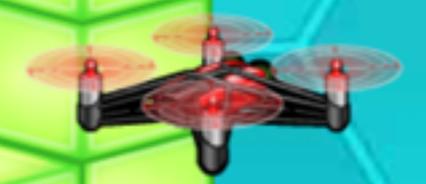
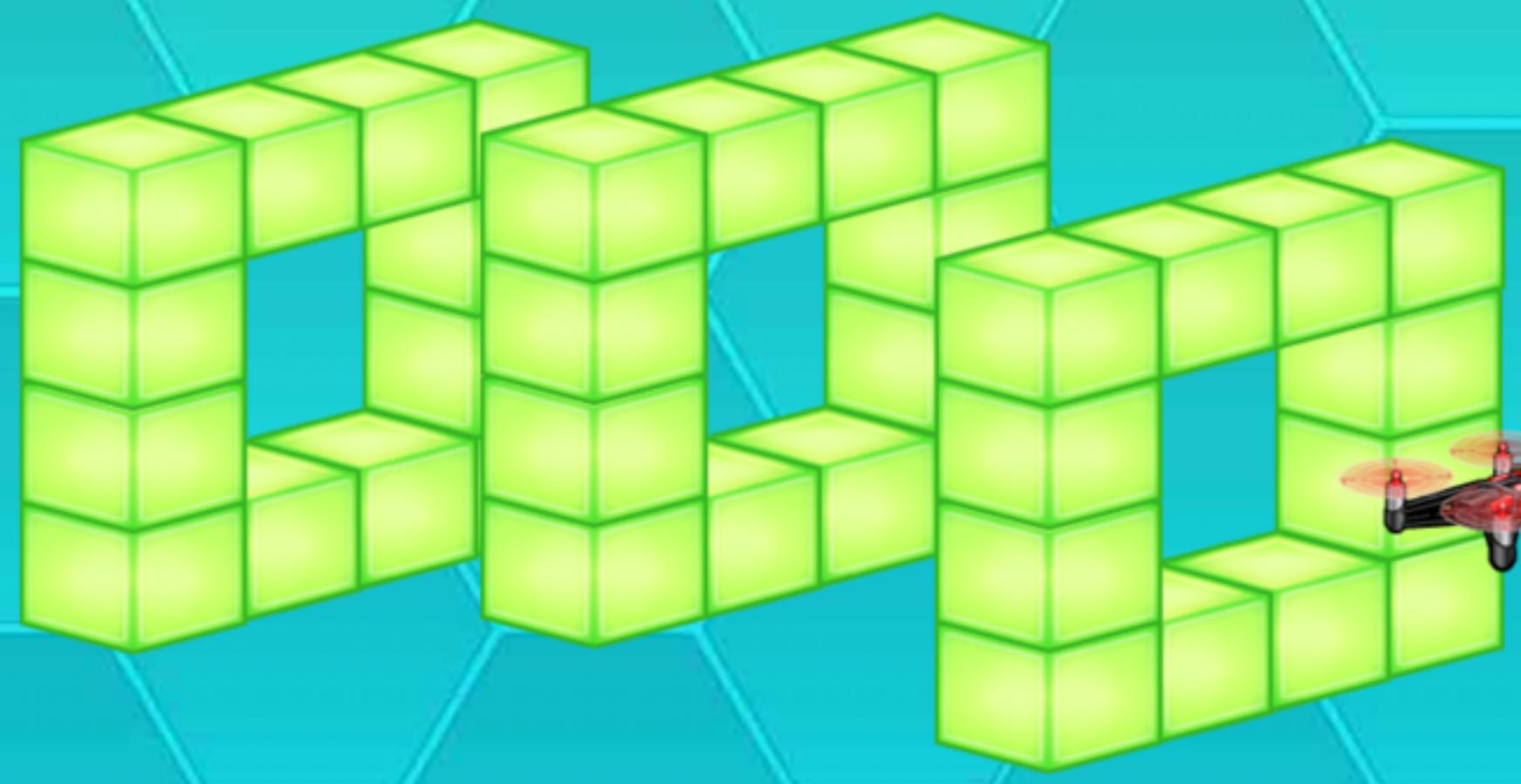


```
when I receive [ ]
set speed to 100
forward for 1
```

```
when I receive take off
take off
```



# Crash Course

# Puzzle Solutions

\*If you find that the order of these puzzles does not match the order in the app, please update your app to the newest version.



**Tynker is a complete solution that teaches kids how to code through puzzles and online courses.**

## **What do these puzzles teach?**

---

These puzzles are designed to introduce programming concepts and computational thinking skills in a fun way.



