

# Jumping

Jumping from floor to floor.



# Jumping



Get ready

Chose a sprite or draw your own, then add two small colored points under the feets:



We will use them to detect when the sprite touches the ground.

Finally we need two variables:

y-speed

jumping

Try this code



Initialize the jump variables and use y-speed to move up and down

Try this code



forever

If it touches the ground

if color red is touching green ? then

if key space pressed then

set y speed to 10

Start a jump  
on space.

set jumping to 1

else

set jumping to 0

Stop jumping.

if jumping = 1 then

if y-speed > -10 then

On the way  
up slow down,  
speed up  
when going  
down.

change y-speed by -0.5



Click the green  
flag to start

Do it

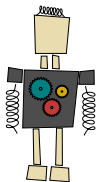
## How it works

The first part of the program initializes the vertical (y) speed, the "jumping state" and the initial position to 0.

Then it starts an infinite loop that takes care of the vertical movement by using the y-speed variable.

The second part of the program keeps on checking if the red points are touching the ground. If it's the case, it starts a new jump when the space key is pressed. Or stops the jump if we just landed on the ground.

While the character is jumping, the vertical speed is reduced by 0.5 until the maximal downwards speed of -10 is reached.



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Based on <https://wiki.scratch.mit.edu/wiki/Jumping>