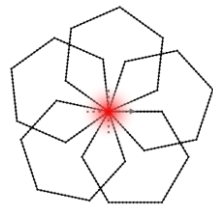
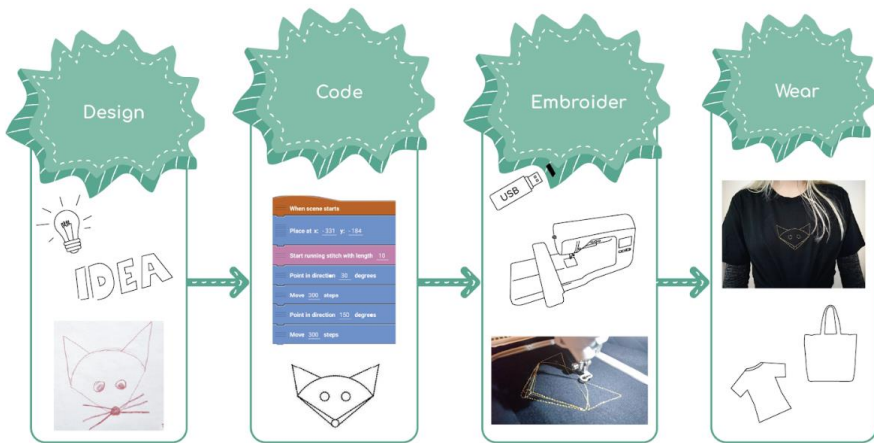


CODE'N'STITCH

Embroidery Designer

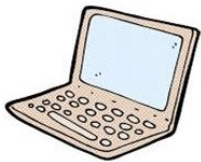




With **Code'n'Stitch** you can create creative designs using your smartphone or tablet. Then you can have them embroidered onto a bag or a t-shirt using an electronic embroidery machine.

As an extra benefit, you'll learn programming!

In which devices is a computer included?



Susan Wojcicki
CEO of Youtube

Which programs /apps do you know?



Instagram



Tim Cook
CEO of Apple

- Programming means creating a computer program or an app?
- The programmer writes **commands** that a computer can understand and execute.
- The computer only understands specific languages, which are called **programming languages**.
- An **algorithm** is a set of instructions to complete a task.

Programming languages:

- Scratch
- Catrobat



Just like a recipe!

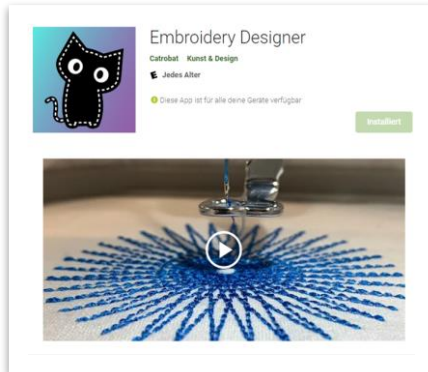




Embroidery Designer

- We use the „Embroidery Designer“ app to create creative embroidery patterns.
- The app is **free**.
- You can install the app yourself and program at home.
- The building blocks look like „Lego“ bricks.
- Programming with the Embroidery Designer is **fun and easy**.

Available for
free at:
Play Store



1. What is **Programming**?

- Create a computer program
- movie
- dessert

2. Which device contains a computer?

- book
- human
- car

3. What is **Catrobot**?

- smartphone
- Programming language
- animal


4. What is important for **programming**?

- How beautiful the program is
- An exact order of commands
- To be as fast as possible

5. Who is able to learn **programming**?

- Adults only
- everyone
- Kids only

1

Click on  to create a new program. Enter a name.

2

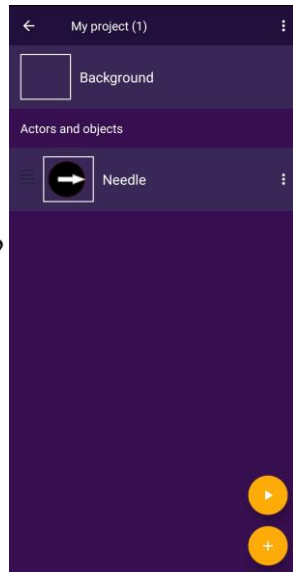
Click on the switch to create a sample project. Click OK.

Example project



3

Here you'll find the object. Tap on it to program.



4

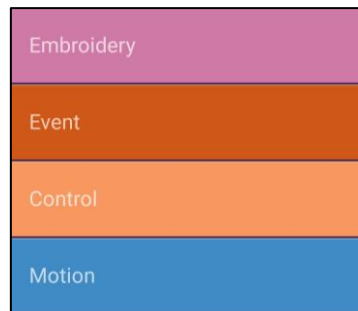
Program the needle



Here you can have a look at your program.

Here you can add new commands.

Similar to Scratch, the commands are organized by color. When you stack them together, they look like Lego bricks.