### **Programming Concepts**

- Sequencing
- Repetition
- Conditional Statements
- Debugging

### **Computational Thinking**

- Problem Decomposition
- Pattern Recognition
- Abstraction
- Algorithmic Thinking
- Automation

# Crash Course Puzzles 1-4

1

set speed to 100 %  
roll for 1 seconds  
on start  
set speed to 100 %  
roll for 1 seconds

2

set speed to 100 %  
roll for 1 seconds  
turn right by 90 degrees  
on start  
set speed to 100 %  
roll for .5 seconds  
turn right by 90 degrees  
roll for .5 seconds

3

set speed to 100 %  
roll for 1 seconds  
turn right by 90 degrees  
repeat 1  
roll for .5 seconds  
on start  
set speed to 100 %  
repeat 4  
roll for .5 seconds  
turn right by 90 degrees

4

set speed to 100 %  
roll for 1 seconds  
turn right by 90 degrees  
turn left by 90 degrees  
repeat 1  
roll for .5 seconds  
on start  
set speed to 100 %  
repeat 2  
roll for .5 seconds  
turn right by 90 degrees  
roll for .5 seconds  
turn left by 90 degrees

# Crash Course Puzzles 5-7

5



Scratch script for puzzle 5:

- set speed to 100 %
- roll for 1 seconds
- when actor touched:
  - set speed to 100 %
  - roll for .25 seconds

The puzzle environment shows a Sphero robot on a path of green and orange blocks. A 'NEW' badge is visible in the top right corner.

6



Scratch script for puzzle 6:

- set speed to 100
- roll for 1 seconds
- turn right by 90 degrees
- turn left by 90 degrees
- repeat 1:
  - roll for .25 seconds
- repeat 3:
  - roll for .25 seconds
  - turn right by 90 degrees
  - roll for .25 seconds
  - turn left by 90 degrees

The puzzle environment shows a Sphero robot on a path of purple blocks. A 'NEW' badge is visible in the top right corner.

7



Scratch script for puzzle 7:

- turn on light true
- on start:
  - turn on light true

The puzzle environment shows three light bulbs labeled 'Light 1'. A 'NEW' badge is visible in the top right corner.

7



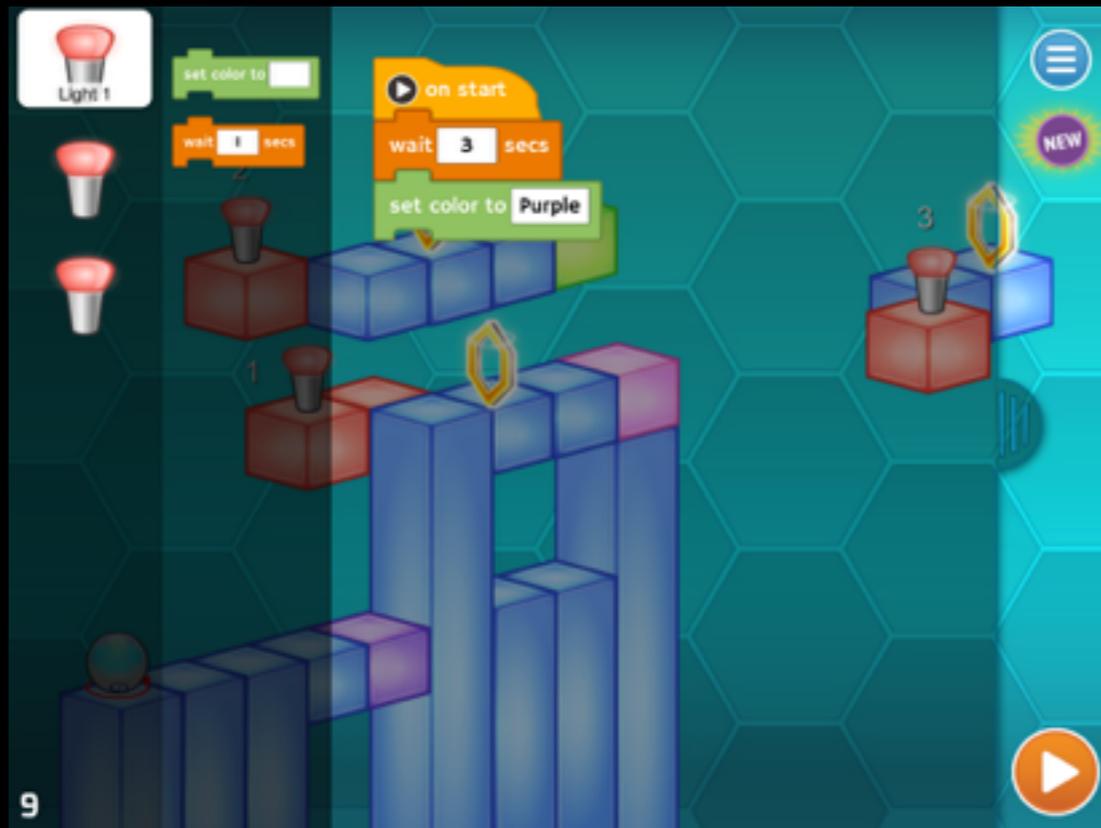
Scratch script for puzzle 7:

- turn on light true
- on start:
  - turn on light true

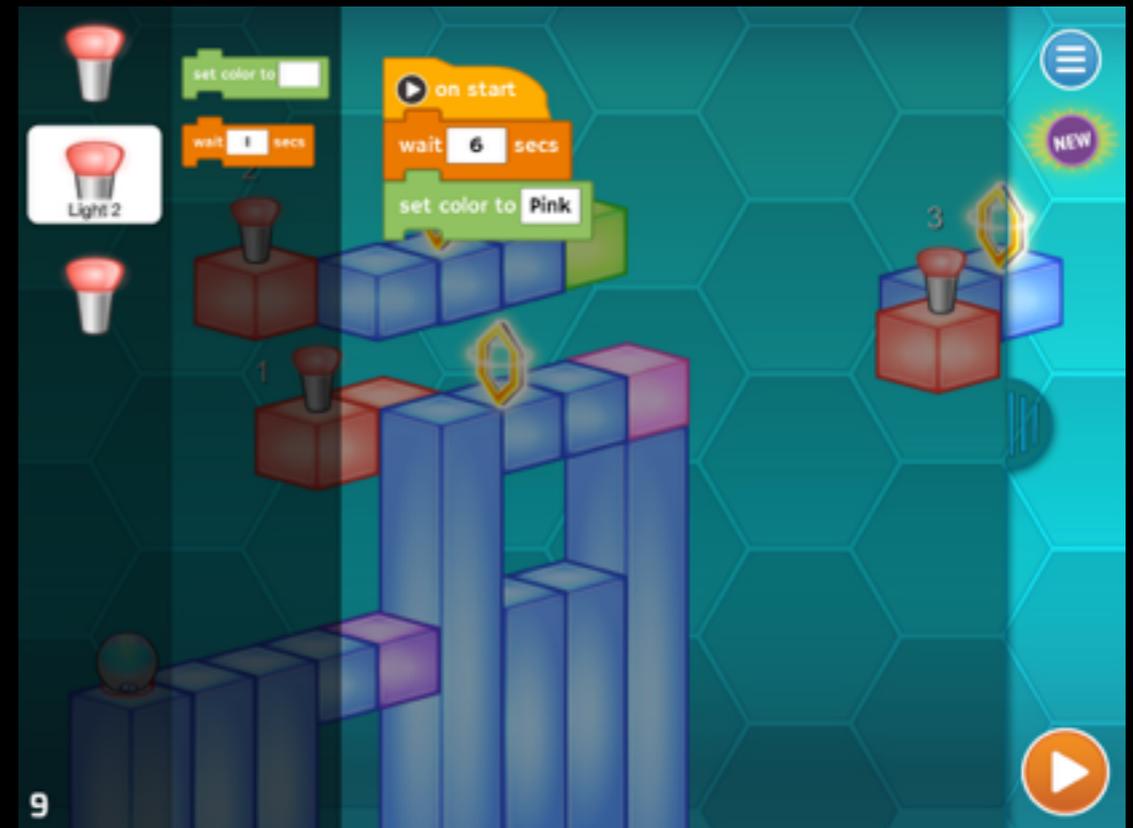
The puzzle environment shows two light bulbs labeled 'Light 2'. A 'NEW' badge is visible in the top right corner.



