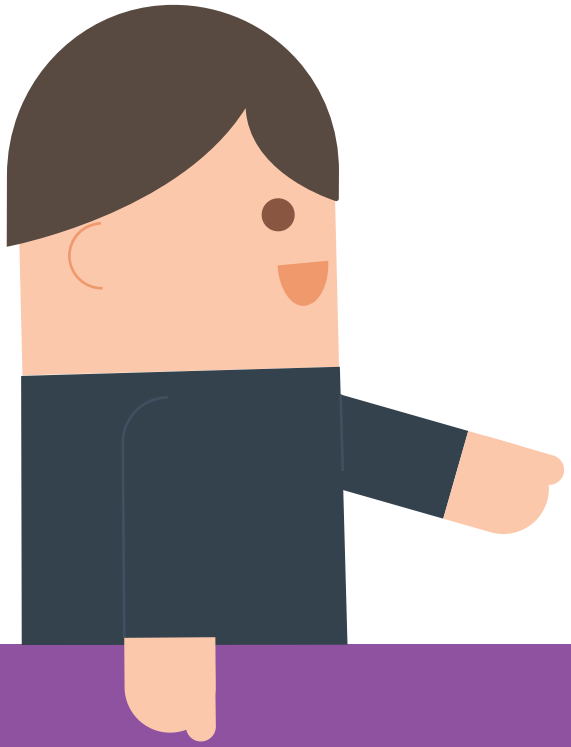
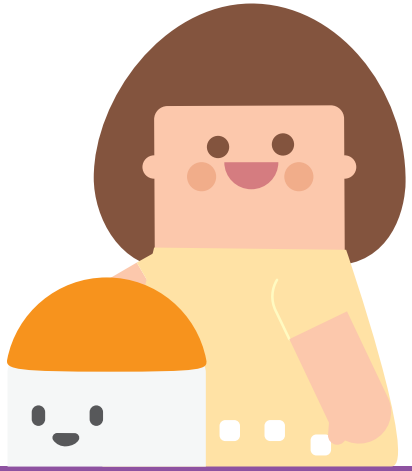
matatalab

Coding Set Home Edition

STORY BOOK 2





Debug 调试

Loop 循环

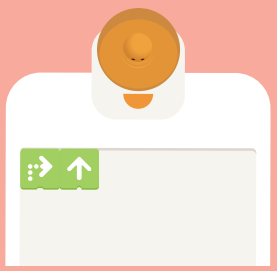
Angle 角度

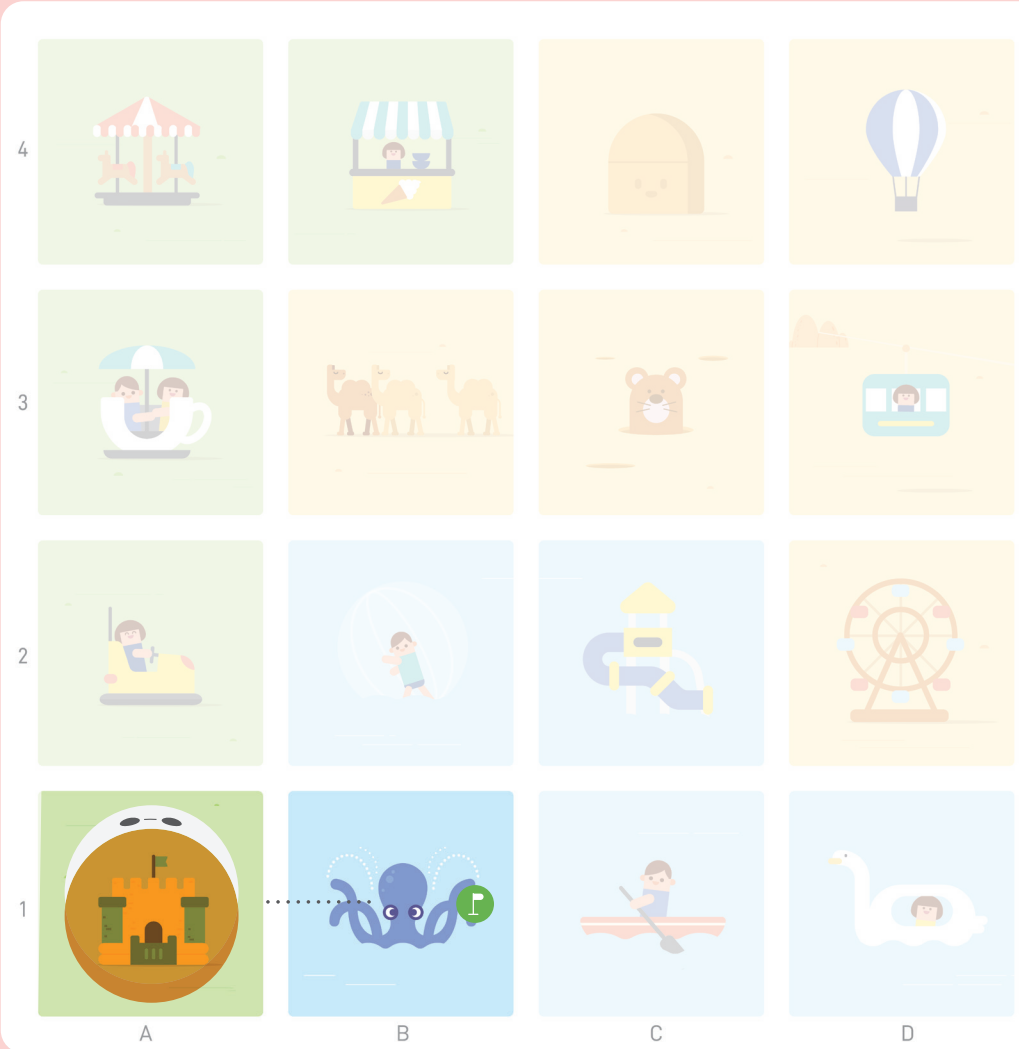
Art 艺术

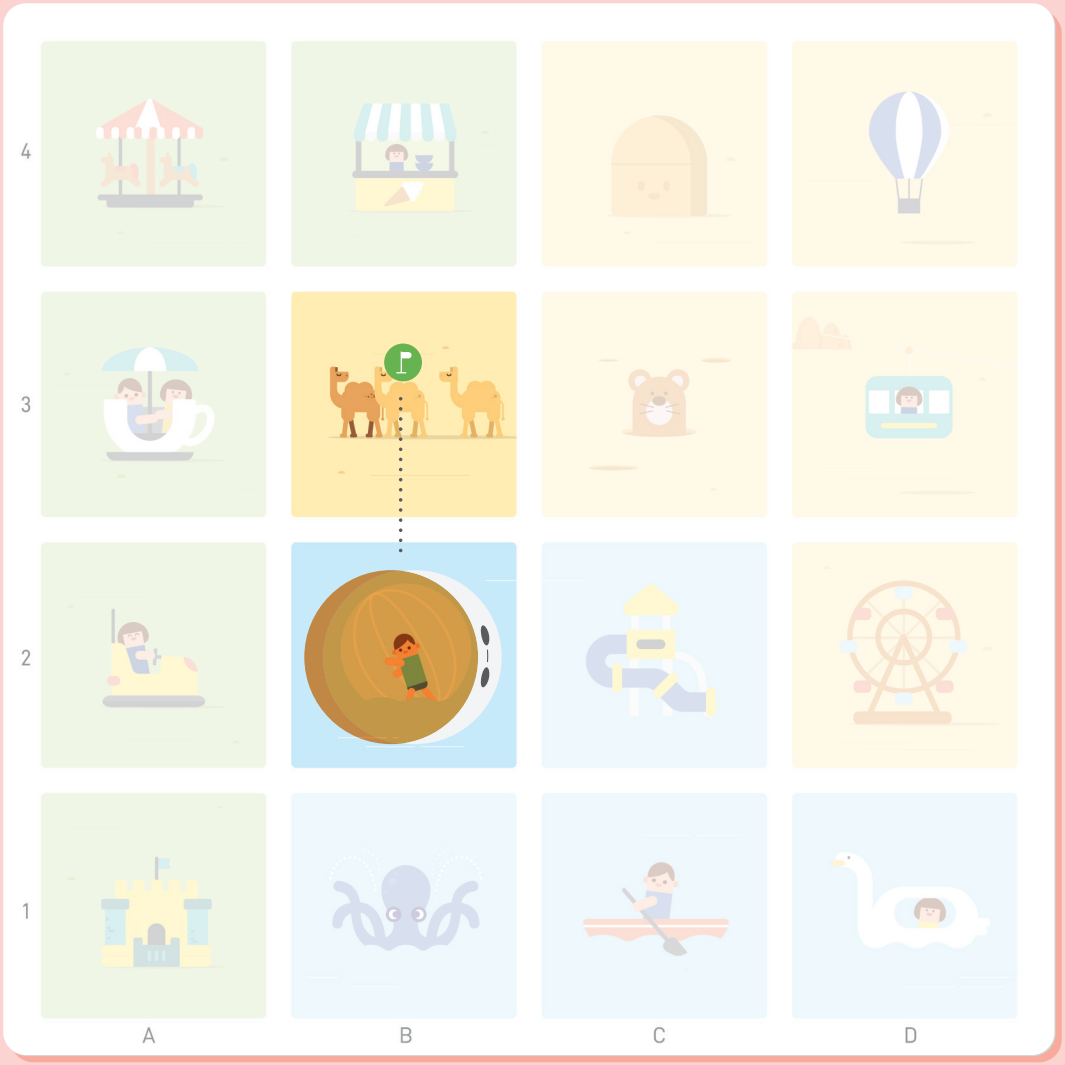
Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world.

- Albert Einstein

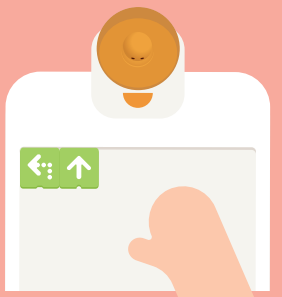
The program let MatataBot move to the music fountain is incorrect. Can you help correct it?







The program to make MatataBot move to the camel is incorrect. Can you help correct it?