Running stitch



When scene starts

Place at x: -289 y: 309

Start running stitch with length 10

Move 70 steps

Zigzag stitch



When scene starts

Place at x: -289 y: 309

Start zigzag stitch with length 2
and width 10

Move 70 steps

Triple stitch



When scene starts

Place at x: -289 y: 309

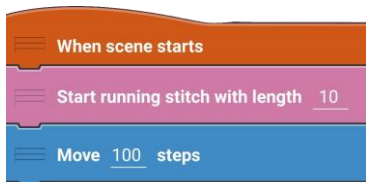
Start triple stitch with length 10

Move 70 steps

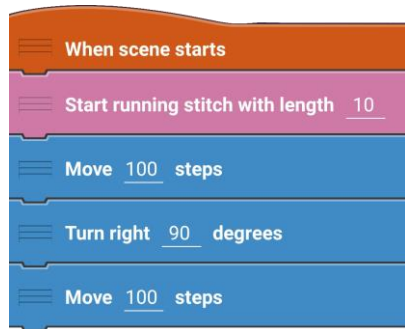
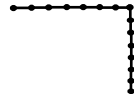
stitch



line

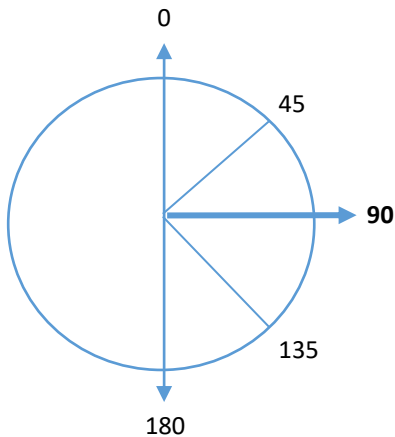


corner



Your assignment:

Program a square!



Did you notice something?
Did you use some bricks more often?
How often?

Brick: loop

A loop is often used in programming.
It contains two bricks.



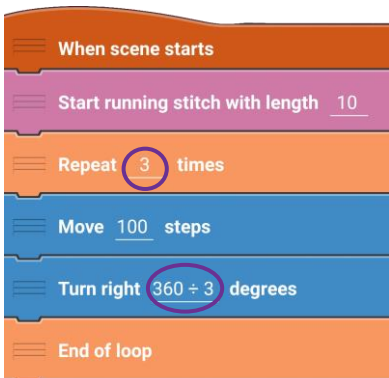
„End of loop“ appears automatically and cannot be moved. All blocks that should be repeated must be placed inside the loop.



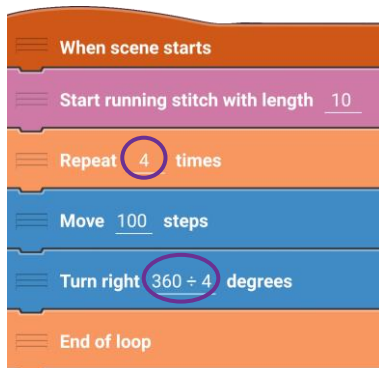
In sports, exercises are often repeated, much like in a loop.



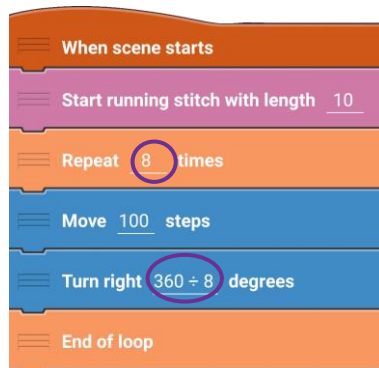
triangle



square



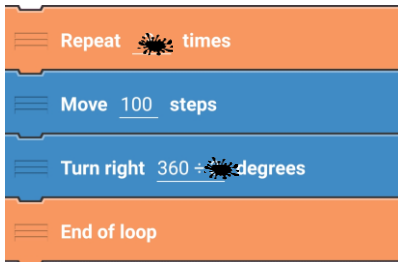
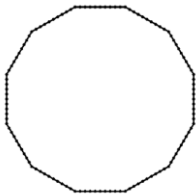
octagon



Your assignment:

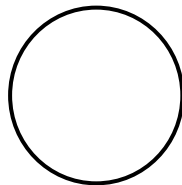
Program a polygon with 12 corners

How often do you have to repeat the loop.
How many degrees
How many degrees do you need to turn?



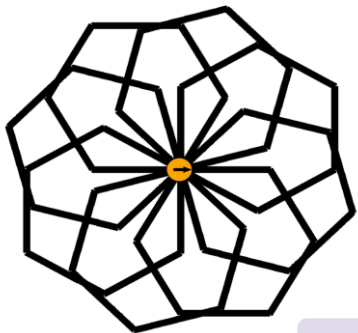
Program a polygon with 20 corners

Do you notice something?



Enter the number of corners into the loop.
The degree of rotation is 3600 degrees divided by
the number of corners.

Flower



The hexagon is repeated 8 times

hexagon

Every hexagon is moved by $360/8 = 40$ degree.

