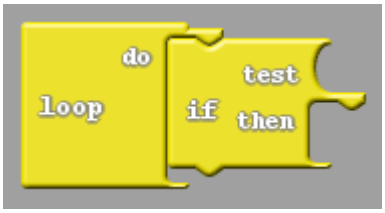
Using the Distance Sensor

1. In this tutorial, we will learn to use the board's distance sensor to control what our programs do. As in the other tutorials, begin by placing a **loop** block, found in the **Control** drawer. 

2. Place an **if** block, found in the **Control** drawer into the **loop**. This will determine whether the *test* in the top of the block is true and execute the blocks in the *then* socket if it is. 

3. Because our distance sensor block, **Get Distance**, returns a number for how far it is reading, we will be comparing its value to a constant value. To do this, place a **Less Than (<)** block in the **if** block's test field. You can find the **Less Than (<)** block in the **Logic Operators** block drawer. 

4. Place a **Get Distance** block (found in the *ECS* block drawer) in the left side of the **Less Than (<)** block and a constant 1000 in the right side. This 1000 value is fine for use in this tutorial, but you will need to fine tune the constant to which you compare for an actual project. The constant number block can be found in the **Variables/Constants** block drawer, and is set to 1 by default.


5. Now that we have the basic frame of our program, we can make it do something. Place an **LED 1 On** block in the then field of the **if** block. Run your program and wave your hand above the shield. The distance sensor will recognize that an object is close to its sensor and turn the light on. You've officially made your first project

with the distance sensor!

6. Our program is already interesting, but we can do better. To make the LED turn off again when your hand is moved out of the distance sensor's beam, change your **if** block to an **if/else** block and put a **LED 1 Off** block in the then field. Test your program and see how it works. Can you think of any ways to improve this design and make it do something more interesting?