Using Subprograms to Organize  
 Your Coin Toss Code

**Algebra**

**Unit 3 Line Master 11a**

Adjust the Coin Toss application to make the code more organized   
by breaking it down into smaller sections.   
To do this, you will create subprograms.

A ***subprogram*** contains a small set of instructions to complete a task and is referenced and called to action by the main program.   
In Scratch, when we make a new block, we have made a subprogram.

Start with the code you wrote by following the guided materials   
in Master 10. If you do not have your code saved, you can begin   
with this link:

<https://scratch.mit.edu/projects/806111487/editor/>

You will create two subprograms: one for resetting the variables and one for tossing the coin. The conditional statement part of the code will remain as part of the main part of the program.

**Part 1: Creating a Reset Subprogram**

Graphical user interface, application, website, Teams

Description automatically generated1. To create a subprogram in   
 Scratch, you need to make your   
 own block. Under **My Blocks**,   
 select **Make a Block**. Name the   
 block **reset**.

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2. A new block appears in the code editing area that says **define   
 reset**. There is also a new block under **My Blocks** called **reset**.   
 Move your code that resets the variables, which was below the   
 **when space key pressed** block, to below the **define reset** block.   
 From under **My Blocks**, select the **reset** block and drag it to   
 below the **when space key pressed** block.  
 The code is shown below.

A picture containing diagram

Description automatically generated

The application should work as before, but now you have reorganized the code to contain one subprogram.

**Part 2. *Creating a Toss Subprogram***

Graphical user interface, application

Description automatically generated1. The second subprogram you will   
 create will be to toss the coin.   
 Under **My Blocks**, select **Make a   
 Block**. Name the block **toss**.

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**Algebra**

**Unit 3 Line Master 11c**

2. Drag the 3 blocks of code associated with the actual coin   
 toss to below the **define toss** block as shown below.   
 Drag the new **toss** block below the **when green flag**   
 **clicked** block.   
 The code is displayed on the below.

**Tip:** You might find it helpful to pull apart the code, and temporarily place it elsewhere in the code editing window before snapping it

back together.

Diagram

Description automatically generated with low confidence

The application should work the same as before, but now the   
code is broken down and organized into smaller parts,   
called subprograms!

3. Try out the application to ensure that it still works.  
 You can do this by clicking on the green flag above the stage   
 many times. What happens to the number of heads?   
 The number of tails?   
 If the results aren’t what you expect, look through your code   
 for any errors.