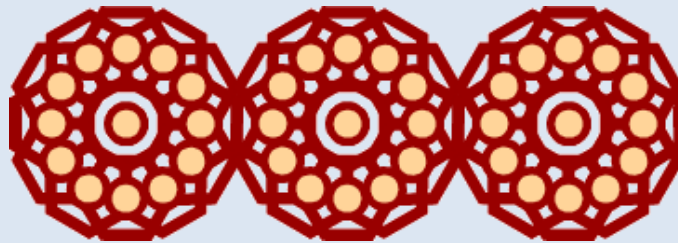


# TILING PATTERNS

## MODULE 1: INVESTIGATION 4

### Defining your own Pattern Blocks





#### ACTIVITY 1.4.1

# Defining your own Block

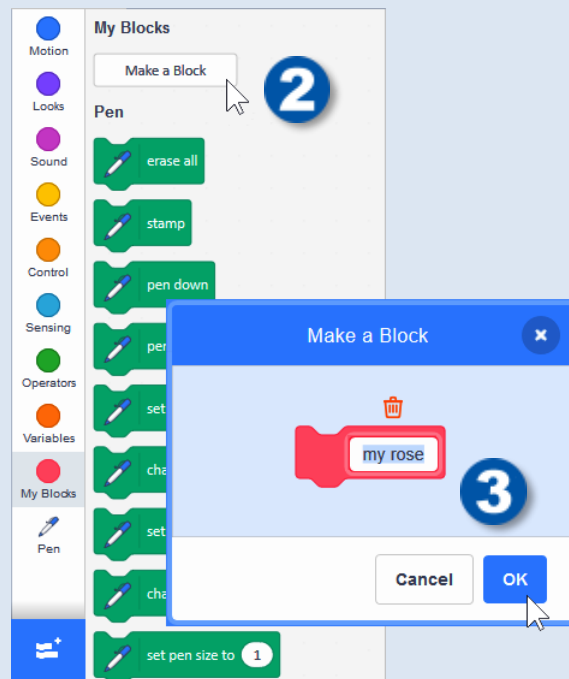
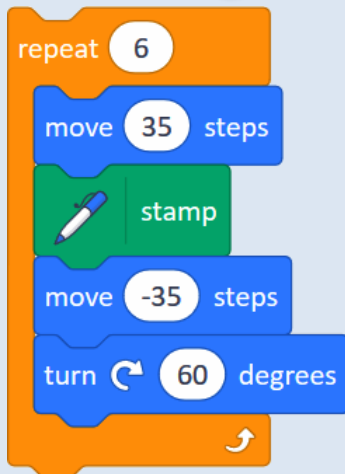


Continue in your project **14-Rose Patterns**.

- Build a script of a rose pattern using the algorithm **move-stamp-move back-turn** and define a new block to stamp this pattern – *give your script a name.*