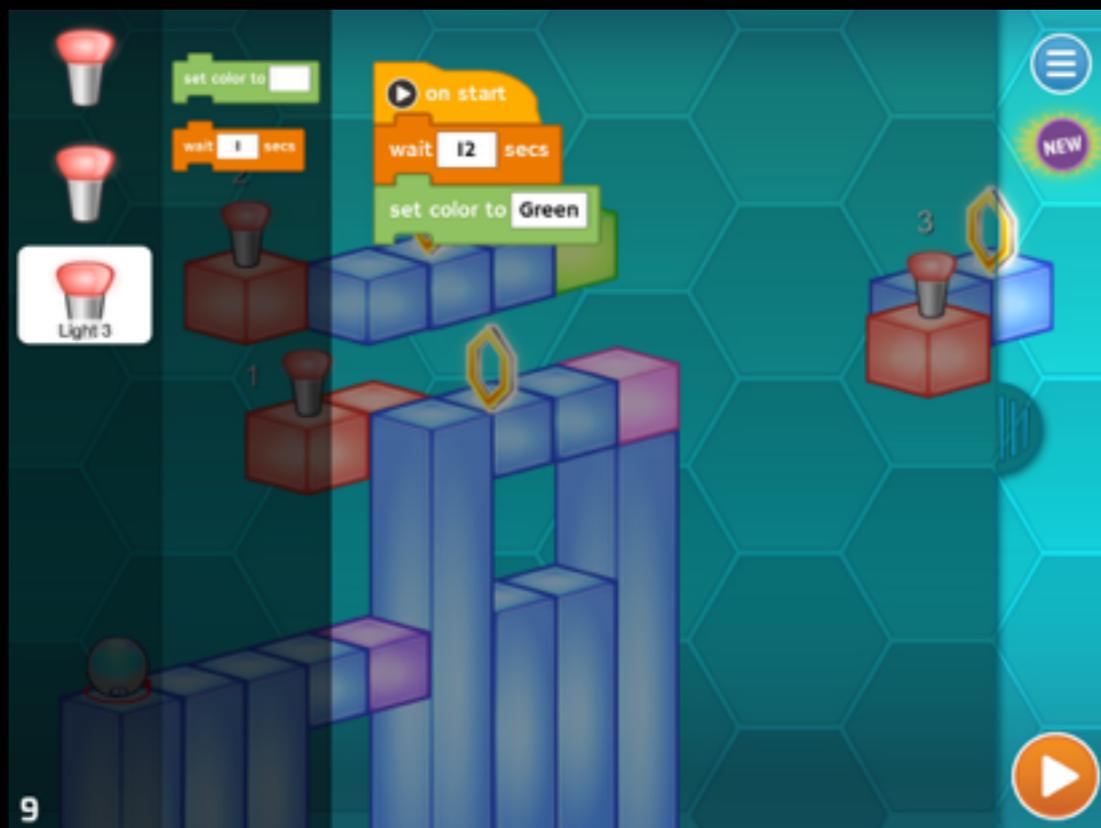
# Crash Course Puzzles 9-10



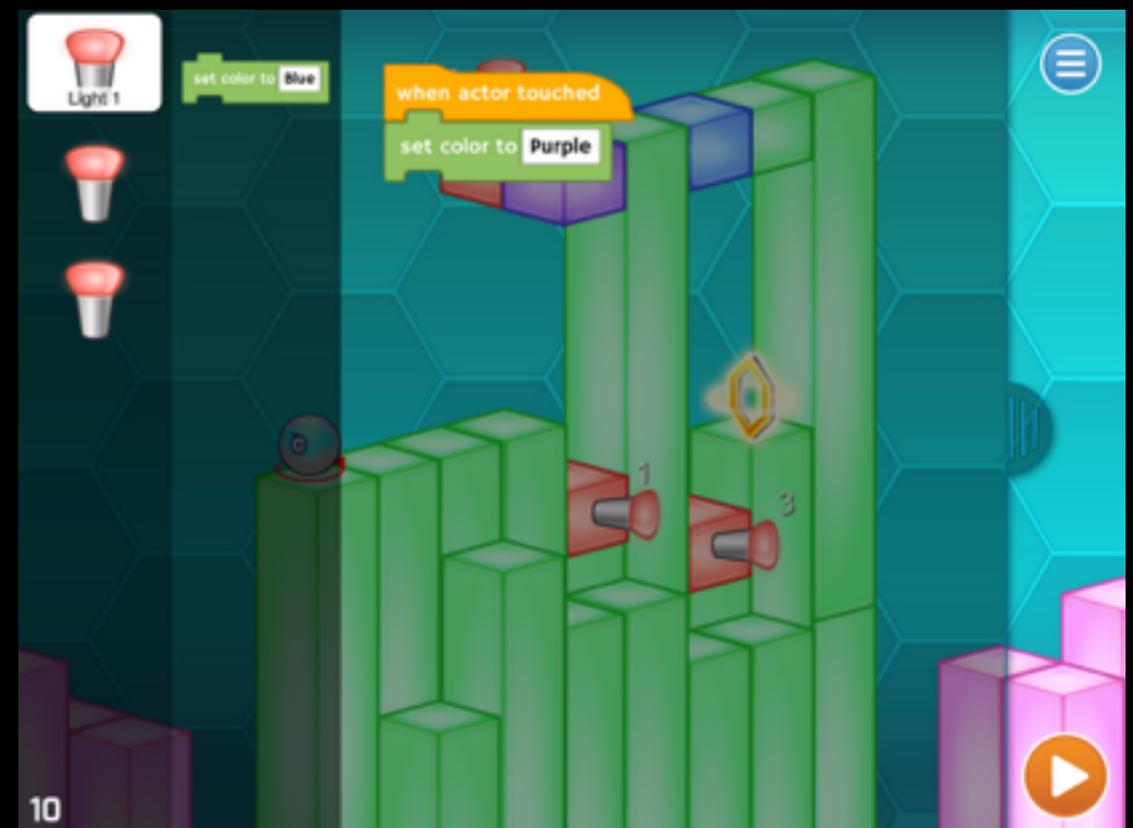
Scratch puzzle 9: Light 1 sequence. The script includes: set color to [white], on start, wait 1 secs, wait 3 secs, set color to Purple. The stage shows a ball on a platform with a light labeled '1' and a target labeled '3'.