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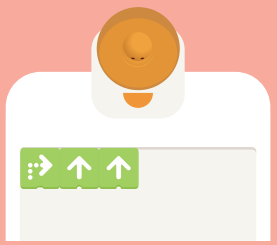
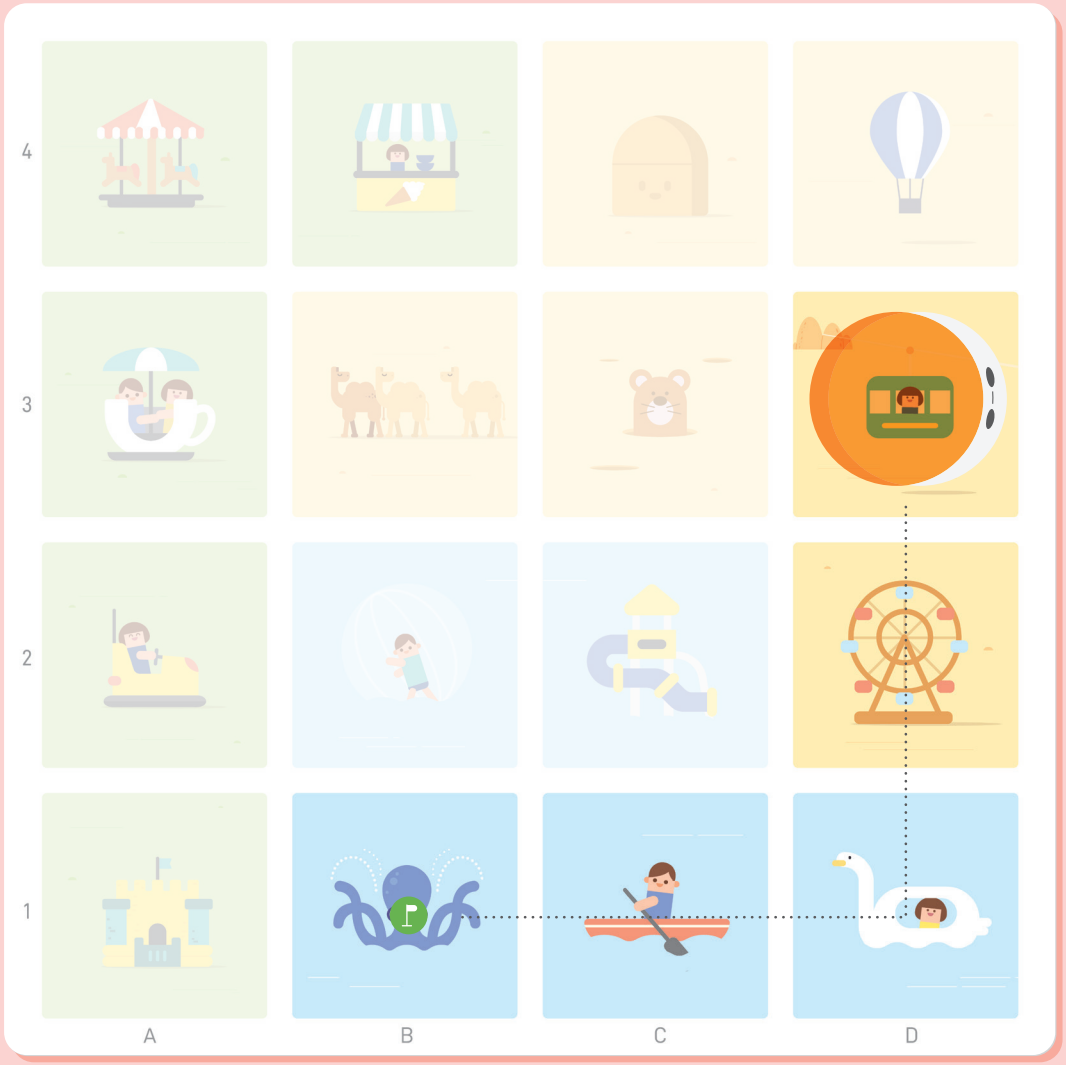
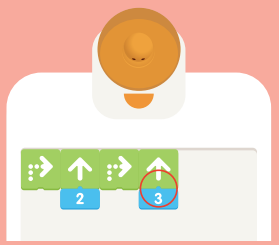
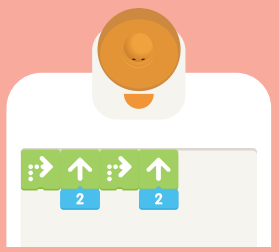


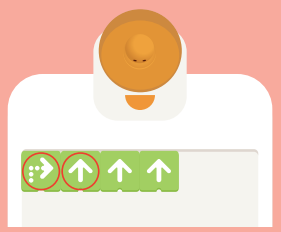


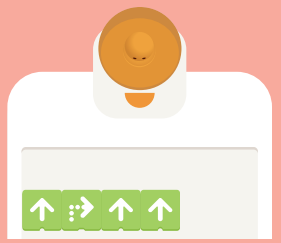
The program to make MatataBot move to the music fountain is incorrect. Can you help correct it?

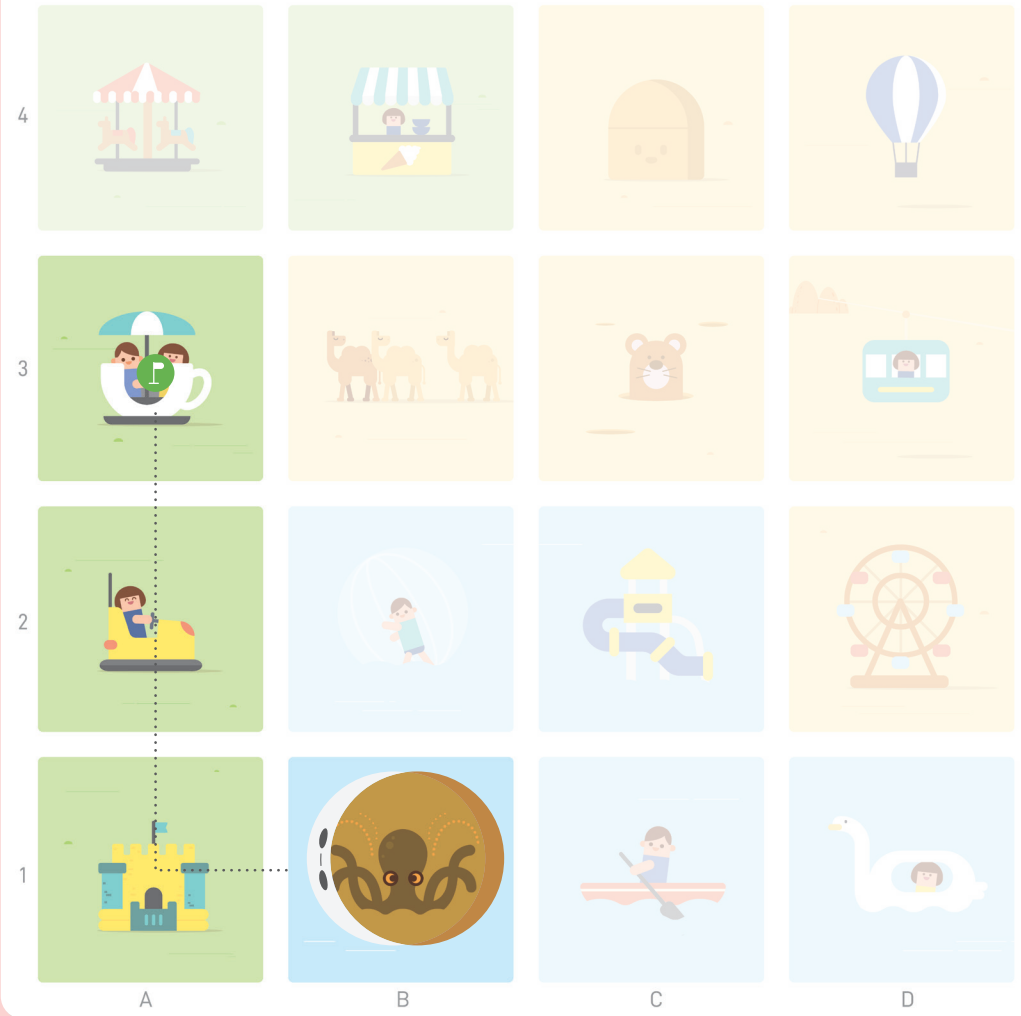


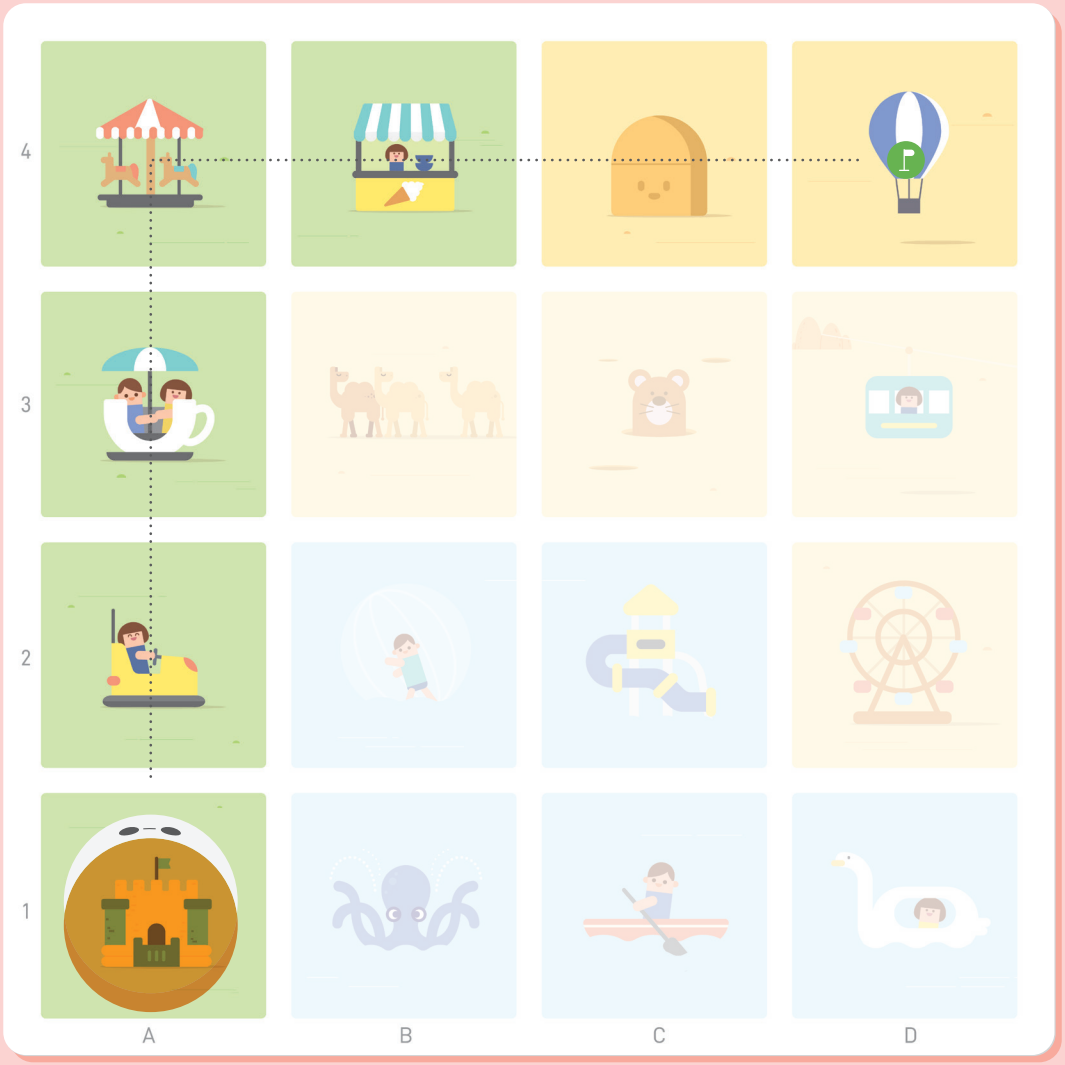


The program to make MatataBot move to the rotating cup ride is incorrect. Can you help correct it?

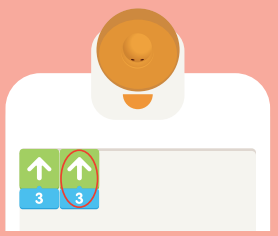


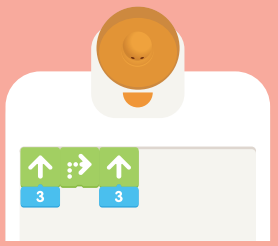




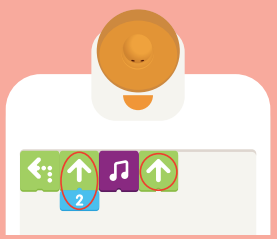


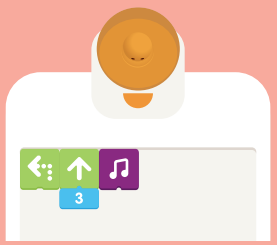
The program to help MatataBot reach the hot air balloon is incorrect. Can you help correct it?

