TUTORIAL CARDS

TU Graz

CODE'N'STITCH

bits4kids

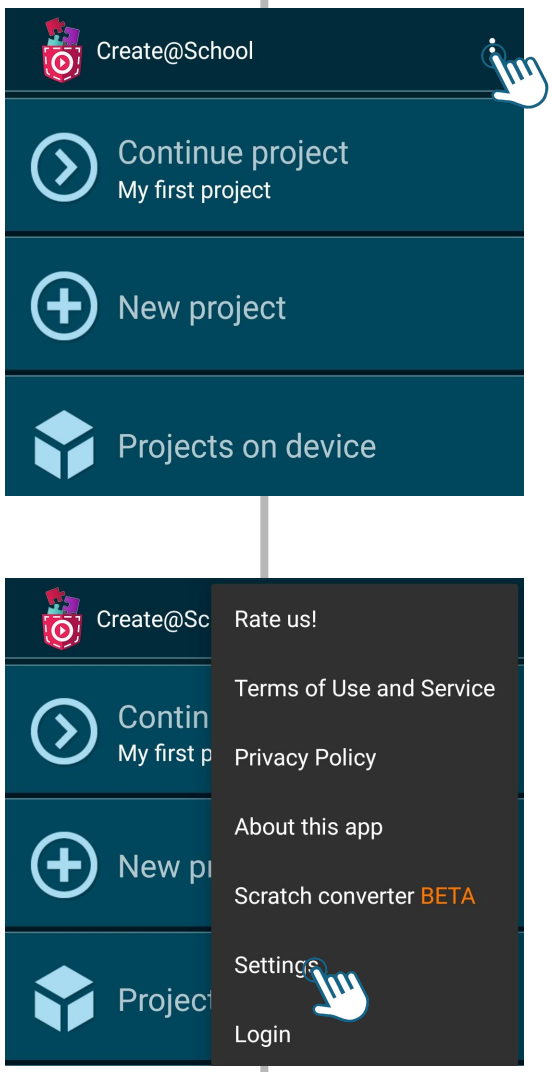
Activate Embroidery-Bricks

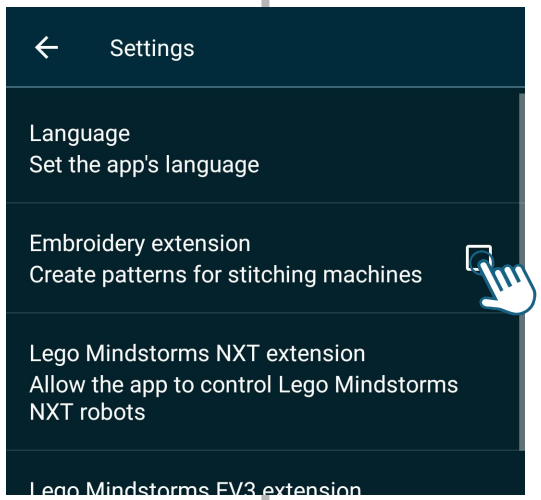
Embroidery

BASIC

1

Start the “Create@School”-App.
Follow the clicks!

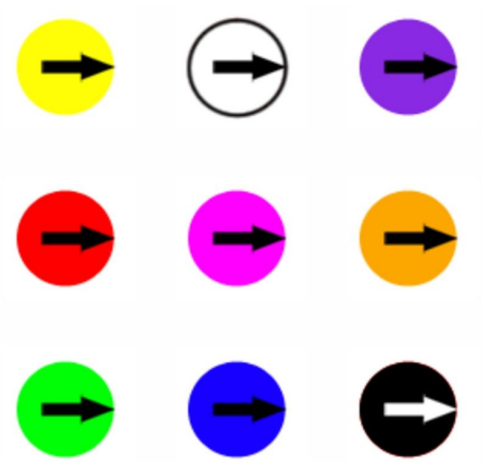




2

You will find the Embroidery-Bricks as an own category within your bricks!

Create Embroidery-Objects



BASIC

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CODE'N'ST TCH

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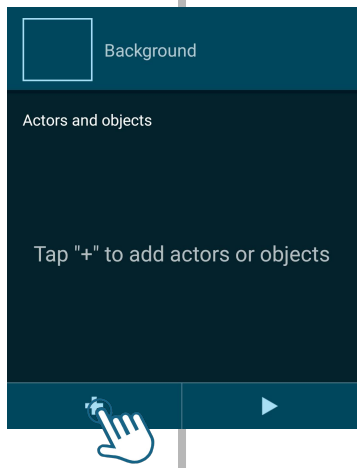
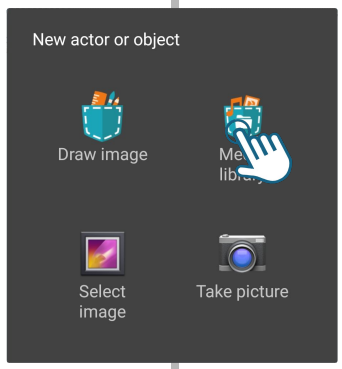
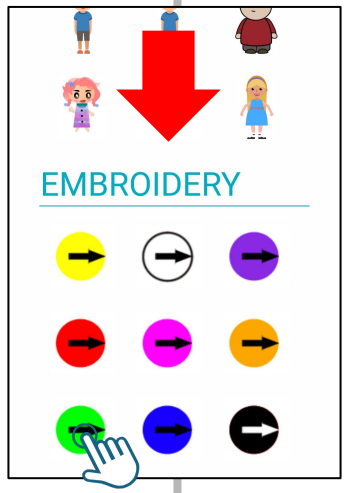
1 Follow the clicks to create a new Embroidery-Object.



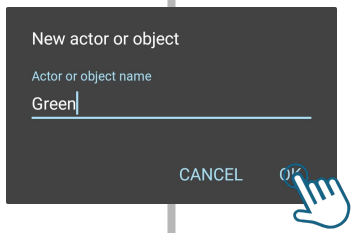
2



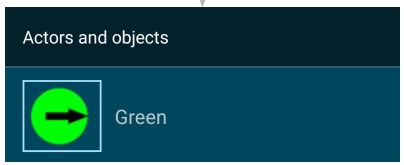
3 Scroll down and search for the fitting arrow.



4



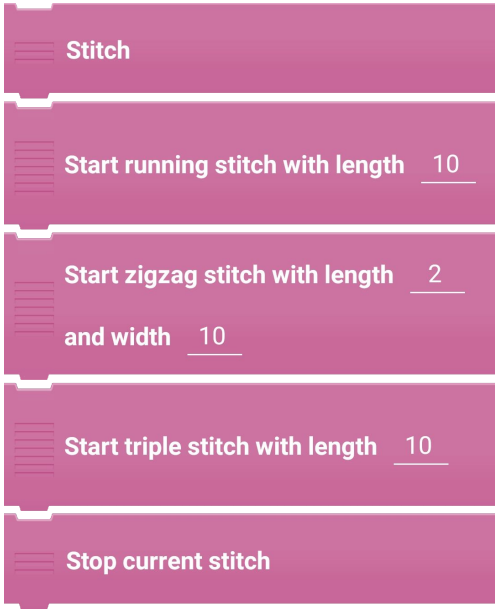
5 Done!
You will need an own object for every of your colors.



An Embroidery-Object represents one level of the **needle** of the embroidery machine.

Several Embroidery-Objects will be embroidered one after another. That enables the possibility to use several colors.

