e-book

Hamster Coding

Scratch 16

Written by ConceptOn

ROBOMATION
MAKE THINGS ALIVE

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.

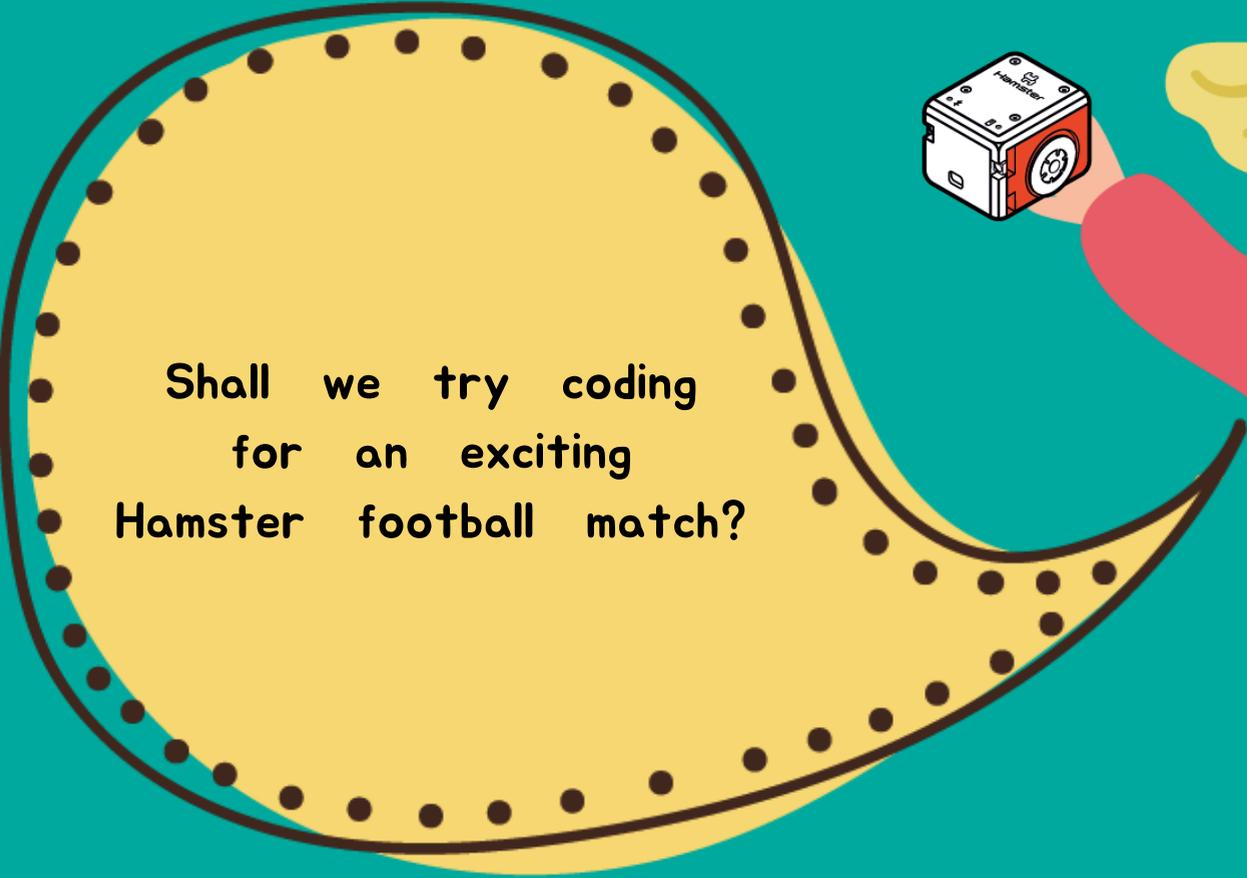- For more information, contact us at 7concepton@daum.net.

Hamster Coding

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

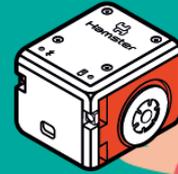The use of the Scratch programs will make coding more interesting!

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Today's Activity

Division	Description	Time
Introduction	**Explore the problem.** Why not try an exciting Hamster football match?	5min
Development	**Find a solution.** Let's code by setting arrow keys to control the movements. **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 an exciting
Hamster football match?

Get ready

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

1 Hamster

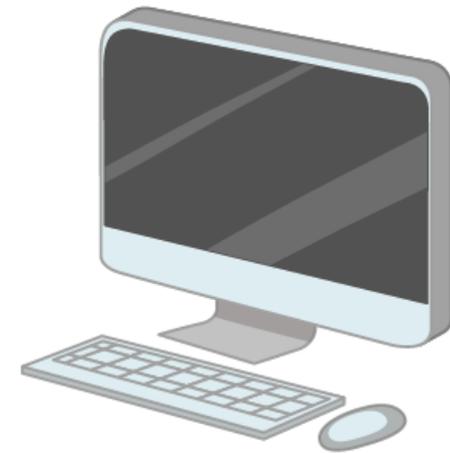2 Bluetooth Dongle

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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Robot football match

Let's enjoy watching an exciting robot football match.

Let's think

What should Hamster robots do to play football?
Let's recall the robot football and decide what your Hamster robots should do.

Pass a football!

Score a goal!

Set the arrow keys to enjoy a football match!

Dribble and shoot the ball!

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Guess how?