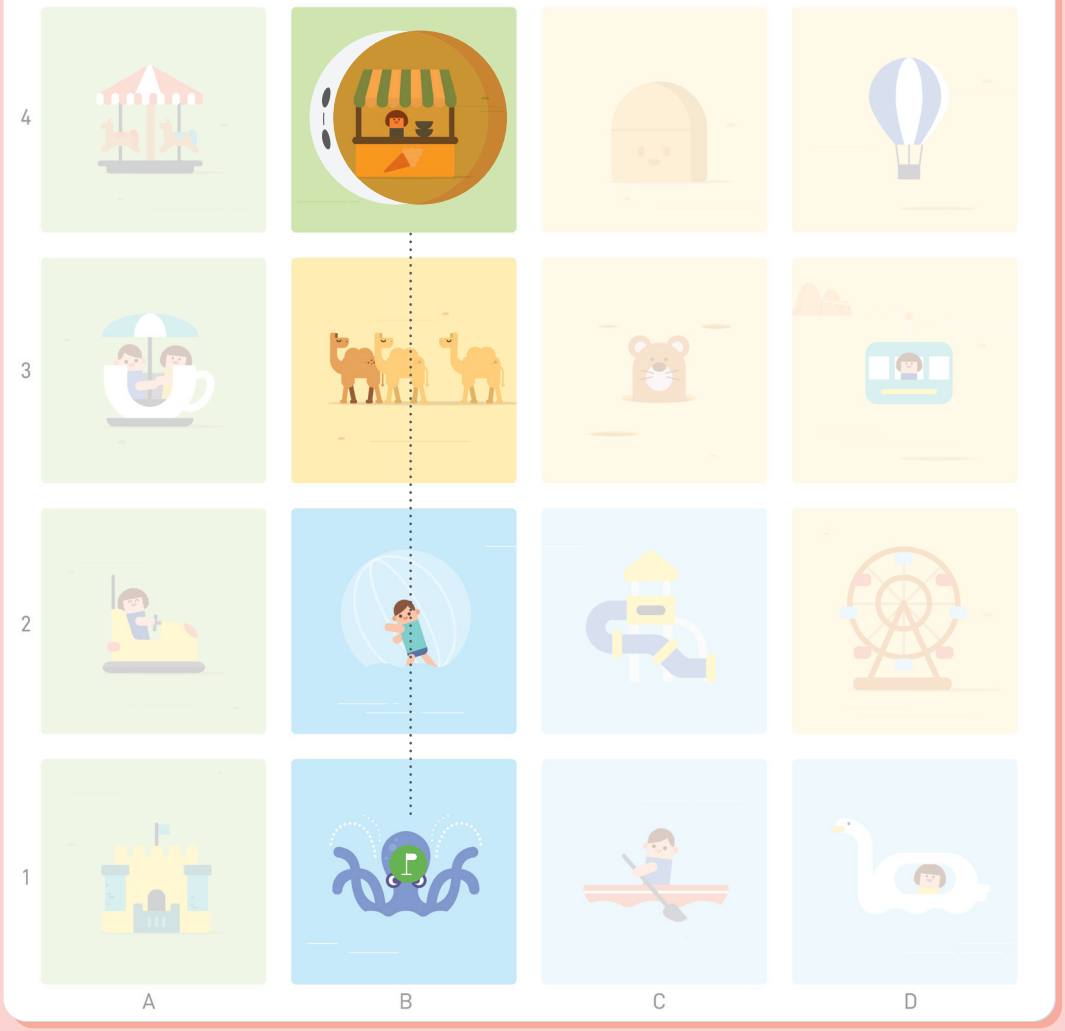


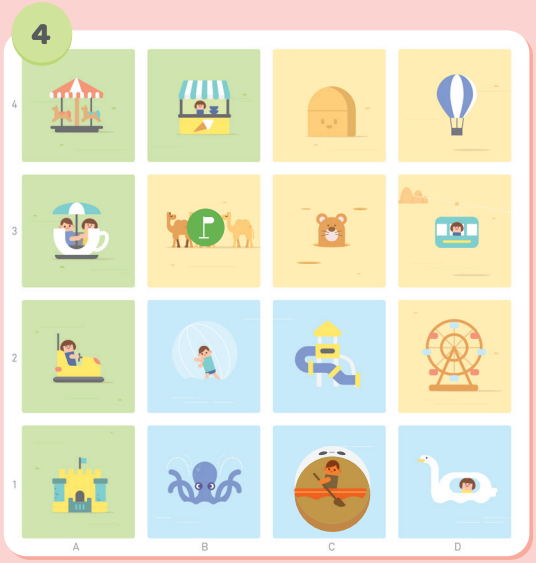


The program to sing a song after reaching the music fountain is incorrect. Can you correct it?

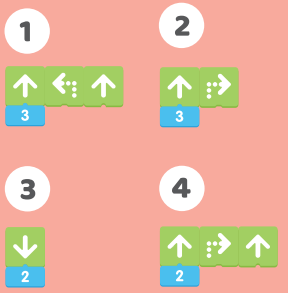








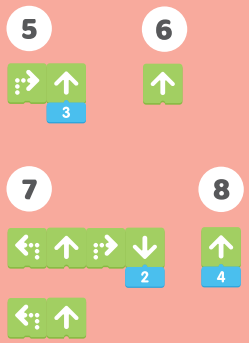
Can you correct these wrong programs?



Come to try more solutions!

The answer is on page 50

Can you correct these wrong programs?



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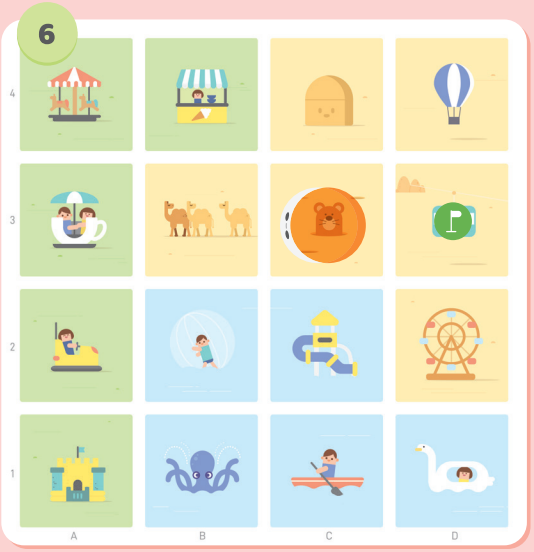
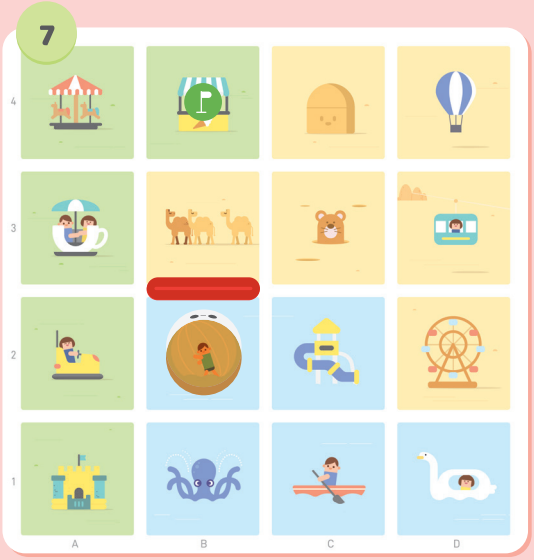
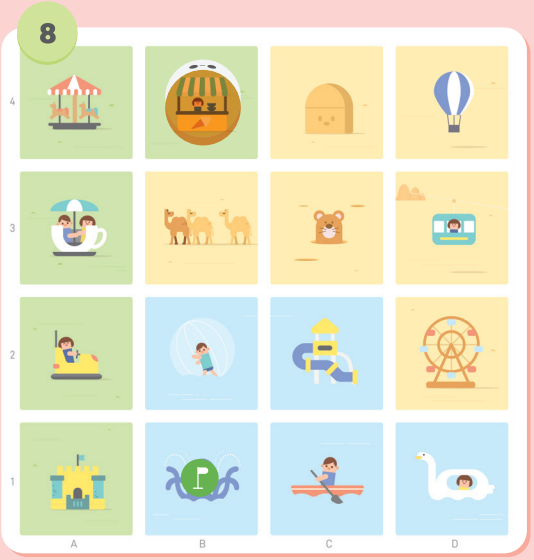
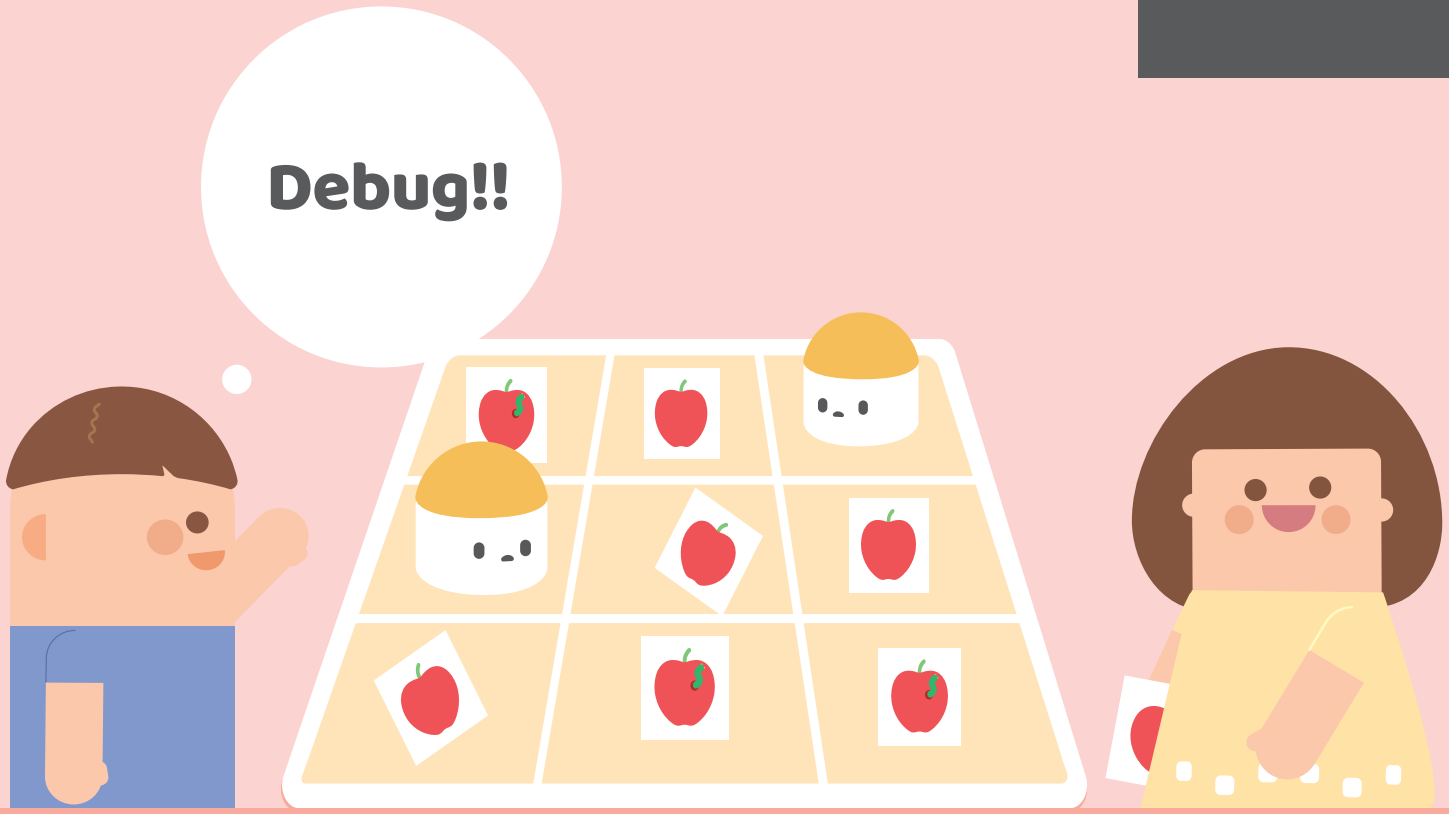








1

Download these cards from edu.matatalab.com or make it by yourself.

2

Shuffle the cards and quickly spread them on the table.

3

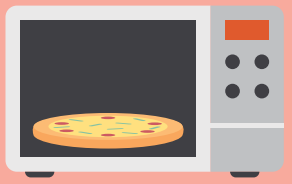
Find all the cards with bugs as fast as you can, and shout “Debug!”. The faster person wins.

