e-book

Hamster Coding

Scratch 9

Written by ConceptOn

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How to Use

This manual is designed for the educational utilization of the Hamster robot.

· Please use this manual as on-screen instructions when teaching the Hamster class.

· The contents are easy to understand. Just read them before the class.

· Worksheets can be downloaded from the Robomation website.

· This manual can be used to ensure the best lesson plan.

· For more information, contact us at 7concepton@daum.net.
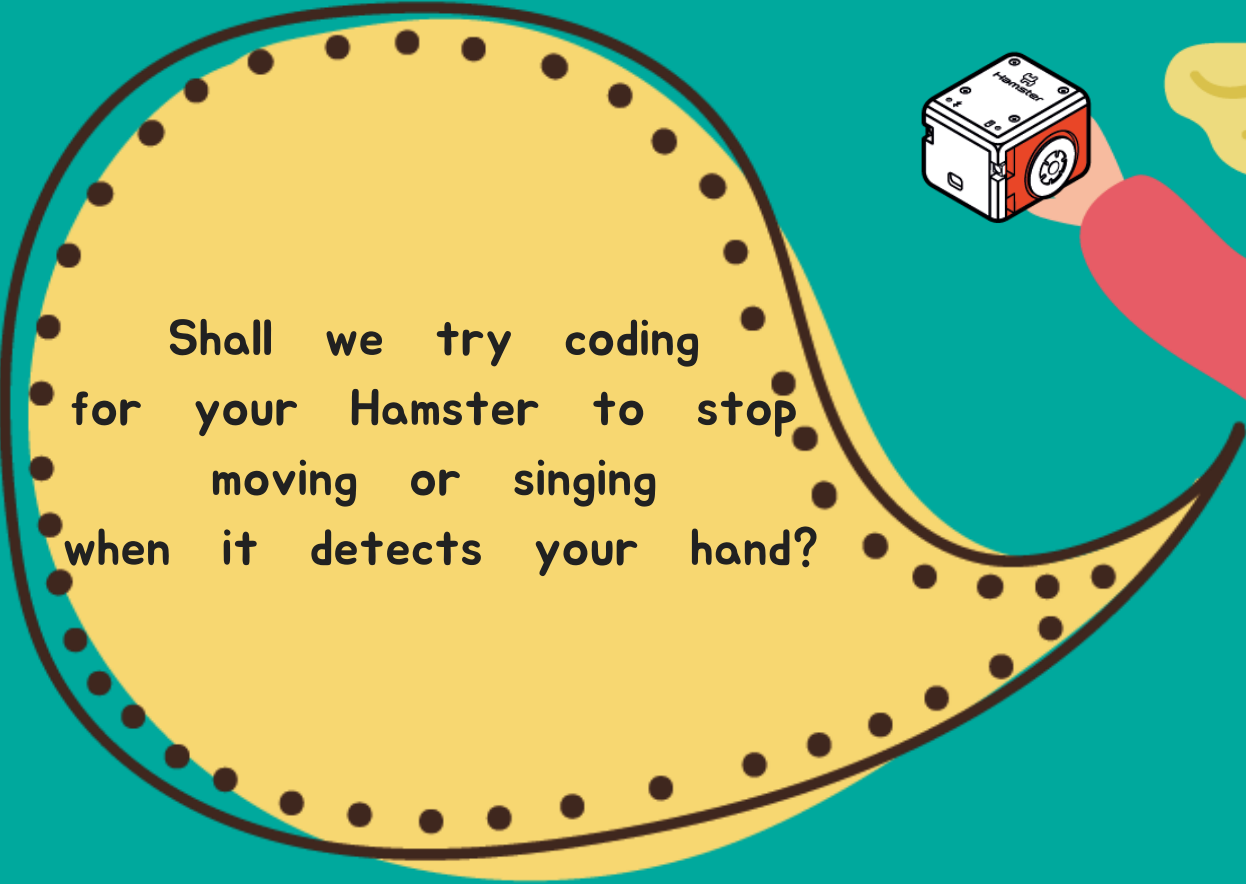
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Hamster Coding

Let's get started with Hamster coding with the Scratch program!

The use of the Scratch programs will make coding more interesting!

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Today's Activity

Division	Description	Time
Introduction	**Explore the problem.** Why not code for your Hamster to come to rest when it detects an object?	5min
Development	**Find a solution.** Let's write code with the "hand found?" and "repeat until~" blocks. **Solve the problem.** Let's command your Hamster to move according to a given mission.	30min
Conclusion	**Review today's activities.** Let's talk about what you have learned and enjoyed.	5min

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Shall we try coding for your Hamster to stop moving or singing when it detects your hand?