Embroidery Bricks



BASIC

1

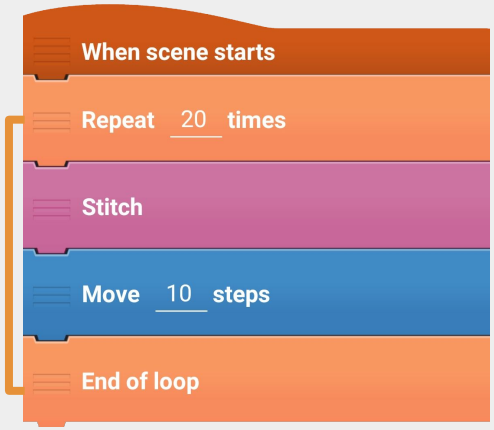
Stitch lets the machine stitch into the fabric once.

Example

Usually you combine **stitch** with a **loop** and a **move-brick**.

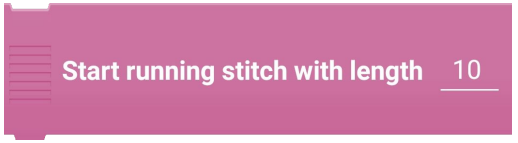
With this you create a seam:

This script **stitches** the fabric and den **moves** the needle 10 steps. This will be **repeated** 10 times.



2

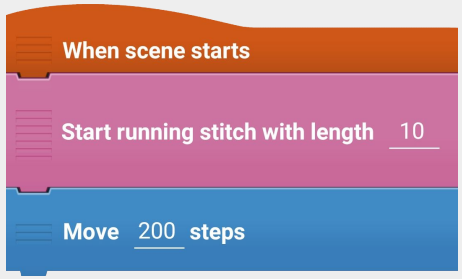
The running stitch lets the machine stitch constantly with a variable length.



Example

The running stitch makes stitching a seam easier because you **won't** need a **loop** any more.

This script does the same as the example on the left.

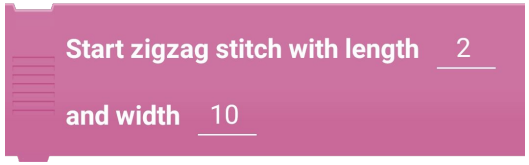


The machine start a **running stitch** which will stitch every **10 steps**. Then the machine **moves 200 steps**. **10 Steps will result in a 2 mm seam. 200 steps therefore are a 4 cm seam.**

Turn over

3

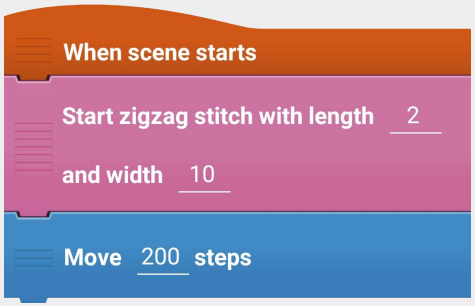
The zigzag stitch lets the machine stitch constantly with a variable length and width in a “**zigzag**” pattern.



Example

You can stitch **thicker seams** with the zigzag stitch.

Try different values for the length and width to get to know this brick.



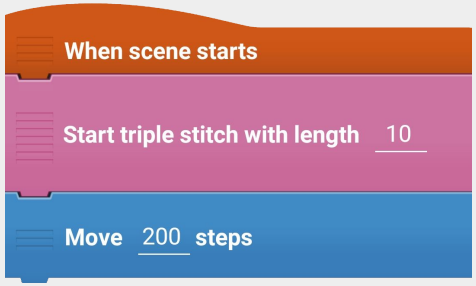
4

The triple stitch works the same as the running stitch, but it sews up the every stitch three times.

Example

The triple stitch jumps back after the first stitch, stitches, then jumps back forward again and stitches again.

This makes the seam **last longer**.

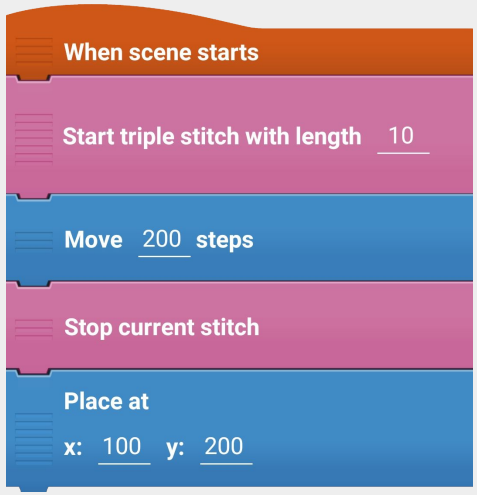


5

“Stop current stitch” lets the current stitch stop.

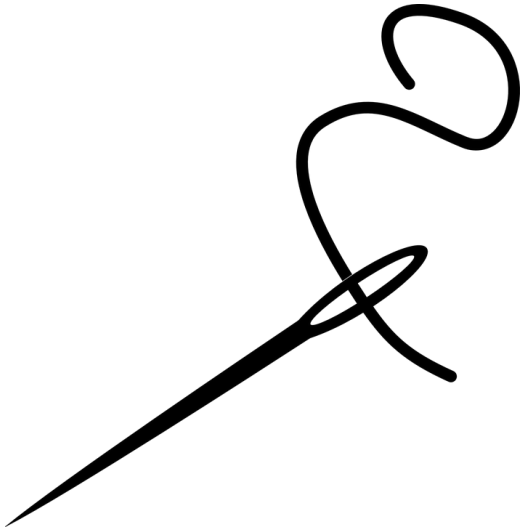
Example

You will need this brick if you want to **change the position** of the needle after starting a running, zigzag or triple stitch.



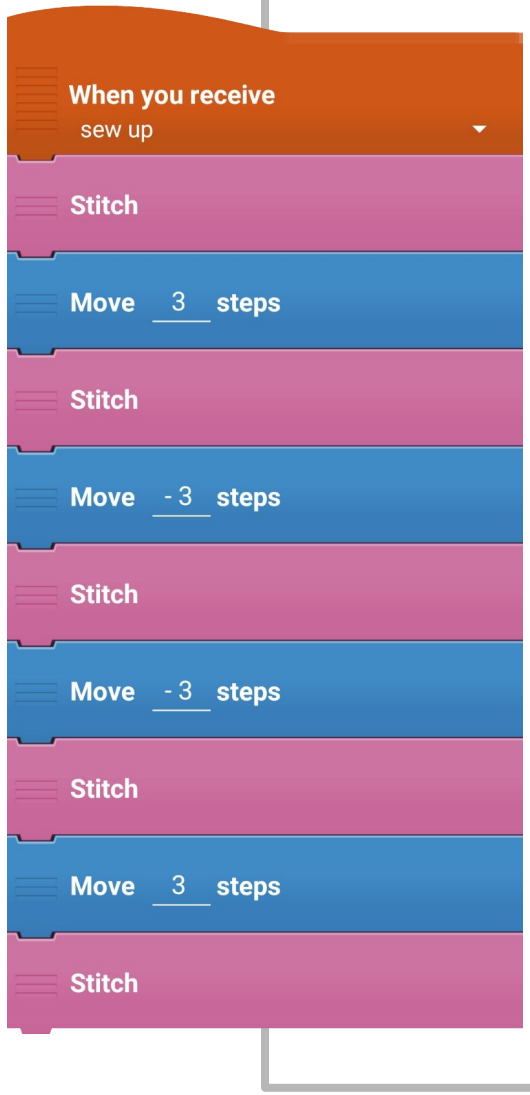
Otherwise an unwanted intermediate seam would occur.