What is wrong? Find the error and fix it.

1

2

3



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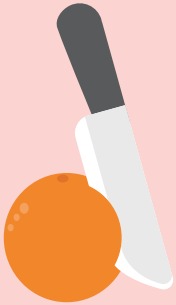
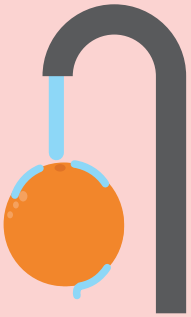


1



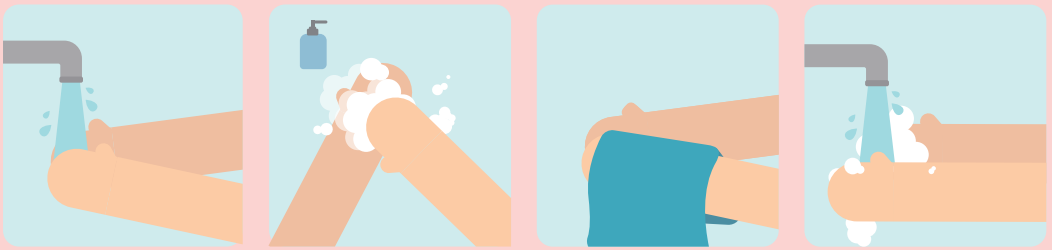
2

3

4

1 2 3 4

What is wrong? Find the error and fix it.



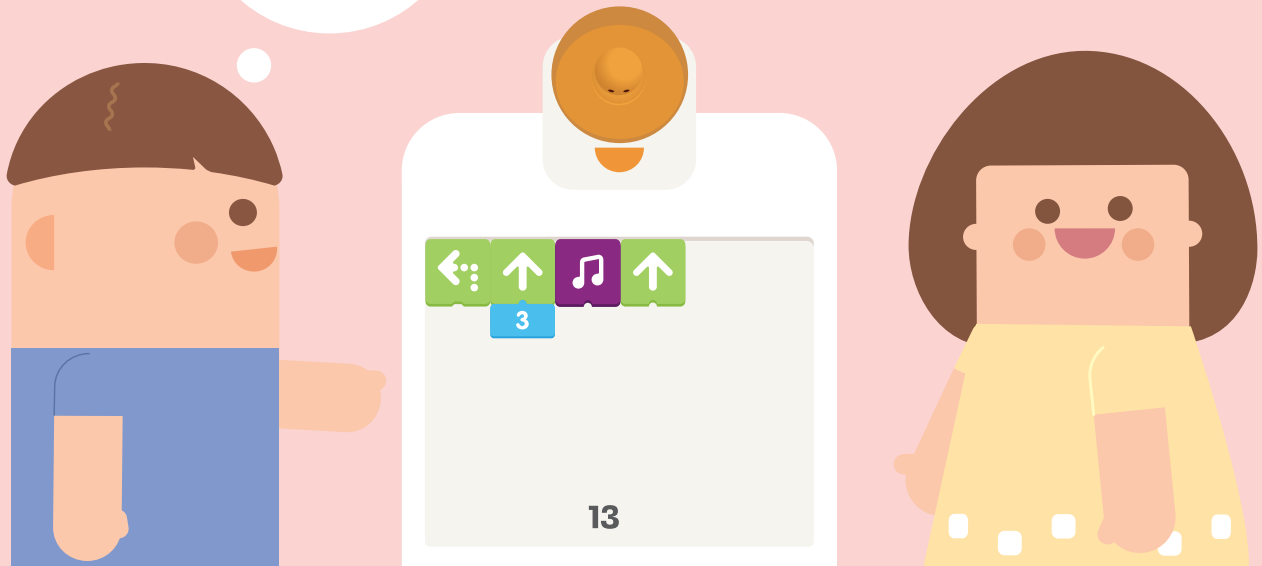
1 2 3 4

The answer is on page 50

Pair programming

After creating the program, we need to check and test it to identify and correct the errors. You may team up with a person who can help you check and correct errors to improve efficiency.

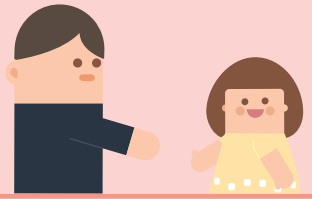
Debug!!



Parent's Guide

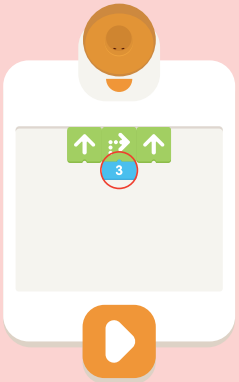
Unit Goals

Master the methods of debugging: Errors refer to mistakes or defects in computer programs. Error debugging refers to finding and correcting errors and defects in computer programs.



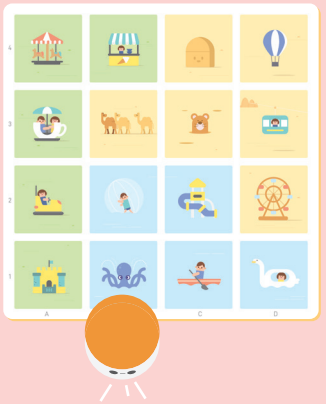
Difficulties

In the following cases, the command tower will send an alarm for a program error.



Number coding blocks are placed at wrong place.

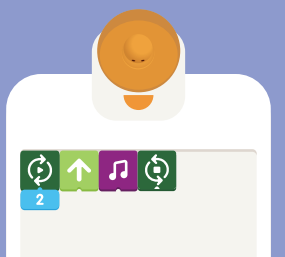
In the following situations, Matatabot will walk out of the map.



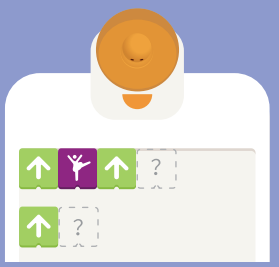
Using the wrong turn left/righ coding blocks.

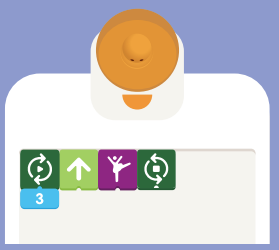
The number of moving steps exceeds the number of squares.

Every time MatataBot finds a candy, it will sing a song. What should we do when there are not enough Preset Music coding blocks?

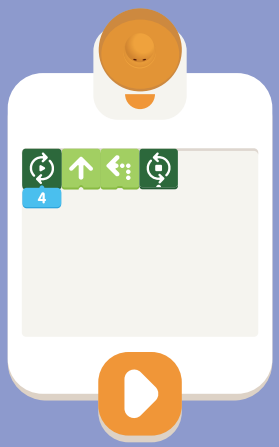


Every time MatataBot finds a candy, it will dance. What should we do when there are not enough Preset Dancing coding blocks?

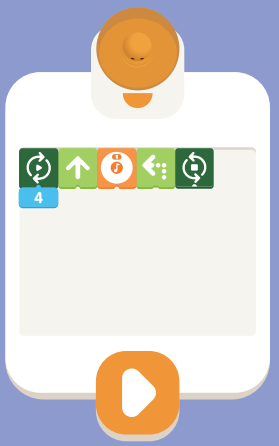




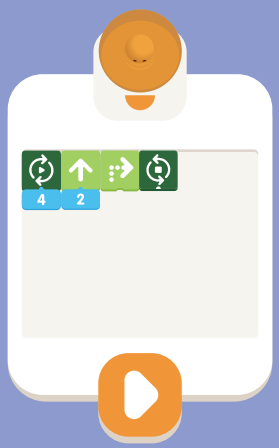
How can MatataBot return to the starting point after collecting all the candies?

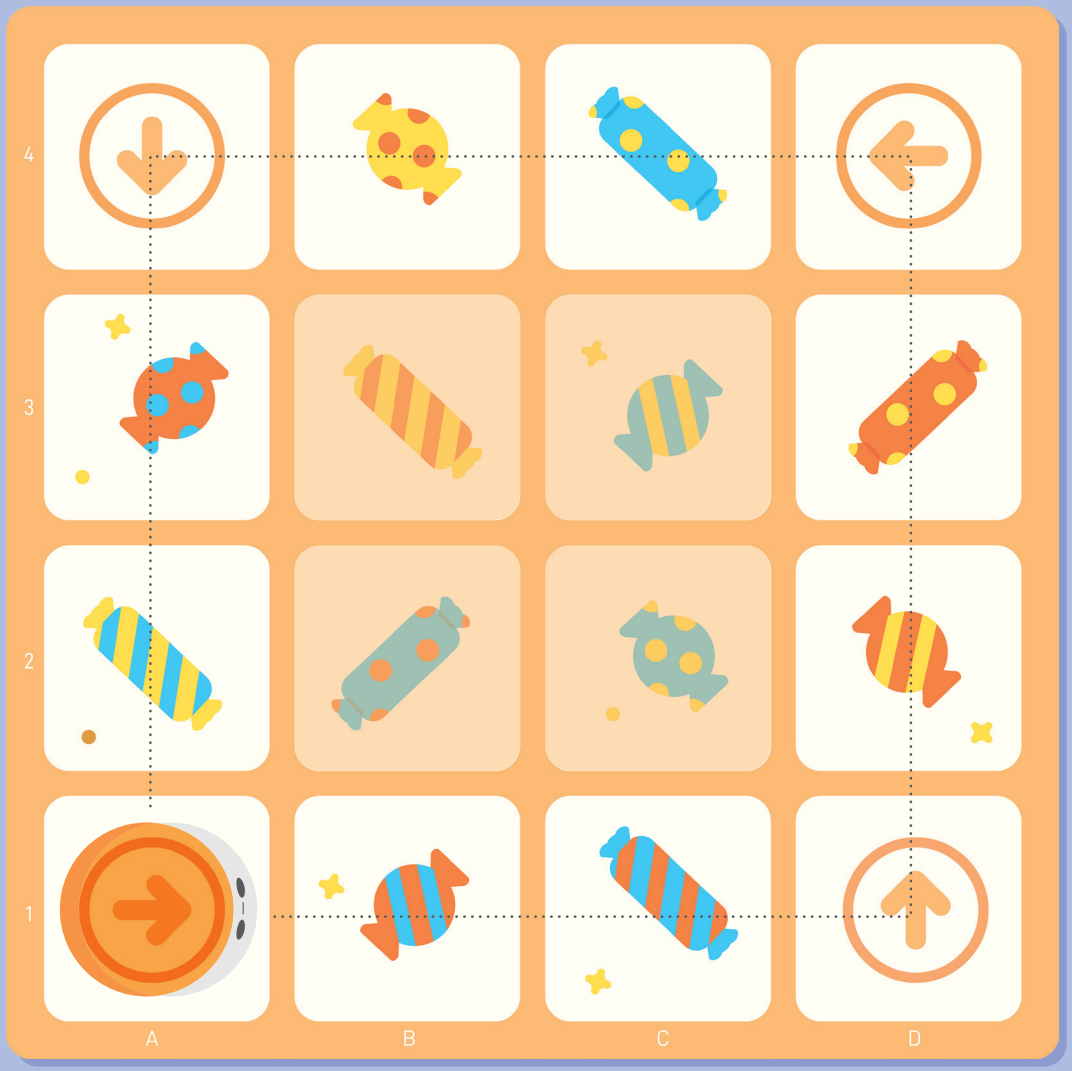


Every time MatataBot receives a candy, it will sing , and then return to the starting point.

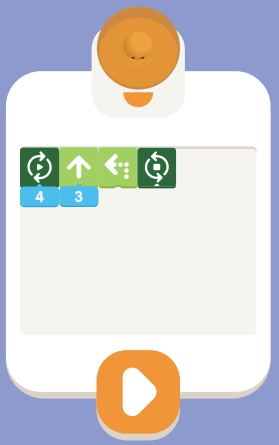


Collect all of these candies with loop coding blocks!

