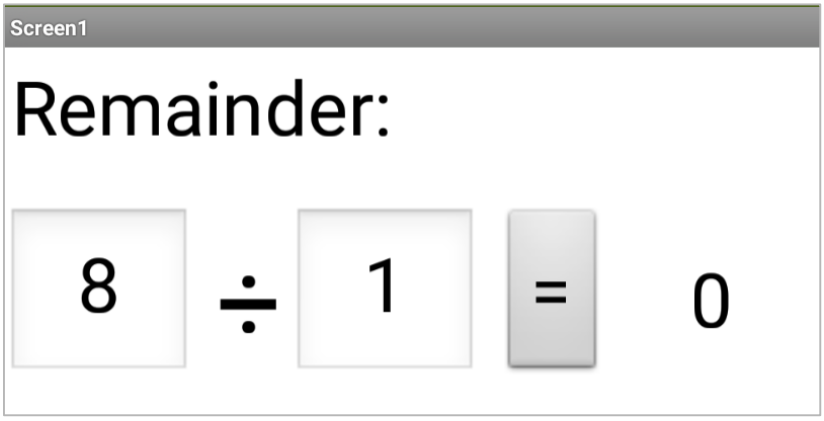
FACTOR APP

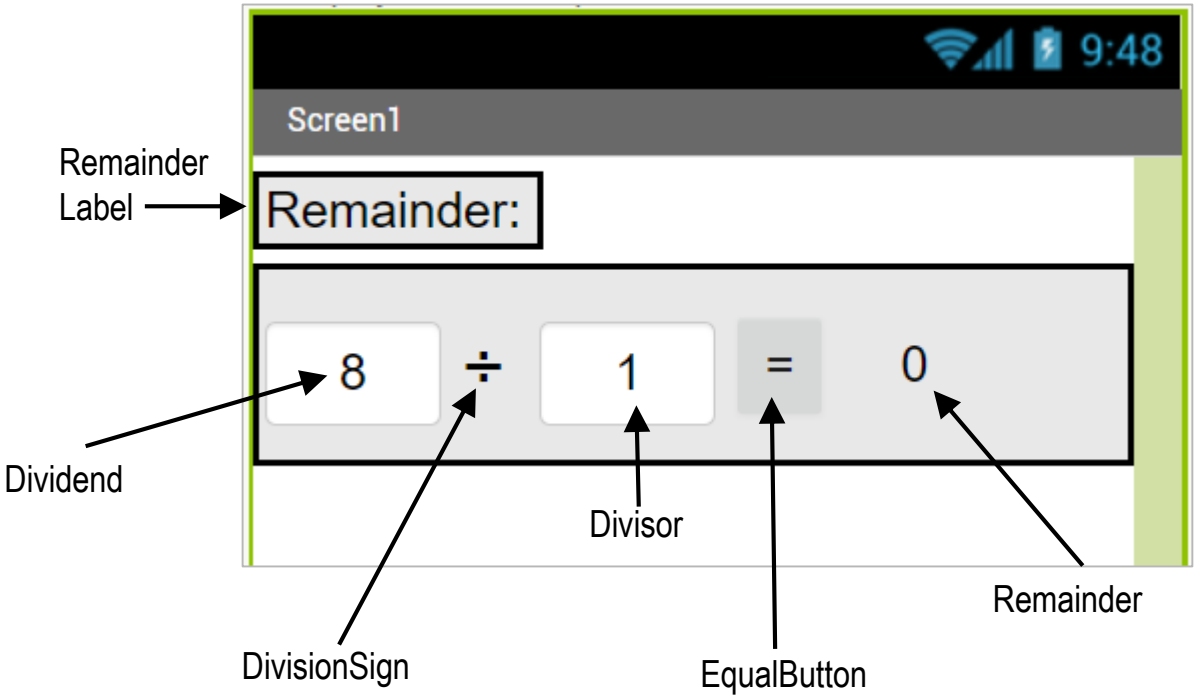
Remainder App

❑ Open the SimpleRemainder_Template project, provided to you by your teacher.