When scene starts

Place at x: -52 y: 183

Start zigzag stitch with length 2
and width 10

Repeat 8 times

Repeat 6 times

Move 200 steps

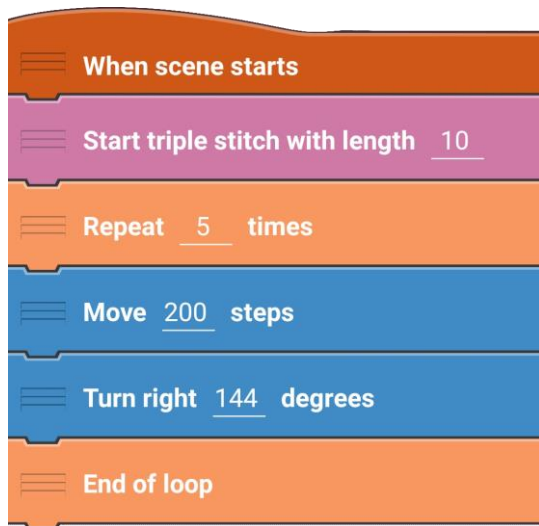
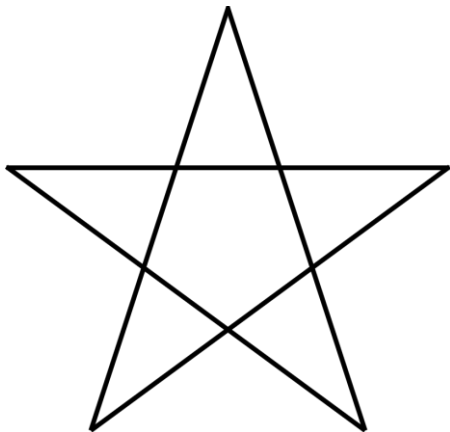
Turn right $360 \div 6$ degrees

End of loop

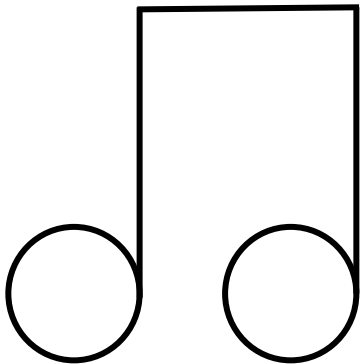
Turn right $360 \div 8$ degrees

End of loop

Stars



Note



note left

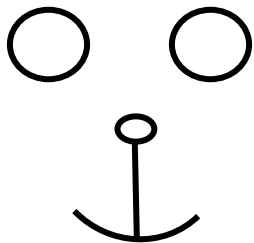
- When scene starts
- Start triple stitch with length 10
- Point in direction 180 degrees
- Repeat 20 times
- Move 20 steps
- Turn right 360 ÷ 20 degrees
- End of loop
- Point in direction 0 degrees
- Move 250 steps
- Turn right 90 degrees
- Move 200 steps



note right

- When scene starts
- Move 200 steps
- Point in direction 180 degrees
- Start triple stitch with length 10
- Repeat 20 times
- Move 20 steps
- Turn right 360 ÷ 20 degrees
- End of loop
- Point in direction 0 degrees
- Move 250 steps

Face of an animal



Eyes

```
When scene starts
Start triple stitch with length 10
Repeat 20 times
Move 20 steps
Turn right 360 + 20 degrees
End of loop
Stop current stitch
Move 200 steps
Start triple stitch with length 10
Repeat 20 times
Move 20 steps
Turn right 360 + 20 degrees
End of loop
```



Nose

```
When scene starts
Place at x: 100 y: -190
Point in direction 270 degrees
Start triple stitch with length 10
Repeat 20 times
Turn right 18 degrees
Move 10 steps
End of loop
Point in direction 180 degrees
Move 80 steps
```

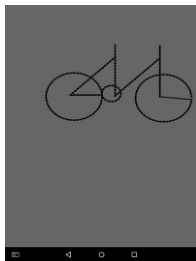


Mouth

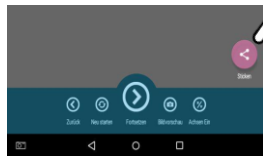
```
When scene starts
Place at x: 180 y: -220
Point in direction 195 degrees
Start triple stitch with length 10
Repeat 7 times
Turn right 20 degrees
Move 30 steps
End of loop
```

Export your design

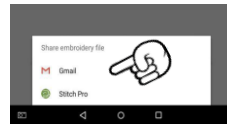
1. Start the program and tap the „Back“ button.



2. Tap on the pink „embroider“ icon



3. Export your design, e. g. via google drive or e-mail. Now you have it on your computer.



4. Transfer the design from your computer to a flash drive. Then you can use the flash drive to transfer the design to the embroidery machine.



Catrobat Community

Additionally, there is the option to upload your patterns to the Catrobat Community.

There, your designs will be saved, and you can share the program with your friends.

You can find many pattern templates and tips & tricks for Code'n'Stitch at <https://wiki.catrobat.org/bin/view/Education/Embroidery/>