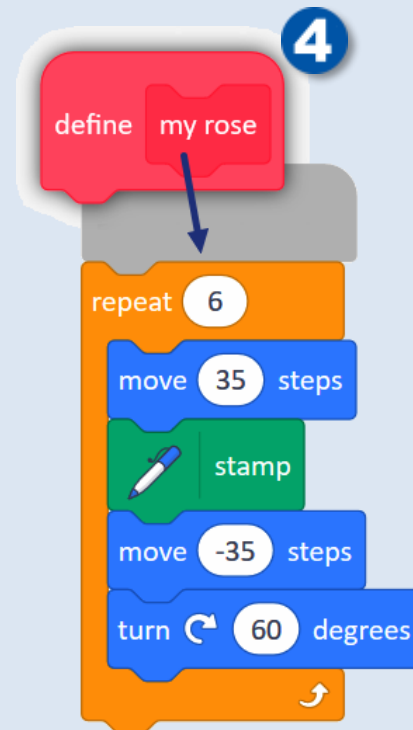


1



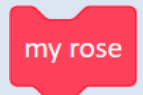
2

3



4

5

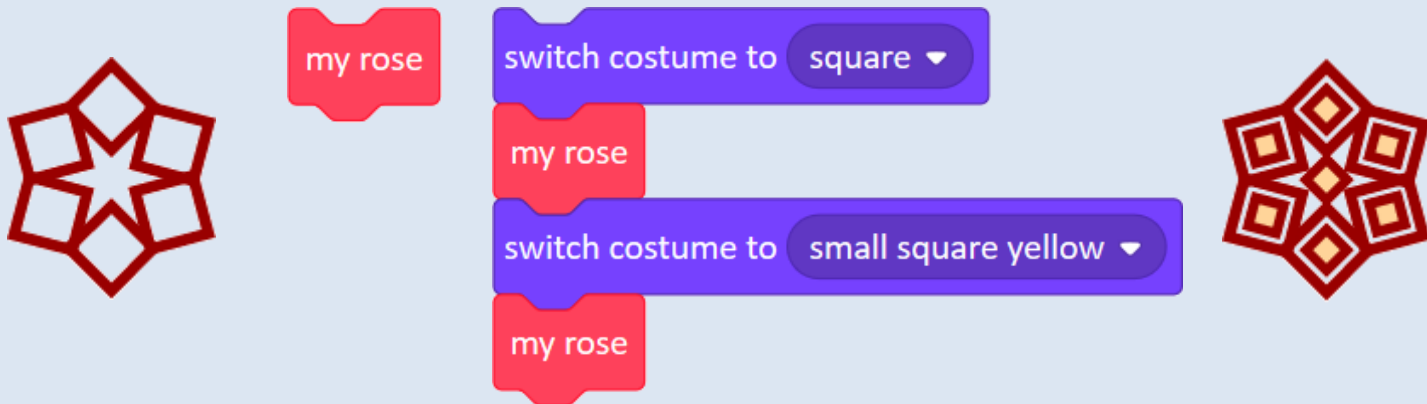


## MODULE 1: INVESTIGATION 4

### Activity 1.4.1 – Defining your own Block



- Drag your new block **my rose** into the scripts area and click it.
- Drag the Tile somewhere else on the stage and click the block again.
- Build different scripts using your new block, one or more times.

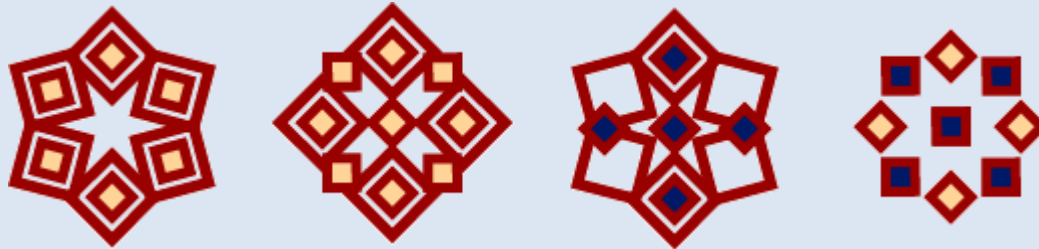


## MODULE 1: INVESTIGATION 4

### Activity 1.4.1 – [Extension] Defining your own Block



- **[Extension]** Change the definition of your new block or create another new block to create different rose patterns.





## Discussion Questions

- Why do you think it is useful to define your own blocks?
- Why might it be important to give your new block a meaningful name?

## MODULE 1: INVESTIGATION 4

### Activity 1.4.2 – Unplugged: Reading Scripts



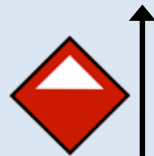
## ACTIVITY 1.4.2: UNPLUGGED

# Reading Scripts



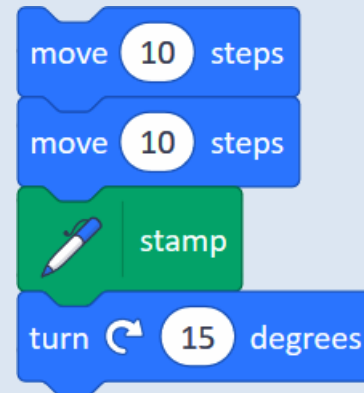
Read each script and think about what would happen on the stage when it is clicked.

- 1 How **many steps** will my Tile sprite move in total when I click on the script below?



Total number of steps moved =

- 2 How could I make this script **simpler** and still have the same outcome?