START HERE

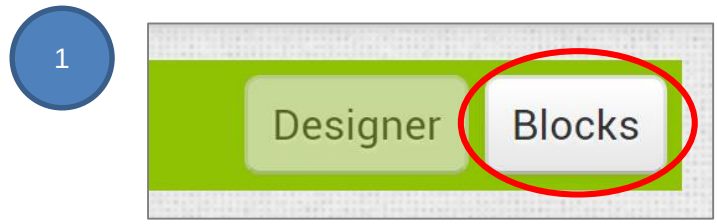
❑ In the Designer view, review the components and note their names in the project.



FACTOR APP

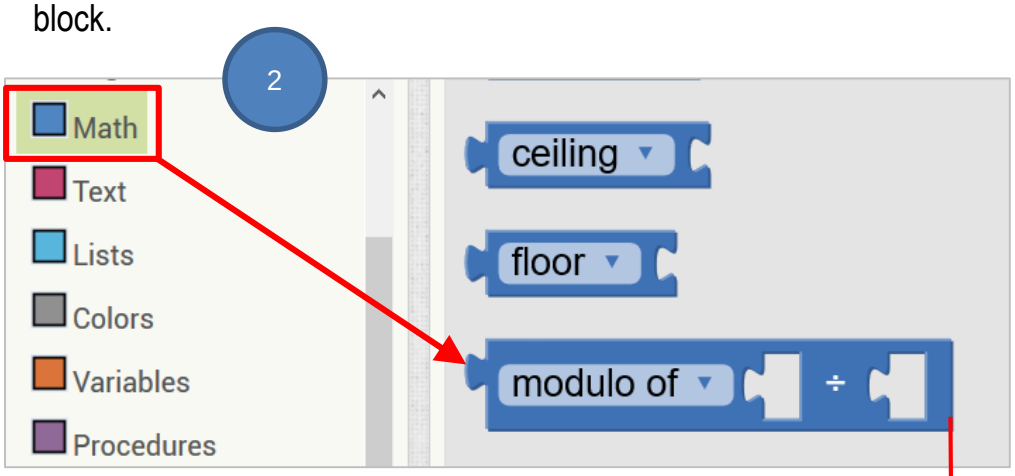
LET'S CONTINUE

❑ Go to the Blocks Editor.

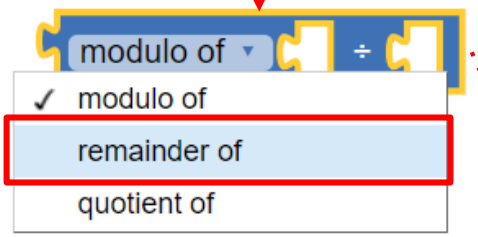


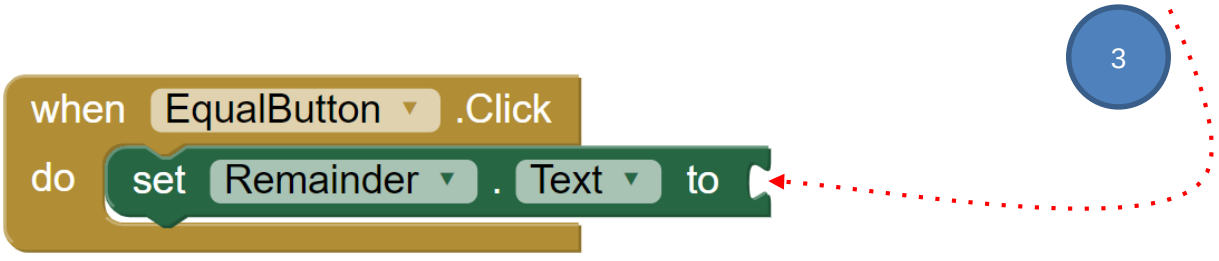
Use the Math remainder block in MIT App Inventor to find the remainder of a division.

❑ From the Math drawer, drag out a **modulo of** block and change it to **remainder of** block.



❑ Snap the **remainder of** block into the **set Remainder.Text to** block in the **when EqualButton.Click** block.

