

Digital

Scratch 2

# Kids

CAN CODE



# TASK 3

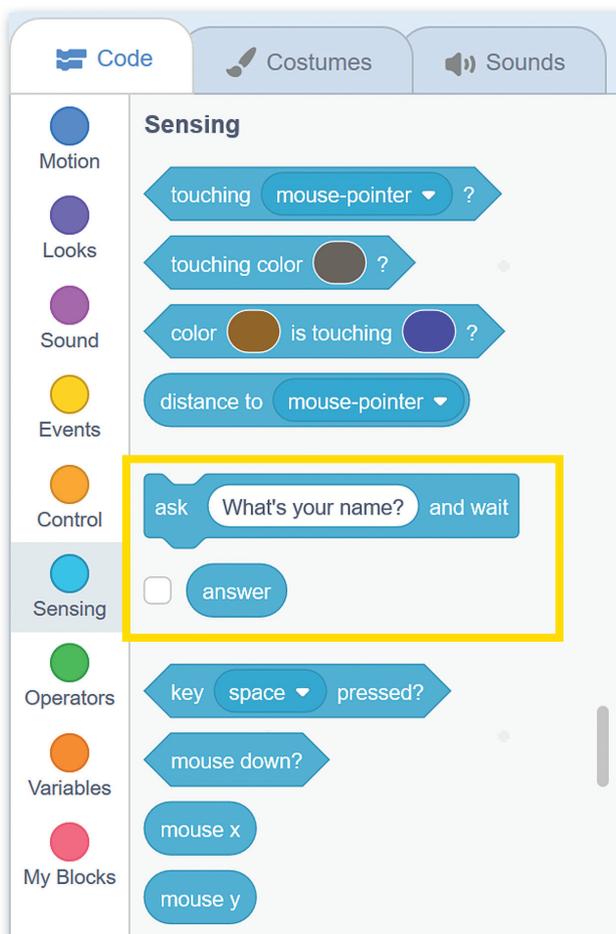
## Conditions

You can interact with Scratch in many ways. As you have already seen, using the mouse we can make a sprite change its appearance. But, did you know that you can also have a dialog with the cat just using your keyboard?

### Ask and answer blocks

These blocks are considered sensing blocks and you find them among the light blue **Sensing** blocks category. The **ask () and wait** block and the **answer** block are always used together in a script.

The sprite asks the question and then waits for the user's answer. This block creates an input box that appears at the bottom of the stage where you can enter an answer. The answer is stored in a block called answer.



ask What's your name? and wait

Click on the white box, and type the question. The block makes an input box appear on the screen to type your answer. The input is then stored in the **answer** block.

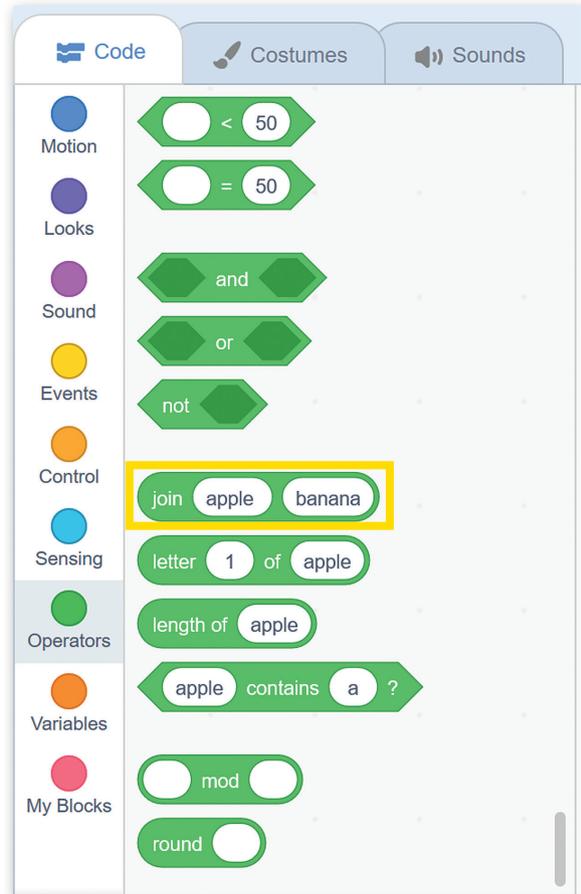
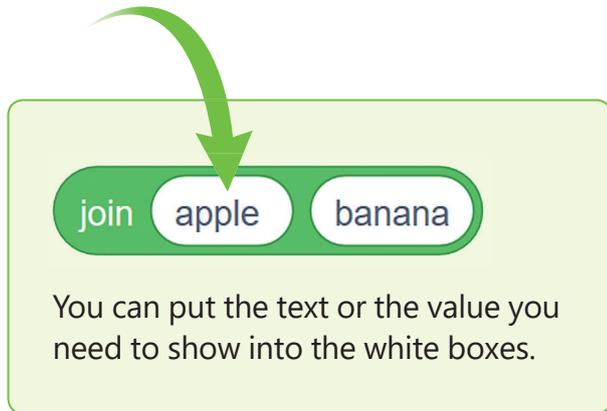
answer