Sew Up

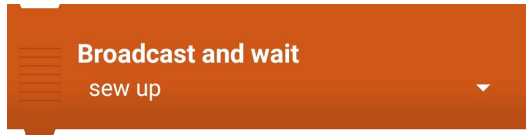


BASIC

1 To sew up you will need this script.



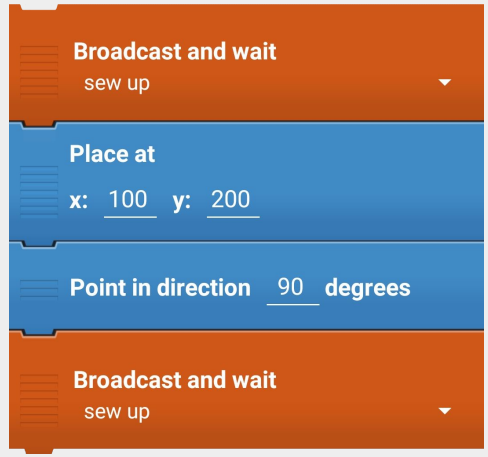
2 Insert this brick before and after the needle jumps to a new position.



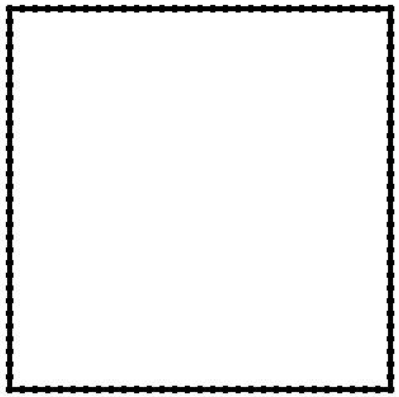
You have to sew up because otherwise the thread could become loose.

Usually you have to sew up **before** and **after** every **“set position”, “change x by”** or **“change y by”.** Before sewing up, the direction has to be set correctly.

See this example:



Square



60 x 60 mm

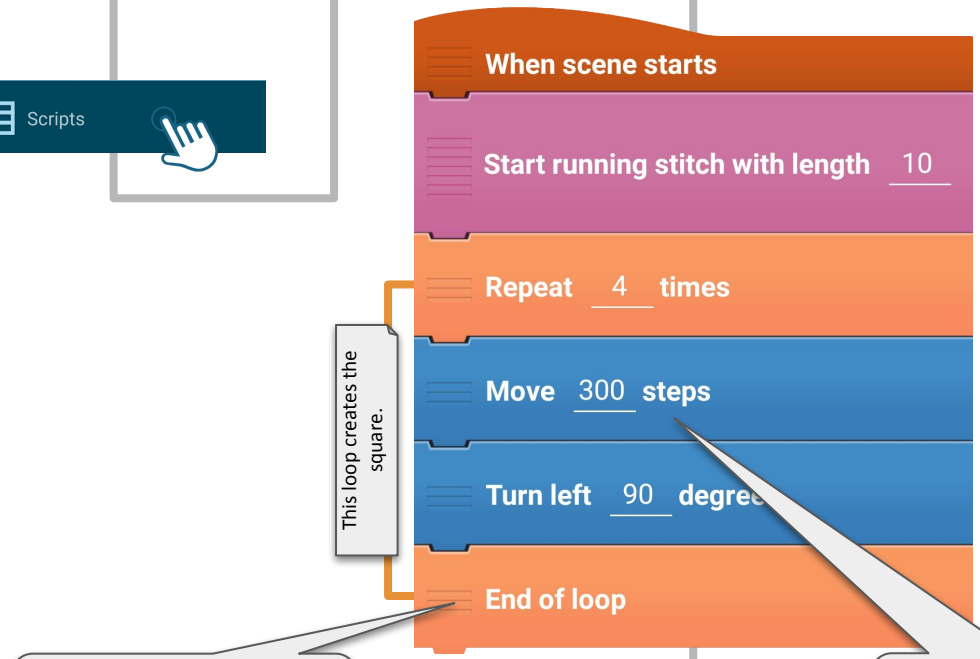
BASIC

1 Create a new Embroidery-Object. *(see Create Embroidery-Objects Tutorial)*

2 Your object

3 Scripts

4 Now start and insert the bricks step by step to your script.



The End of Loop will be created automatically.
All bricks in between the loop will be repeated.

10 Steps result in a 2 mm seam. 300 steps are therefore a 6 cm seam.

5 Tap play to start your design!

A square is built from four lines, meeting each other in a 90° angle.

At first the script runs the **running stitch**.
After that it **moves** the needle 300 steps and **turns** 90°.
This will be **repeated** 4 times.

What's going to happen if you adjust the angle or the steps?
Try it!

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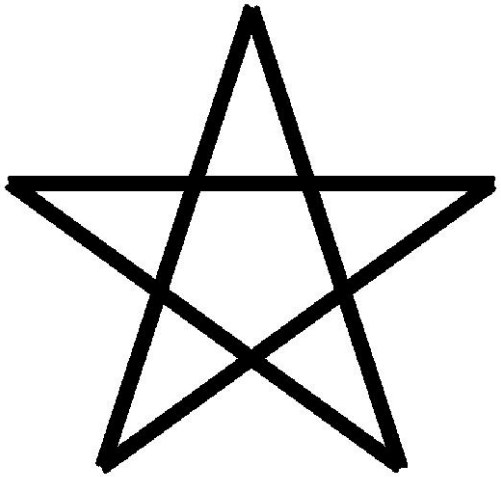
Star

zigzag



58.2 x 61.2 mm

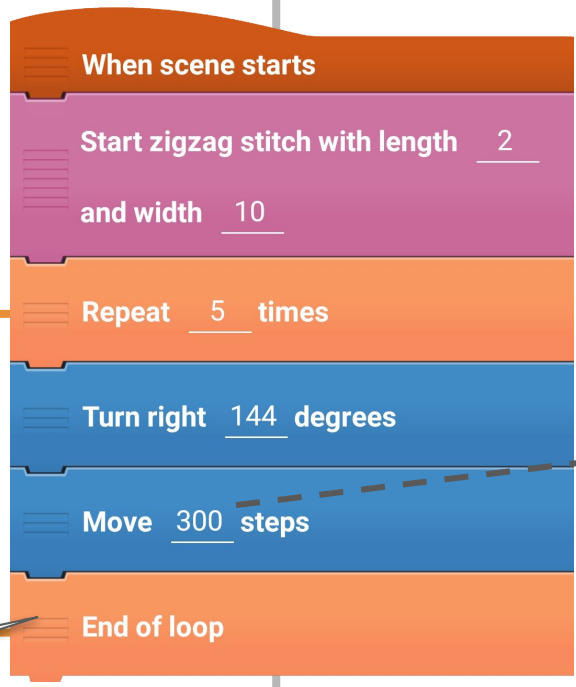
BASIC

1. Create a new Embroidery-Object. *(see Create Embroidery-Objects Tutorial)*

2. Your object

3. Scripts

4. Now start and insert the bricks step by step to your script.



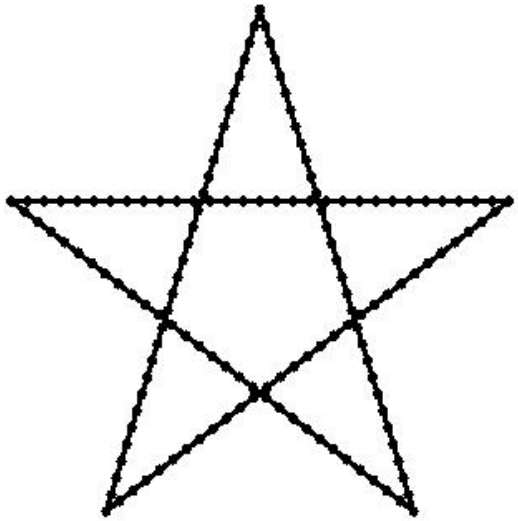
The End of Loop will be created automatically.
All bricks in between the loop will be repeated.

