

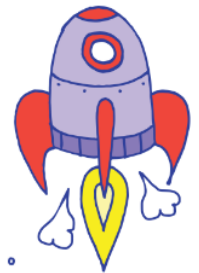
SCRATCH Lunar Lander

Register/login at <https://scratch.mit.edu>

Use positive and negative speed to control a rocket landing.



- 1) Choose a nice planet background to land on.
- 2) Create a new rocket sprite and adjust the size.
- 3) **X** marks the landing spot. Add a **Button5** sprite, call it **X**, and put it below the rocket.
- 4) Create a variable called **speed** to control the rocket.
- 5) Change **speed** to a slider (right-click on it).
- 6) For positive and negative speed **change slider range** to: -10 to 10 (right-click on it).



Positive speed makes it go up, negative speed goes down.

- 7) Add a **forever** loop to the rocket to **change y by the speed**.

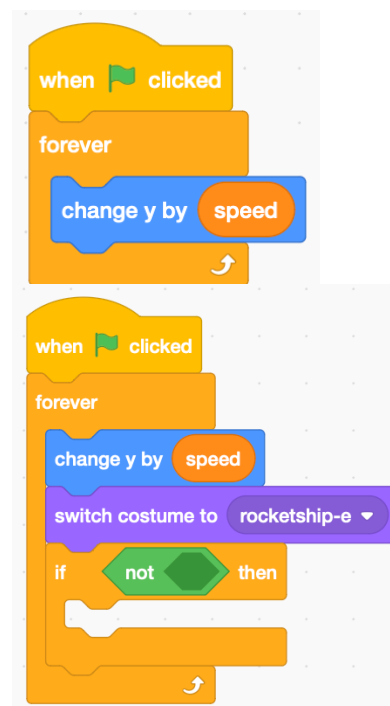
*Is the rocket touching the **X**?*

*How can we ignore the flame touching **X**?*

- 8) Inside the loop, **switch costume** to one without a rocket flame.

*Carry on flying if it has **not** landed.*

- 9) Add an **if** block, with a **NOT** operator.



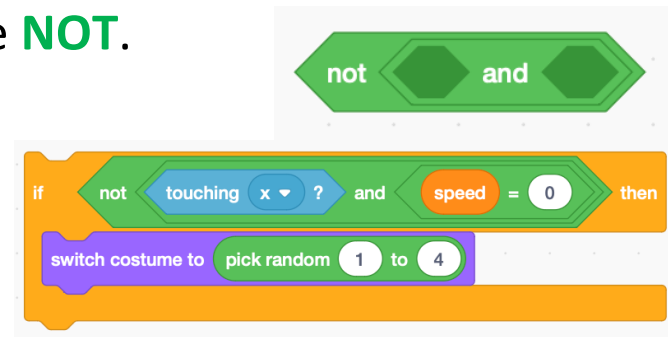
*The rocket can only land if it is touching the **X** **AND** the rocket isn't moving (speed=0).*

10) Add an **AND** operator inside **NOT**.

11) On one side of the **AND**, test for the rocket **touching X**.

12) On the other side of the **AND**, add a test for **speed=0**.

13) Inside the **if** block, **switch costume** back to one with a flame to show the rocket firing.

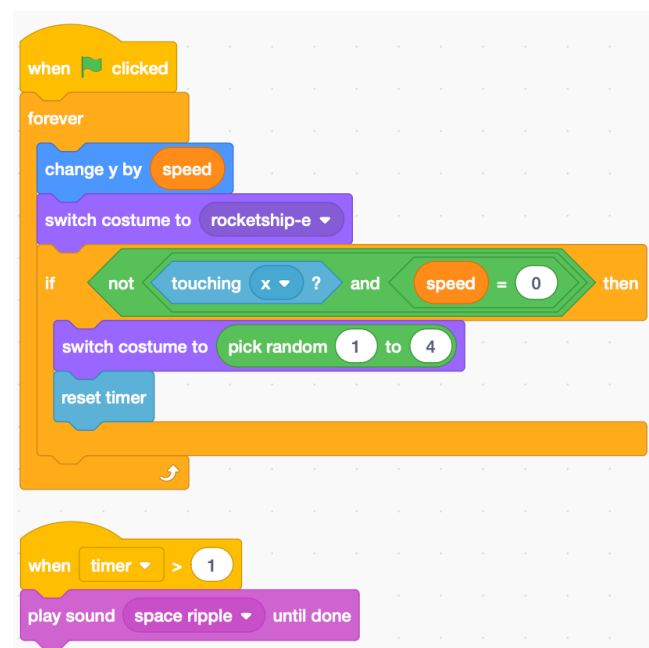


*The rocket has landed if it's touching the landing spot, and the speed isn't changing. Use a **timer** to count how long it's been since the engine last fired.*

14) **Reset timer** to 0 every time we switch to a rocket firing costume.

15) When the **timer** reaches **1 second** it's landed.

16) **Play** a space sound on landing.



Make the game harder by making the rocket or X smaller.

Save your code with a good name. **File > Save now**