Give the player the ability to climb.

Climbing is another way for the player to move around and progress through the level. Ladders can be used to let players reach spots that would have been impossible with jumping. They can also be used to allow players to climb down into the depths of a level to explore what lies below. For climbing we will check to see if we are colliding with a ladder object. If we are, we will move our player up or down depending on the keys pressed.

Before we get started: Create a ladder sprite. Name it “Sprite_Ladder”. Go to Transform → Resize Canvas to make the ladder sprite 64 x 64. Open up the sprite and draw your ladder. Note: Only draw a small section of your ladder. We will make it stackable. Make a ladder object. Creat a new object. Name is Object_Ladder and set the sprite to Sprite_Ladder.

Object_Player

Event: Step <Step>
Action: Check object
Applies to: Self
Object: Object_Ladder
x = 0
y = 0
Check relative

[same event]  
Action: Start block

[same event]  
Action: Set gravity
Applies to: Self
Direction: 270
Gravity: 0
NOT Relative

[same event]  
Action: Set vertical speed
Applies to: Self
Vertical speed: 0
Not Relative

[same event]  
Action: End block

[else]  
Action: Else

We are adding these additional actions to our Step Event to account for colliding with the ladder. If you were to jump into a ladder, you should “hang on” to it and not fall back to solid ground. To do this, we need to turn off gravity when the player is colliding with the ladder.

NOTE: Your player must have the Move: Player (Gravity) attributes in order for the ladder to be useful. The gravity code must be put after the Else action in order for the Ladder to work. See the Move: Player (Gravity) card for instructions on how to set the gravity for the player in your game.
Add the following actions above what is already in the Keyboard <Up> event under your Object_Player.

**Object_Player**

**Event: Keyboard <Up>**
- Action: Check object
  - x = 0
  - y = 0
- Check Relative

[**same event**]
- Action: Start block

[**same event**]
- Action: Check empty
  - x = 0
  - y = -1
- Objects: Only solid
- Check Relative

[**same event**]
- Action: Jump to position
  - x = 0
  - y = -5
- Check Relative

[**same event**]
- Action: End block

[**same event**]
- Action: Else

Click **Add Event** and add a new Keyboard <Down> event. Repeat the above actions for Keyboard <Up> except for the Else action. Remember to change any negative values to positive, since we are now moving in the opposite direction.

**NOTE:** The actions for climbing down a ladder are exactly the same as climbing up the ladder. The only difference is that the values in Check Empty and Jump to Position are positive instead of negative. Just like left and right, a negative value points up and a positive value points down.