Scratch puzzle 9: Light 2 sequence. The script includes: set color to [white], on start, wait 1 secs, wait 6 secs, set color to Pink. The stage shows a ball on a platform with a light labeled '1' and a target labeled '3'.



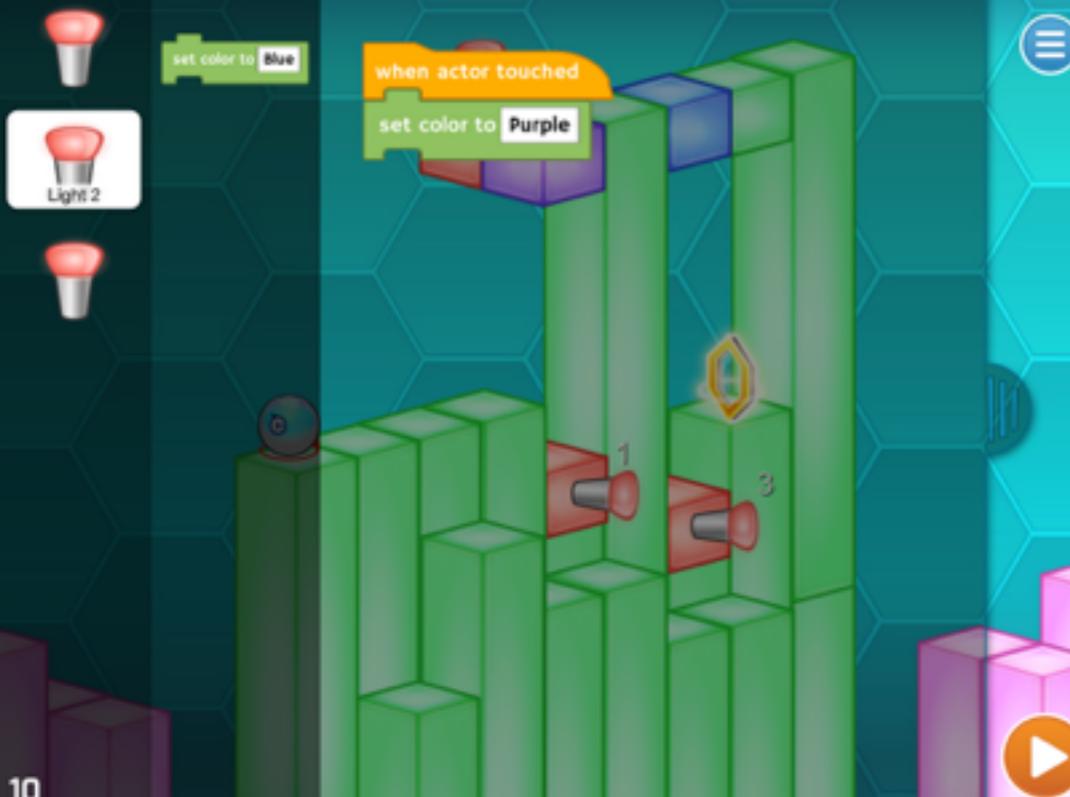
Scratch puzzle 9: Light 3 sequence. The script includes: set color to [white], on start, wait 1 secs, wait 12 secs, set color to Green. The stage shows a ball on a platform with a light labeled '1' and a target labeled '3'.



Scratch puzzle 10: Light 1 sequence. The script includes: set color to Blue, when actor touched, set color to Purple. The stage shows a ball on a platform with a light labeled '1' and a target labeled '3'.

