

# Animate a Snow Scene

{code  
club}

## Introduction

Learn how to animate a car driving through a snow scene using Blender.

## What you will make

Here is how your finished piece will look:



## What you will need

### Hardware

- A desktop or laptop computer capable of running the Blender software

### Software

- [Blender](#) (v2.73 or newer)

### License

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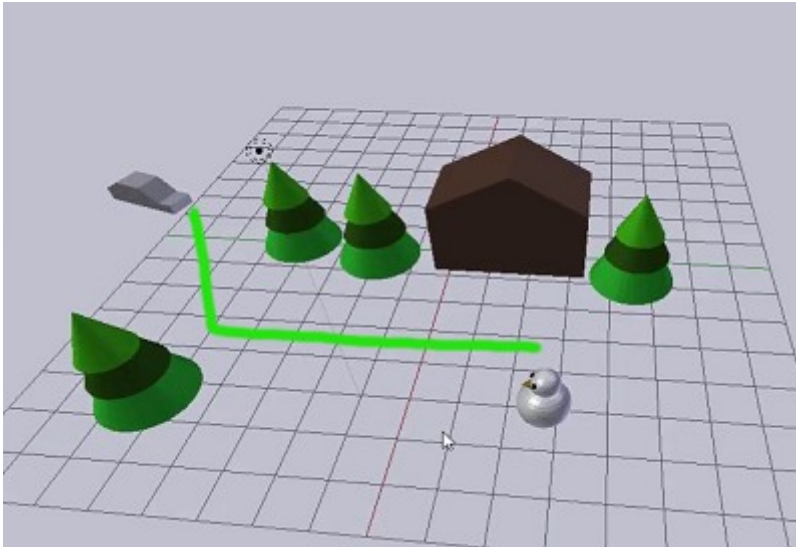
# Step 1: Where is the camera?

## ✓ Activity Checklist



Download and open the [starter project](#).

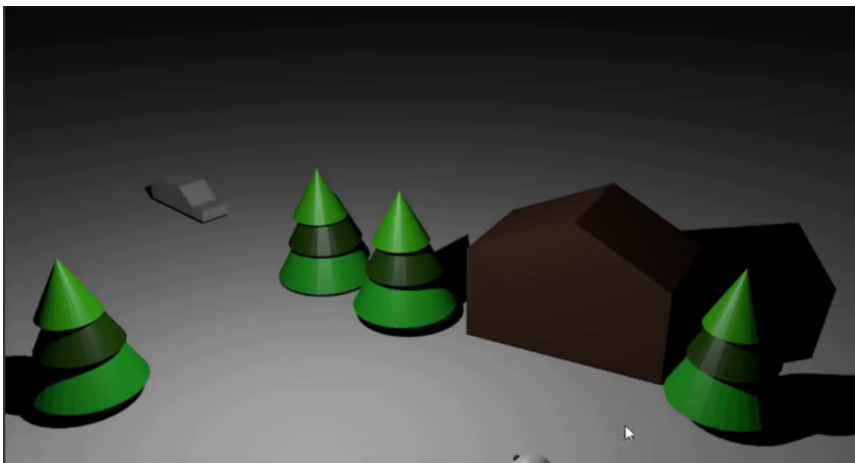
You will animate the car to follow this route:



The first thing you should do when animating is check where the camera is.



Go to render view by pressing F12 (or FN + F12 if you're using a Mac) to see what the scene looks like.



The camera angle is not quite right, as you can only see the tip of the snowman's head at the bottom of the screen, and not the whole snowman.



