Programming Apps

iCompute

Bitsbox

Decomposition

Pattern Recognition

Logic

Abstraction

Algorithms

iCompute
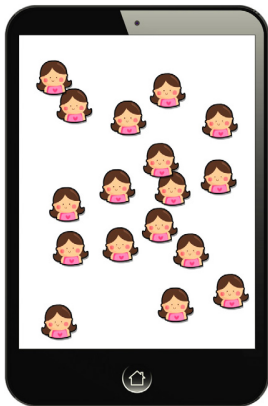www.icompute-uk.com
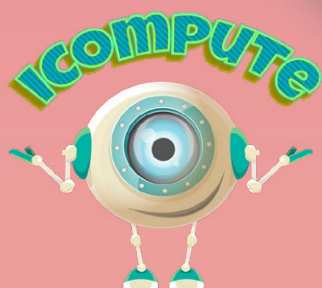
 # 1   Tap the screen to stamp a picture. Tap, tap, tap to create a crowd!

Stamper Girl

```
1  function tap() {
2    stamp('girl',x,y)
3  }
```

Click the **Library** icon
to find thousands of
» *stamps*
» *fills*
» *colors*
» *sounds*
» *and songs!*

Challenges

☐ Can you replace the girl with something else?

☐ Can you add a line of code that sets the background fill color to yellow?

- -

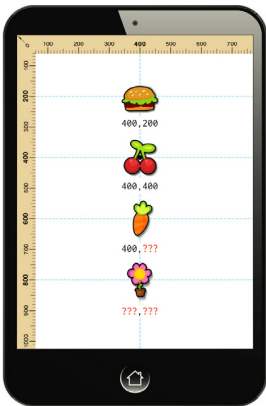**# 2**   Stamp a picture in the middle of the screen.

Big Apple

```
1  fill('green')
2  stamp('apple',500)
```

Challenges

☐ Can you replace the apple with something else?

☐ Can you change the fill color of the background?

☐ Can you make the apple smaller? *Hint: The apple is 500 pixels wide.*

🍔 Corner Store
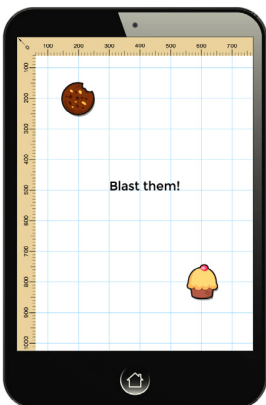
```
1  fill('ruler11')
2  stamp('burger',400,200)
3  stamp('cherry',400,400)
4  stamp('carrot',400,???)
5  stamp('flower',???,???)
```

400,200

400,400

400,???

???,???

Challenges

☐ Can you figure out how to draw the carrot by finishing line 4 of the code?

☐ Can you figure out how to draw the flower?

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---

4   Tap the tasty treats to blow them up!

🧁 Dessert Blaster

```
1  fill('ruler 3')
2  text('Blast them!',300,500)
3  stamp('cookie',200,200).tap = explode
4  stamp('cupcake',600,800).tap = explode
5
6
```

Blast them!

Challenges

☐ Can you change the text to say something else?

☐ Can you change the background to a color?
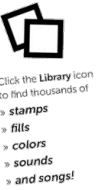
☐ Can you add more exploding objects to the screen?

❤️ Looking for Love

Click the **Library** icon
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» *fills*
» *colors*
» *sounds*
» *and songs!*

```
1  fill('park')
2  girl = stamp('girl 2')
3  boy = stamp('boy')
4
5  function tap() {
6    girl.move(x,y,250)
7    boy.move(x,y,2000)
8  }
```
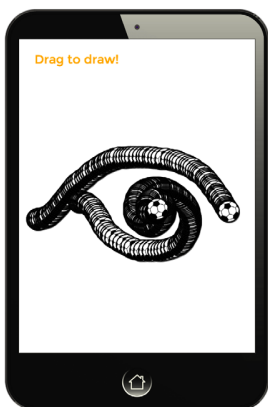
Challenges

☐ Can you make the boy chase something else?

☐ Can you make the girl move faster? *Hint: Her speed is 250.*

- -

6   Drag your cursor on the screen to draw with soccer balls!

⚽ Soccer Draw
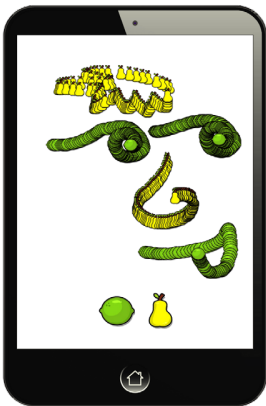
Drag to draw!

```
1  function drag() {
2    stamp('ball',x,y,80)
3  }
4
5  text('Drag to draw!',50,100,'orange')
```

Challenges

☐ Can you make the ball bigger? *Hint: The ball is 80 pixels wide.*

☐ Can you draw with something besides a soccer ball?

