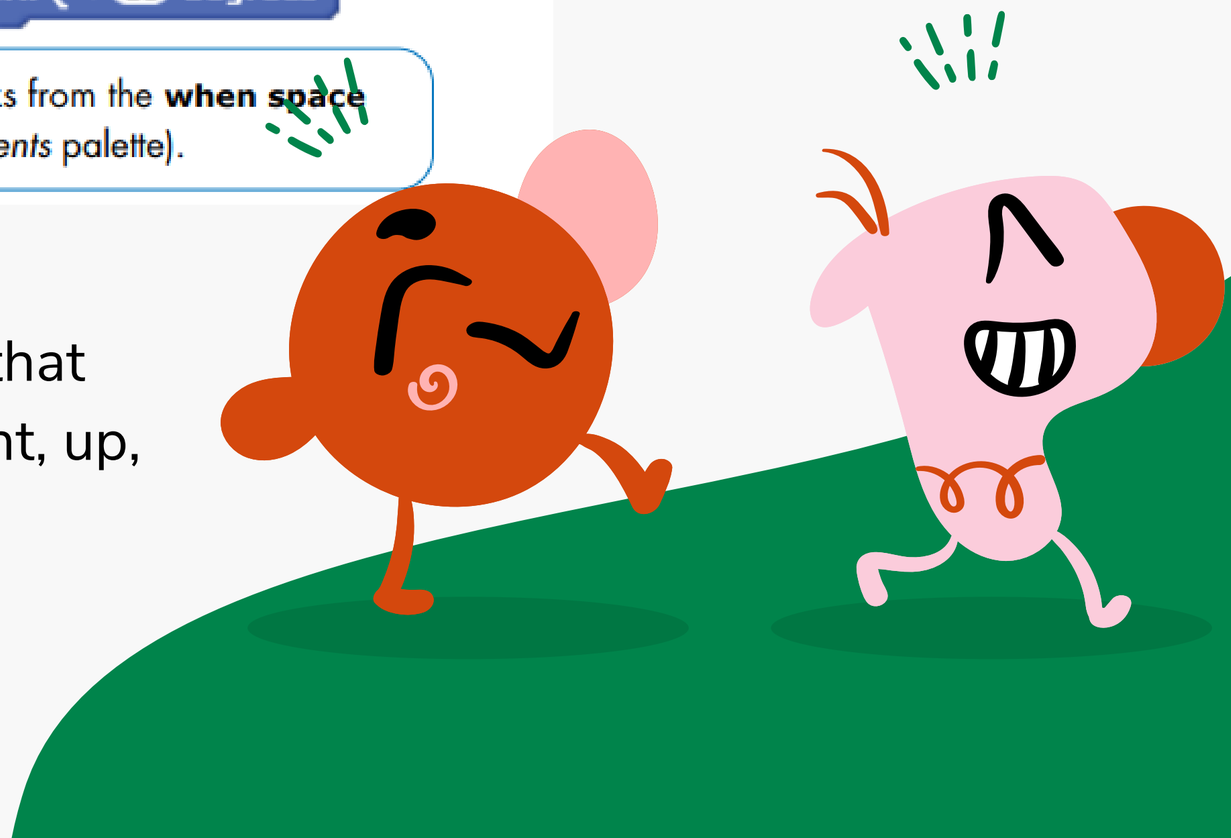
- ↑ Move the sprite forward 10 steps
- ↓ Move the sprite backward 10 steps.
- → Turn the sprite to the right 10°.
- ← Turn the sprite to the left 10°.



Activity Time (cont.)



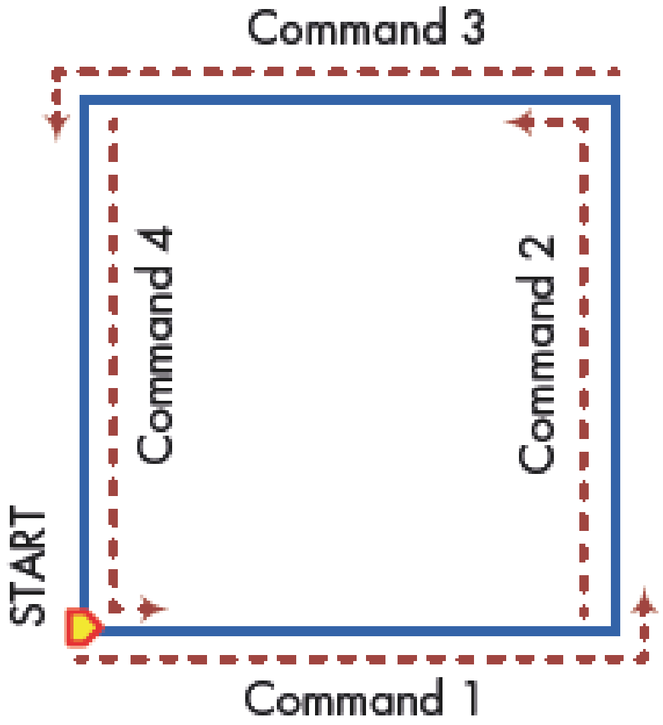
Start a new Scratch project, choose a sprite that clearly shows if the sprite is pointing left, right, up, or down. Add the above script to your sprite