Write simpler version of script below:

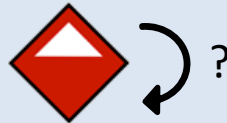
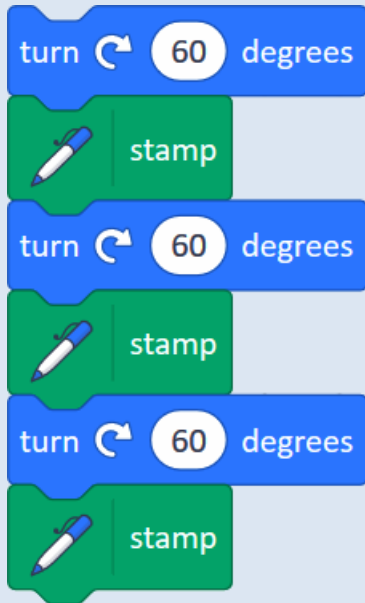


# MODULE 1: INVESTIGATION 4

## Activity 1.4.2 – Unplugged: Reading Scripts

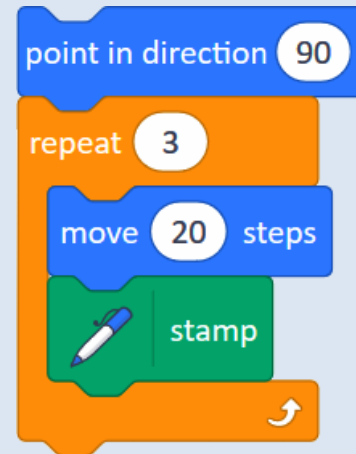


- 3 How many degrees will my Tile sprite turn in total when I click on the script below?



Total number of degrees turned =

- 4 Write a script that has the same outcome as the script below but without using the **repeat** block.



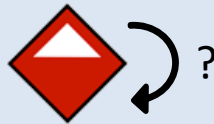
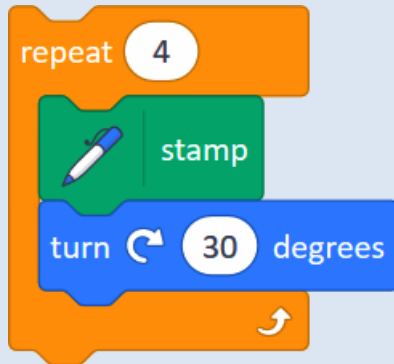
Write a script with same outcome without **repeat** below:

# MODULE 1: INVESTIGATION 4

## Activity 1.4.2 – Unplugged: Reading Scripts



- 5 How many degrees will the Tile sprite turn in total when I click on the script below?



Total number of degrees turned =

- 6 What is the lowest number that could go into the repeat block to create the pattern on the right?



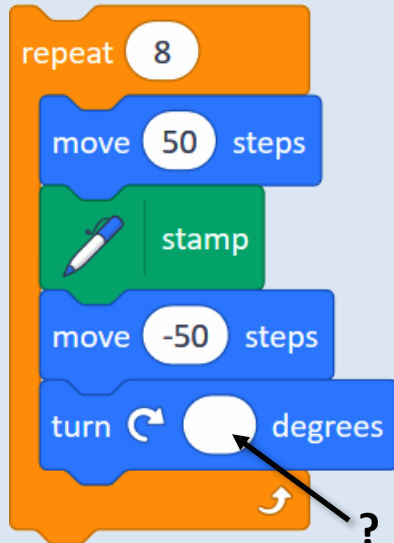
Repeat number =

# MODULE 1: INVESTIGATION 4

## Activity 1.4.2 – Unplugged: Reading Scripts

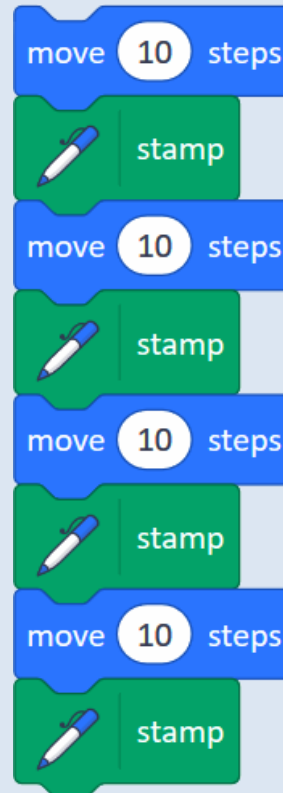


- 7 Which **number** do I need to put into the **turn** block to create the pattern below?