☐ Can you change the color of the text from orange to green?

 # 7   Make crazy drawings with limes and pears! Click a fruit to use it as your paintbrush.

🖌 Fruit Painter

```
1   ink = 'lime'
2   stamp('lime',325,900).tap = swapInk
3   stamp('pear',475,900).tap = swapInk
4
5   function swapInk() {
6     ink = this.name
7   }
8
9   function drag() {
10    stamp(ink,x,y,50)
11  }
```

Click the **Library** icon
to find thousands of
» *stamps*
» *fills*
» *colors*
» *sounds*
» *and songs!*

Challenges

☐ Can you draw with different stamps?

☐ Can you change the size of the paintbrush? *Hint: The paintbrush is 50 pixels wide.*

- -

 # 8   Tap the screen to make the rocket blast off!
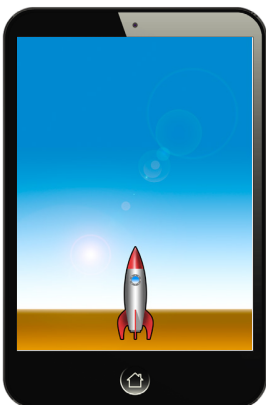
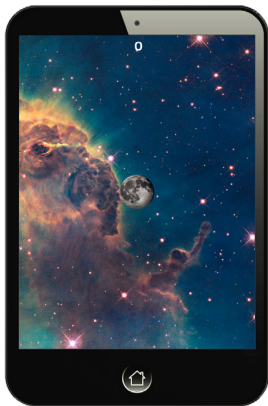## 🚀 321 Blastoff!

```
1   fill('desert sky')
2   ship = stamp('rocket',384,900)
3
4   function tap() {
5     ship.move(384,-100,1000)
6     sound('rocket')
7   }
```

Challenges

☐ Can you make something else blast off instead?

☐ Can you change the background to stars?

☐ Can you make the rocket move faster? *Hint: The speed is 1000 milliseconds.*

9   Blast moons to earn points while listening to awesome music!

Galactyroids

Click the Library icon
to find thousands of
» stamps
» fills
» colors
» sounds
» and songs!

```
1    song('forces',50)
2    fill('stars')
3    points = 0
4    score = text(0, 375, 60, 'white')
5    moon = stamp('moon')
6
7    moon.touch = boom
8
9    function boom() {
10     points = points + 1
11     moon.explode(newMoon)
12     sound('nuke')
13   }
14
15   function newMoon() {
16     score.change(points)
17     moon.move(random(700), random(1000), 1000)
18     moon.unhide()
19   }
```

Challenges

☐ Can you change the moon to something else?

☐ Can you change the background to something else?

☐ Can you make the music louder? *Hint: The volume is 50.*

☐ Can you figure out how to get more points for every moon you blast? *Hint: Try changing line 10.*

1. Visit https://bitsbox.com/code
2. Choose 'Get Started'
3. Create New App ➕

Maze Runner

```
1  fill('maze')
2  bot = stamp('mazebot',190)
3
4  function drag() {
5    bot.move(x,y,300)
6  }
7
```

Lines 4, 5 and 6 tell the robot to move when you drag.

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drag() is a basic Bitsbox command. It tells your app what to do when someone drags their cursor (or their finger) on the screen.

Challenges

☐ Try substituting 'maze2' on line 1

☐ Can you change the background to something else?

Hal Animator

```
1   hal = stamp('hal')
2   poses = []
3   poses[1] = 'hal surprised'
4   poses[2] = 'hal wave'
5   poses[3] = 'hal party'
6
7   i = 1
8   function tap() {
9     hal.change(poses[i])
10    i = i + 1
11    if (i == poses.length) { i = 1}
12  }
```

🧠 Teach Hal some new moves.

When you're coding, sometimes it's handy to make lists. These lists are called arrays.

Line 2 creates a new array called poses. Lines 3, 4 and 5 each put a different stamp into the array. Each of these stamps is Hal in a different pose.

Challenges

☐ Try adding these lines of code after line 5

☐
```
poses[4] 'hal hello'
poses[S] 'hal jump'
poses[6] 'hal scared'
```