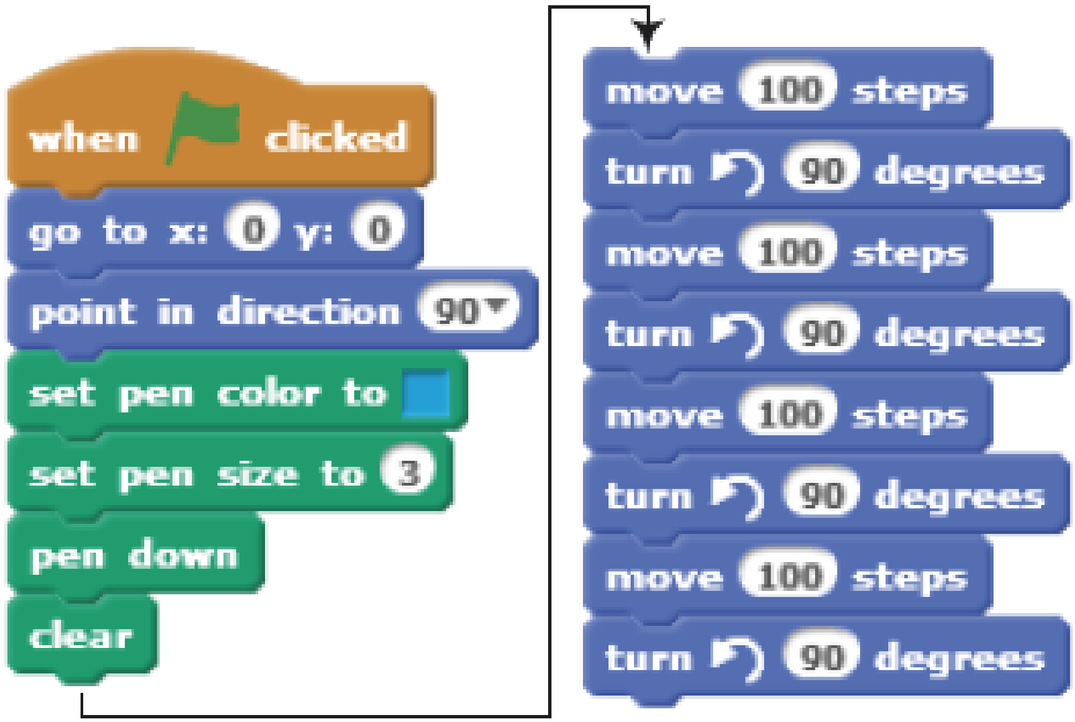


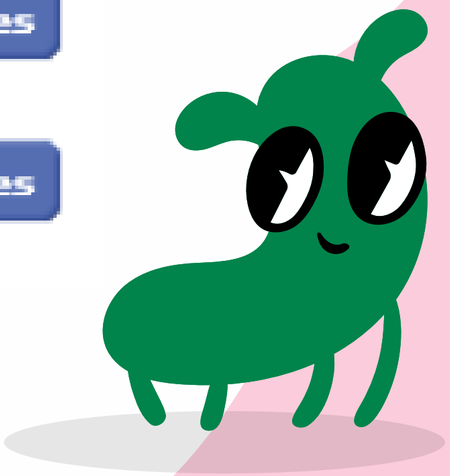
The Power of...