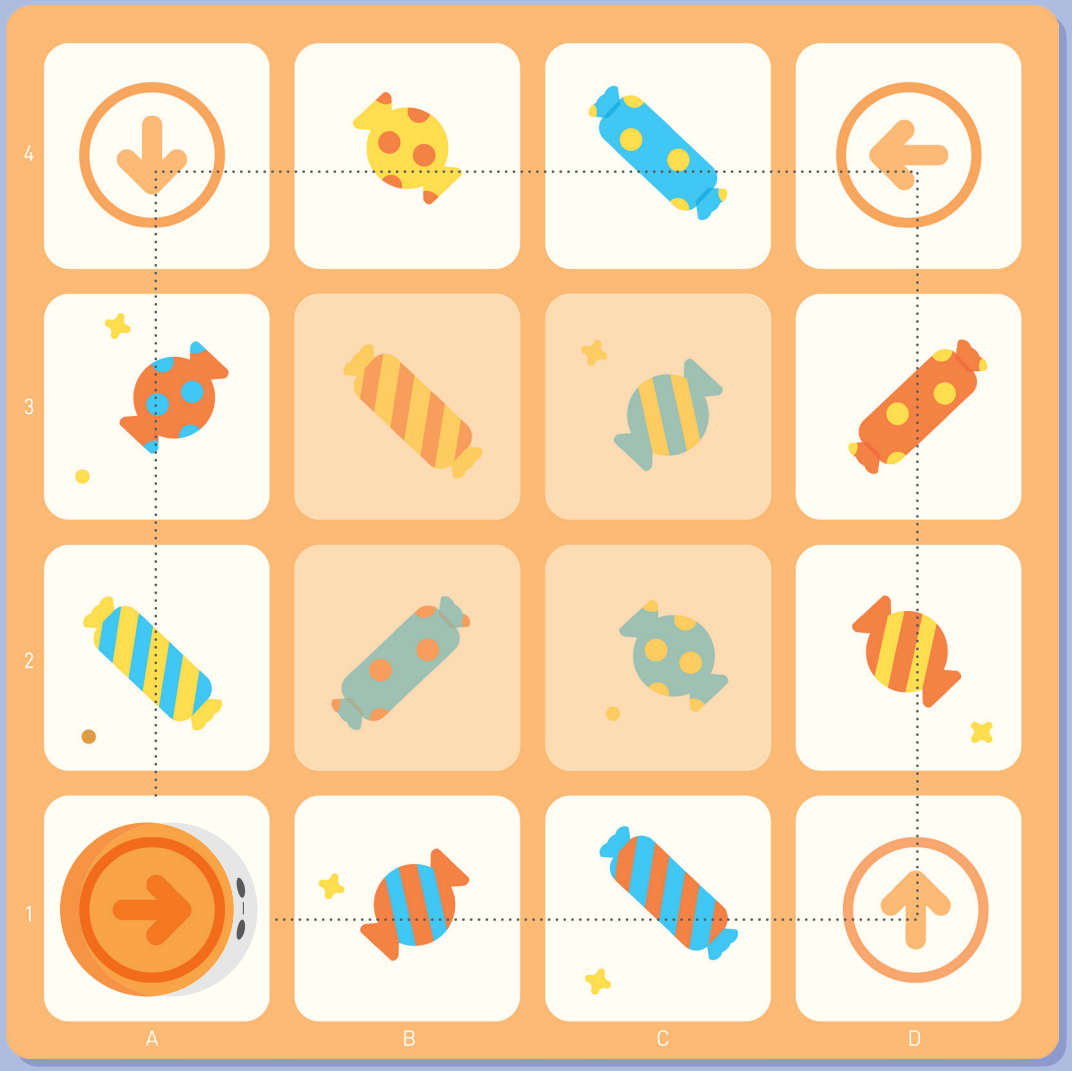




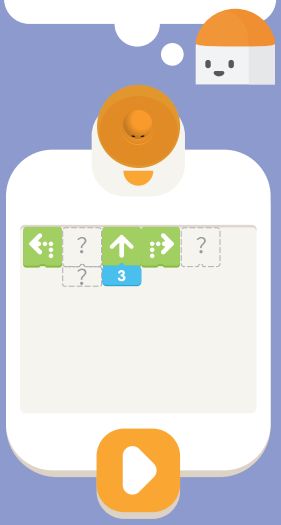
How many candies can MatataBot find with the loop coding blocks?



How many candies can MatataBot collect with the loop coding blocks?



Complete the program to help MatataBot collect all the candies and return to the starting point.



The answer is on page 50

1 2

Please use the loop coding blocks to let MatataBot randomly perform a dance every time it eats a piece of candy.

3 4

Please use the loop coding blocks to let MatataBot sing every time it gets a candy.

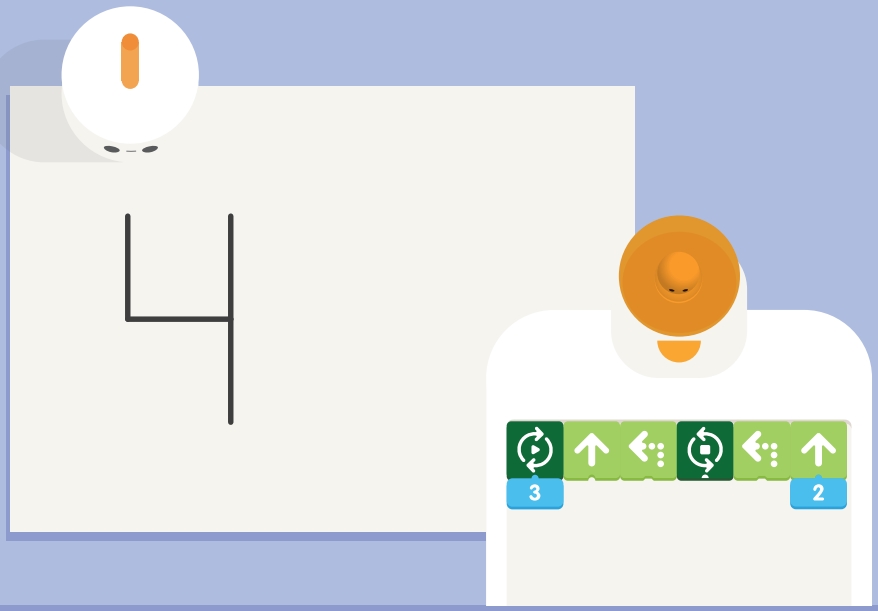
Come to try more solutions!

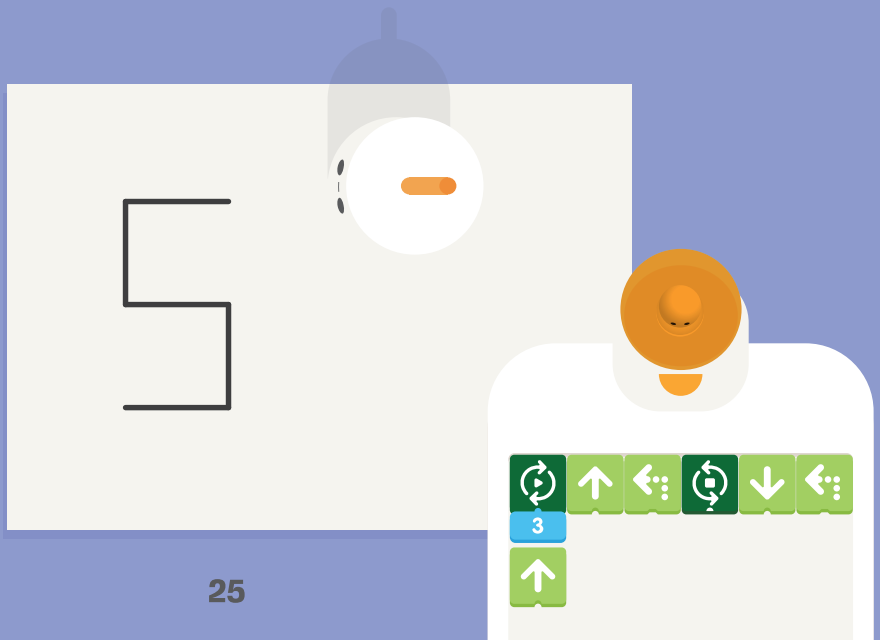
The answer is on page 50

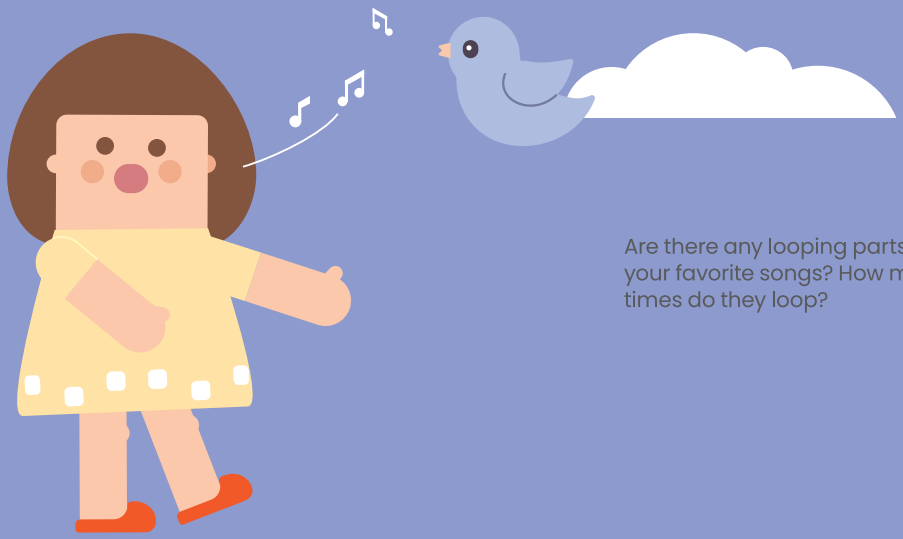
5 6 7 8

Please set the starting point and direction by yourself, and use loop coding blocks to design a concise program to let MatataBot collect all the marked candies.

Let MatataBot draw numbers with the loop coding blocks.What other numbers can MatataBot draw?



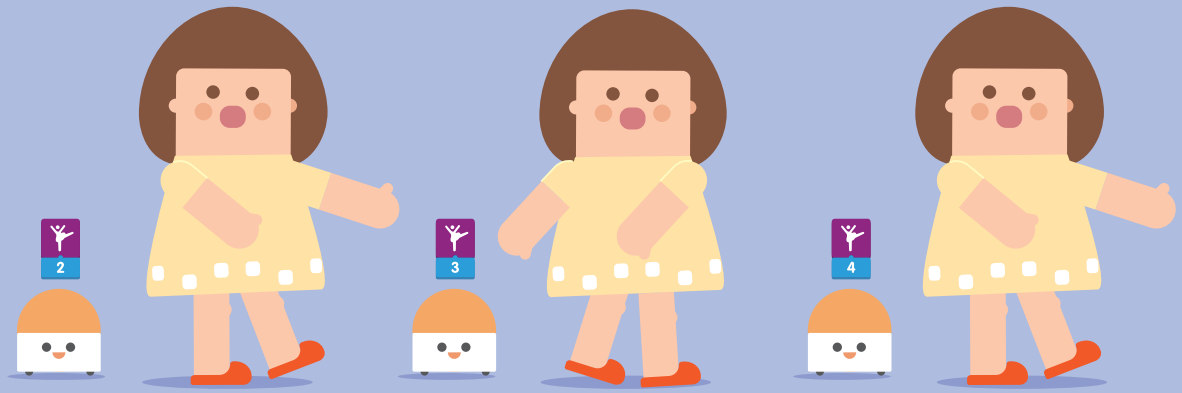




Are there any looping parts in your favorite songs? How many times do they loop?

During the meal, we can take a bite of rice and food, then take another bite of rice and food, and contiune the loop wih this law.

Can you imitate MatataBot's dance moves? You can repeat it for multiple times.



What other things in life will repeat like a loop? Draw it down.