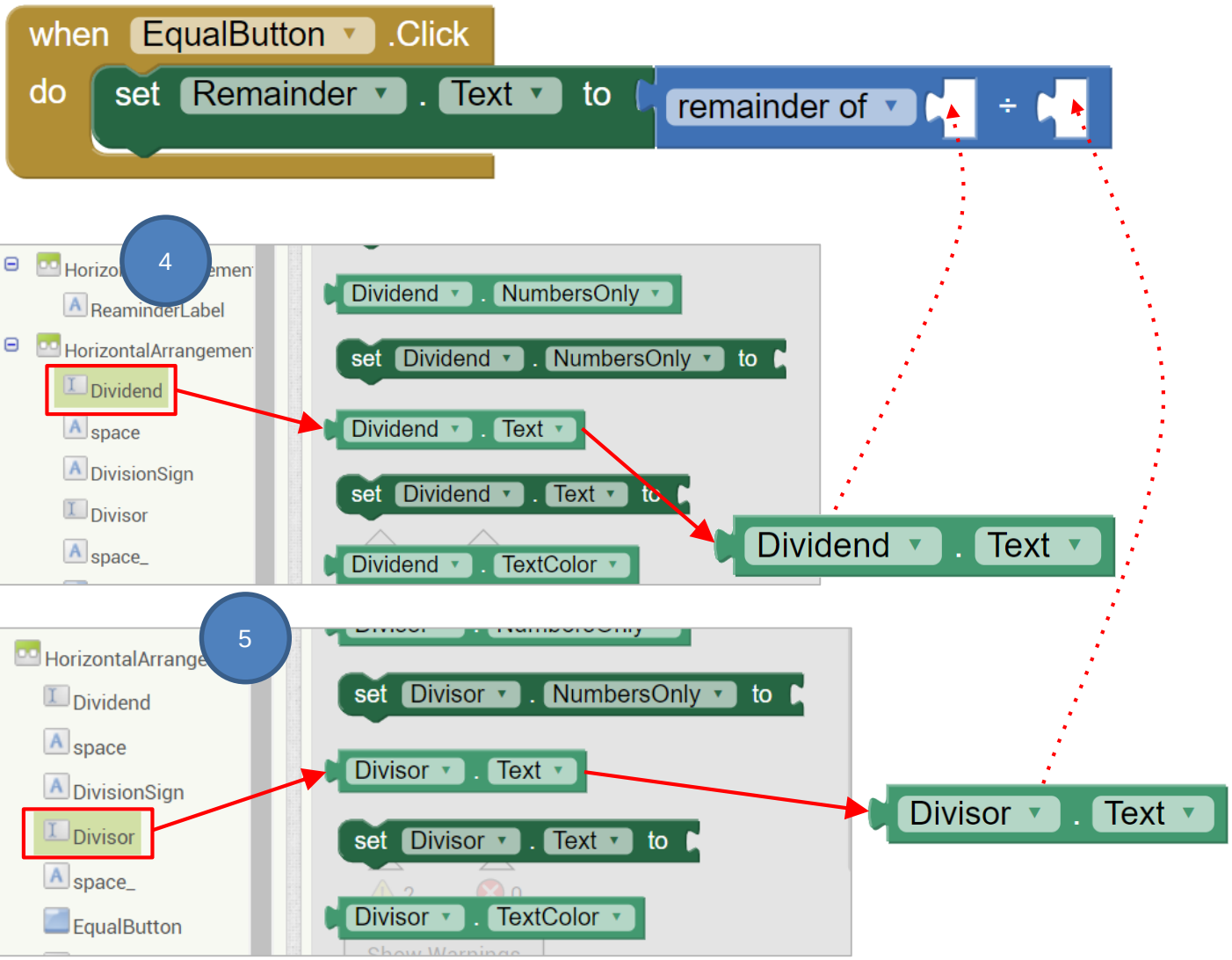




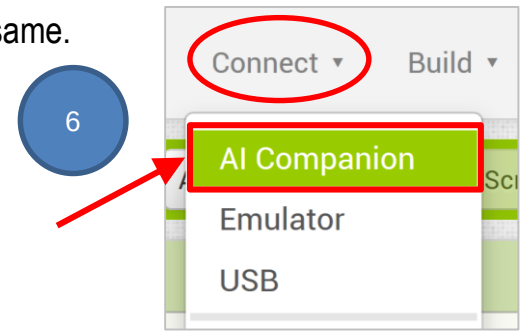
FACTOR APP

LET'S CONTINUE

❑ Set **Dividend.Text** as the dividend, and set **Divisor.Text** as the divisor in the **remainder of** block.