REPEAT

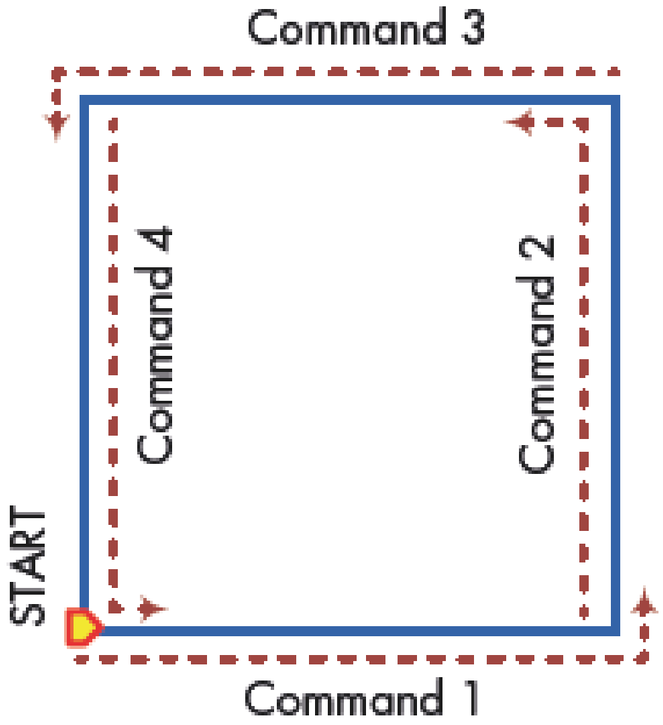
Make a Square

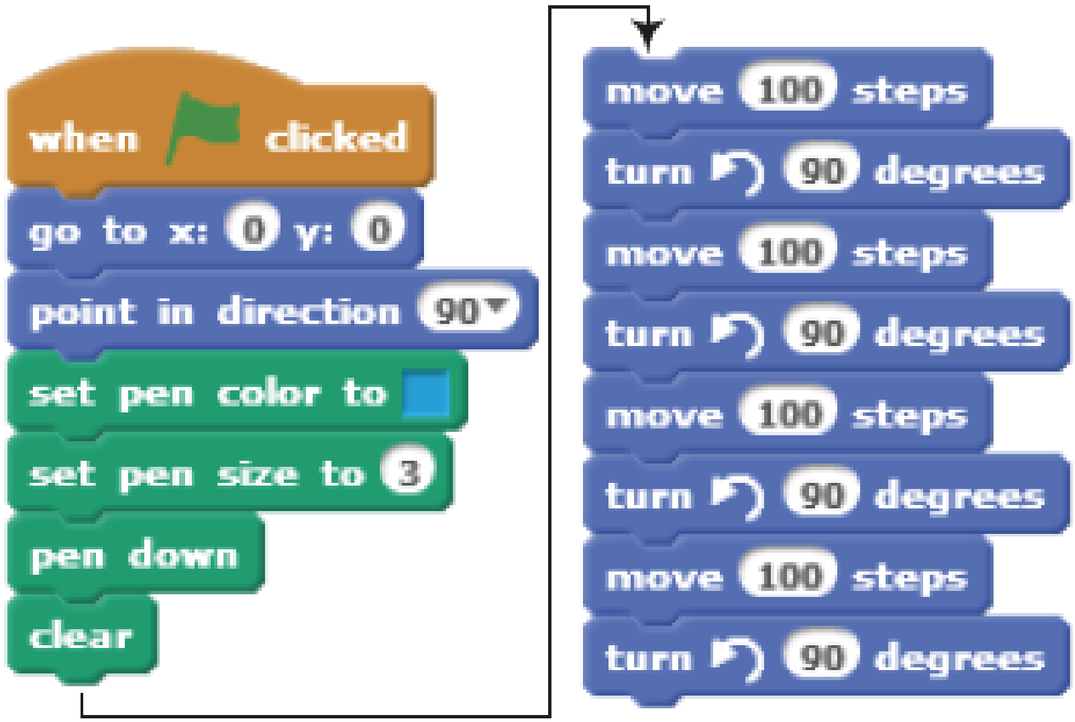


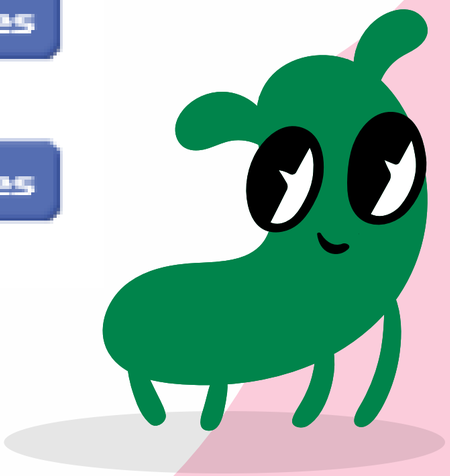




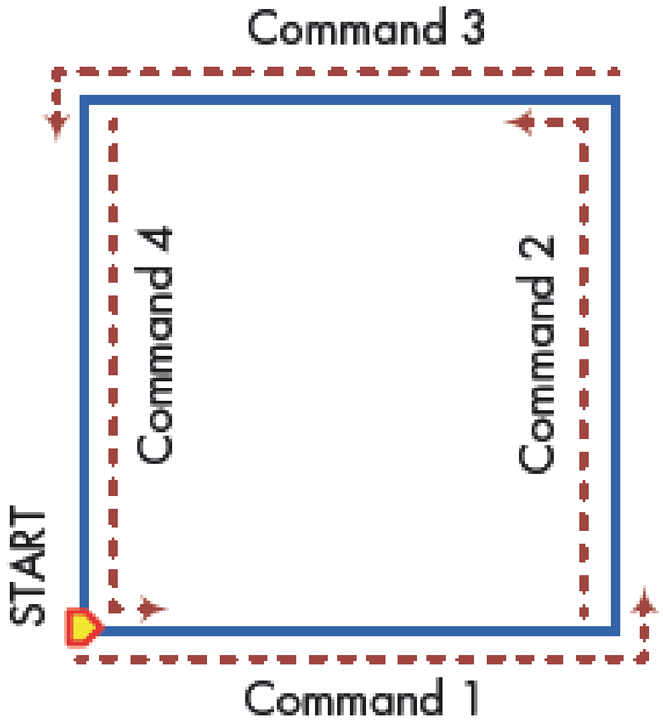
Make a Square

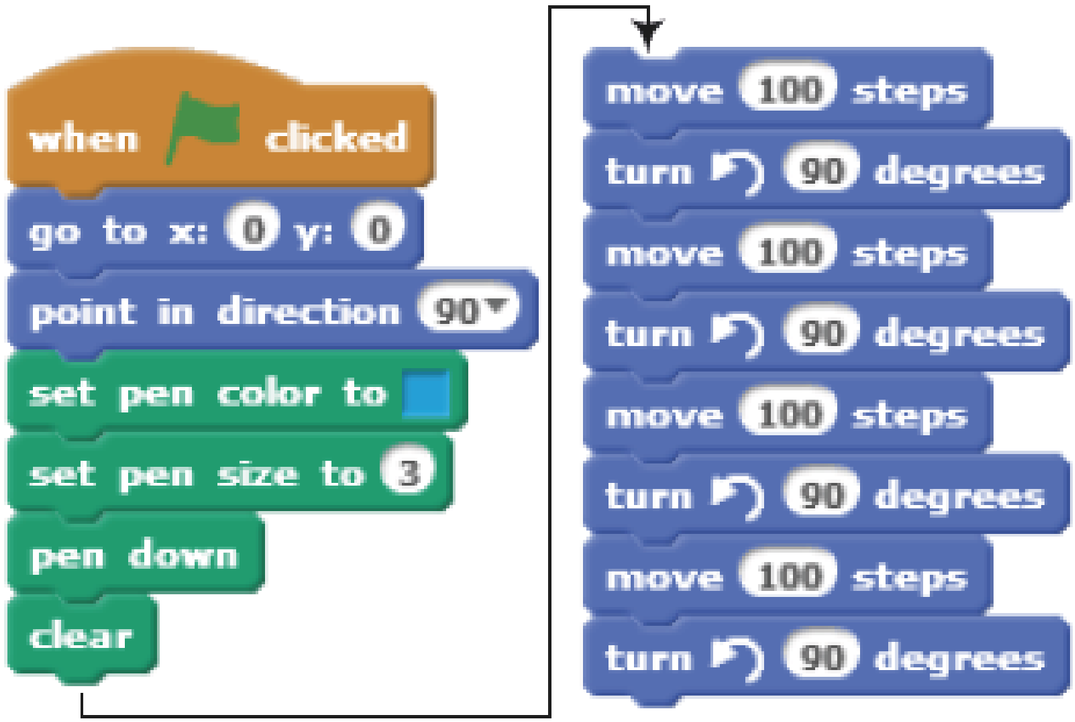


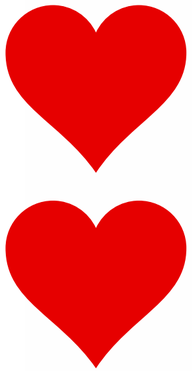