# Crash Course Puzzles 10-11

10

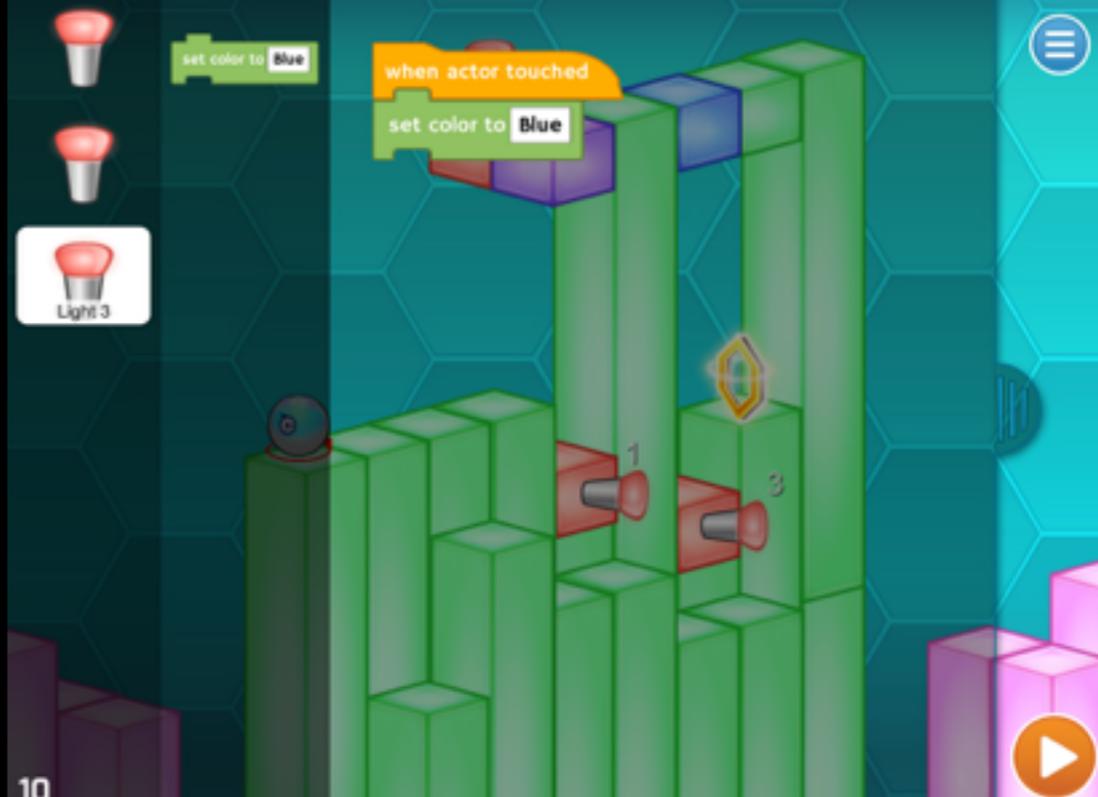


Scratch script for puzzle 10:

- set color to Blue
- when actor touched
- set color to Purple

The puzzle scene features a Sphero robot on a green block structure with two red push buttons labeled 1 and 3. A yellow key icon is on a higher block. The background is a teal wall with a hexagonal pattern.