Tap this number to change the size of the star.

Try different values!

5. Tap play to start your design!

Star



57 x 60 mm

BASIC

1. Create a new Embroidery-Object. *(see Create Embroidery-Objects Tutorial)*

2. Your object

3. Scripts

4. Now start and insert the bricks step by step to your script.

When scene starts

Start running stitch with length 10

Repeat 5 times

Turn right 144 degrees

Move 300 steps

End of loop

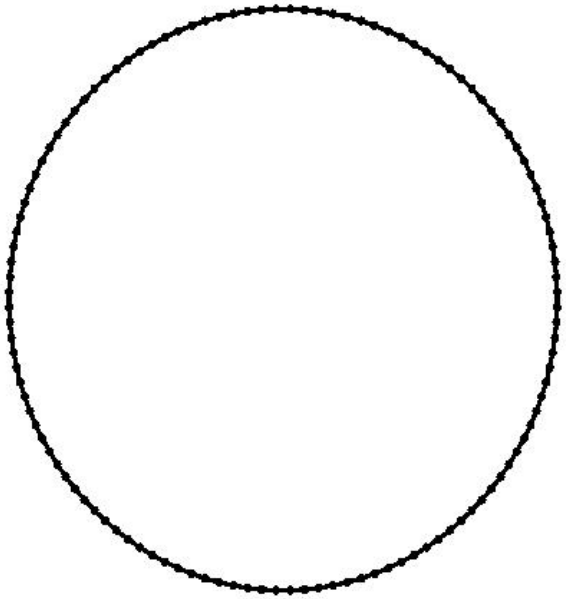
The End of Loop will be created automatically.
All bricks in between the loop will be repeated.

Tap this number to change the size of the star.

Try different values!

5. Tap play to start your design!

Circle



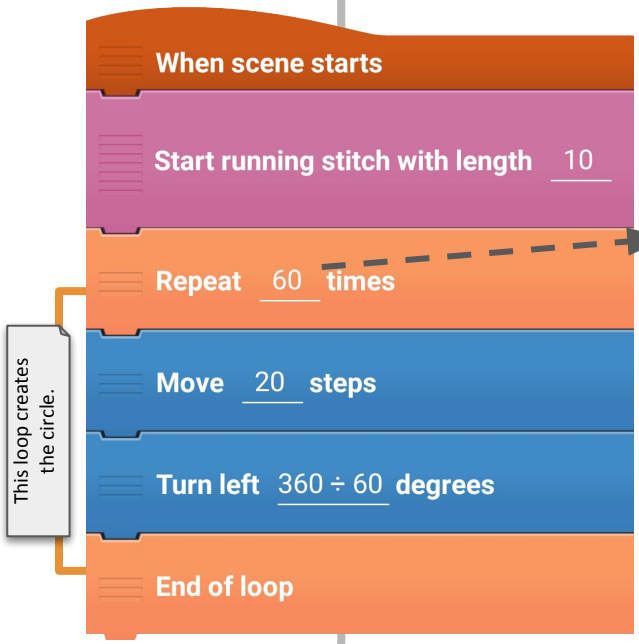
76.2 x 76.2 mm

BASIC

1. Create a new Embroidery-Object. *(see Create Embroidery-Objects Tutorial)*

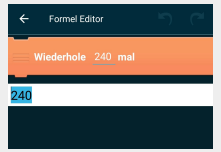
2. 

4. Now start and insert the bricks step by step to your script.



5. Tap play to start your design!

Tap this number to change it.



A circle has **360 degrees**. To adjust its size you have to change the repetitions of the loop and the turning angle.

Choose a number for the repetitions, e.g. 60 and also adjust the "turn-brick" by dividing 360 by this number.

Try different combinations! But always stick to dividing 360 through your number to get a circle.

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Semicircle

37.2 x 76.2 mm

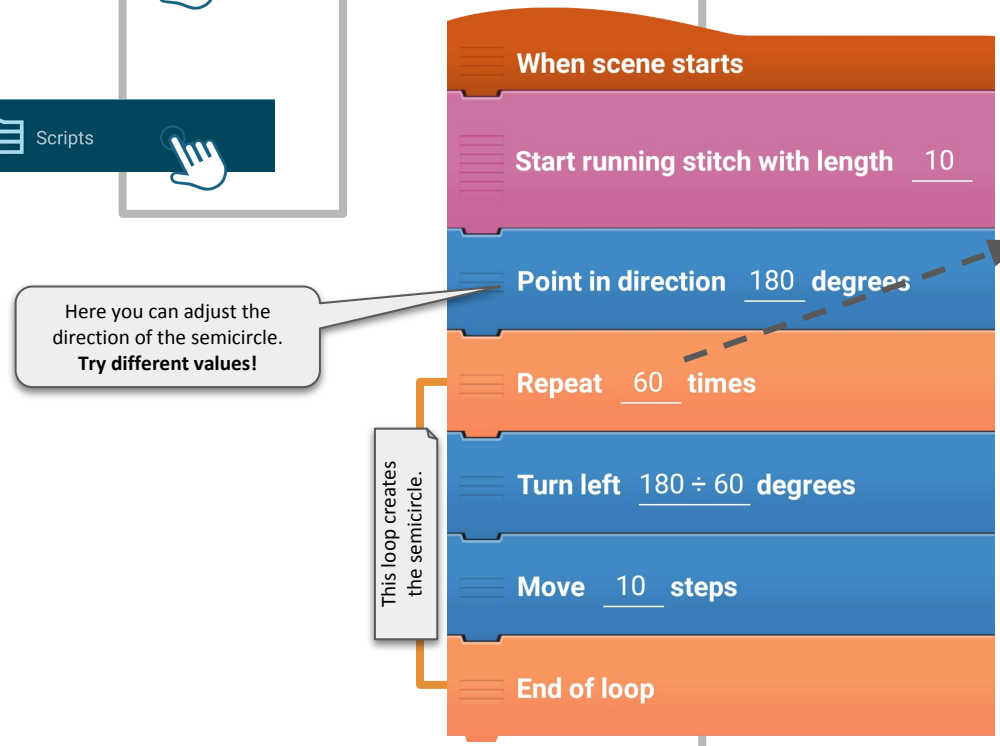
BASIC

1. Create a new Embroidery-Object. *(see Create Embroidery-Objects Tutorial)*

2. Your object

3. Scripts

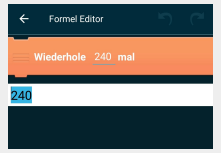
4. Now start and insert the bricks step by step to your script.



Here you can adjust the direction of the semicircle. **Try different values!**

5. Tap play to start your design!

Tap this number to change it.



A semicircle has **180 degrees**. To adjust its size you have to change the repetitions of the loop and the turning angle.

Choose a number for the repetitions, e.g. 60 and also adjust the "turn-brick" by dividing 180 by this number.