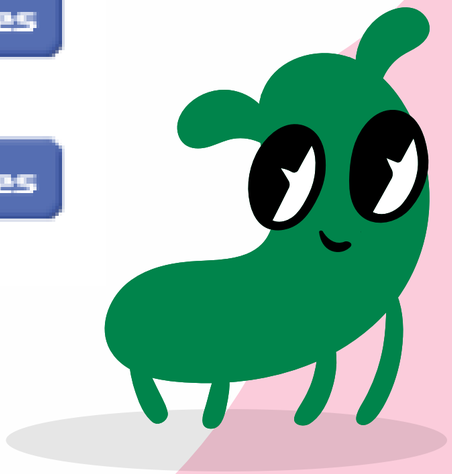


Make a Square

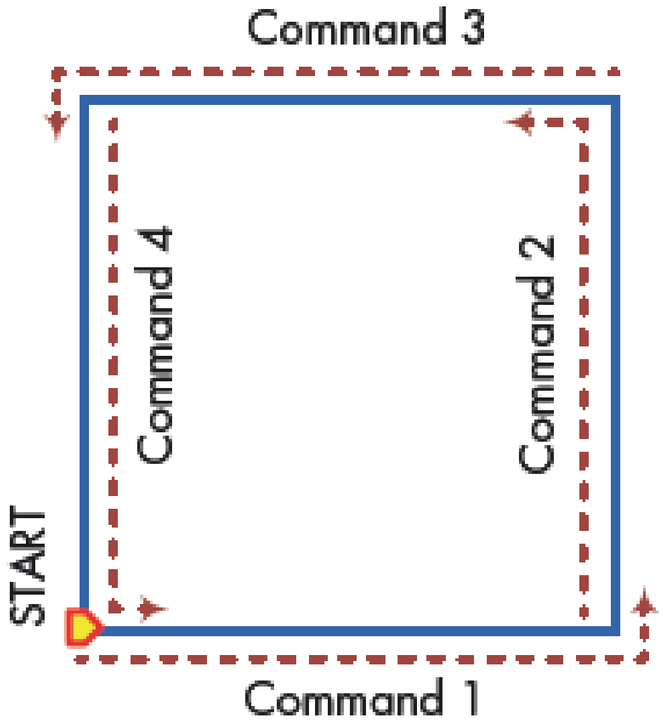


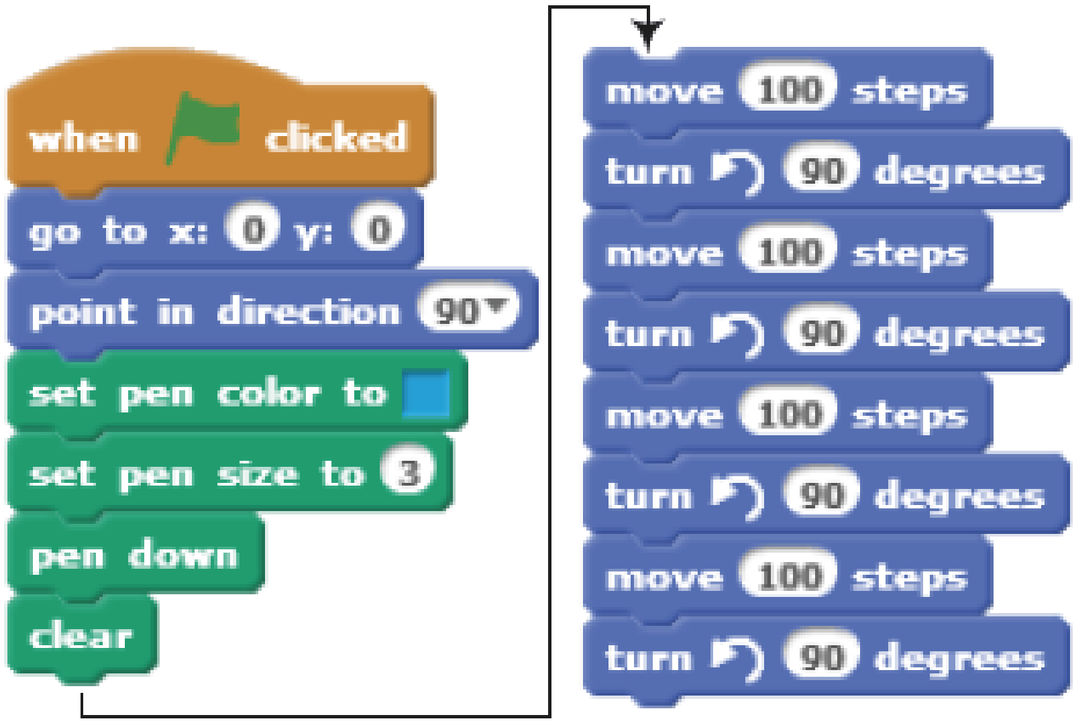


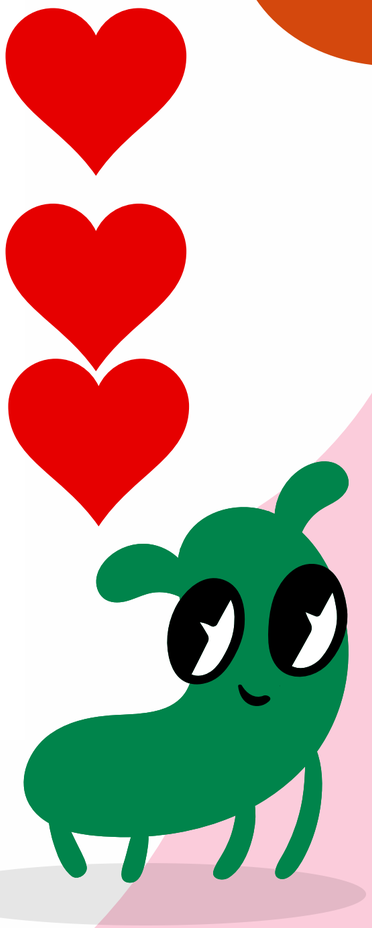




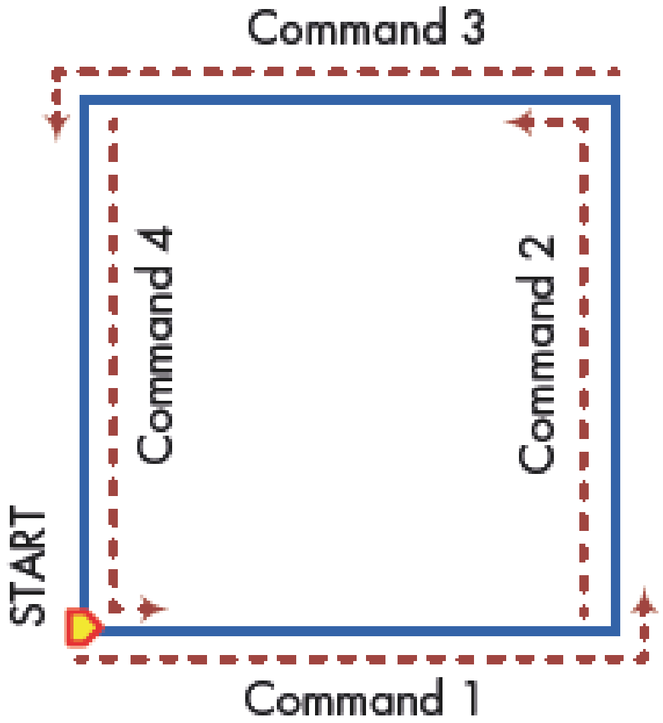
Make a Square

