Globisens

xploris

CODING MATH

Divisible by three

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DIVISIBLE BY THREE

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1 Introduction

Welcome to a new mathematical adventure!

Today, we're going to explore a fun and simple way to work with numbers and understand what it means for a number to be “divisible by 3”.

Imagine you have some candies, and you want to share them equally with three friends. Our goal is to figure out how to distribute the candies so that each friend gets the same amount, with none left over.

Why is this important?

Knowing how to divide any quantity helps us not only to distribute things fairly, but also to solve problems, play, and learn more about how numbers work.

2 Theory

What does it mean for a number to be divisible by 3?

A number is divisible by 3 if, when dividing it by 3 gives an exact number with no remainder. In other words, the "remainder" is 0.

For example:

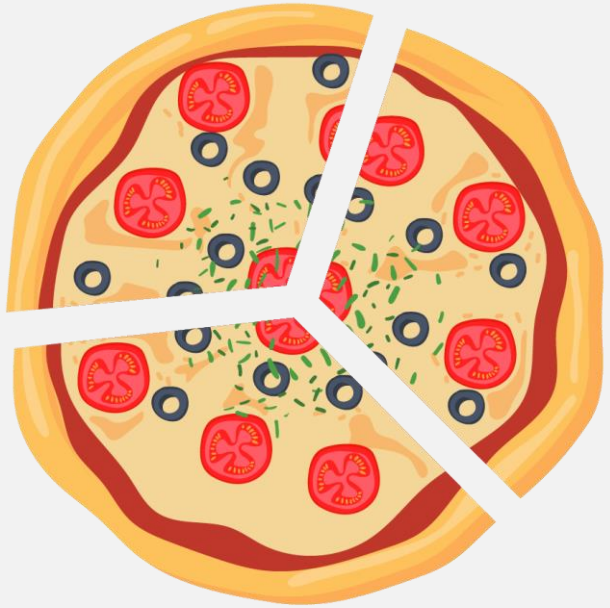
12 ÷ 3 = 4. Here, 3 goes into 12 exactly 4 times, with no remainder. Therefore, 12 is divisible by 3.

13 ÷ 3 = 4 with a remainder of 1. Since there is 1 left over, 13 is not divisible by 3.

It's time to practice!

We will check the numbers divisible by 3 with our Xploris using Xplorilab block programming. We will create a program that checks numbers and tells us which ones are divisible by 3.

Let's get to work! Follow my steps and let's program together.

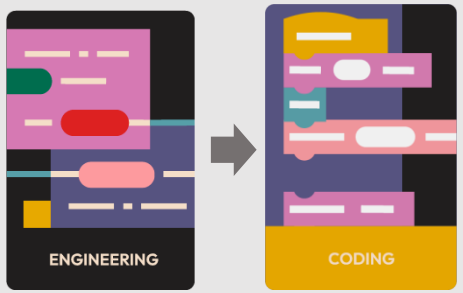


3 Activity setup

Turn on your Xploris and connect it to your computer or tablet.

Open the XploriLab software on your computer or tablet.

Once inside XploriLab, select the icon to connect the device via USB cable or bluetooth as applicable.



Go to the ENGINEERING section and then to CODING.

4 Coding

1

Use the clear screen block from the DISPLAY Group to clear the screen of our device. This step will ensure that we have a clean space to display the results of our programming.

Note: If you don't find the block right away, you can scroll the Display section to search for it.
Let's place it as the **first block** in our program

2

From the LOOPS group, use the forever block.

This block will allow us to **repeat indefinitely** the instructions that we place inside it.

This will ensure that our program continues to run continuously while we perform the checks. Let's drag the “Forever” block and place the following instructions inside it!