To activate the **answer** block, click the check box. A blue answer box will appear at the top left of the stage.

If you use more than one **ask () and wait** block, the answer block retains the last input. When nothing has been inputted yet, the value will hold nothing.

## Join block

This block is an operator block and you can find it in the green **Operators** blocks category of Scratch. It is very helpful when you want to link words, numbers or any value together in a series.

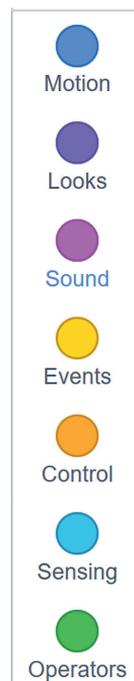


## What's your name?

In previous projects you made a sprite talk, now we will create a script in which the cat will ask a question which you can answer.

To have a small chat with the sprite:

- > Add the **when flag clicked** block, from the **Events** blocks category, into the script area. **1**
- > From the **Sensing** blocks category, add the **ask () and wait** block. **2**
- > Add the **say () for () seconds** block from the **Looks** blocks category. **3**
- > Click the **Operators** blocks category. Choose the **join () ()** block, put it into the **say for () seconds** block and type "Hi" in the first box. **4**
- > From the **Sensing** blocks category, add the **answer** block into the second box of **join () ()** block. **5**



```

1 when clicked
2 ask "What's your name?" and wait
3 say "Hello!" for 2 seconds
   join "apple" "banana"
4

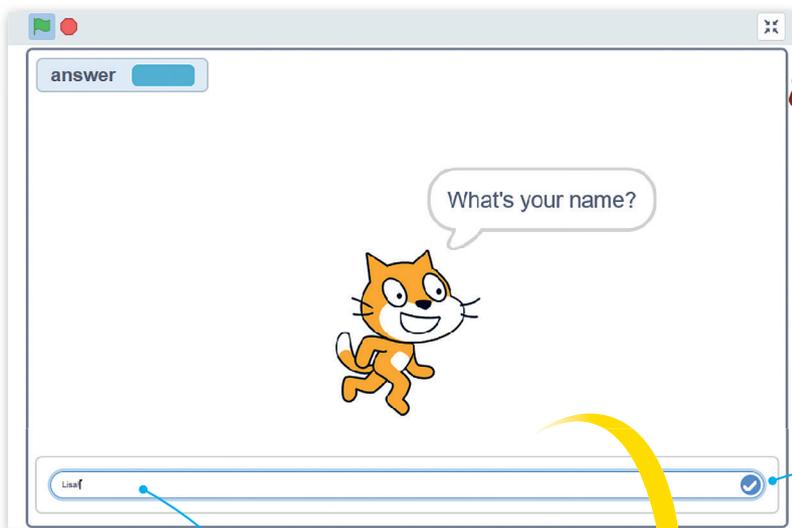
```

Let's run the program!  
 First click the green flag  
 to run the script.  
 Type your answer, press  
 the Enter key and the  
 cat will say "Hi!" to you!

```

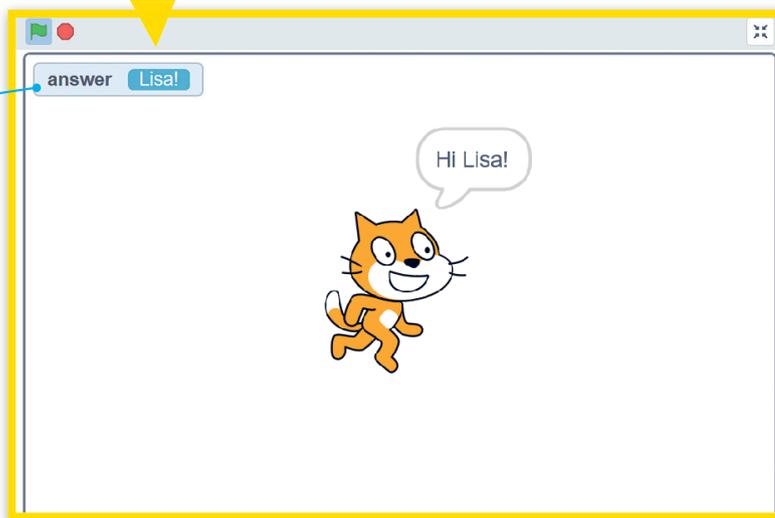
when clicked
ask "What's your name?" and wait
say join "Hi" answer for 2 seconds
5

```



First type your answer  
 and then click here.