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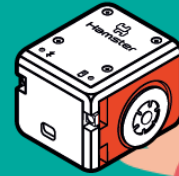
Get ready

First, let's find out what is needed for Hamster coding.

1   Hamster

2   Bluetooth Dongle

3   PC

4   Worksheet

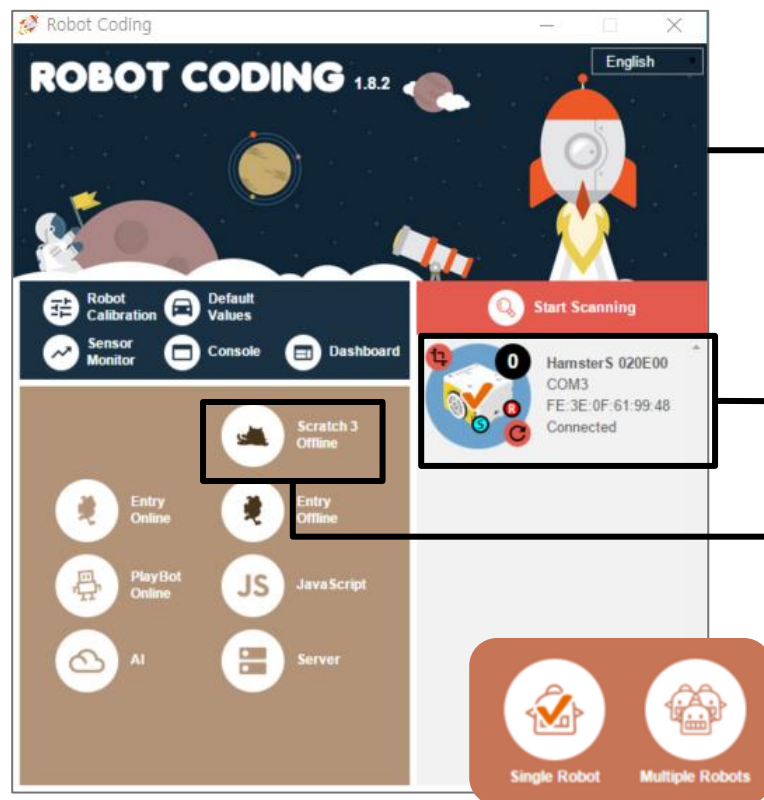5   Writing supplies (pen and paper)

6   Charging cable
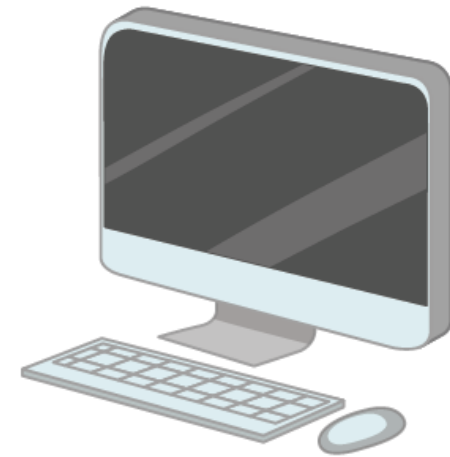
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Open the program

When opening the program, turn on Hamster and plug the Bluetooth Dongle into the USB port of your PC.

Open the program

1 Run the Robot Coding program.

2 Check if your Hamster robot is connected with the Bluetooth Dongle (through its LED light colors).
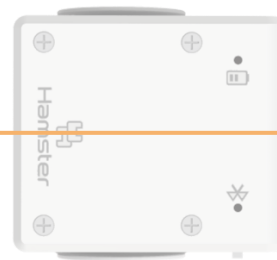
3 Click on Scratch 3 Offline.

4 Click on "Single Robot" and then "New File."

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Let's think

Let's stop your Hamster moving forward with your hand.

Move

Stop

What Hamster should do

What should be done with your hand

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Guess how?

Let's stop your Hamster moving forward with your hand.

If Hamster comes in contact with your hand,

it will stop!

What Hamster should do

Moving forward until
it detects your hand

What should be done
with your hand

Covering the proximity sensors
at the front of Hamster

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Exercise 1

Let's code to stop your Hamster moving forward with your hand.

Moving forward until it detects your hand

Code hints

| hand found? | wait until |

| set wheels to left: 30 right: 30 | stop |
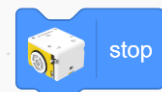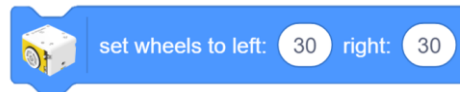
Think about how to code first before writing code!
Did your Hamster move as expected?

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Exercise 2

Let's code to stop your Hamster moving forward with your hand.

Moving forward until it detects your hand

Code hints

hand found?