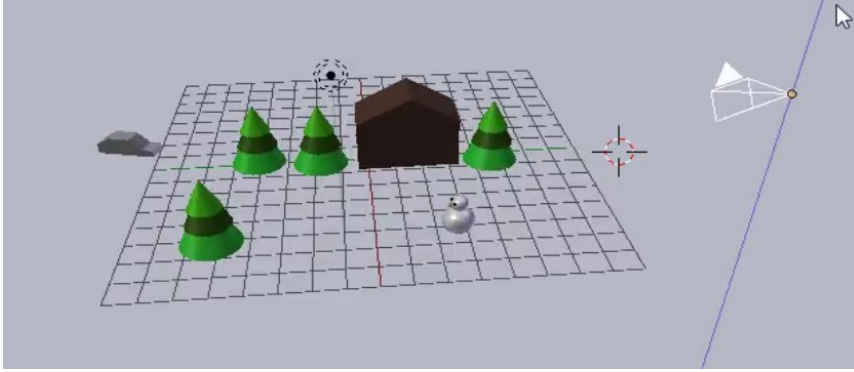
Press ESC to get out of the render view.



Right-click on the camera to select it.



Rotate your view a little bit until you can see both the camera and the scene.

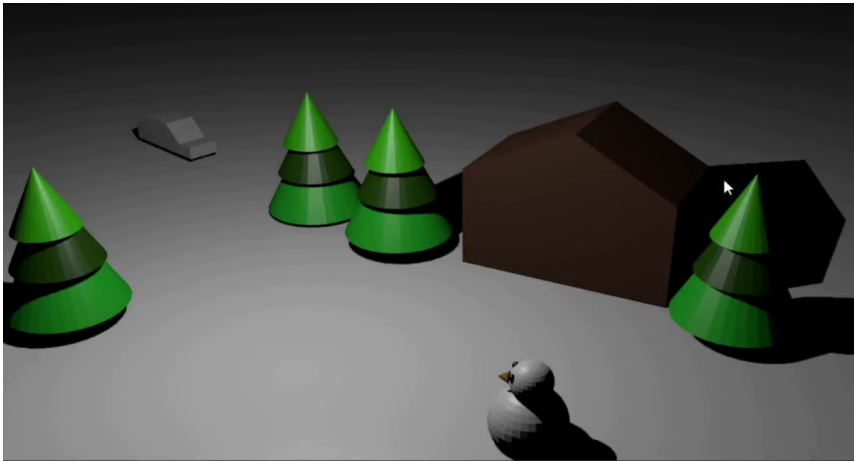


Move the camera down using the blue handle.



Go to render view by pressing F12 (FN + F12 on a Mac) again to check whether you can now see the whole snowman.

If not, exit the render view and lower the camera a little bit more. If the camera is too low, pull it up a little bit instead. Continue rendering and checking until you have everything in view.



## Step 2: Keyframing

Let's animate your car!

For a stop frame animation (also known as stop motion animation), you have to create all of the frames by yourself. This is a lot of work, which is why you are going to use **keyframing**.

For key frame animation, the animator creates images for particular points in the animation and asks the computer to work out all the other images in between.

For example, if your car starts at its current position and four seconds later it should be next to the snowman, the computer will work out a way of driving the car from the start position to the snowman — you don't have to create all the frames by yourself.

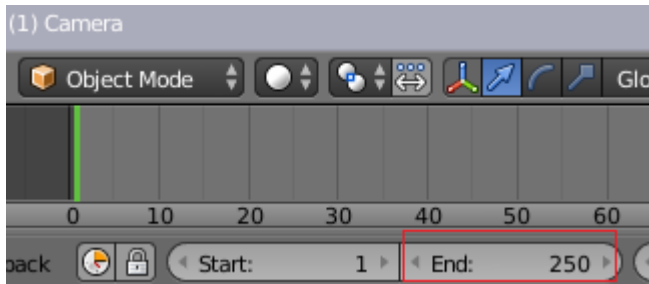
At the bottom of the Blender window, there is a timeline with a green bar.



At the moment it is set to 250 frames, which means 250 images will be output by the computer for the animation. There are 24 frames in 1 second, so 250 images would give you slightly more than 10 seconds of animation. For this project, you only want just over 4 seconds worth of animation, so let's set the end frame to 100.

### ✓ Activity Checklist

- ☐ Locate the box for **End frame** at the bottom of the screen.



- ☐ Set the **End frame** by typing **100** into the box, then press Enter.