Try different combinations! But always stick to dividing 180 through your number to get a semicircle.

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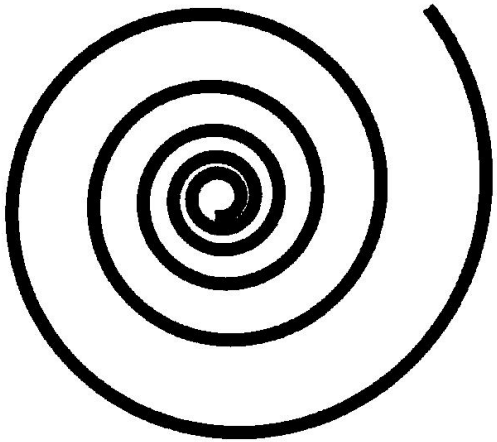
Spiral

zigzag

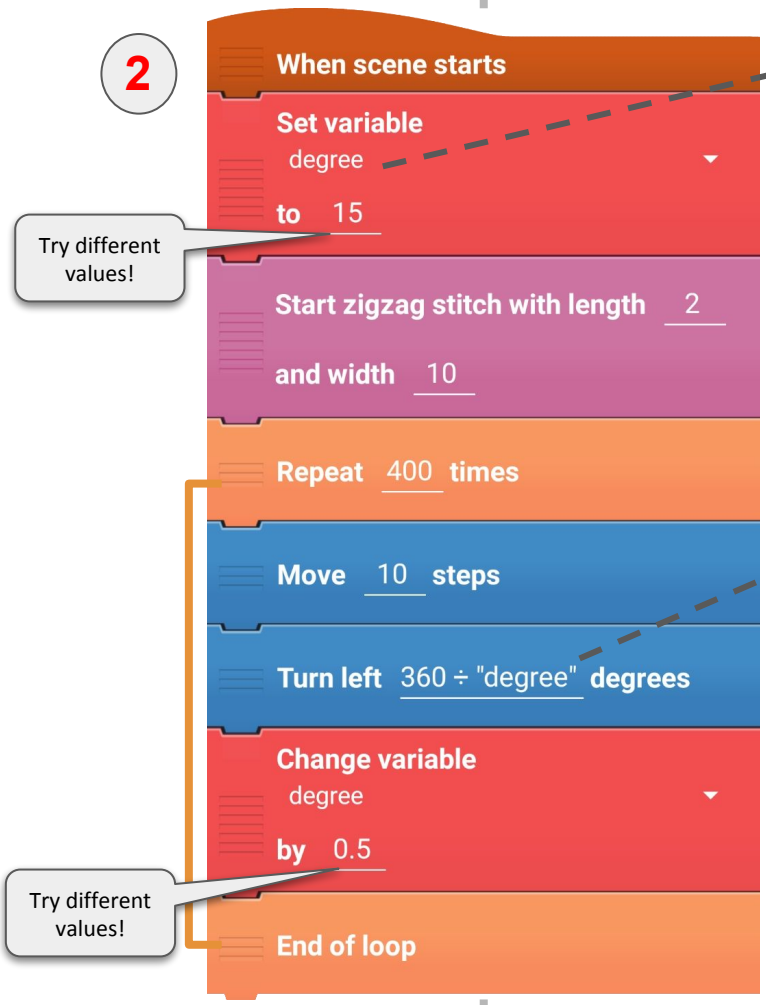


103.9 x 116.6 mm

MEDIUM

1. Create a new Embroidery-Object. *(see Create Embroidery-Objects Tutorial)*

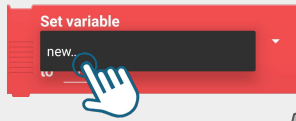
2.



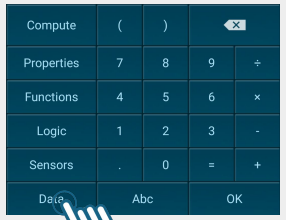
Try different values!

Try different values!

Tap “new” to create a new variable.

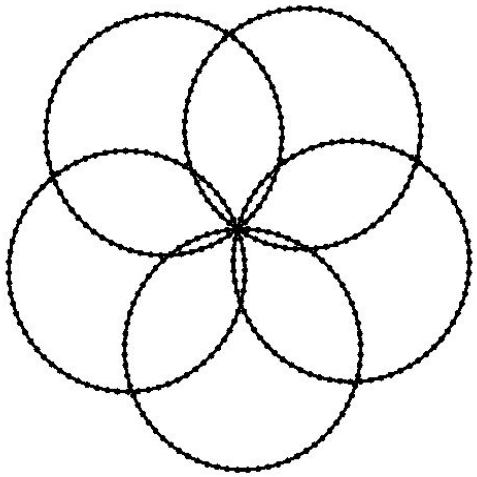


You’ll find the variable “degree” in data.



3. Check the bricks, if it still doesn’t work.

Flower

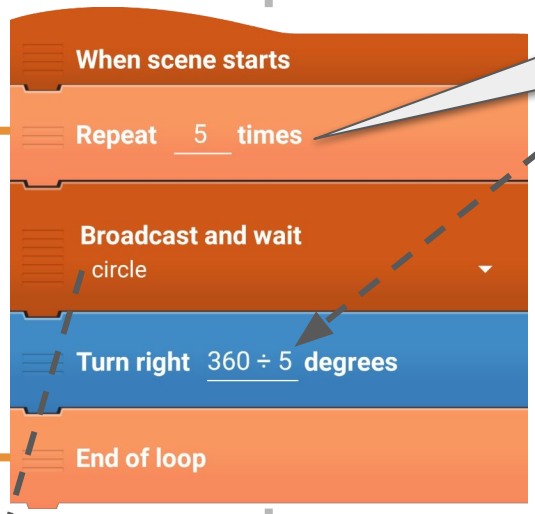


73 x 74.2 mm

1

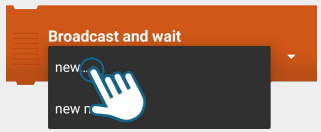
Create a new Embroidery-Object.
(see Create Embroidery-Objects Tutorial)

2



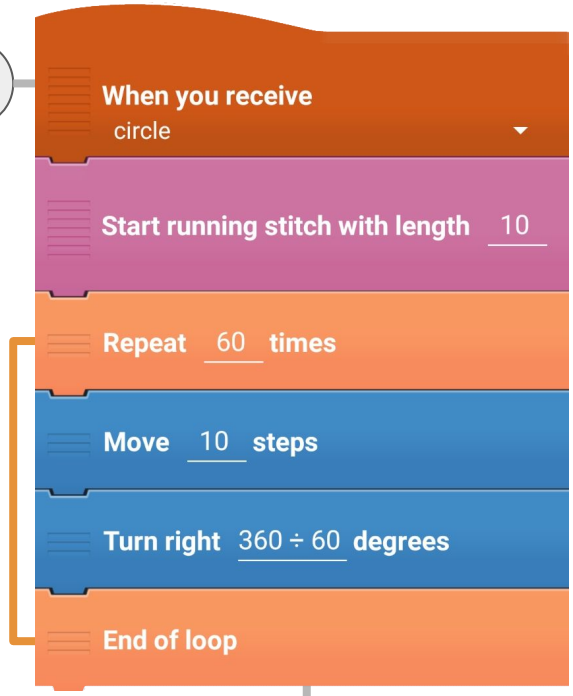
What happens if you type in a different number? Adjust it also in the below brick.
Try it!