What you type here  
 appears in the answer box.



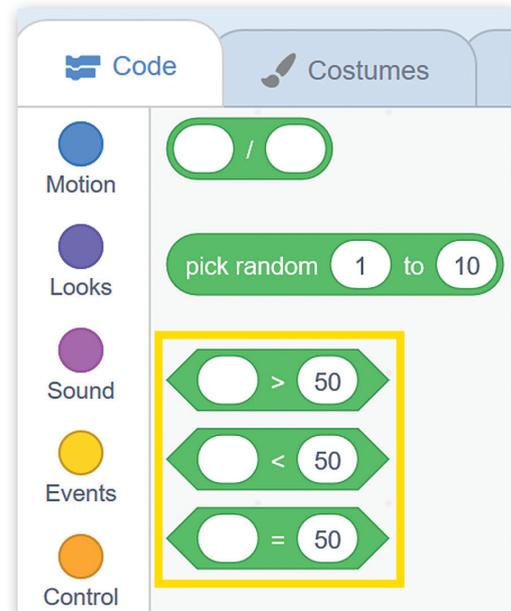
## Conditions

Making decisions is an important part of everyday life. As humans we make decisions based on what we observe or know to be "true". For example, if it is raining outside, we will use an umbrella. Conditions are cause and effect. A computer cannot decide by itself how to react and that's the reason we use conditional statements. In this way, we tell the computer what to do and when to do it.

### Conditional operators in Scratch

When writing conditions, you can use conditional operators, to compare values and act depending on the result. The result of a conditional check can be either "true" or "false".

Three blocks of **Conditional Operators** are the **more than** block  $() > ()$ , the **less than** block  $() < ()$  and the **equal to** block  $() = ()$ . Each one has two white boxes, in which you type text or put a value (like an **answer** block).



The **() more than ()** block checks if the first value is greater than the second value. If the first is less, the block returns "true", if not it returns "false".



The **() less than ()** block checks if the first value is less than the second value. If the first is less, the block returns "true", if not it returns "false".

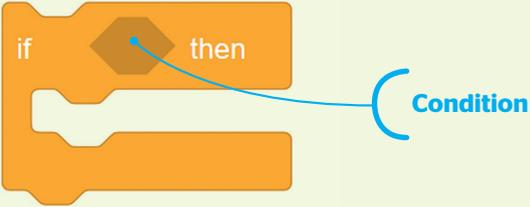


The **() equal to ()** block checks if the first value is equal to the second value. If the values are equal, the block returns "true", if not it returns "false".

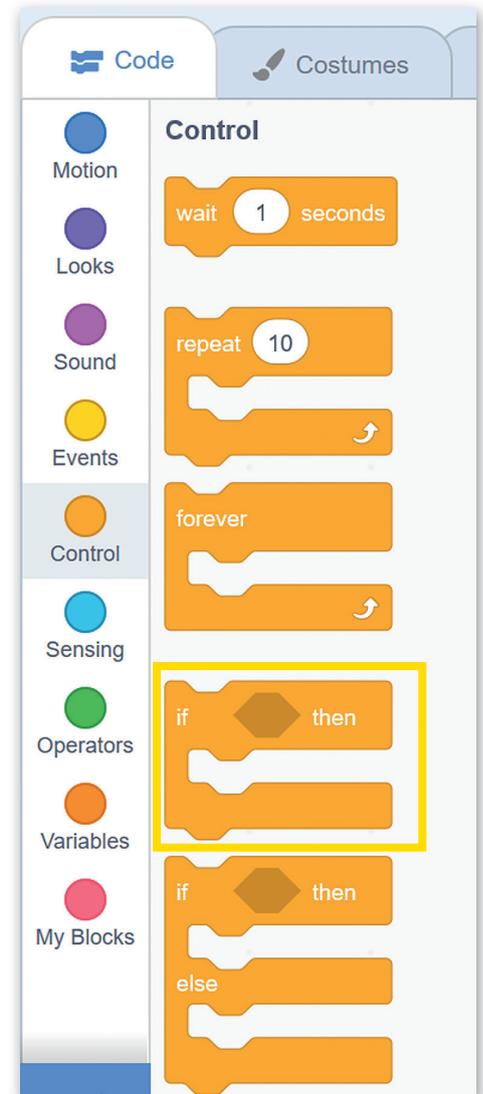
## How the if () then block works

Conditional statements allow us to control what a computer program does and to make a computer perform different actions based on the logical statements. The program executes a particular section of code based on whether a condition is "true" or "false". The most used way to make a decision in a program is the **if () then** statement. If statements control the flow of a program.