Number of degrees =

- 8 Make the script below **shorter** by using the **repeat** block.



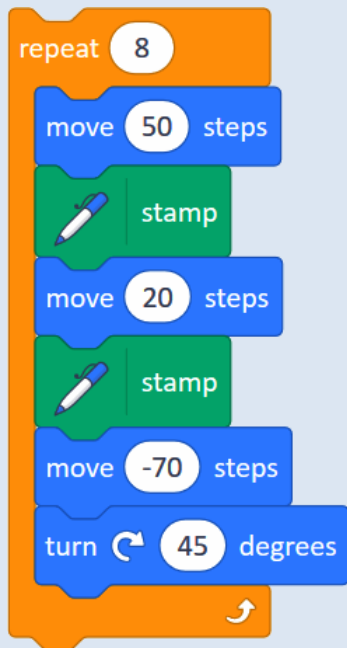
Write the shorter script using the **repeat** block below:

# MODULE 1: INVESTIGATION 4

## Activity 1.4.2 – Unplugged: Reading Scripts

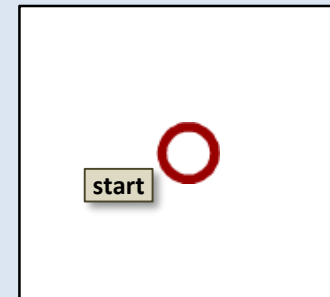
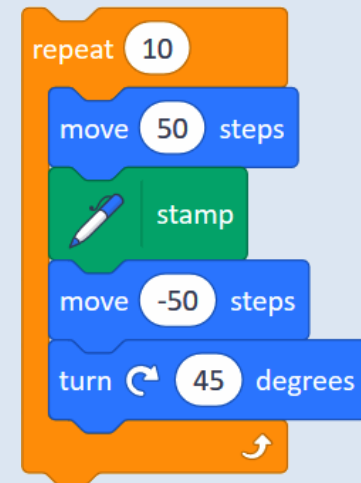
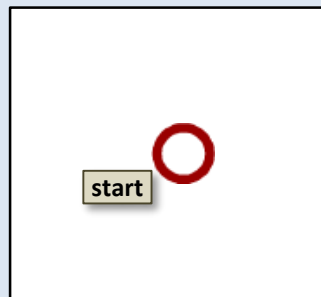
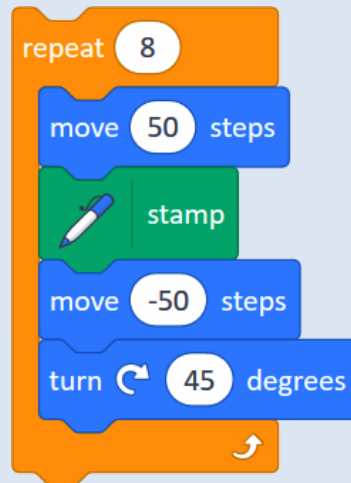


- 9 How many times will the Tile sprite stamp if I click on the script below?



Number of tiles stamped =

- 10 [Extension] In the boxes on the right draw the pattern that will be stamped by the Tile sprite when each of the scripts on the right are clicked on.