❑ Using MIT AI2 Companion, run through the numbers in your table in Lesson 1 to test if the remainders are the same.



FACTOR APP

ALGORITHMIC THINKING

❑ Read the table.

Number	Divisor	Remainder	Factor?	Algorithmic Thinking
8	1	0	✓	If remainder of (8÷1) = 0, then 1 is a factor of 8.
8	2	0	✓	If remainder of (8÷2) = 0, then 2 is a factor of 8.
8	3	2		If remainder of (8÷3) = 0, then 3 is a factor of 8.
8	4	0	✓	If remainder of (8÷4) = 0, then 4 is a factor of 8.
8	5	3		If remainder of (8÷5) = 0, then 5 is a factor of 8.
8	6	2		If remainder of (8÷6) = 0, then 6 is a factor of 8.
8	7	1		If remainder of (8÷7) = 0, then 7 is a factor of 8.
8	8	0	✓	If remainder of (8÷8) = 0, then 8 is a factor of 8.

❑ Fill in the table.

Number	Divisor	Remainder	Factor?	Algorithmic Thinking
8	1	0	✓	E.g. If remainder (Number÷1) = 0, then 1 is a factor of the number.
8	2	0	✓	If remainder (Number÷2) = 0, then _____ is a factor of the number.
8	3	2		If remainder (Number÷___) = 0, then ___ is a factor of the number.
8	4	0	✓	If remainder (Number÷___) = 0, then ___ is a factor of the number.
8	5	3		If remainder (Number÷___) = 0, then ___ is a factor of the number.
8	6	2		If remainder (Number÷___) = 0, then ___ is a factor of the number.
8	7	1		If remainder (Number÷___) = 0, then ___ is a factor of the number.
8	8	0	✓	If remainder (Number÷___) = 0, then ___ is a factor of the number.

FACTOR APP

ALGORITHMIC THINKING(CONT'D)

❑ Fill in the table.

Number	Divisor	Remainder	Factor?	Algorithmic Thinking
8	1	0	✓	E.g. If remainder (Number÷Divisor) = 0, then Divisor is a factor of the number.
8	2	0	✓	If remainder (Number÷Divisor) = 0, then _____ is a factor of the number.
8	3	2		If remainder (Number÷_____) = 0, then _____ is a factor of the number.
8	4	0	✓	If remainder (Number÷_____) = 0, then _____ is a factor of the number.
8	5	3		If remainder (Number÷_____) = 0, then _____ is a factor of the number.
8	6	2		If remainder (Number÷_____) = 0, then _____ is a factor of the number.
8	7	1		If remainder (Number÷_____) = 0, then _____ is a factor of the number.
8	8	0	✓	If remainder (Number÷_____) = 0, then _____ is a factor of the number.

❑ Can you write down the rule for finding all factors of an input number?

Counting up from 1 to the **Number**:

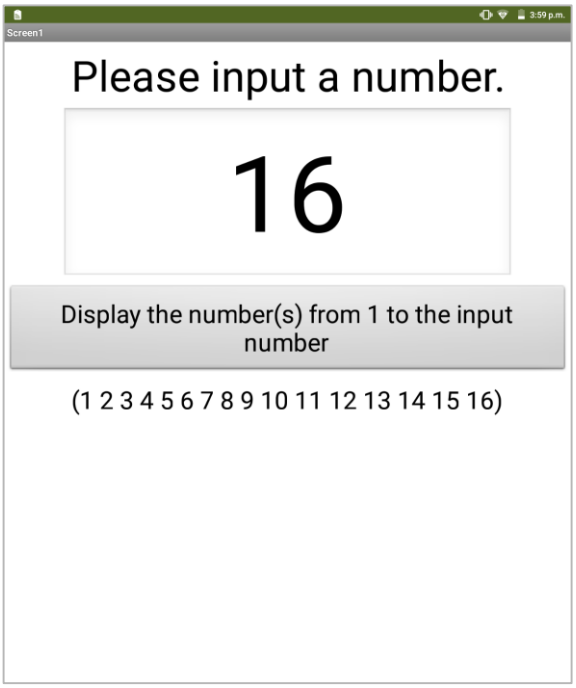
If remainder of (_____÷_____) = 0, then _____is a factor of _____.

