Robotics with LEGO® WeDo (V)

An introduction to robotics for the young with LEGO® WeDo
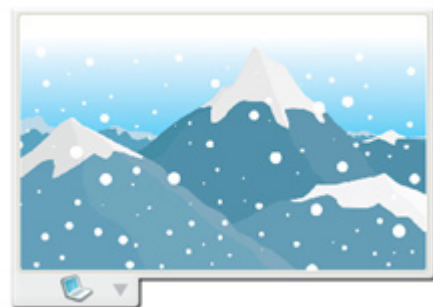
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In this part we will have a closer look at the Start on Key Press and the Display Background blocks.

Display Background Block

With this block you can display a background on the screen choosing from among the 20 backgrounds available in the WeDo software.

Let's make the following program, adding the number of the background you wish to see.

Upon executing the program you should see the following image:

Now, let's show background 1, 2 and 3. We'll use the following program:

But upon executing it you will notice the changes are very fast and you can't really see any of the backgrounds. We need to make the time between background changes longer to be able to see them. To this end we'll use a Wait block.

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And what if we want to see all 20 backgrounds? Easy: we simply add more Wait and Display Background blocks, but that will make the program very long.

Can we do this more efficiently? Yes. All we need is a Display Input block.

Display Block

With this block we can use the number that is shown on the screen to make more complex programs.

Our first example will simplify the program that shows the 20 backgrounds.

The corresponding program is as follows:

To understand the program we will analyse each action step by step.

The program is divided into two parts. The first is executed only once and the second part is everything inside the Repeat block.
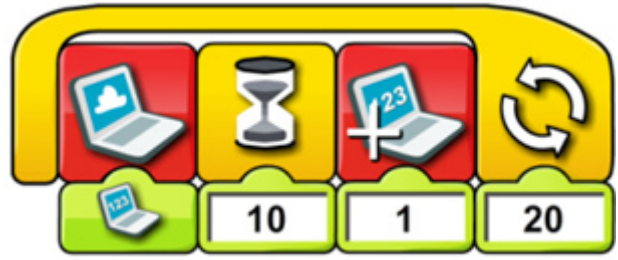
The number 1 will appear on the screen. This serves to indicate at what background number we will start.

You will observe there is a Display Background block connected to the Display Input block. This means that the background displayed on the screen will correspond to the number shown.

The background will be shown for one second before changing to the next one.

The number 1 is added to the value shown on the screen, so if we start with 1, now the number is 2 and the sequence is started again.

Now that the number is 2, the second background image is shown during 1 second and again the number is incremented. This is repeated 20 times, until all 20 backgrounds available in the WeDo software have been shown.

Start on Key Press Block

Until now, in order to start a program we always clicked on the start block. Well, now we can also start a program using a keyboard key, thanks to the **Start on Key Press block**.

If you want to change the key that appears in the block all you need to do is place the cursor over the block until it turns into a T:

Don't click, but the moment you see the T simply hit the key you wish to use, e.g. Arrow Up. You will see how the image changes to reflect the chosen key.

You can also change it to a letter or a number.

> After changing the value of the Start on Key Press block, click on an empty part of the work area so the block isn't modified accidentally.

As an example we will create a program that will show the word "Forward" whenever the arrow up key is pressed and the word "Backward" each time the arrow down key is pressed.

If you press the arrow up key you will see "Forward" on the screen.

If you press the arrow down key you will see "backward" on the screen.

In the following part we will have a look at the use of the Message Blocks in order to change the linearity of the program.

On the website notjustbricks.blogspot.com you will find multimedia materials (images and videos) of the creations of the author, some of which come with building instructions. #