In Scratch the **if () then** block belongs to the orange **Control** blocks category and it controls the flow of the script.



The block first check its condition. If the condition is "true", the commands inside will run. If the condition is "false" this script will be ignored.



One of the most important parts in programming, is to check conditions. The **if () then** block is the simplest way to do that. When you need to check more than one condition, you can use more **if () then** blocks. And so, this block is used in many cases. You can use it to compare values, to check the given input or to control objects!

### SMART TIP

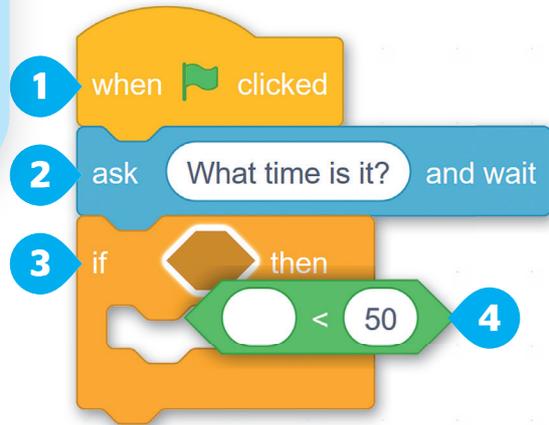
The **if () then** block check the condition only once. If the condition becomes false while the code inside the block is already running, it will keep running until it has finished.

## What time is it?

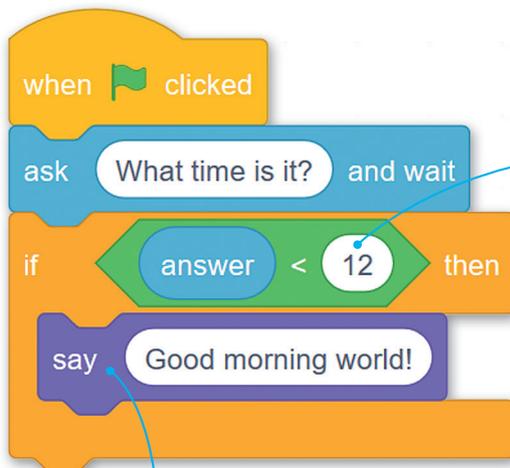
In the following example, the user is asked what time it is, and the program replies depending on the answer the user gives. Use the **if () then** block to check if the time is before "12" to say, "Good morning world!".

To create a script that asks for the time and checks it to give a suitable reply:

- > Click the **Events** blocks category and add the **when flag clicked** block into the script area. **1**
- > From the **Sensing** blocks category, add the **ask () and wait** block and type "What time is it?" inside the box. **2**
- > Add the **if () then** block from the **Control** block category. **3**
- > Click the **Operators** blocks category. Add the less than () < () block into the **if () then** block. **4**



Complete the script as shown below:



This block has two new words: **if**, and **then**. The word **if** is followed by a condition, in this case **answer < 12**. The computer compares the data in **answer** with the condition and if the number is smaller than 12, it executes the commands in the **if** branch. This is called **conditional execution**.

This command is executed if the condition is "true".

Test this example!  
If you answer 15, will the condition return "true" or "false"?



It's time to extend our previous script.  
Let's try to say, "Good morning world!" or "Good afternoon world!"  
according to the given time.

Create this script and run it:

```
when clicked
ask "What time is it?" and wait
if answer < 12 then
say "Good morning world!"
if answer > 12 then
say "Good afternoon world!"
```

*Do you think that we have covered  
all the possible answers of time?  
What will happen if your answer is 12?  
Add the proper command to make  
the script work for the answer 12.*



# hands on!

*You want to organize  
the grades of your class.  
What things do you  
have to take care of?*

*Create and run the program  
that shows if the students passed  
the lesson or not. Think of all  
the possible preparations  
you must make. Include any  
decisions you have to make  
and how these decisions will  
change your actions.*