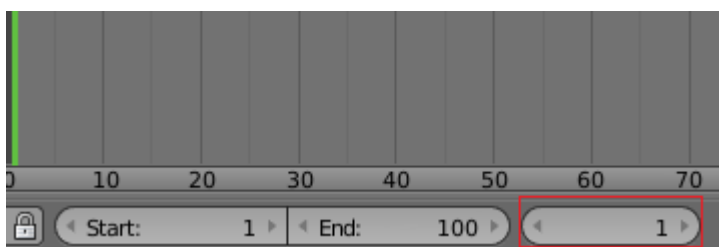
## Step 3: Key frame the first frame

The car is at its starting position in frame 1, and it should be next to the snowman in frame 90.

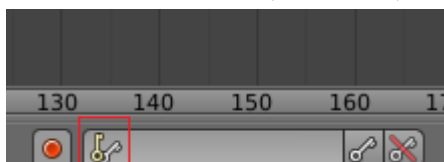
Let's set frame 1 as the first key frame. This is like telling the computer "At frame 1, remember that you are here."

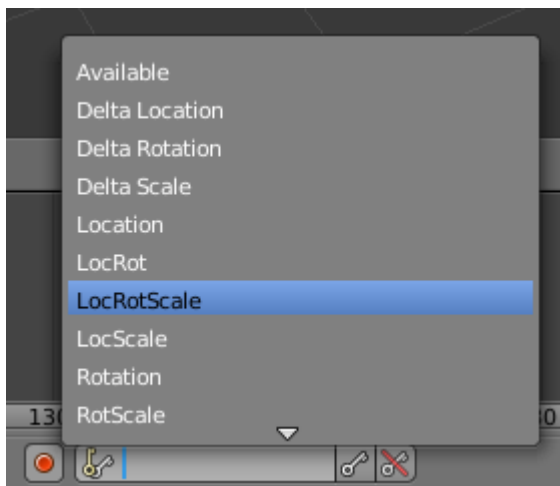
### ✓ Activity Checklist

- ☐ Make sure that you are on frame 1 by checking the frame number at the bottom of the timeline.



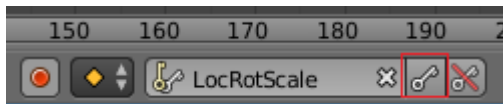
- ☐ Make sure that the car is selected — right-click on it to select it.
- ☐ Click the **Keys** icon at the bottom of the timeline, and select **LocRotScale** to record the location, rotation, and scale of the car in the start frame.





The computer will work out where the car is, which way it is facing, how it is rotated, and how big it is.

- ☐ Click on the small key on the right-hand side of the **Keys** icon to create a key frame.

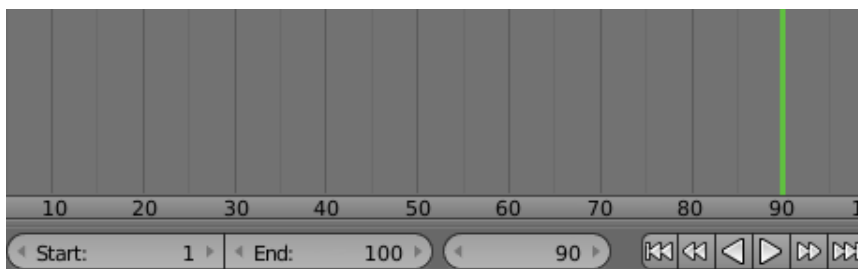


You can see the key frame represented by a yellow bar on the timeline.