## MODULE 1: INVESTIGATION 4

### Activity 1.4.3 – [Extension] Building a Row of Roses



#### ACTIVITY 1.4.3 [EXTENSION]

# Building a Row of Roses

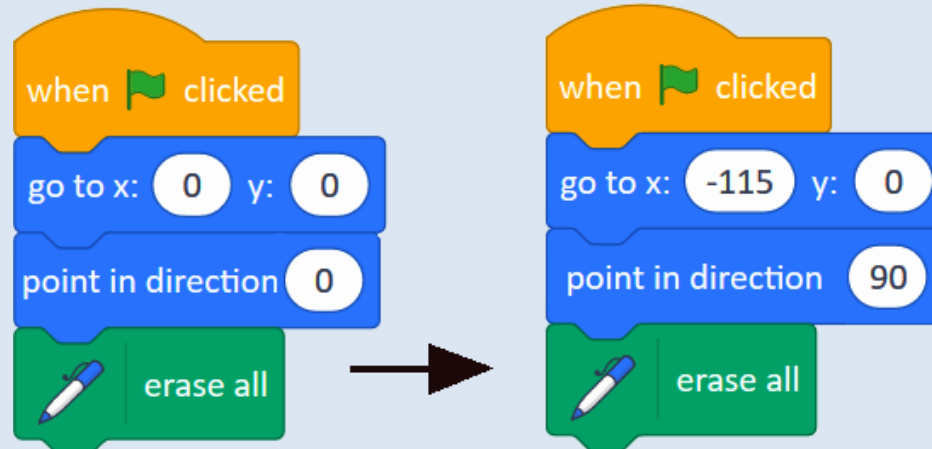
## MODULE 1: INVESTIGATION 4

### Activity 1.4.3 – [Extension] Building a Row of Roses



Continue in your project **14-Rose Patterns**.

- Edit the setup script so that the Tile starting position is closer to the left edge of the stage and is pointing to the right.

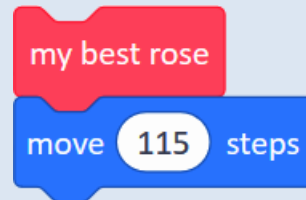


# MODULE 1: INVESTIGATION 4

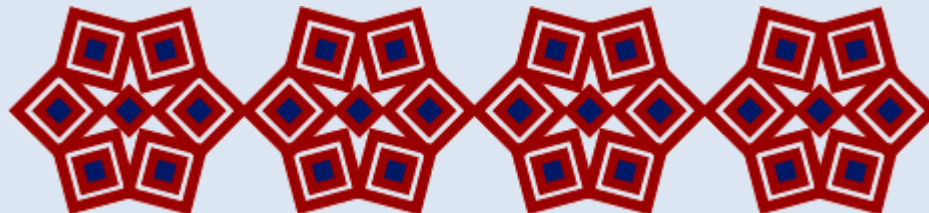
## Activity 1.4.3 – [Extension] Building a Row of Roses



- Choose one of your roses, define a block for it and build a small script using your **rose** block and **move 115 steps** (for example).



- Add a **repeat** block around this script.





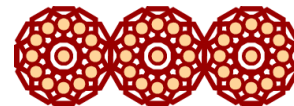
## Discussion Questions

- Could you plan a strategy for a pattern with four repeated roses?
- How about six roses in two rows of three?
- How could you find out the exact coordinates (i.e. x position and y position) for the starting point of each of your rose patterns?



## MODULE 1: INVESTIGATION 4

### Activity 1.4.4 – [Extension] Rose of Roses



#### ACTIVITY 1.4.4 [EXTENSION]

## Rose of Roses

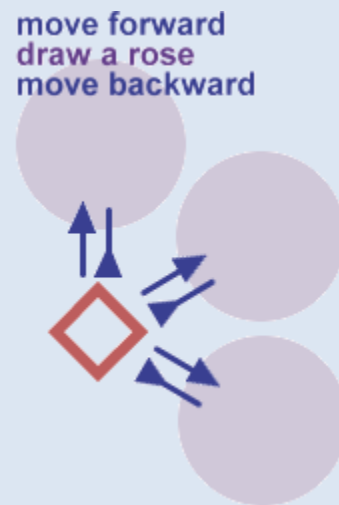
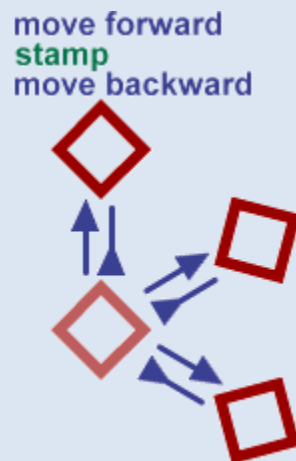
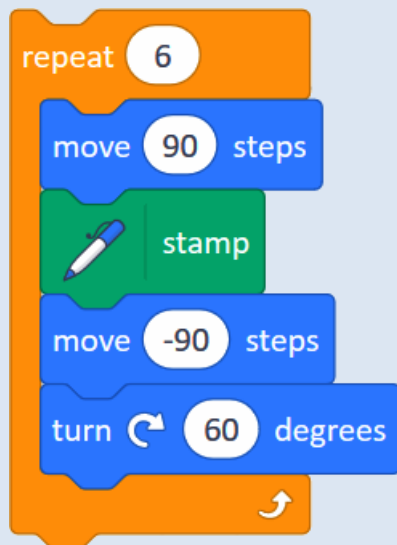
# MODULE 1: INVESTIGATION 4

## Activity 1.4.4 – [Extension] Rose of Roses



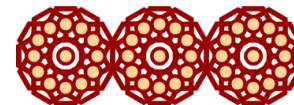
Continue in your project **14-Rose Patterns**.