When to use loop?

When we need to repeat a movement or a set of movements. For example, we can use the loop coding blocks if we want to let MatataBot move around the map. Take a look at the two methods below. Which one is simpler?

Loop coding blocks can simplify the program, not only save programmers' time, but also make debugging easier.

After learning how to create loop programs, please think about the questions below:

1. What needs to be changed in order to draw a larger square?

2. Can you create a program to draw a rectangle using loop?

3. What should you do if you want to loop a group of movements 8 times with numbers 2,3,4,5?

Unit Goals

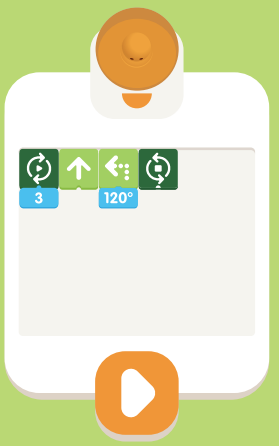
Optimize the program with loops: A loop refers to restarting a series of actions after running its last step. Therefore, a loop always comes with repeated actions.

Difficulties

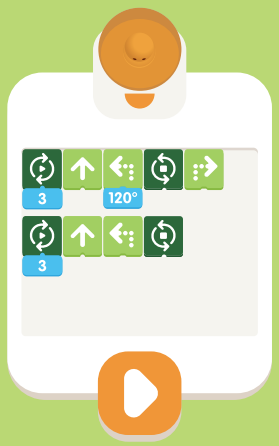
- Coding block placement rules: The loop coding blocks must appear in pairs. Put the Loop Begins coding block and the number coding block that represents the number of loops before the series of commands that need to be repeated, and put the Loop Ends coding block at the end of the commands.
- Program understanding: Since it is difficult for children to understand  , parents could first ask children to create a program  that needs to be repeated. Then add the Loop Begins coding block and the number coding block representing the looping times at the front  , and add the Loop Ends coding block at the end of the program  .
- Loop application: Writing different loop programs in each game is beneficial for children, and multiple exercises will develop children's understanding of loops and be helpful for their future understanding of multiplication.

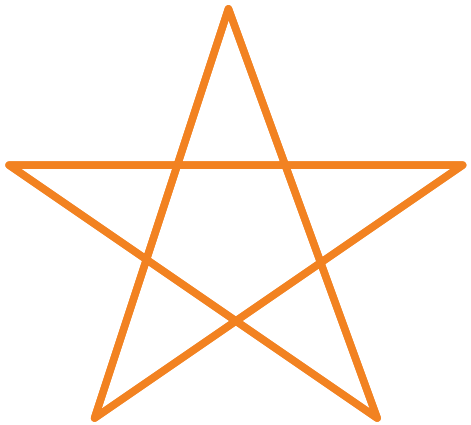
Parent's Guide

MatataBot combined loop coding blocks with 120° to draw a triangle.

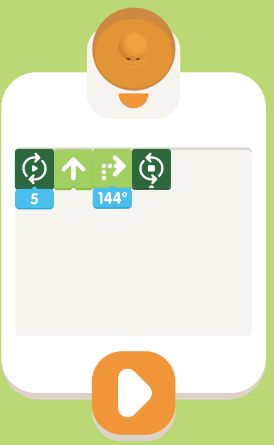


MatataBot combined loop coding blocks with 120° to draw a house.

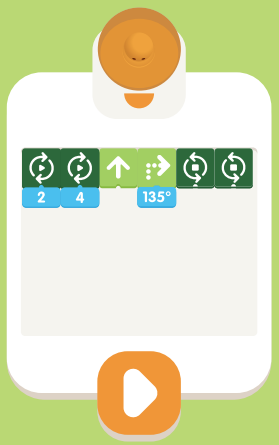


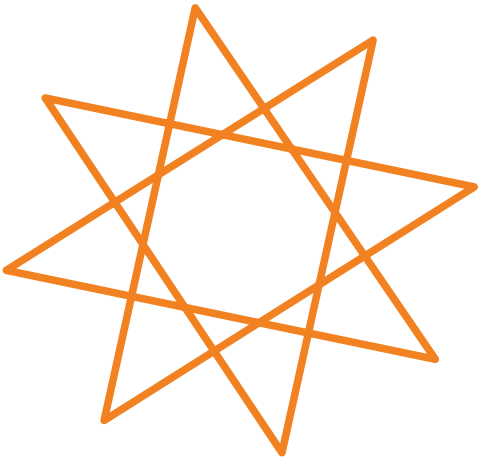


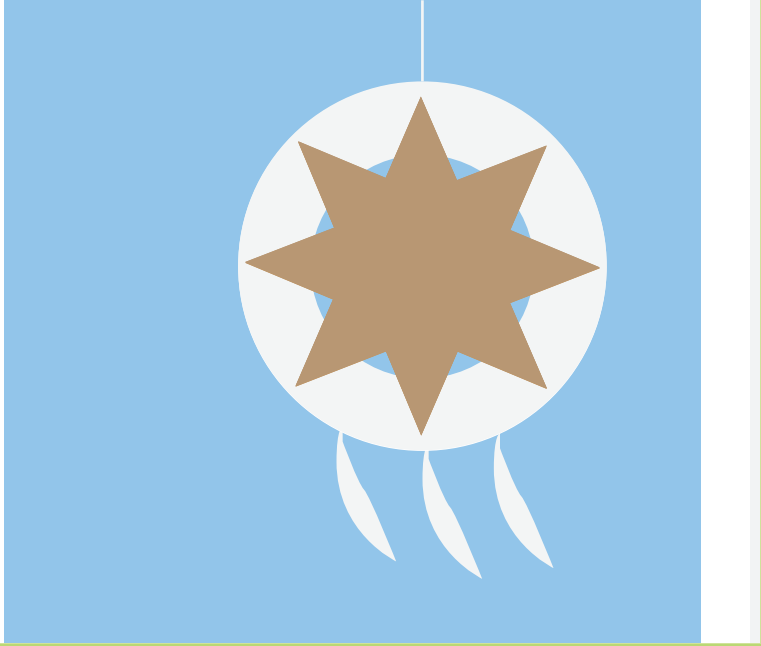
MatataBot combined loop coding blocks with 144° to draw a pentagram.



MatataBot combined loop coding blocks with 135° to draw an octagon.

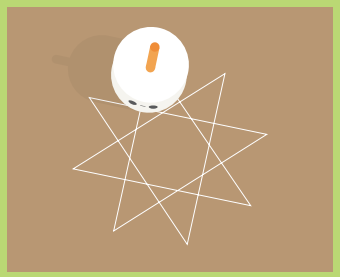




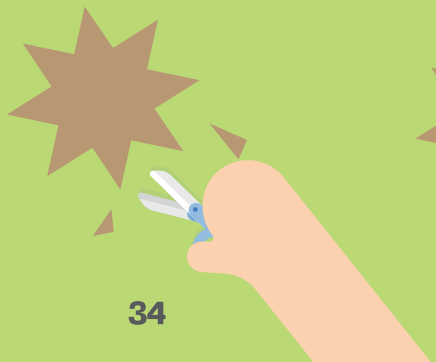


Handmade octagonal stars artwork .

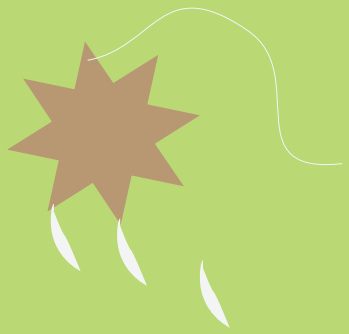
1. Program MatataBot to draw an octagonal star on a piece of paper.

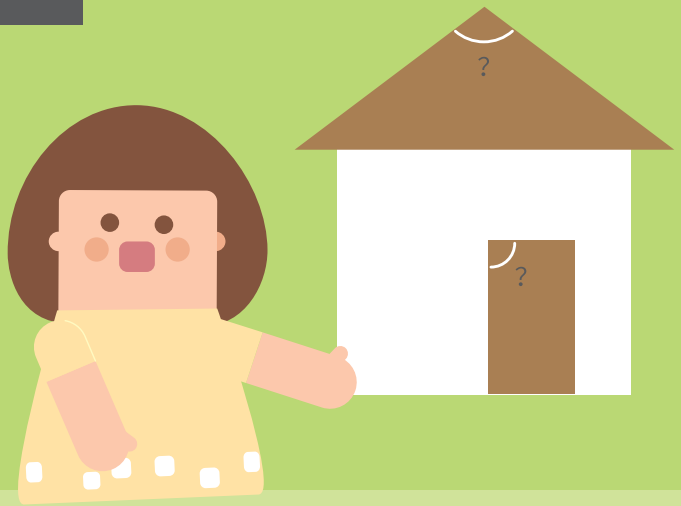


2. Cut out the octagonal star and decorate it with colored pens.

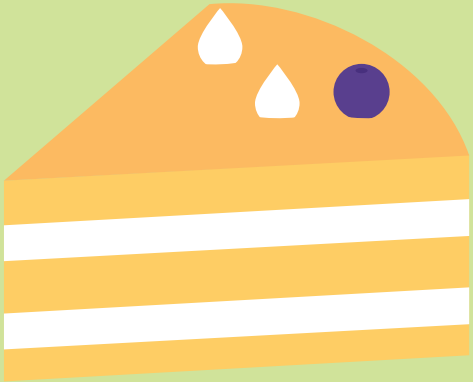


3. Punch holes in the corners and decorate it with wool feathers and other items.



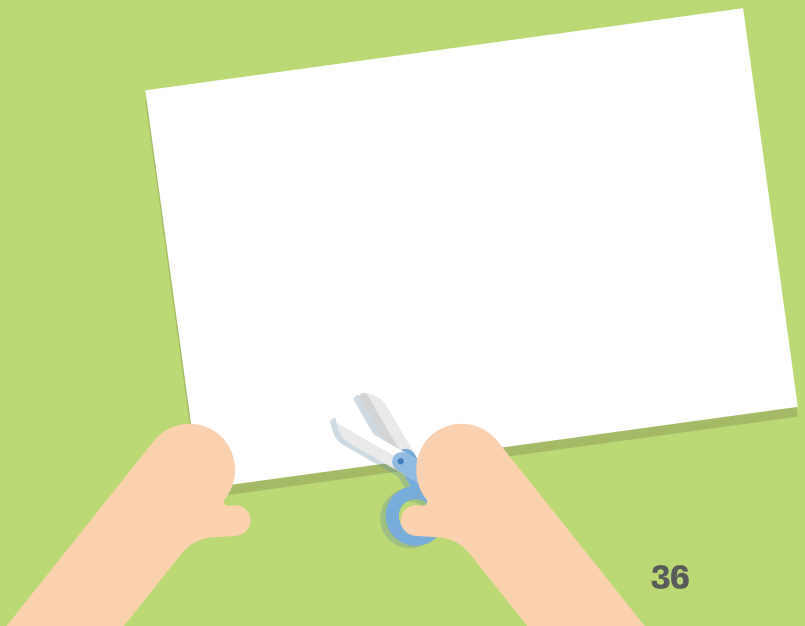


Have you observed the angles in our daily life? Angles are everywhere, and understanding them can help us solve problems.



How can we slice more evenly when dividing the cake?