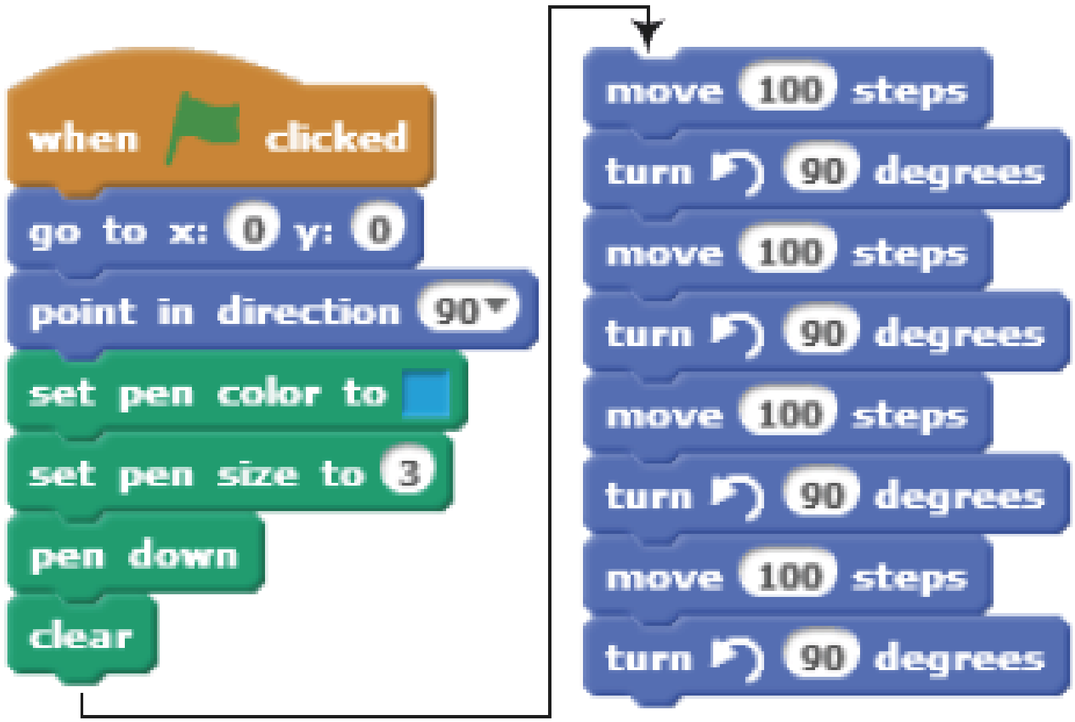


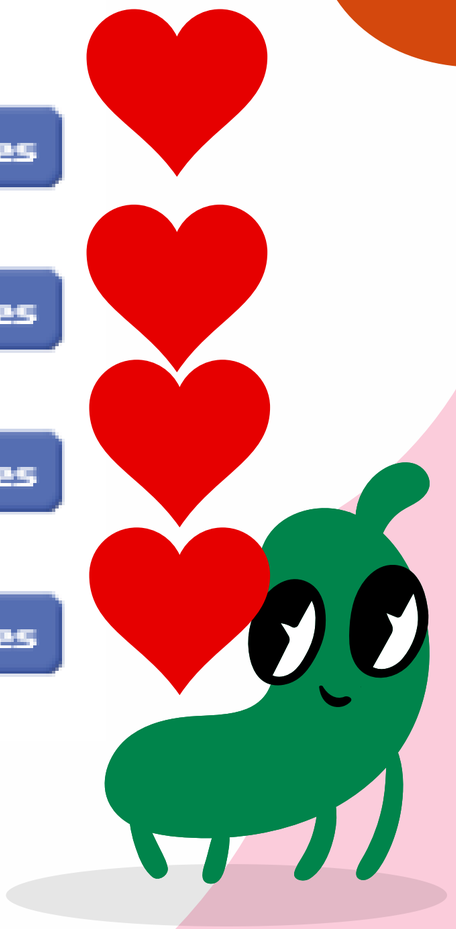




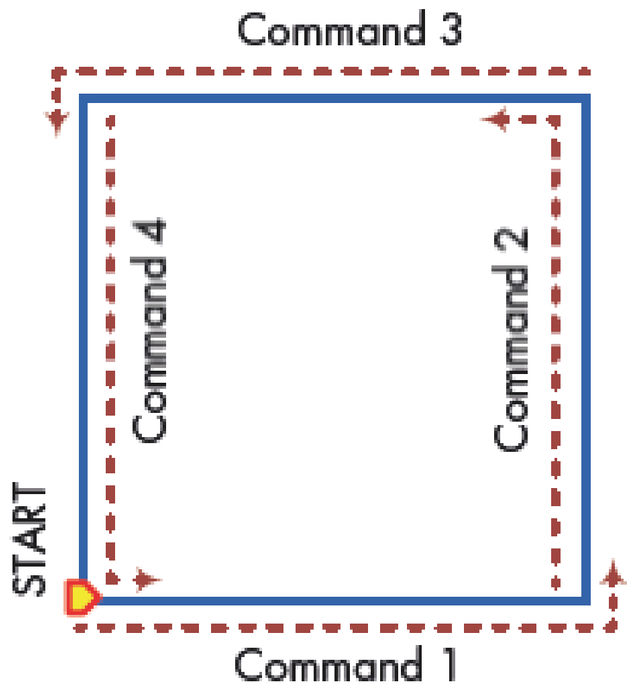
Make a Square

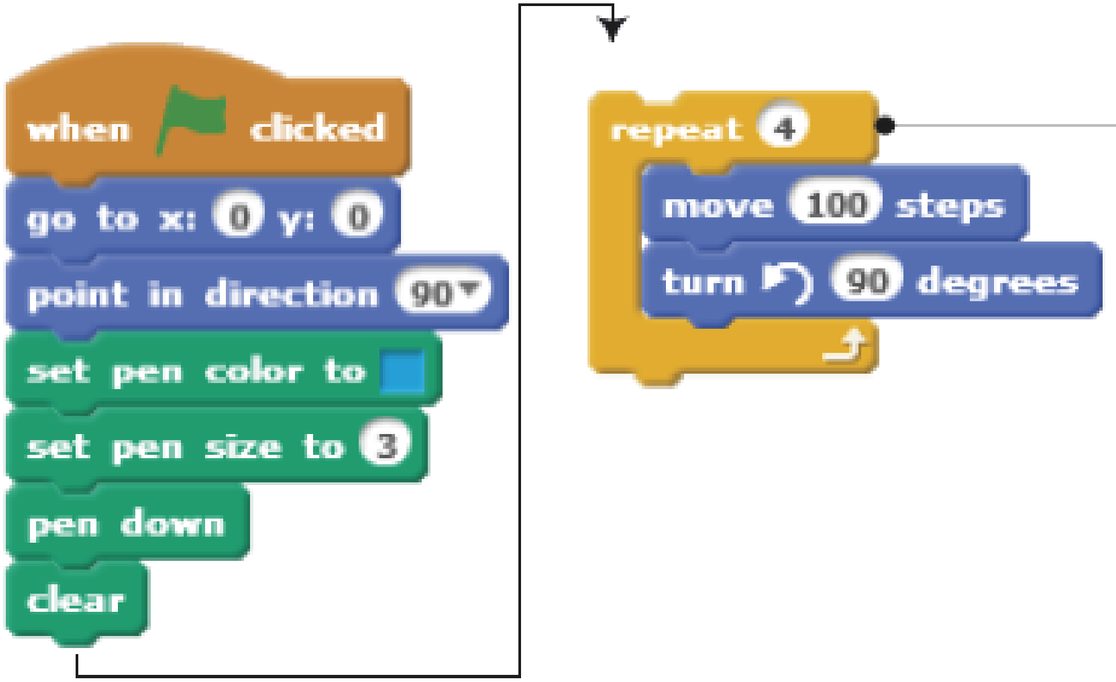




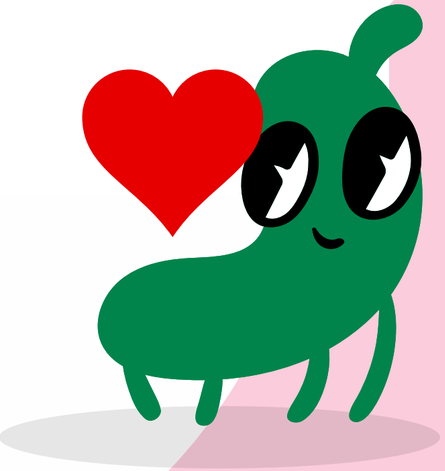


Make a Square

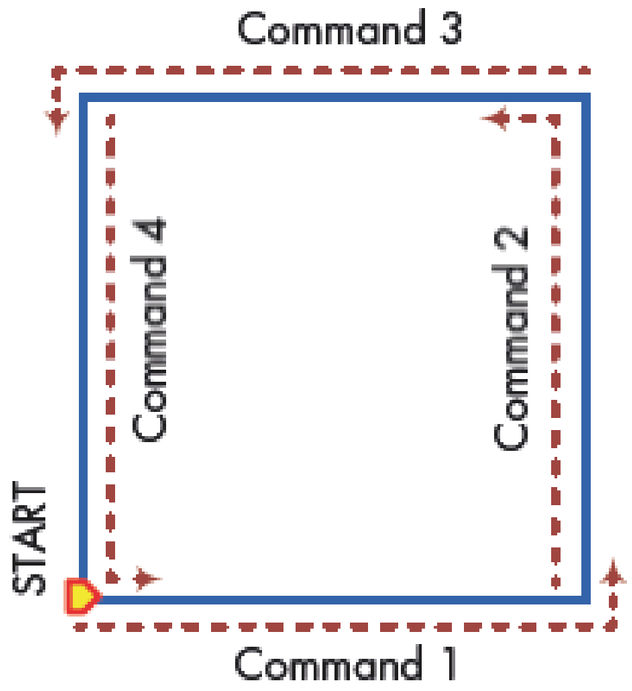