10

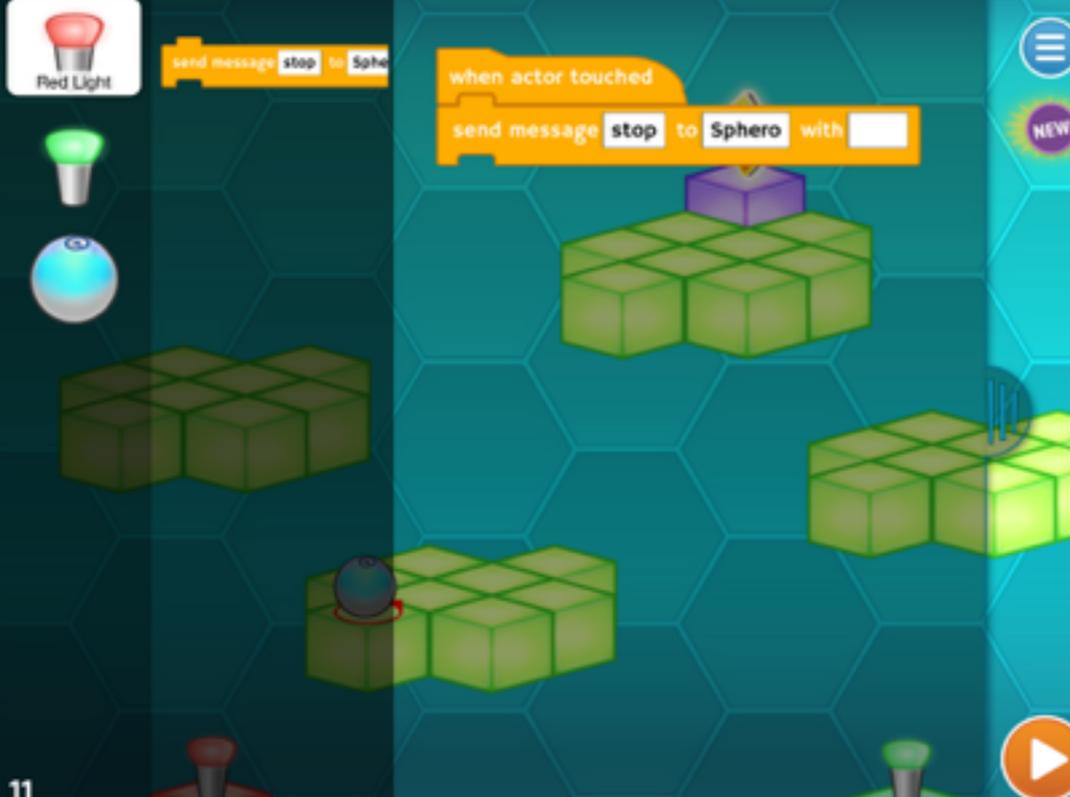


Scratch script for puzzle 10:

- set color to Blue
- when actor touched
- set color to Blue

The puzzle scene is identical to the first image, showing the Sphero robot and the block structure.

11

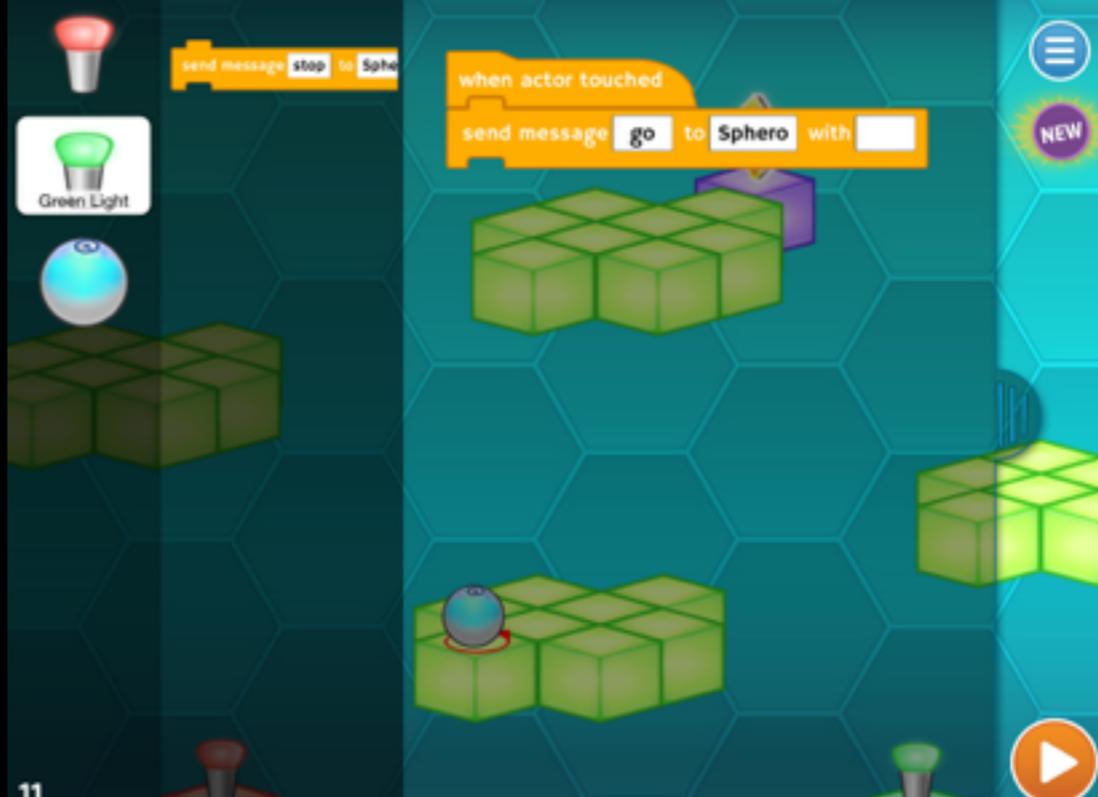


Scratch script for puzzle 11:

- Red Light
- send message stop to Sphero
- when actor touched
- send message stop to Sphero with [ ]

The puzzle scene features a Sphero robot on a green block structure. A red light is on a block to the left, and a green light is on a block to the right. A yellow key icon is on a purple block. A "NEW" badge is in the top right corner.