CT Tips

Through the tables, you convert steps in an **algorithm** to code blocks for finding factors.

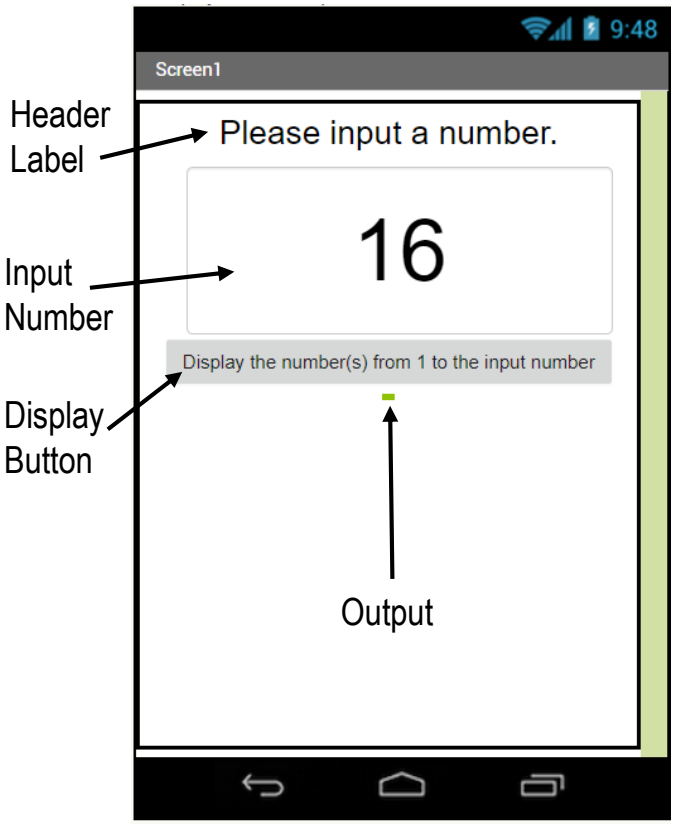
FACTOR APP

This app will help you to learn the use of the **for each number** block in MIT App Inventor.

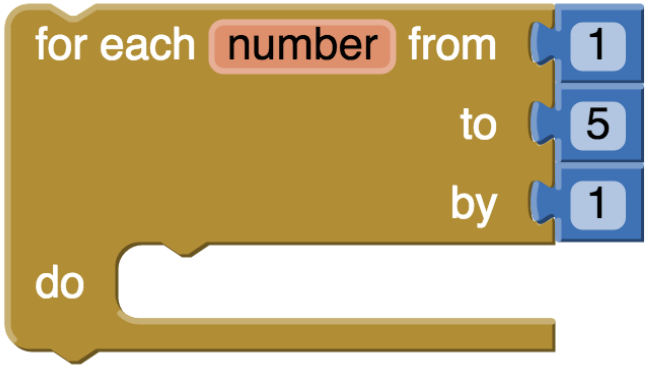


DISPLAY NUMBERS

- ❑ Open the DisplayNumber_Template project, provided to you by your teacher.
- ❑ In the Designer view, review the components and their names in the project.



- ❑ Look at the code blocks in the Blocks view.
- ❑ The **for each number** block is used for doing something a number of times for a given range.