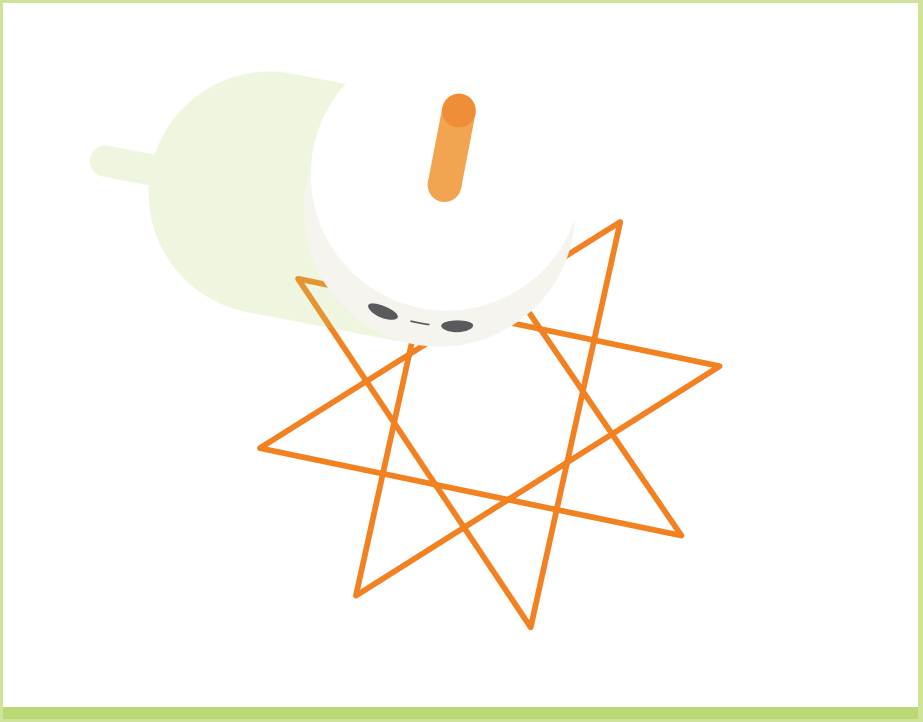
Which pizza is bigger, yours or your brother's?



How do scissors work?

Difference between humans and robots: Robots cannot think independently and creatively like a human, but after receiving human commands, they can always strictly follow the commands without any deviation. Therefore, the robot can always perform precise movements.

Send MatataBot commands to draw an angle, and you will find that it is a reliable friend who can always execute your commands accurately.



Unit Goals

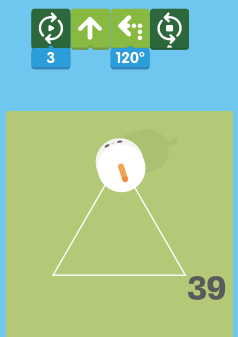
Use angle coding blocks to program: Play the angle drawing, drawing and other activities through the cooperation with robot to understand the value of combining the precision of robot work with the creativity of humans.

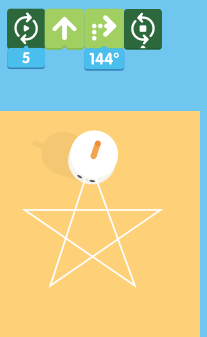
Difficulties

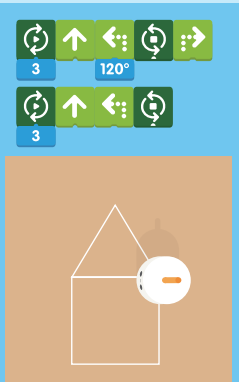
- Computer advantages: Computer cannot think independently and creatively, but they can always strictly follow the commands.
- Human-computer cooperation: Both humans and computers have their own areas of expertise. Humans can collaborate with computers to create more fun and excellent works.

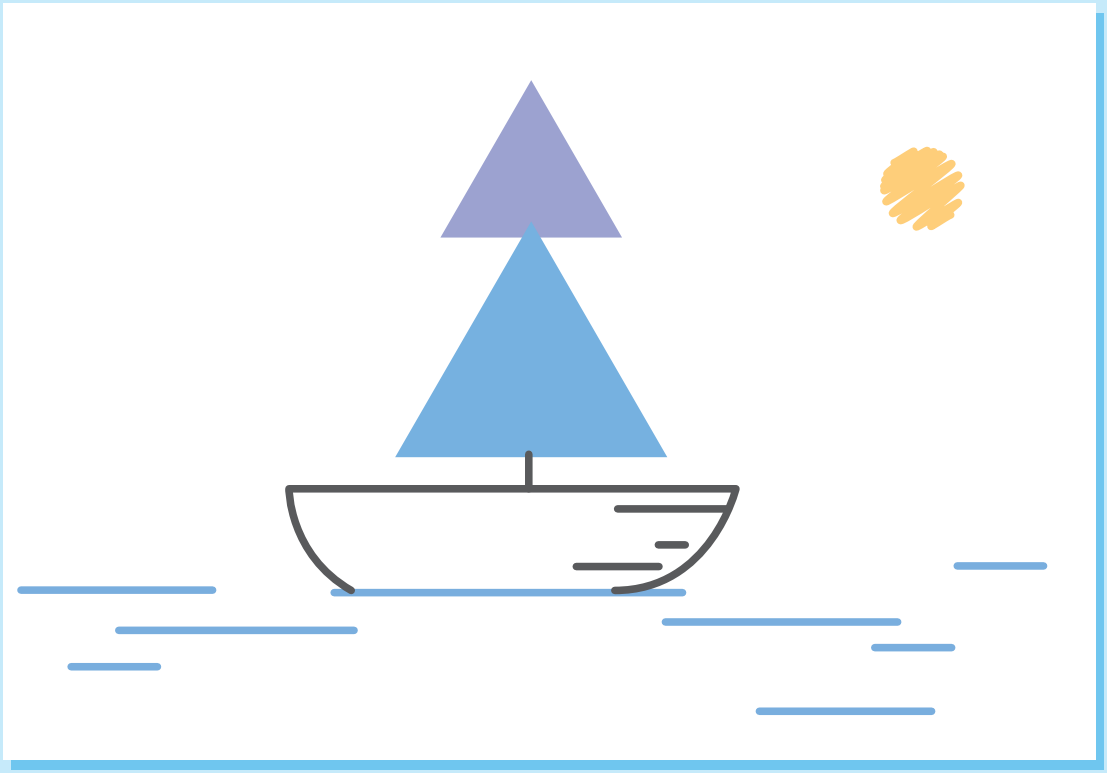
Parent's Guide

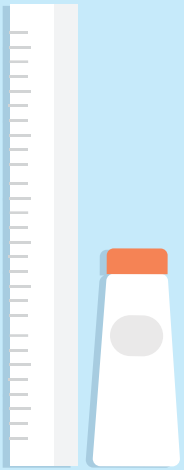
Collaborate with MatataBot on a painting of a forest hut.

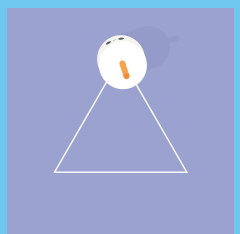


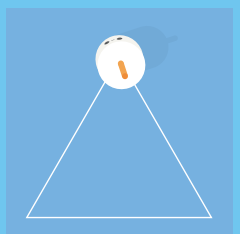




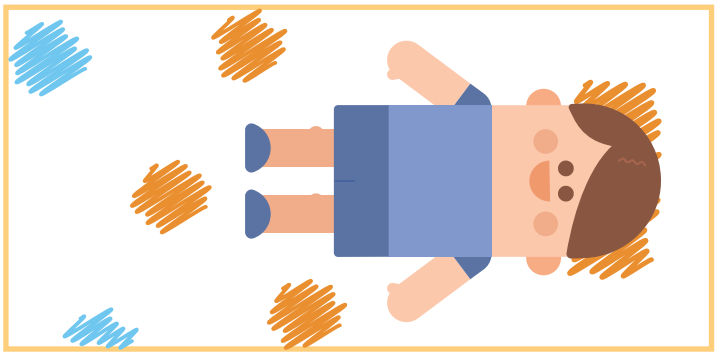




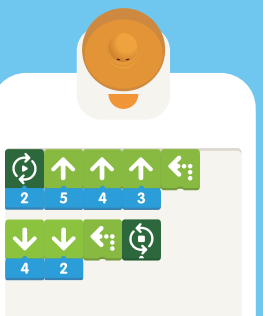


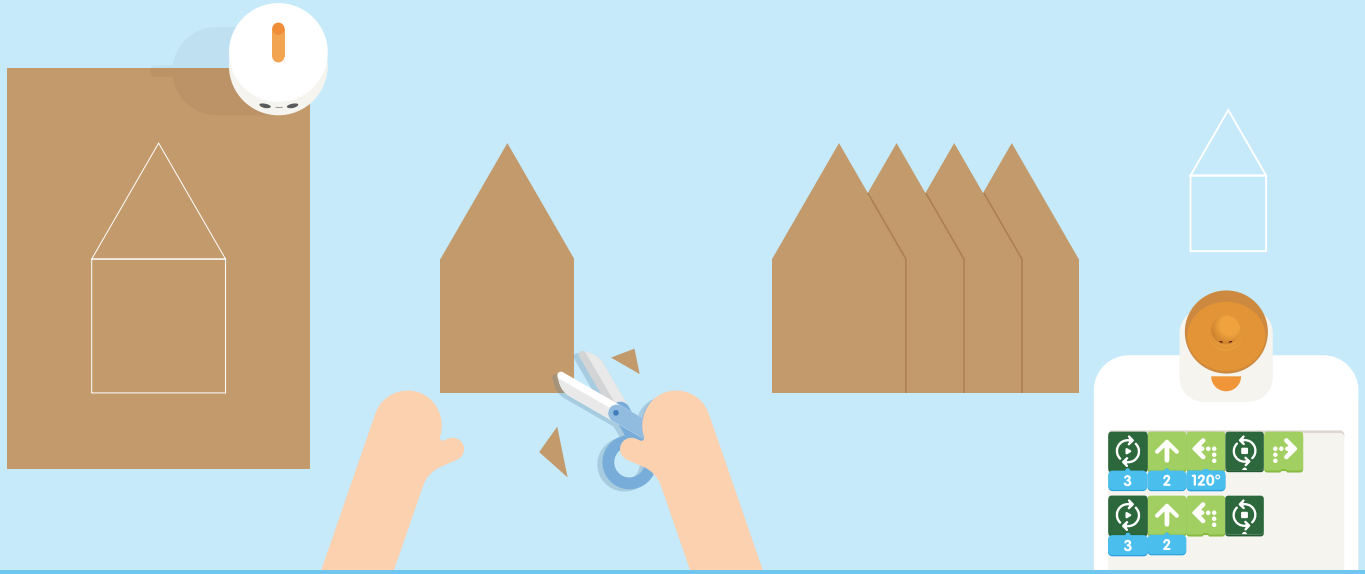


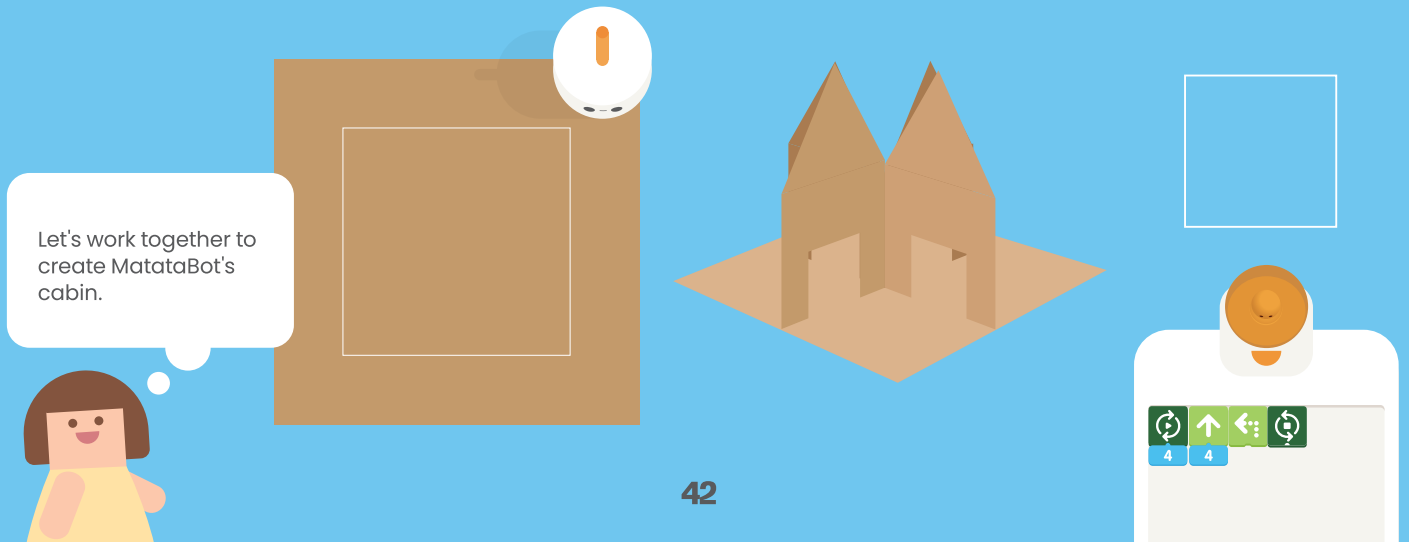
Collaborate with MatataBot on a painting of a sailing boat.