11



Scratch script for puzzle 11:

- Green Light
- send message stop to Sphero
- when actor touched
- send message go to Sphero with [ ]

The puzzle scene is identical to the first image of puzzle 11, showing the Sphero robot and the block structure.

# Crash Course Puzzles 11-12

11

when I receive **go**  
start rolling

when I receive **stop**  
stop moving

Sphero

start rolling  
stop moving

NEW

12

roll for **1** seconds

set speed to **100** %

turn right by **90** degrees

turn left by **90** degrees

when I receive **turn left**  
turn left by **90** degrees

when I receive **turn right**  
turn right by **90** degrees

when I receive **go forward**  
set speed to **100** %  
roll for **.25** seconds

Sphero

12

send message **go forward** to [actor]

when actor touched  
send message **turn left** to **Sphero** with [ ]

Light 1

12

send message **go forward** to [actor]

when actor touched  
send message **go forward** to **Sphero** with [ ]

Light 2

# Crash Course Puzzles 12-15

12

send message go forward to  
when actor touched  
send message turn right to Sphero with

Light 3

13

Drone  
take off  
land  
on start  
take off  
land

14

Drone  
set speed to 100 %  
forward for 1 seconds  
take off  
land  
on start  
set speed to 100 %  
take off  
forward for 1 seconds  
land

15

Drone  
set speed to 100 %  
forward for 1 seconds  
up for 1 seconds  
take off  
land  
repeat 3  
on start  
set speed to 100 %  
take off  
repeat 3  
forward for .5 seconds  
up for .25 seconds  
land

# Crash Course Puzzles 16-17

16

The script for the Drone actor is as follows:

- on start
- set speed to 100
- take off
- repeat 3
  - up for .25 seconds
  - forward for .25 seconds
  - left for .25
- land

Additional script blocks on the left side of the workspace:

- set speed to 100
- forward for 1 seconds
- take off
- land
- left for 1
- up for 1 seconds
- repeat 3

17

The script for the Red Light actor is as follows:

- when actor touched
- send message take off to Drone

The script for the Green Light actor is as follows:

- when actor touched
- send message land to Drone with [ ]

17

The script for the Green Light actor is as follows:

- when actor touched
- send message take off to Drone

The script for the Red Light actor is as follows:

- when actor touched
- send message go forward to Drone with [ ]

17

The script for the Blue Light actor is as follows:

- when actor touched
- send message take off to Drone

The script for the Green Light actor is as follows:

- when actor touched
- send message take off to Drone with [ ]

# Crash Course Puzzles 17-18

17

when I receive **take off**

forward for **1**

take off

land

when I receive **take off**

take off

when I receive **go forward**

forward for **.25**

when I receive **land**

land

Drone

Light 1

18

Light 1

when I receive **step1**

set color to **Red**

on start

set color to **Green**

when I receive **step1**

set color to **Red**

18

Light 2

when I receive **step1**

set color to **Green**

18

Light 1

Drone

take off

set speed to **100 %**

when I receive **step1**

repeat **10**

forward for **1**

land

turn left by **90** degrees

when I receive **step1**

set speed to **100 %**

take off

repeat **3**

forward for **.5**

turn left by **90** degrees

land

# Crash Course Puzzle 18

The image shows a Scratch script for a Sphero robot puzzle. The script is as follows:

```
on start  
  roll for .5 seconds  
  broadcast step1  
  repeat 3  
    roll for .5 seconds  
    turn left by 90 degrees  
  repeat 10  
    broadcast step1  
  set speed to 100 %  
  roll for 1 seconds  
  turn left by 90 degrees
```

The script is set to run on a Sphero robot in a 3D environment with purple pillars and a red cube. The number 18 is displayed in the bottom left corner.

# Ready for More?

Tynker coding puzzles are created using Tynker's visual programming language. Kids can create their own puzzles and apps using Tynker too!

Tynker's self-paced online courses provide guided tutorials and powerful creativity tools to inspire kids of all ages to bring their creative ideas to life. Over 26 million kids have started learning programming at home, school, after-school programs, and summer camps using Tynker.



Learn more at [tynker.com/courses](https://tynker.com/courses)