Tap “new” to create a new message.



Then choose a name.

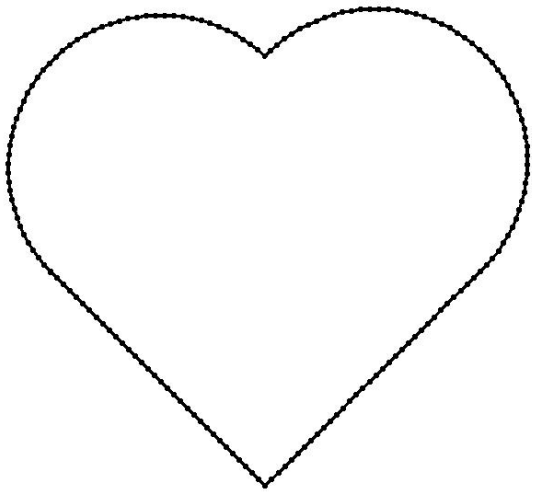
3



4

Check the bricks, if it still doesn’t work.

Heart

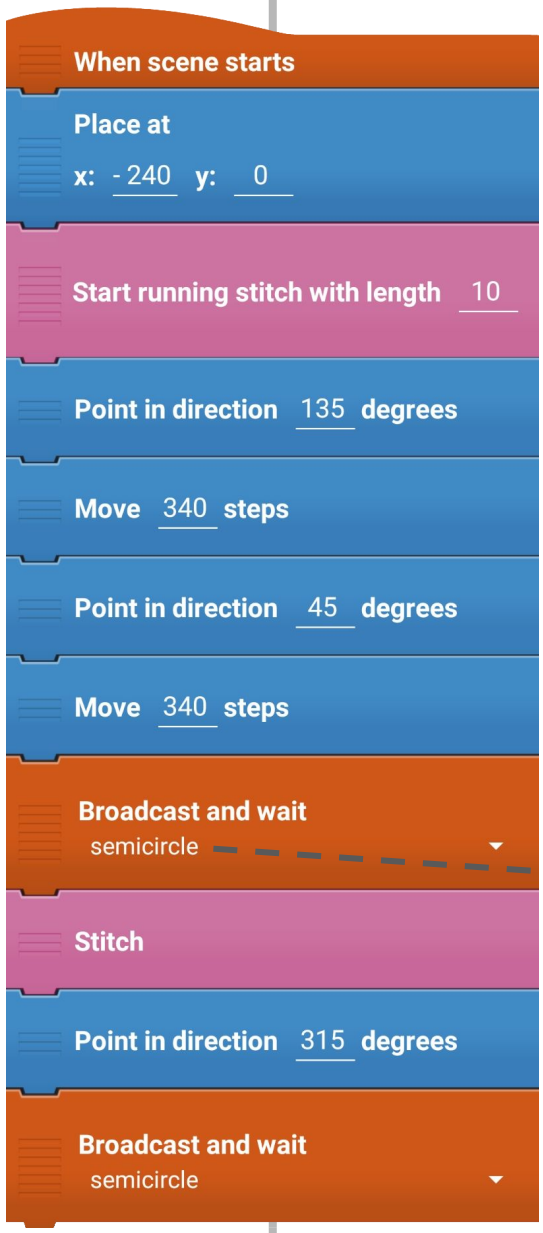


103.6 x 112.8 mm

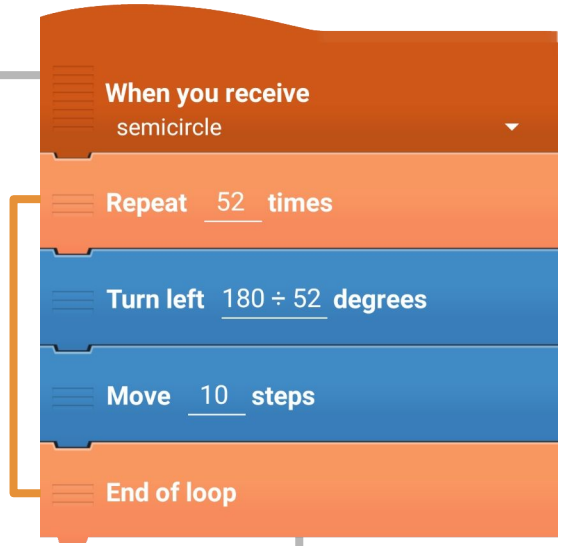
MEDIUM

1. Create a new Embroidery-Object. *(see Create Embroidery-Objects Tutorial)*

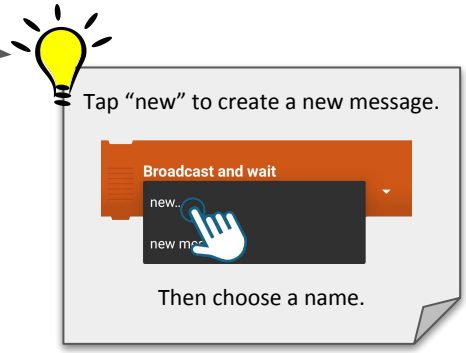
2.



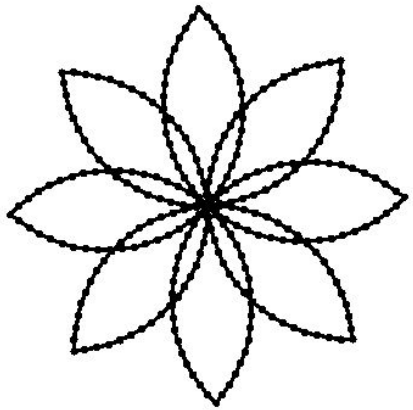
3.