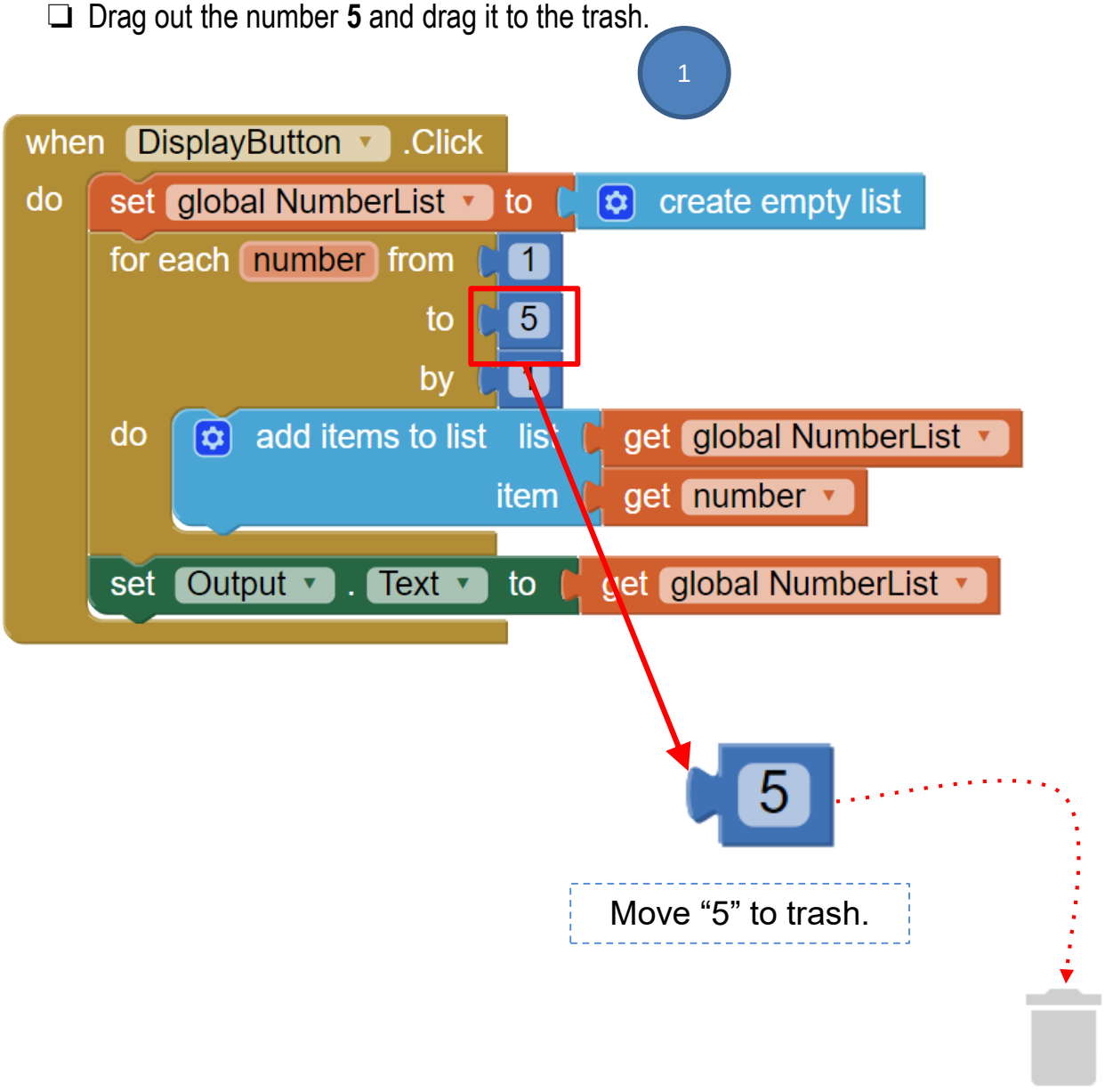


FACTOR APP

LET'S UPDATE THE APP

Now, we need to update the **for each number from** block in the **when.DisplayButton.Click** event.