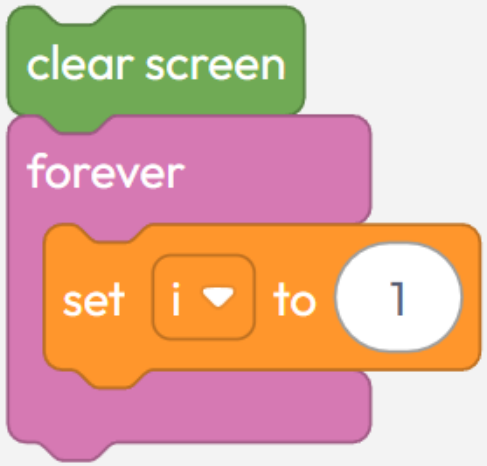
4 Coding

3

- From the VARIABLES group, click on Create variable to create a new variable.
- Create a new variable called **“i”**.
- Drag the set i to block to set an initial value for the variable.
- Use the numerical block of the MATH section to assign the initial value 1 to the variable “i”.

This will allow us to start the verification of numbers from 1 in our program.

That's it! Now let's configure our variable to get started!



4 Coding

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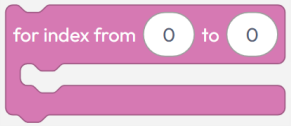
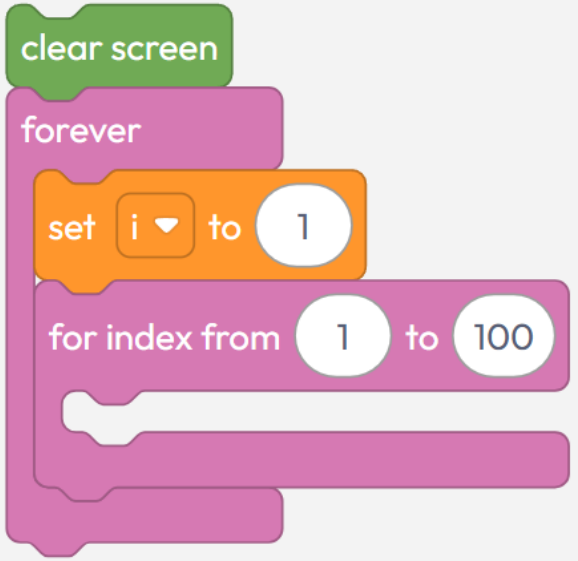
- From the LOOPS section, we will use the block 

to define the range of numbers to be checked.
- In this block, set the **index** variable to start at **1** (initial value).
- Set it to end in **100** (final value), since we want to work with numbers from 1 to 100.

This block will allow the program to automatically run through each number in that range and perform the necessary checks.

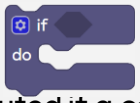
Let's incorporate this block into "Forever" and keep making progress!



4 Coding

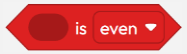
5

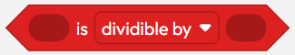
Set up the condition that will evaluate whether a number is divisible by 3. To do this, follow these steps:

1. From the LOGIC group, select 

block

This block only allows actions to be executed if a condition is met.

2. From the MATH group, use the block 

and change the option 

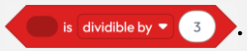
clicking on the drop down menu.

In the second space, write the number

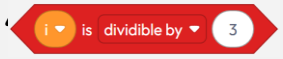
using a Math block .

This block will be used to check if the number is divisible by 3 .

3. From the VARIABLES group, select the

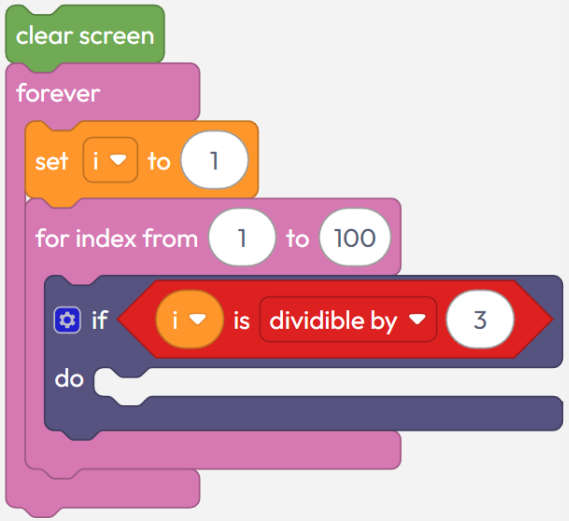
variable and place it inside the first space of the block 

.