4. Check the bricks, if it still doesn't work.



Lotus

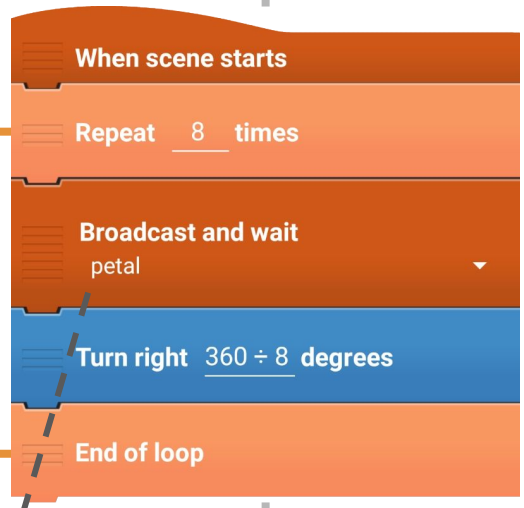


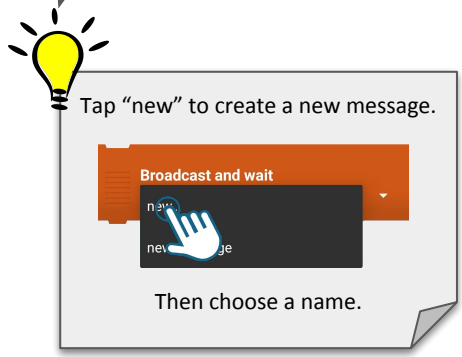
64.8 x 64.8 mm

MEDIUM

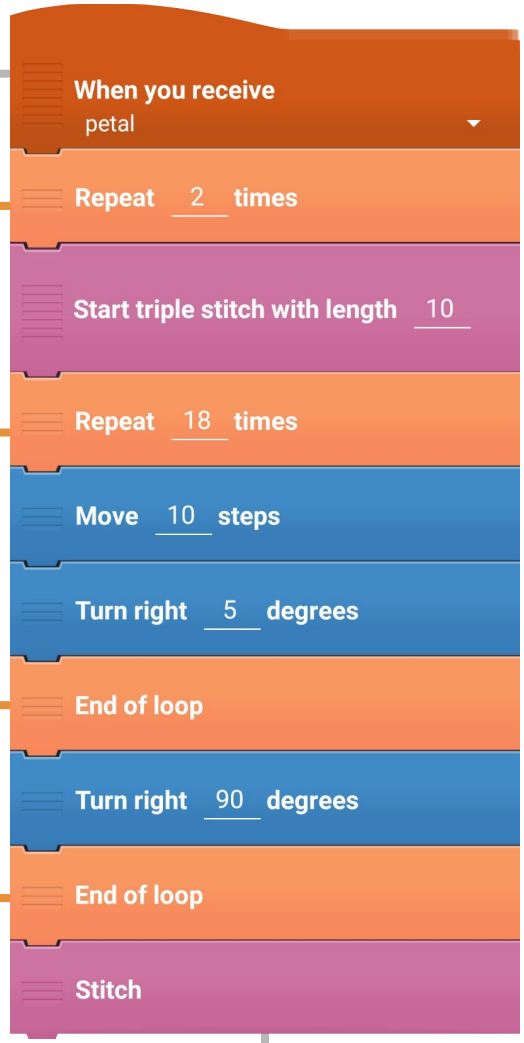
1. Create a new Embroidery-Object. *(see Create Embroidery-Objects Tutorial)*

2.





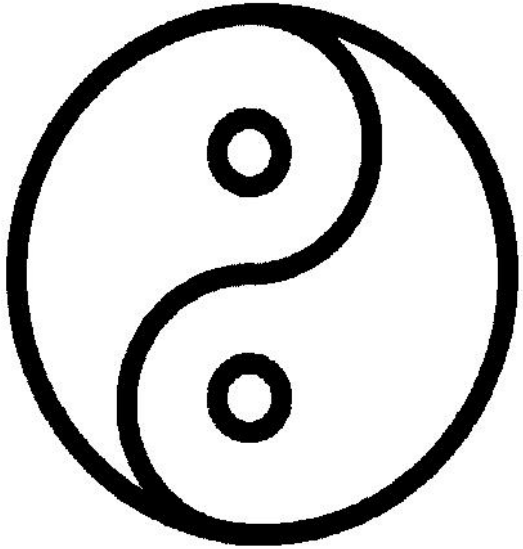
3.



4. Check the bricks, if it still doesn’t work.

Yin & Yang

zigzag



78.4 x 78.4 mm

MEDIUM

TU Graz

CODE'N'STITCH

bits4kids

1 Create a new object:
(see Create Embroidery-Objects Tutorial)

big circle + curve

```
When scene starts
Start zigzag stitch with length 2
and width 10
Repeat 120 times
    Move 10 steps
    Turn left 360 ÷ 120 degrees
End of loop
Point in direction 270 degrees
Repeat 30 times
    Move 10 steps
    Turn right 180 ÷ 30 degrees
End of loop
Repeat 30 times
    Move 10 steps
    Turn left 180 ÷ 30 degrees
End of loop
```

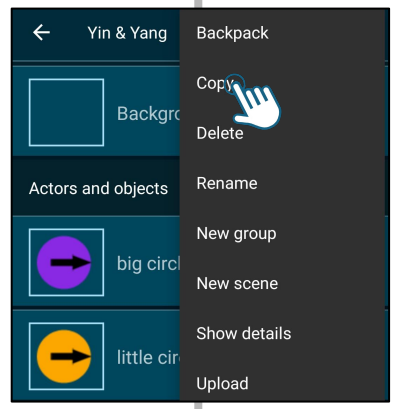
2 Create a second object:

little circle top

```
When scene starts
Place at
X: 0 Y: 255
Start zigzag stitch with length 2
and width 10
Repeat 16 times
    Move 10 steps
    Turn left 360 ÷ 16 degrees
End of loop
```

3 Copy the second object and change the position:

little circle bottom

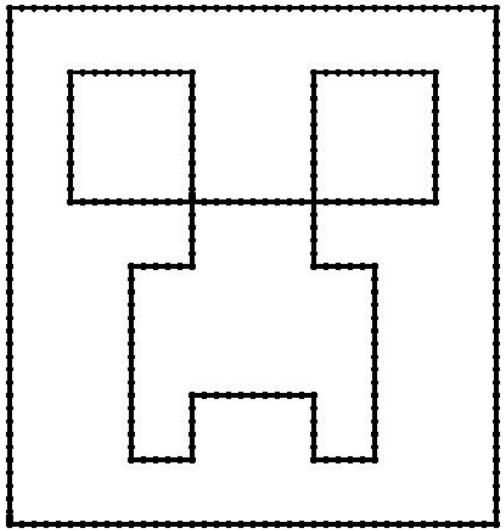



```
When scene starts
Place at
X: 0 Y: 75
Start zigzag stitch with length 2
and width 10
Repeat 16 times
    Move 10 steps
    Turn left 360 ÷ 16 degrees
End of loop
```

4 Check the bricks, if it still doesn't work.

Creeper

Minecraft



80 x 80 mm

MEDIUM

1 Create a new object for the face. *(see Create Embroidery-Objects Tutorial)*

2

```
When scene starts
Place at x: -50 y: 50
Start triple stitch with length 10
Point in direction 270 degrees
Repeat 4 times
    Move 100 steps
    Turn right 90 degrees
End of loop
Point in direction 90 degrees
Move 100 steps
Repeat 4 times
    Move 100 steps
    Turn left 90 degrees
End of loop
Point in direction 180 degrees
Move 50 steps
```

This part belongs to (2).

```
Point in direction 90 degrees
Move 50 steps
Point in direction 180 degrees
Move 150 steps
Point in direction 270 degrees
Move 50 steps
Point in direction 0 degrees
Move 50 steps
Point in direction 270 degrees
Move 50 steps
Point in direction 0 degrees
Move 150 steps
Point in direction 90 degrees
Move 50 steps
Point in direction 2 degrees
Move 50 steps
```

3 Create a new embroidery object for the outer square.

4

```
When scene starts
Place at x: -200 y: 200
Start triple stitch with length 10
Repeat 4 times
    Move 400 steps
    Turn right 90 degrees
End of loop
```

5 Check the bricks, if it still doesn't work.

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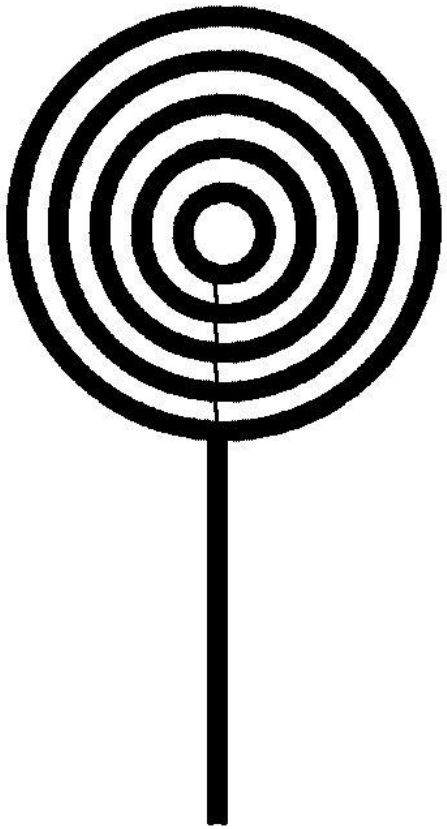
Lollipop



124.6 x 65.6 mm

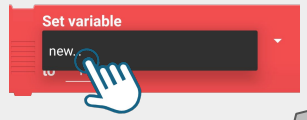
PRO

1 Create a new object: *(see Create Embroidery-Objects Tutorial)*

2

```
When scene starts
Set variable circle size to 20
Repeat 5 times
  Broadcast and wait circle
  Change variable circle size by 20
  Change Y by -30
End of loop
Change Y by 30
Start zigzag stitch with length 2 and width 10
Point in direction 180 degrees
Move 300 steps
```

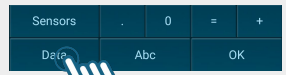
Tap “new” to create a new variable.