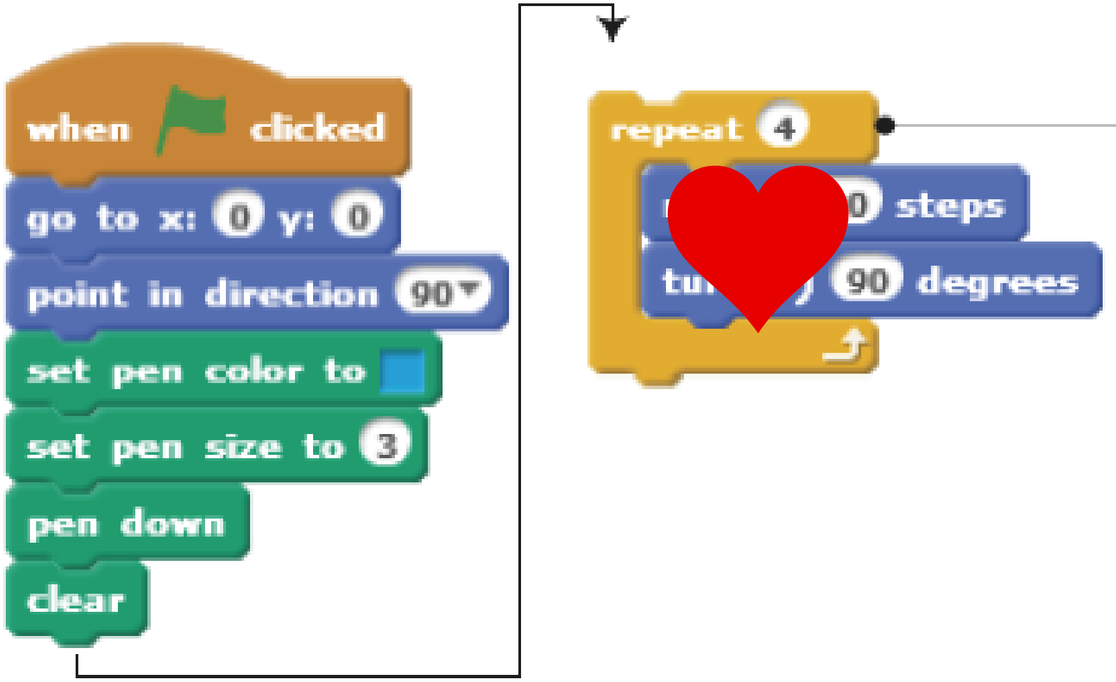


Run the commands inside the **repeat** block four times.

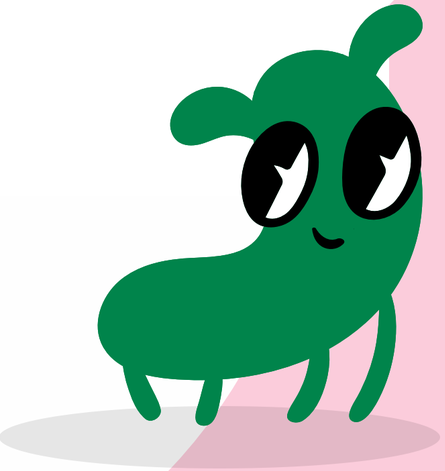


Make a Square



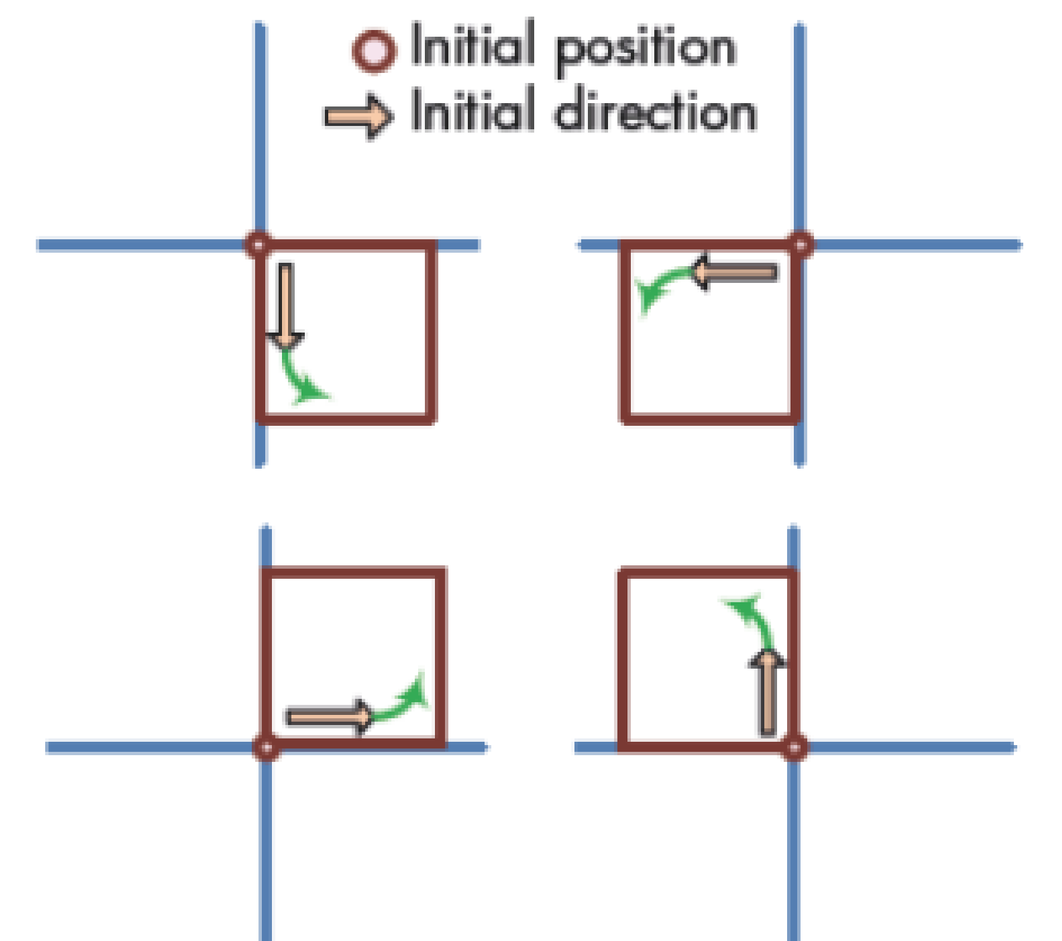


Run the commands inside the **repeat** block four times.