4. Place the block ‘ 

inside the space of the

block.



4 Coding

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Prepare the screen to clearly display the number that is divisible by 3.

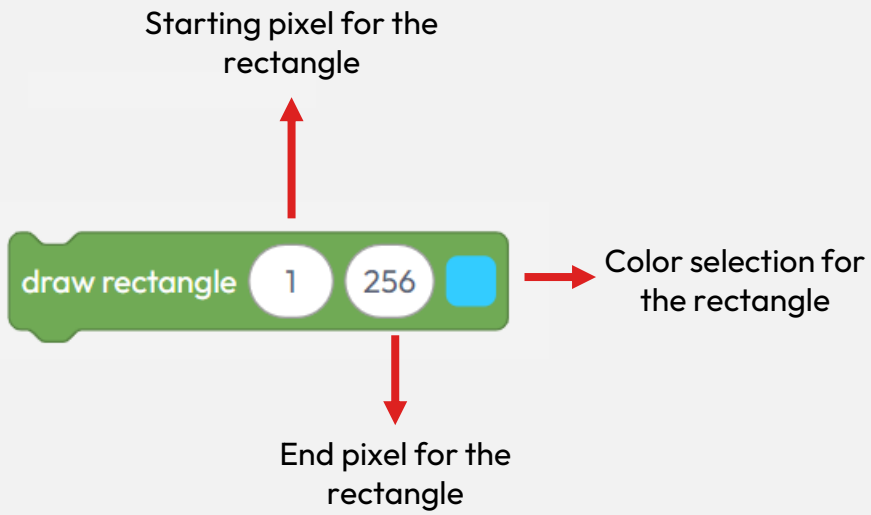
1. To use the

block from the DISPLAY group.

This block will draw a rectangle on the screen as a background for the numbers.

2. To adjust the

parameters use numeric blocks from the MATH section.



4 Coding

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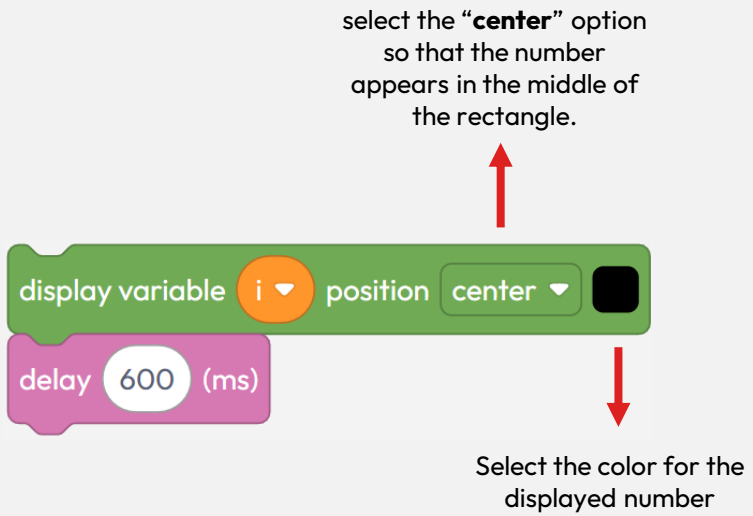
Display the number i **that is divisible by 3 and allow time for the result to be visible before displaying the next number.**

To achieve this, we will proceed as follows:

1. Use the display variable position center block from the DISPLAY group and use a Variable block from the VARIABLES group to select the variable i as the number to be displayed.

2. Use the delay 100 (ms) block from the LOOPS group and set the time to 600 ms.

This block adds a pause of 0.6 seconds before changing the display to show the next number.



4 Coding

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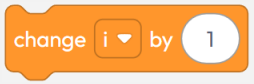
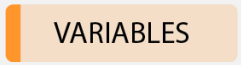
To go through all the numbers from 1 to 100, we will use a block that will increment the value of the variable “i” in each iteration of the loop.