- Build a simple rose pattern with large moves e.g. 90.  
Replace the stamp block in the script by your own **rose** block.

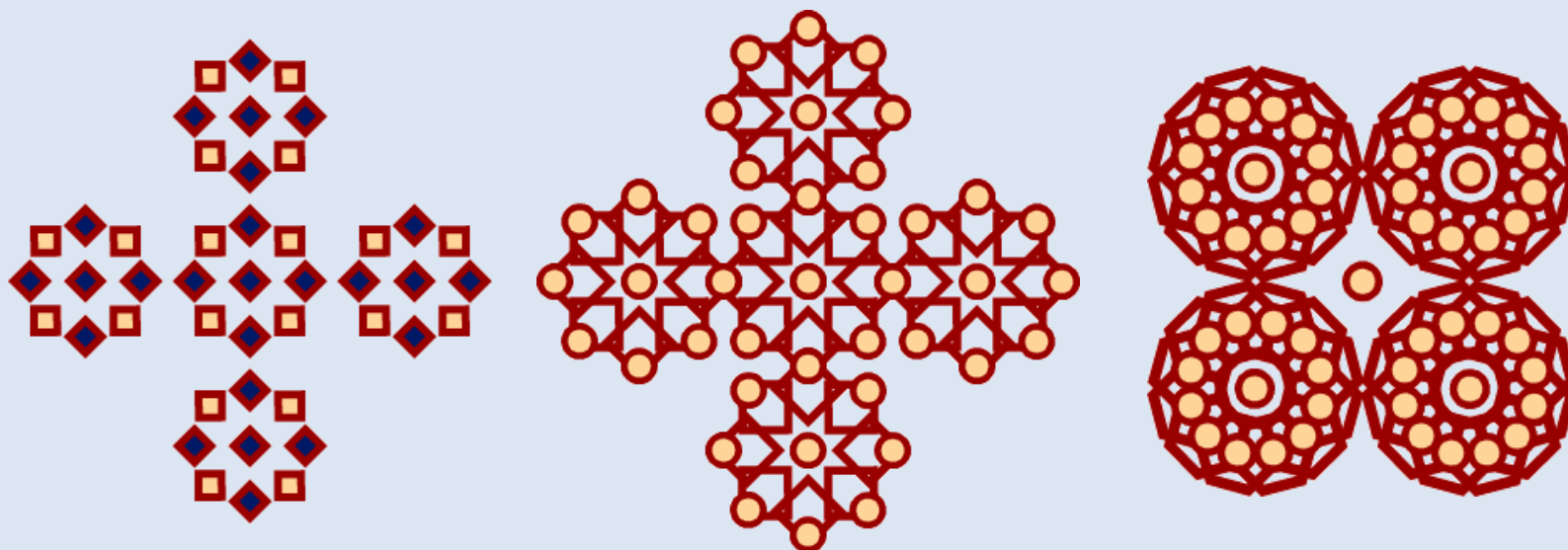


# MODULE 1: INVESTIGATION 4

## Activity 1.4.4 – [Extension] Rose of Roses



■ Build your own rose of roses. Some examples are below.



# MODULE 1: INVESTIGATION 4



## My **Investigation 4** check list:

- ☐ I defined a new block that stamps a rose pattern.
- ☐ I used my new block within a script.
- ☐ **[Extension]** I edited the definition of my new block to change the rose pattern.
- ☐ I used what I learned during Module 1 to predict what would happen when different scripts are clicked.
- ☐ **[Extension]** I built a script to create a **row of roses** using **my rose** pattern block.
- ☐ **[Extension]** I built a script to create a **rose of roses** using **my rose** pattern block.

# MODULE 1 INVESTIGATION 4: Key Vocabulary



**definition** of a new block is the script that is connected to the **define** hat block of the new block. This tells you what your new block will do when clicked.