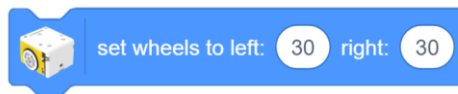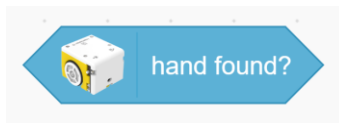repeat until

set wheels to left: 30 right: 30

stop

Figure out other ways to code before writing code! Did your Hamster move as expected?

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Let's think

Let's make your Hamster turn off its red LED lights when it detects your hand.

What Hamster should do
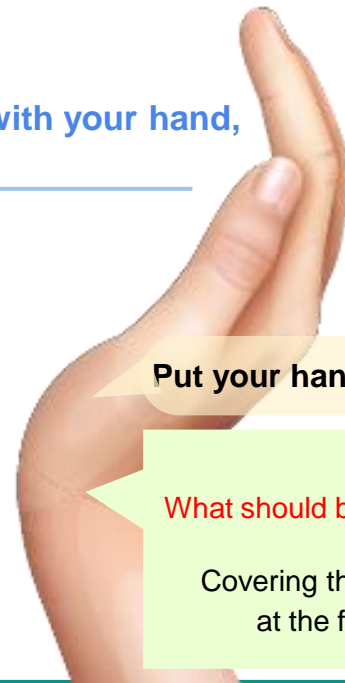
What should be done with your hand

Guess how?

Let's stop your Hamster moving forward with your hand.

If Hamster comes in contact with your hand,

it will turn off the LED lights!

Put your hand close to Hamster.

What Hamster should do

Turning on its red LED lights until
it detects your hand

What should be done with your hand

Covering the proximity sensors
at the front of Hamster

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Exercise 1

Let's write the code that allows your Hamster to turn off its red LED lights when detecting your hand.

f Hamster comes in contact with your hand,

it will turn off the LED lights!

Code hints

```
when 🚩 clicked
set both ▼ led to red ▼
wait until   hand found?
clear both ▼ led
```

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Exercise 2

Let's write the code that allows your Hamster to turn off its red LED lights when detecting your hand.

If Hamster comes in contact with your hand,

it will turn off the LED lights!

Code hints

when 🏳 clicked

repeat until 🤖 hand found?

set both ▼ led to red ▼

clear both ▼ led

Let's think

Let's stop your Hamster singing when it detects your hand.
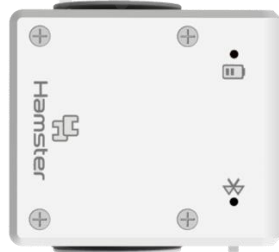
What Hamster should do

What should be done with your hand

Guess how?

Let's stop your Hamster singing when it detects your hand.

If Hamster comes in contact with your hand,

it will stop singing!

Put your hand close to Hamster.

What Hamster should do

Singing until it detects your hand

What should be done with your hand

Covering the proximity sensors at the front of Hamster

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Exercise 1

Let's write the code that makes your Hamster stop singing when it detects your hand.

Put your hand close to Hamster.

Code hints

When Hamster comes in contact with your hand,

it will stop singing!

when ⚑ clicked

play note C 4

wait until hand found?

clear sound

Exercise 2

Let's write the code that makes your Hamster stop singing when it detects your hand.

Put your hand close to Hamster.

Code
hints

When clicking on the Start button

Repeat while not Find-Hand

Play the note of do in the 4th octave

Exercise 3

Let's write the code that makes your Hamster stop singing when blocked by your hand.

Hush~

Code
hints

forever

if   then

else
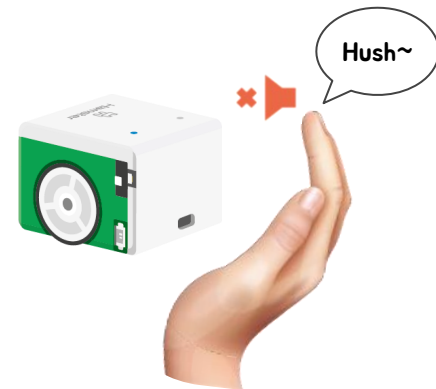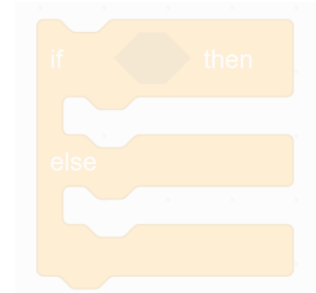
Let's try a challenge.

Let's try coding differently with the Find-Hand block after deciding how your Hamster will act when it detects your hand.

If Hamster comes in contact with your hand,

①

②

③

④

Let's Review

😜 What did you learn today?

😅 Did you encounter any difficulties?

😍 What interested you the most about Hamster robot?

See you again!

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