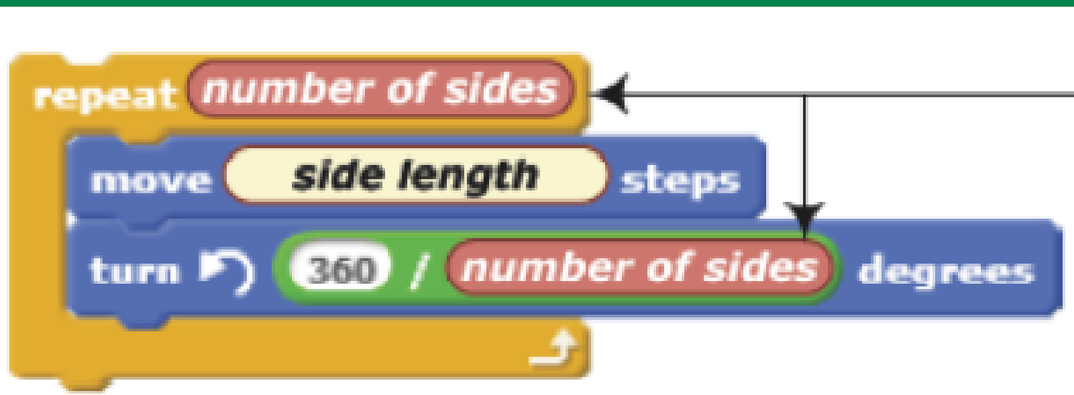
INITIAL DIRECTION

The sprite's initial direction changes the square's location!

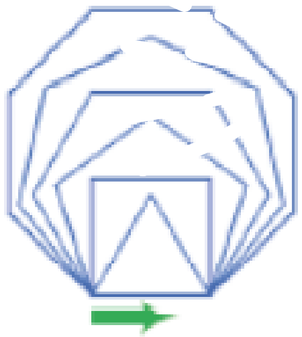


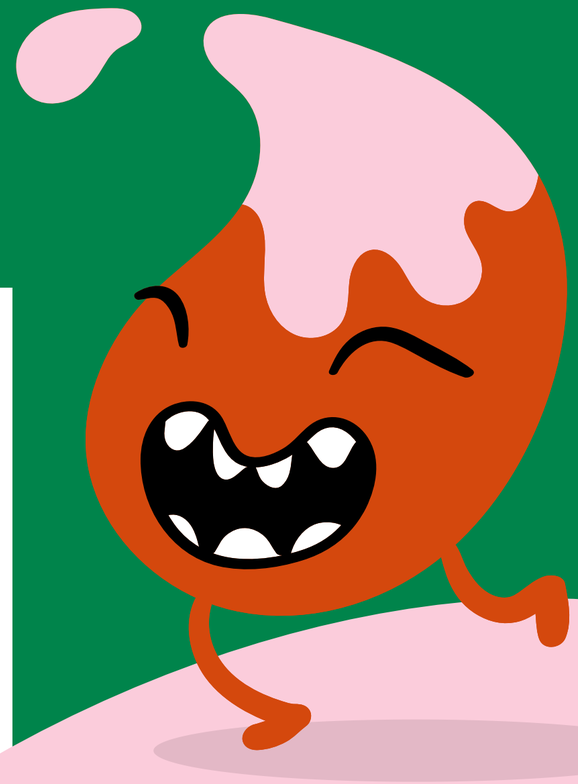
Try This Out!

Modify the square-drawing script to draw other regular polygons!

