

Kinderlogo

Level 5

How to Create and Use Sets of Building Blocks

To try these sample step-by-step lessons, open the KL5 activity. You will quickly learn how to define a procedure by teaching the turtle to remember a set of instructions. Once you have defined a procedure, the turtle can redraw it anytime you want. This is a very powerful concept to explore.

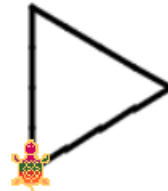
Suggest that students draw their designs in black so that they can later draw them in any color they want.

Example 1

First, let's teach the turtle how to draw a triangle. Once you have given the commands for the shape and have captured the commands with the A key, the turtle will be able to draw it anytime you press A again.

First draw a simple triangle on the screen by typing this pattern:

```
F F F F R R R R
F F F F R R R R
F F F F R R R R
```

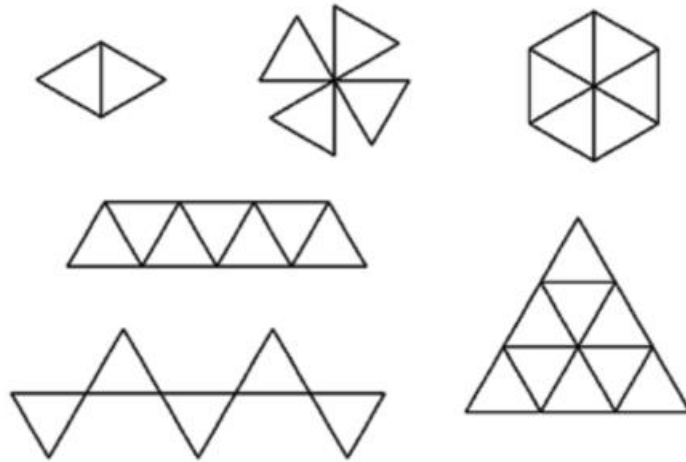


Your shape will look like this:

Press the **A** key to define the procedure, so that the turtle can do it again. You can press **A** anytime you want the turtle to draw a triangle (until you erase the commands or end your Kinderlogo session).

Below are some pictures that can be made using the triangle procedure you just created. Try drawing these by moving the turtle around the screen with its pen up to get it in the proper place and pointing in the right direction. Then put the pen down and draw the triangle by typing the **A** key.

(It may be tempting to use the **T** key to draw the triangle, but the **A** key is an all-purpose keystroke for any design you want to capture. The **T** command still hides and shows the turtle.)



Make careful note of how the turtle draws the triangle. It may take children some practice to be able to predict exactly where the triangle will be drawn.

It may also help children to use cardboard triangles to think with as they “play turtle,” pointing themselves in the same direction as the turtle to plan its placement. Encourage them to experiment with the triangle procedure before tackling the more complex designs.

Example 1

Next, let’s draw a design that uses a hexagon. Before you begin, press **N** and then click All to erase the triangle procedure.

Draw a hexagon by repeating this keystroke pattern 6 times: **F F R R**



Press the **A** key to repeat the initial pattern and store it for future use. Now we can create a design using this hexagon.

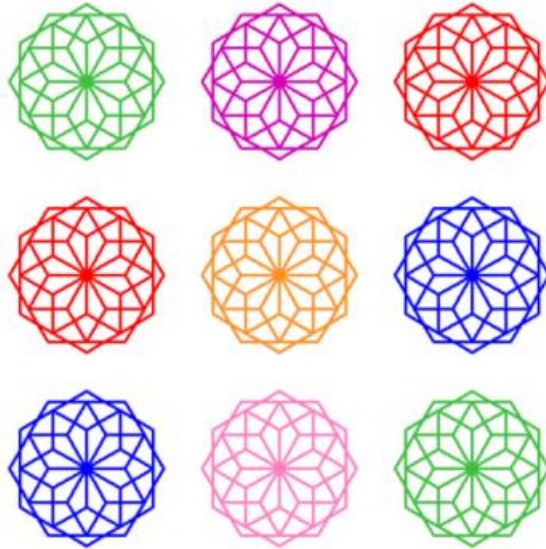
Type this sequence of keystrokes:

A R A R A R A R
A R A R A R A R
A R A R A R A R



With this design still on the screen, press **Z**. Now you can press **Z** anytime you want this flowery design.

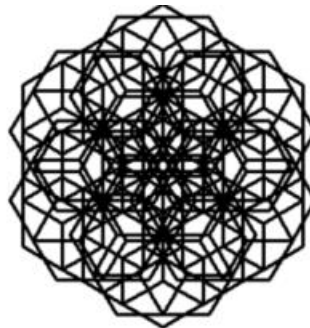
Without much effort, you can create this picture:



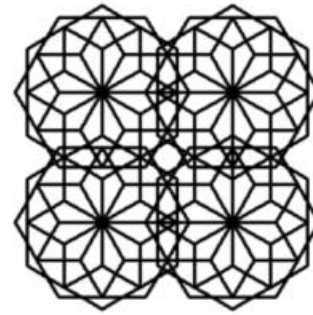
Or these pictures, by repeating the keystroke patterns listed:



U F F R R D Z



F F F R R Z



Z R R R F F F F F F

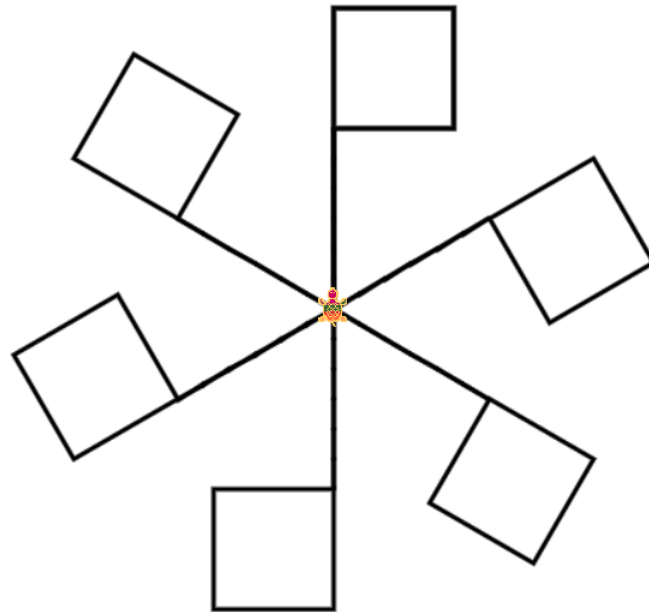
Example 3

Draw a flag using these commands:

F F F F F F
S
B B B B B B

Now press **A**, which causes the turtle to repeat the flag in the same place.

Press **A R R A R R A R R A R R A R R A R R** to draw a pinwheel design.



Now press **Z** to store this design.
Press **2** to change the pen color to red, then press **Z**.

Turn the turtle right with **R**, then
press **6** to change the pen color to blue.

Press **Z** again.

Here is the resulting colorful
design!