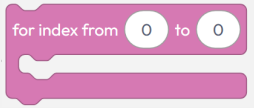
1. Configure the block 

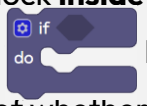
from the 

group.

Select the variable **“i”** and sets the increment to **1.** This block increases the value of the variable “i” by a set number. In our case it will increase by 1.

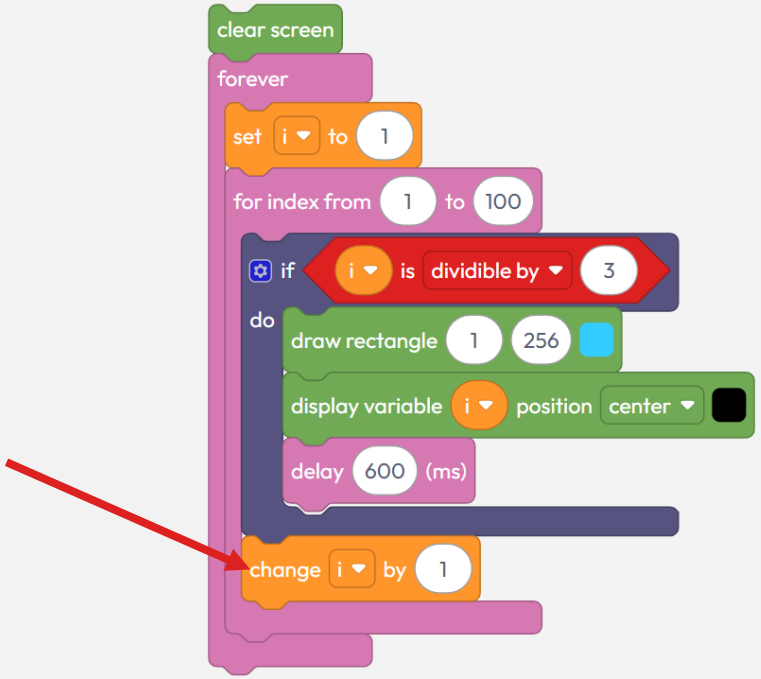
2. **Placement:**

Place this block **inside the** 

from loop group, **but outside the** 

block, since the increment should always occur, regardless of whether the number is divisible by 3 or not.

By doing this, the program will evaluate every number in the range 1 to 100!



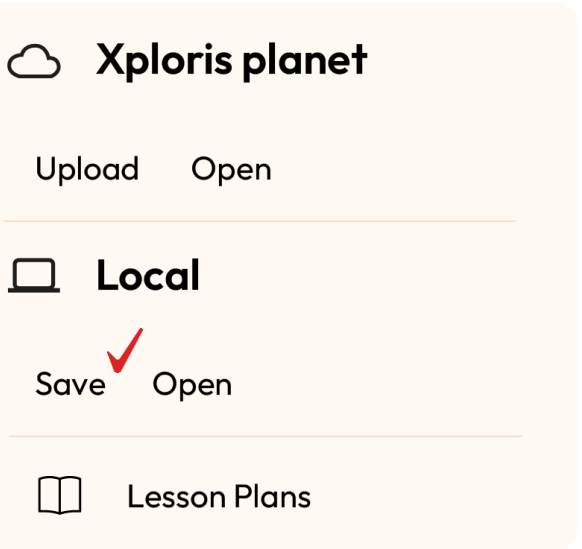
4 Coding

To make sure that the program works correctly, we will follow these final steps:

Press the three-bar icon at the top and select the “Save” option. Then, assign a name and save your program.

Press the “Upload” button in the Xplorilab interface. This will transfer the program to the Xploris device.

Once the program is loaded, press the “Play” button on Xplorilab software. Look at the Xploris screen, and you will see the numbers divisible by 3 being displayed.



5 Activity summary

- We learned what it means for a number to be divisible by 3.
- We designed a block program to identify numbers divisible by 3 from 1 to 100.
- We used **display**, **loops**, **math**, and **variables** blocks.
- We uploaded the program to the Xploris.
- We watched Xploris running our code and displaying the numbers on its screen

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CODING MATH

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