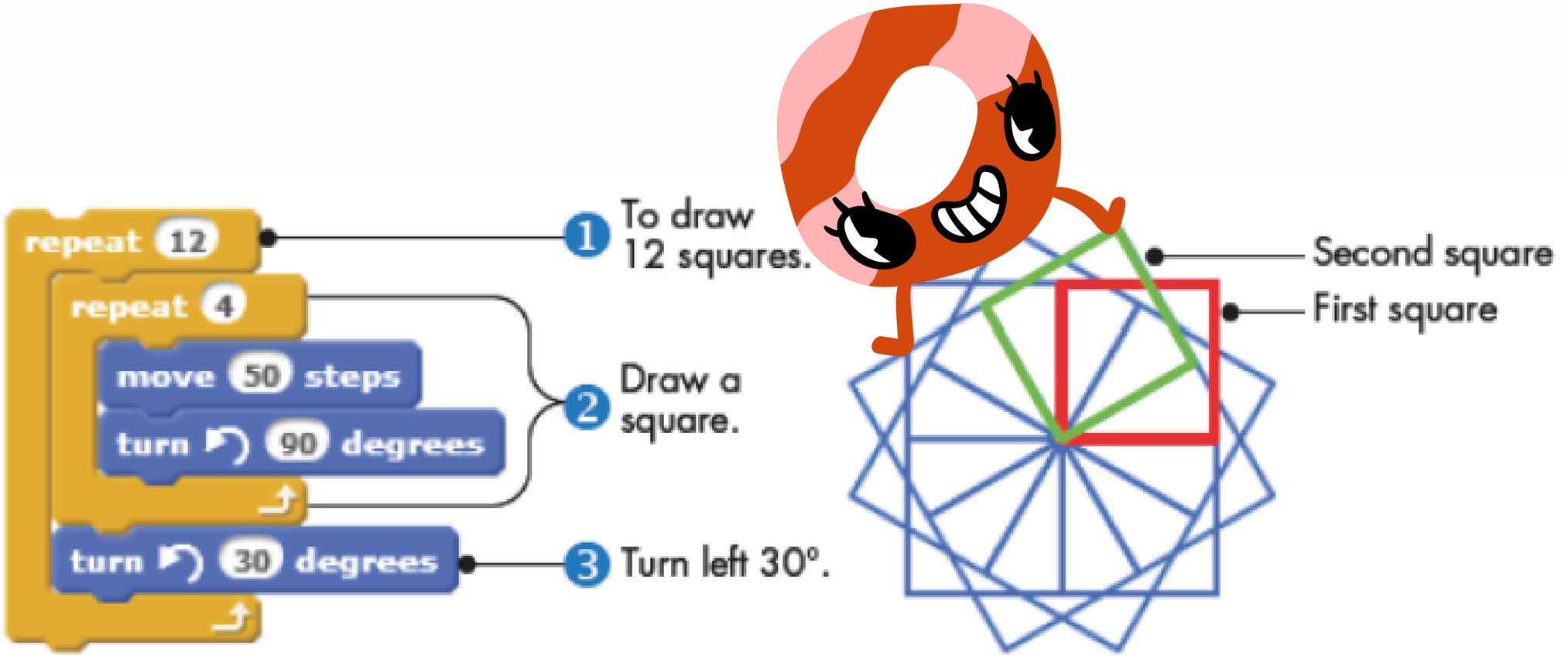


polygon	number of sides
Pentagon	5
Hexagon	6
Heptagon	7
Octagon	8
Nonagon	9





Rotated Squares

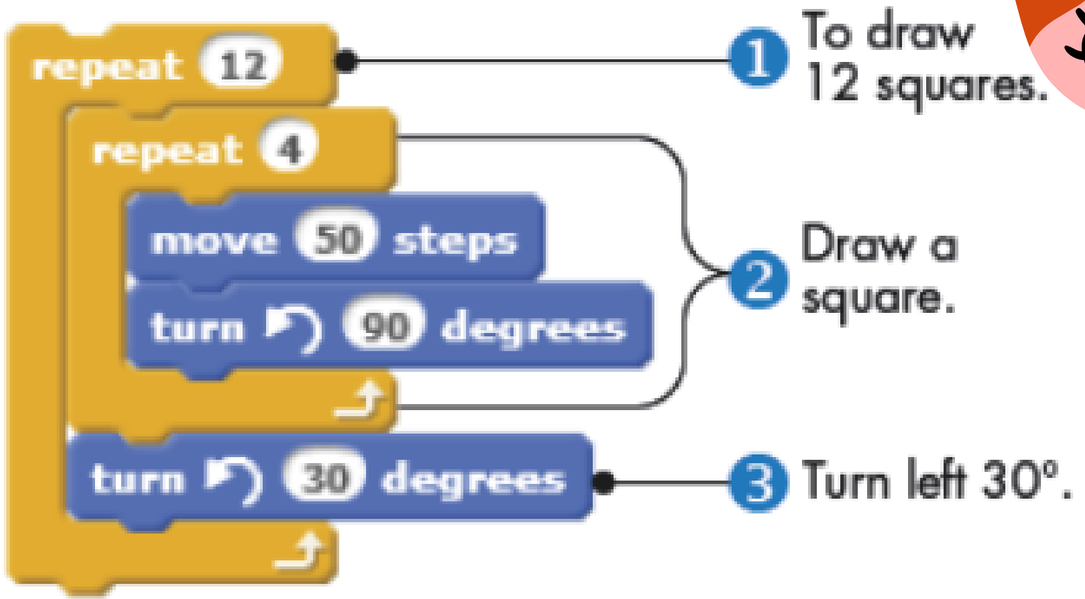


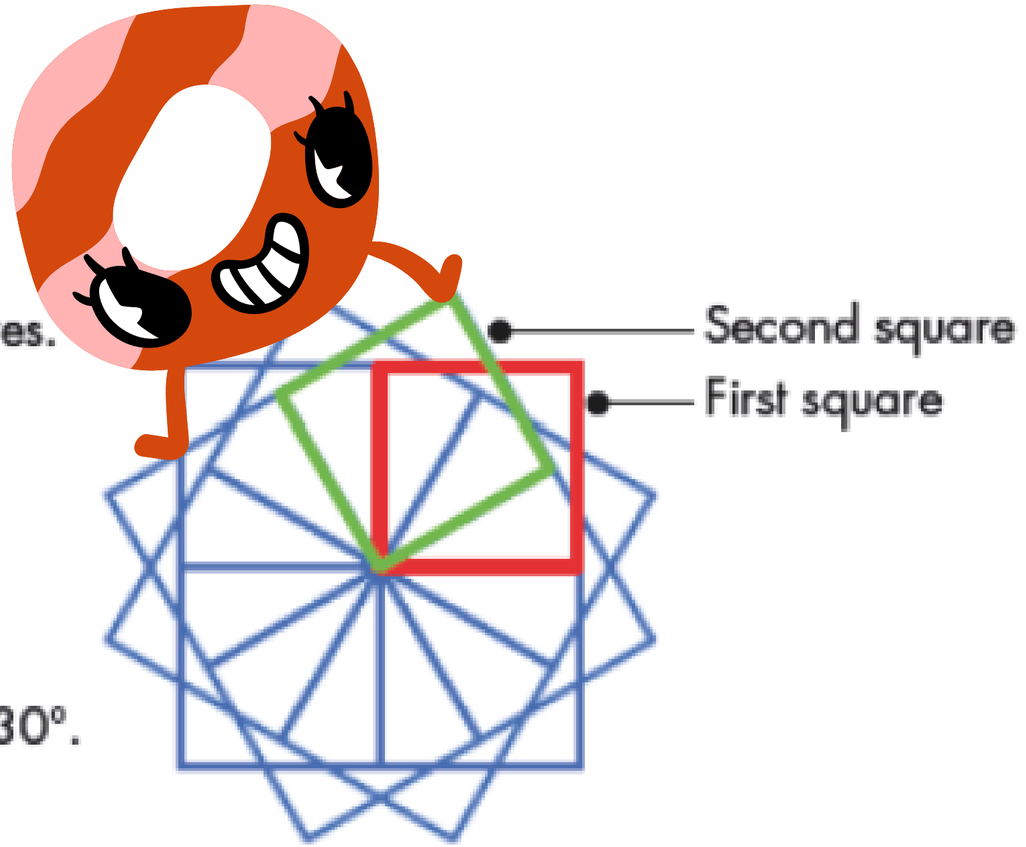
Rotated Squares

Notice that (12 repeats) x (30 degrees for each repeat) = 360 degrees.

What would happen if you change to:

- 4 repeats and 90 degrees?
- 5 repeats and 72 degrees?

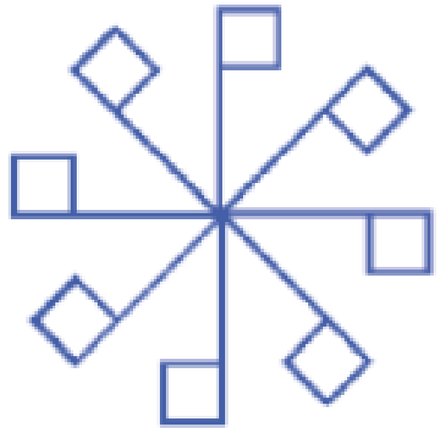




EXPLORING WITH STAMP

Let's write a program to draw the whindmill!

The flag shape as it appears in the Paint Editor. Note the location of the costume's center.



Add **change color effect by** block inside the repeat block!

THANK YOU!

Don't forget to

and click the