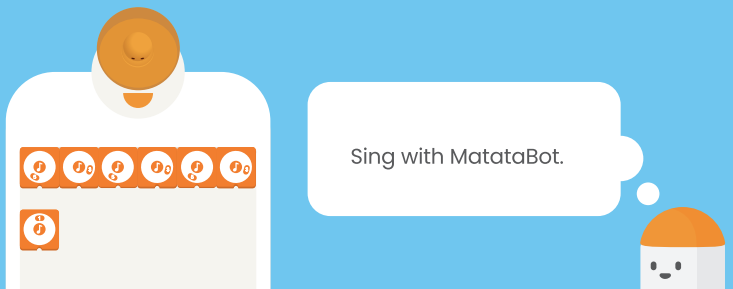


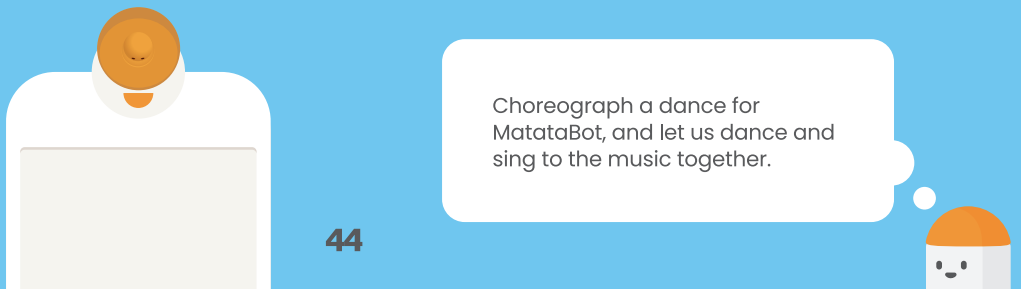
Let Matatabot draw a bed for me.




3
2
120°
3
2

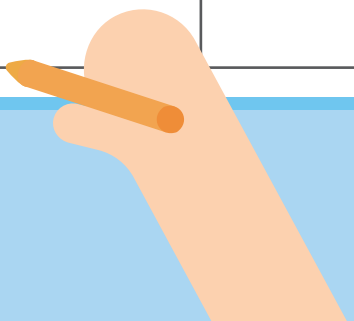

Let's work together to create MatataBot's cabin.
4
4

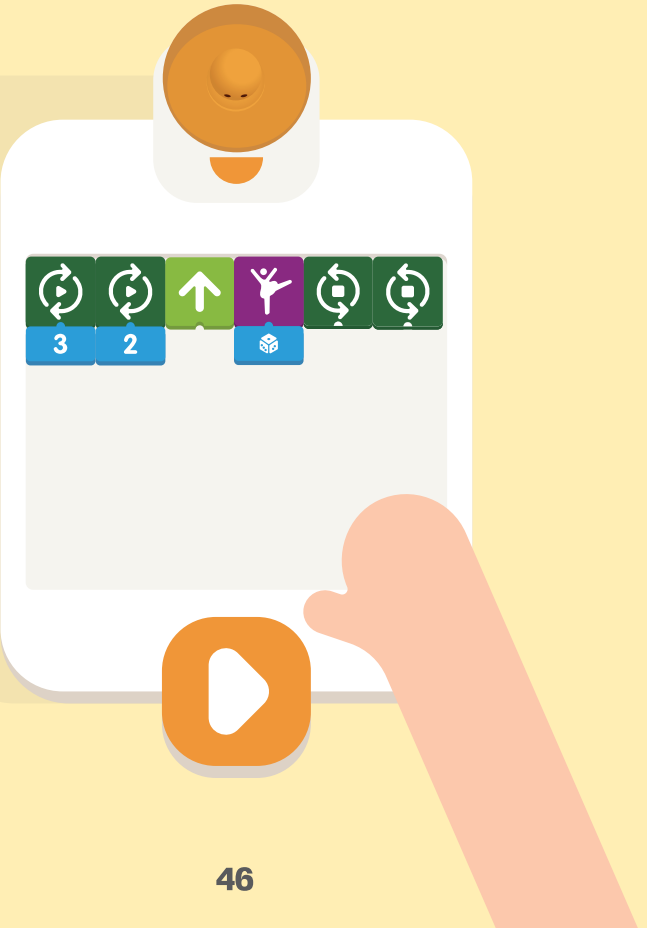

Sing with MatataBot.



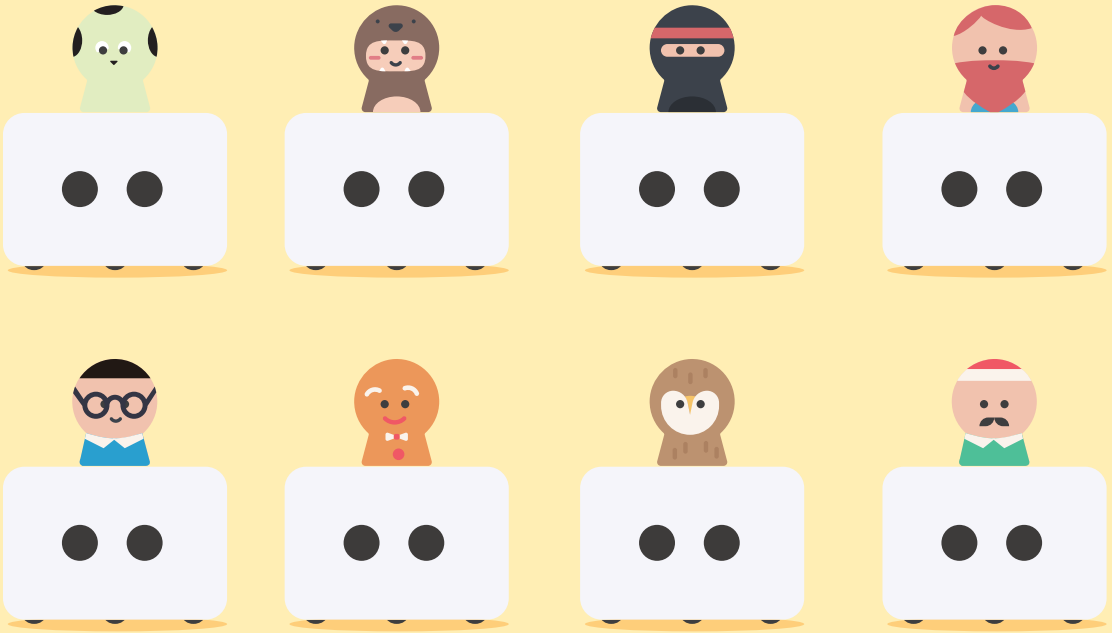
Choreograph a dance for MatataBot, and let us dance and sing to the music together.

Make a map for MatataBot and compile a story about it.

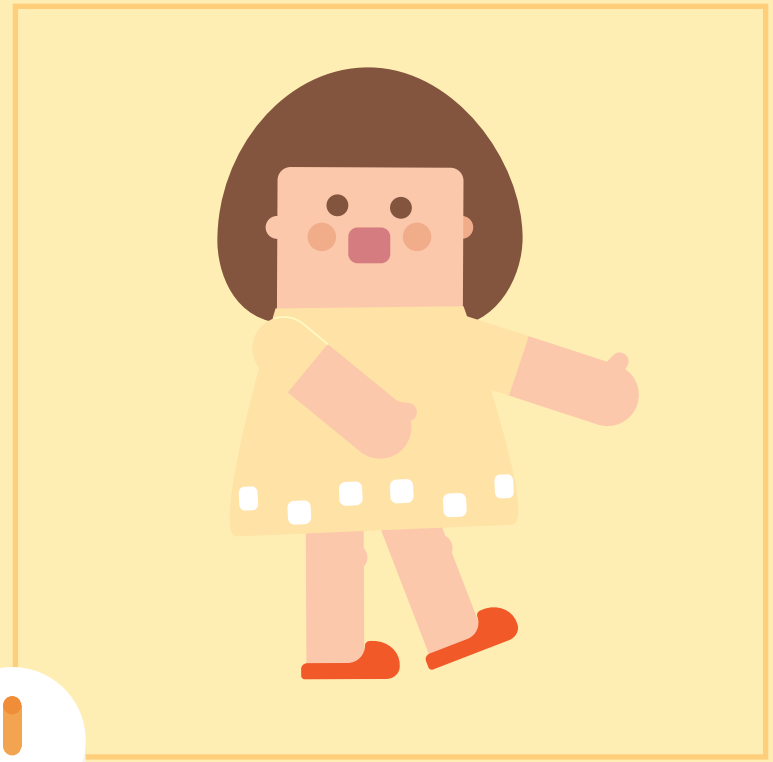




Place different coding blocks on the control board to see what will happen.

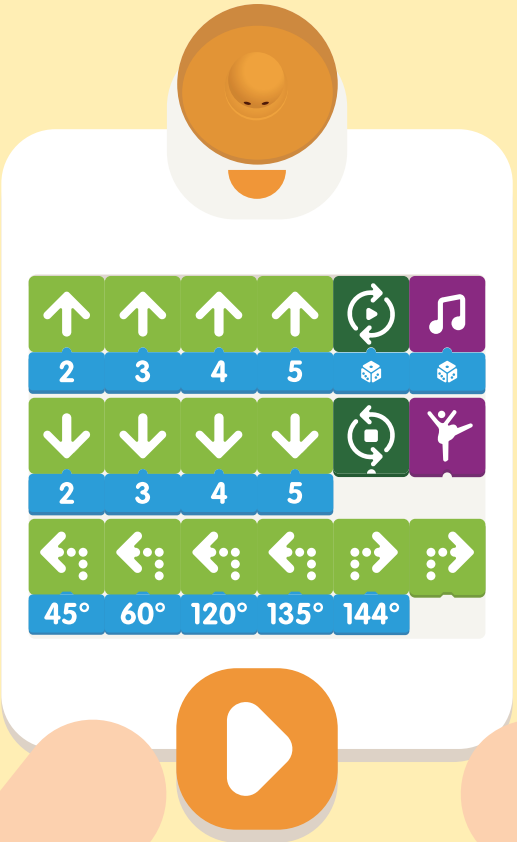


Get creative and transform MatataBot!



What is the largest square that MatataBot can draw?

Fill the control board with coding blocks.



P8

1 

2 

3 

4 

P9

5 

6 

7 

8 

P11

The steps of making a pizza: exchange the order of step 3 and step 4.

The steps of making orange juice: exchange the order of step 1 and step 2.

P12

Steps of planting flowers: the correct sequence would be 3-1-2-4.

Steps of washing hands: exchange the order of step 3 and step 4.

P22

P23

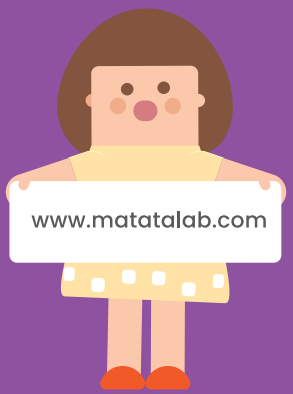
1 

2 

3 

4 

Tips: Those answers are only suggested, use your creativity to find out other possible answers!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