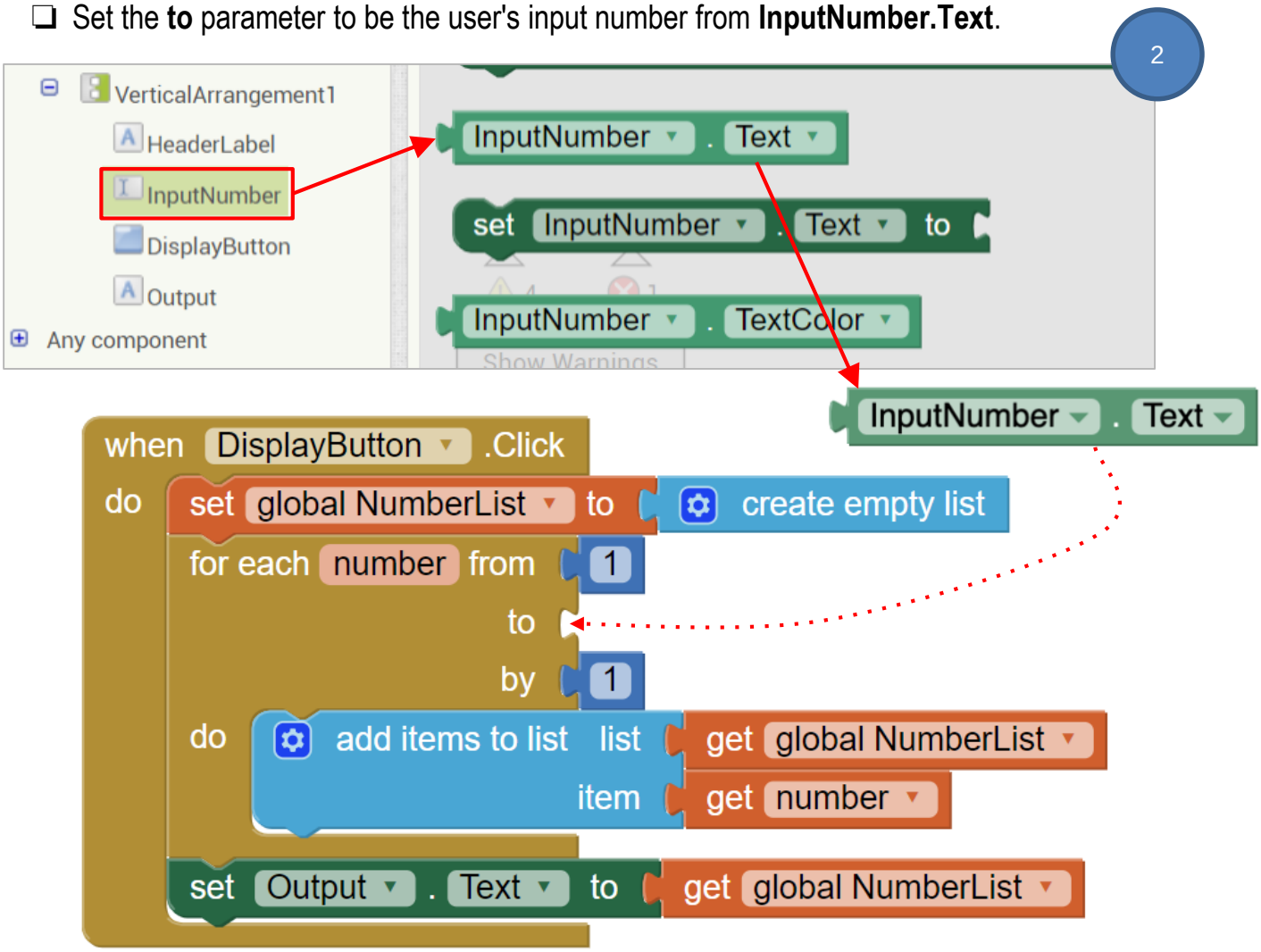
❑ Drag out the number **5** and drag it to the trash.



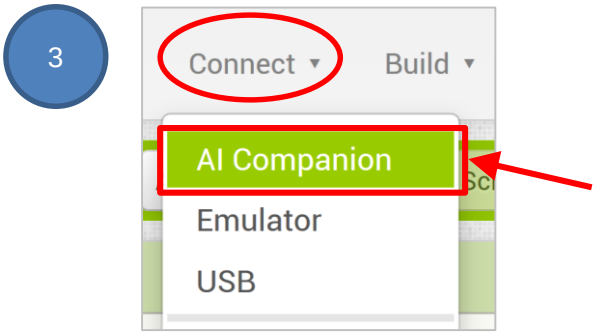
FACTOR APP

LET'S CONTINUE

❑ Set the **to** parameter to be the user's input number from **InputNumber.Text**.