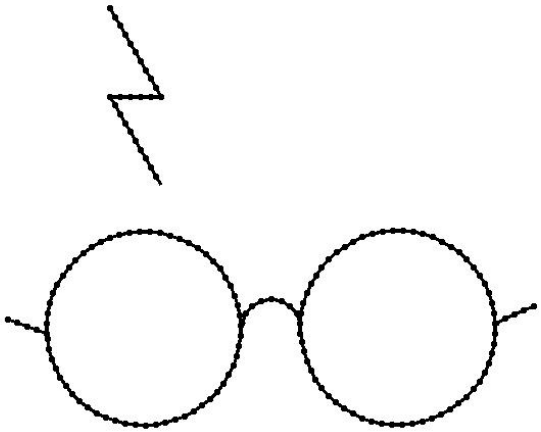
3

```
When you receive circle
Start zigzag stitch with length 2 and width 10
Repeat "circle size" times
  Move 10 steps
  Turn left 360 ÷ "circle size" degrees
End of loop
Stop current stitch
```

You’ll find the variable in data.



Harry Potter



81.8 x 103 mm

PRO

1. Create a new Embroidery-Object for the thunder. *(see Create Embroidery-Objects Tutorial)*

2.
When scene starts
Place at x: -160 y: 230
Point in direction 150 degrees
Start running stitch with length 10
Move 100 steps
Point in direction 270 degrees
Move 50 steps
Point in direction 150 degrees
Move 100 steps

3. Create a second Embroidery-Object for the glasses.

4.
When you receive circle
Move 10 steps
Repeat 60 times
Turn right 360 ÷ 60 degrees
Move 10 steps
End of loop

Tap “new” to create a new message.

5.
When scene starts
Place at x: -260 y: -75
Point in direction 110 degrees
Start running stitch with length 10
Move 40 steps
Point in direction 0 degrees
Broadcast and wait circle
Stop current stitch
Point in direction 90 degrees
Broadcast and wait sew up
Move 192 steps
Point in direction 0 degrees
Start running stitch with length 10
Broadcast and wait sew up

Check out the “Sew up” Tutorial.

This part belongs to (5).

Repeat 9 times
Turn right 180 ÷ 9 degrees
Move 10 steps
End of loop
Point in direction 0 degrees
Broadcast and wait circle
Broadcast and wait sew up
Stop current stitch
Point in direction 90 degrees
Move 192 steps
Point in direction 65 degrees
Broadcast and wait sew up
Start running stitch with length 10
Move 40 steps

6. Check the bricks, if it still doesn’t work.

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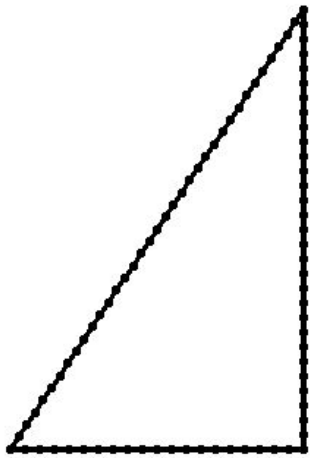
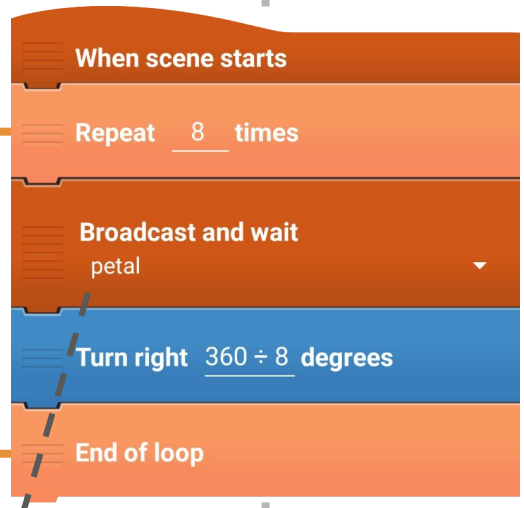
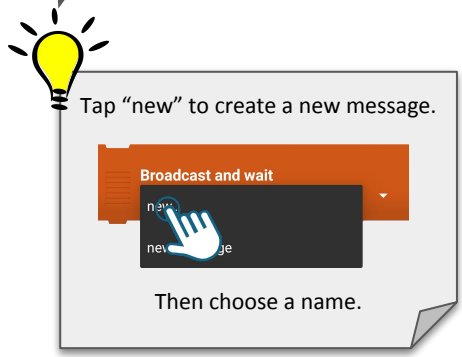
Triangle

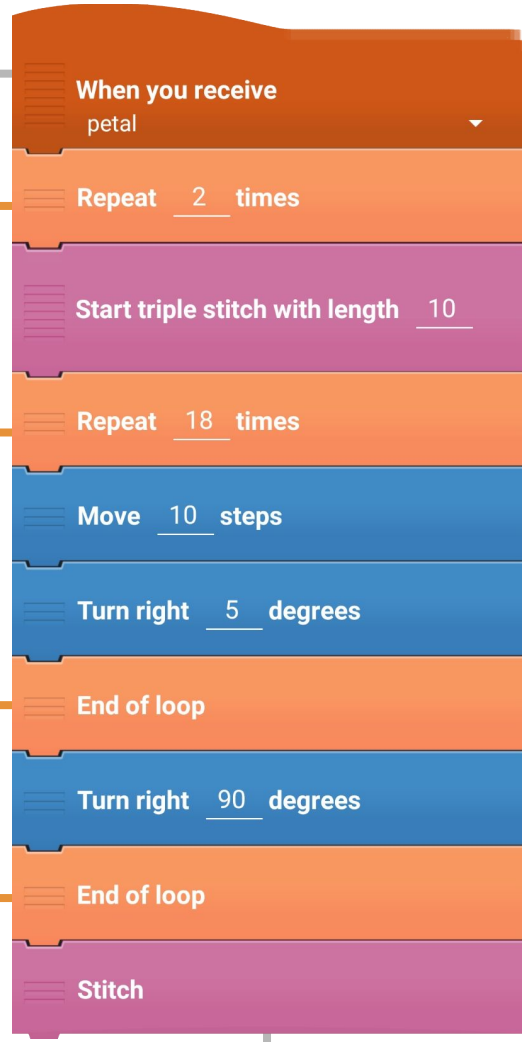


Maths

1. Create a new Embroidery-Object. *(see Create Embroidery-Objects Tutorial)*

2.




3.


4. Check the bricks, if it still doesn’t work.