Let's get ready for a Hamster football match.
Preparations: Hamster, Ping-Pong Ball, Maze Board or Paper
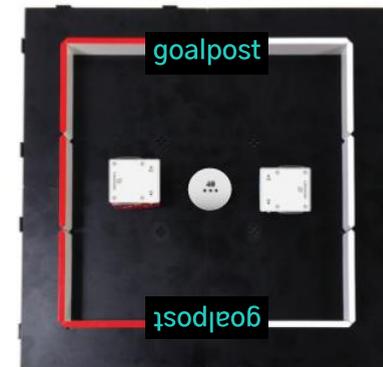
Create a team	Set positions	Prepare an arena	Take a football	Strategize	Practice

Talk about things needed for a football match with your friends!

goalpost

goalpost

Use a maze board or draw a playing field on paper on your own.
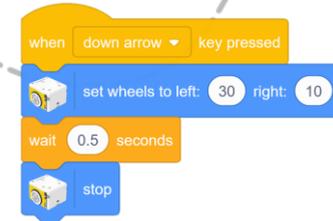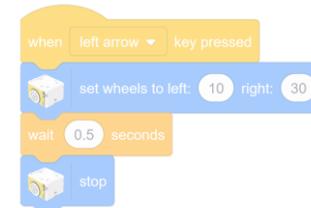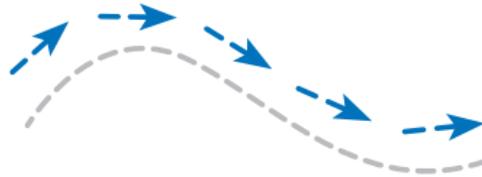
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Exercise 1

Let's write the code so that Hamster robots can drive and dribble the ball.

1 Dribble in a straight route

2 Dribble through a zigzag route

```
when [ up arrow ▼ ] key pressed
set wheels to left: 30  right: 30
wait 0.5 seconds
stop
```

```
when [ left arrow ▼ ] key pressed
set wheels to left: 10  right: 30
wait 0.5 seconds
stop
```

```
when [ down arrow ▼ ] key pressed
set wheels to left: 30  right: 10
wait 0.5 seconds
stop
```

ROBOMATION
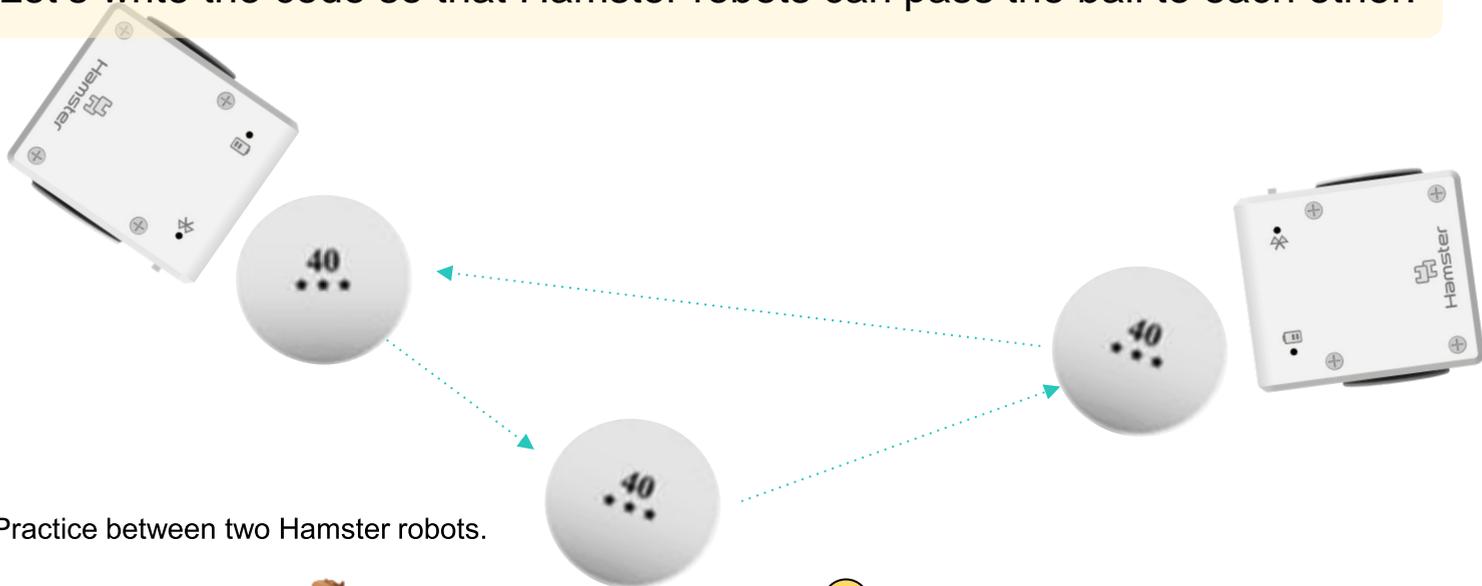MAKE THINGS ALIVE

Exercise 2

Let's write the code so that Hamster robots can pass the ball to each other.

1 Practice between two Hamster robots.

2 Practice among at least three Hamster robots.

Exercise 3

Let's dribble and shoot the ball.

1 Practice with a Hamster robot alone.

2 Practice between at least two Hamster robots.

Pass

Pass

Exercise 4

Let's write the code with conditional statements.
Think of and write the code to control your Hamster robots.

I am good at an accurate pass.

Our team is good at fast and accurate passes!

```
when  clicked
forever
    [robot] stop
    if  key  up arrow  pressed?  then
        [robot] set wheels to left: 30  right: 30
    if  key  down arrow  pressed?  then
        [robot] set wheels to left: -30  right: -30
    if  key  left arrow  pressed?  then
        [robot] set wheels to left: 0  right: 30
    if  key  right arrow  pressed?  then
        [robot] set wheels to left: 30  right: 0
```

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Hamster World Cup

Let's start off with an exciting Hamster football match.

goalpost

goalpost

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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