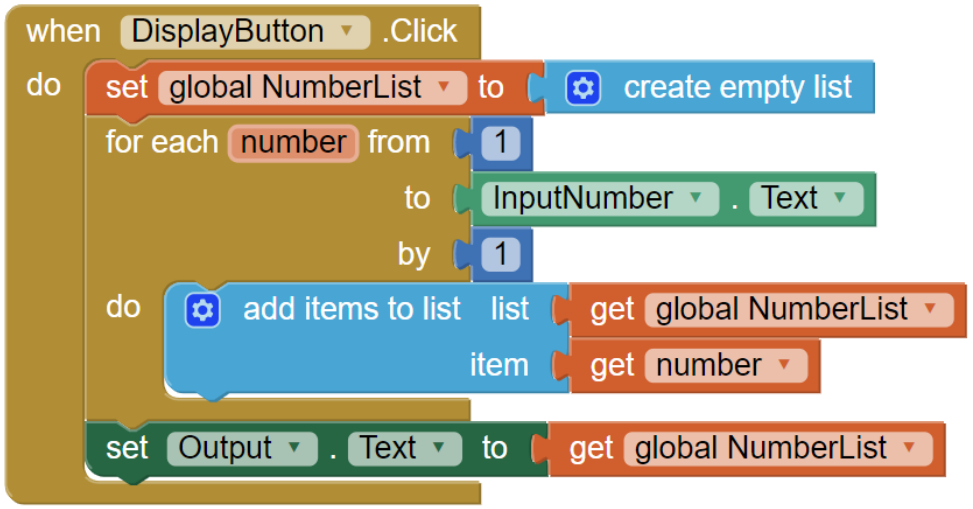
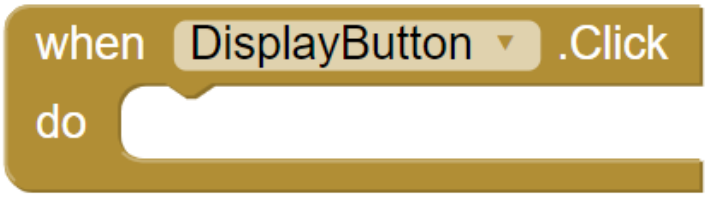
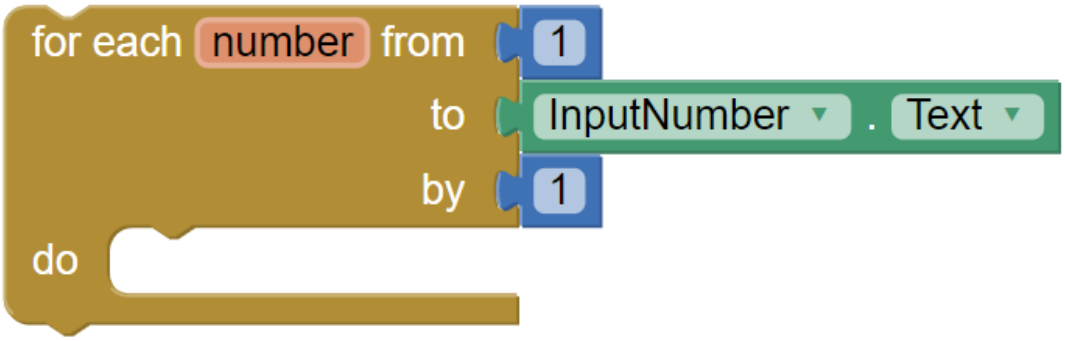
❑ Test using MIT AI2 Companion. Enter a number and press the button. What is displayed in the Output?



FACTOR APP

COMPUTATIONAL THINKING CONCEPTS

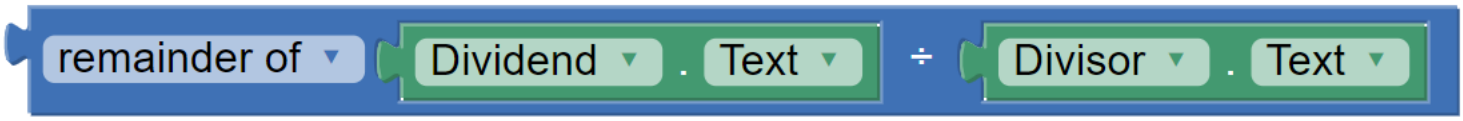
The following are the Computational Thinking Concepts learnt in Lesson 2.

L3U8.4-8.5 Factor App
1. Sequences 
2. Events 
3. Repetition 

FACTOR APP

COMPUTATIONAL THINKING CONCEPTS

The following are the Computational Thinking Concepts learnt in Lesson 2.

L3U8.4-8.5 Factor App
4. Naming 
5. Operators 
6. Manipulation of data and elementary data structures