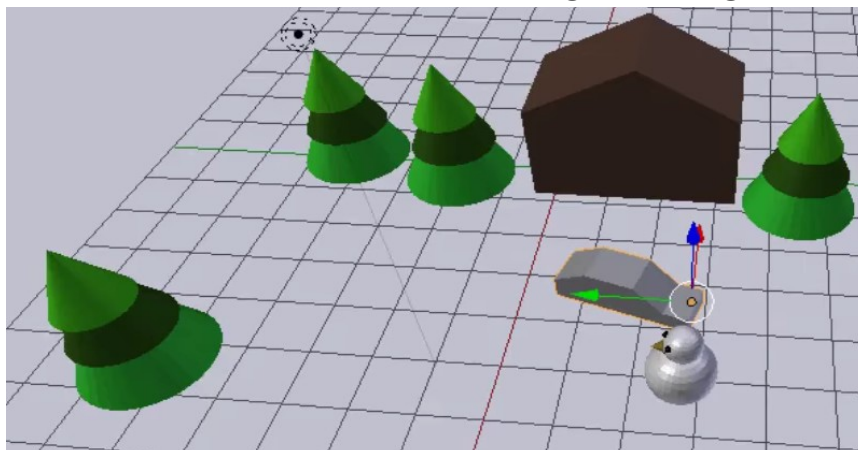
## Step 4: Key frame the end frame

### ✓ Activity Checklist

- ☐ Move the green bar on the timeline to frame 90. You can check the frame number in the menu at the bottom.

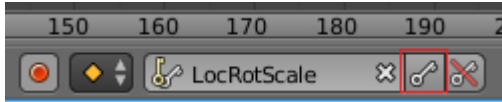


- ☐ Move the car next to the snowman using the blue, green, and red handles.



Now the car is next to the snowman in frame 90.

- ☐ Click the **Key** icon again. A yellow bar should appear on the timeline at frame 90.



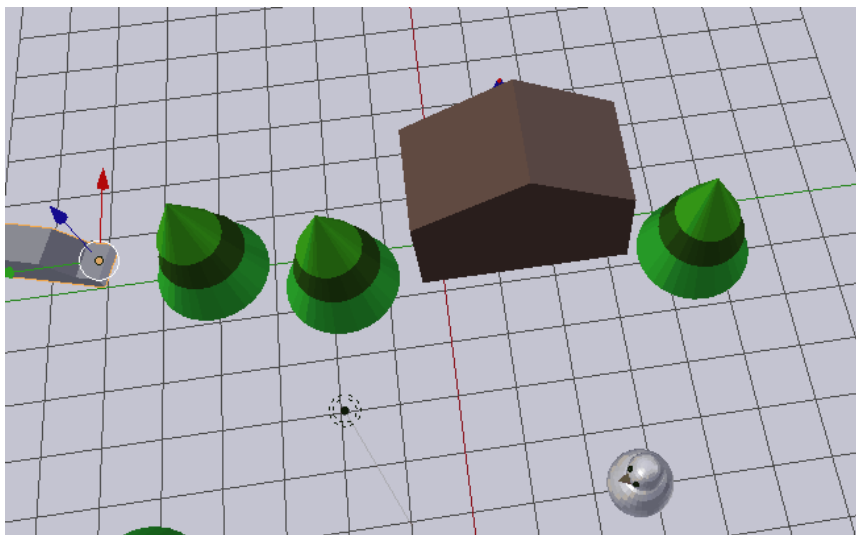
The computer will work out all the steps of the animation in between frame 1 and frame 90.

- ☐ Move the green bar on the time line to frame 0, or type in 0 at the bottom.

- ☐ Click **Play** on the controls at the bottom.



The car will move from its starting position to next to the snowman. However, there is a bit of an issue — the car drives directly into the trees rather than going around them!

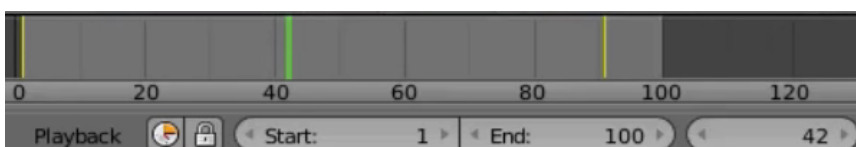


## Step 5: Fine-tune the animation

It would be much better if the car drove between the trees and then towards the snowman. At about frame 40 (approx. 2 seconds) of the animation, the car needs to be between the trees.

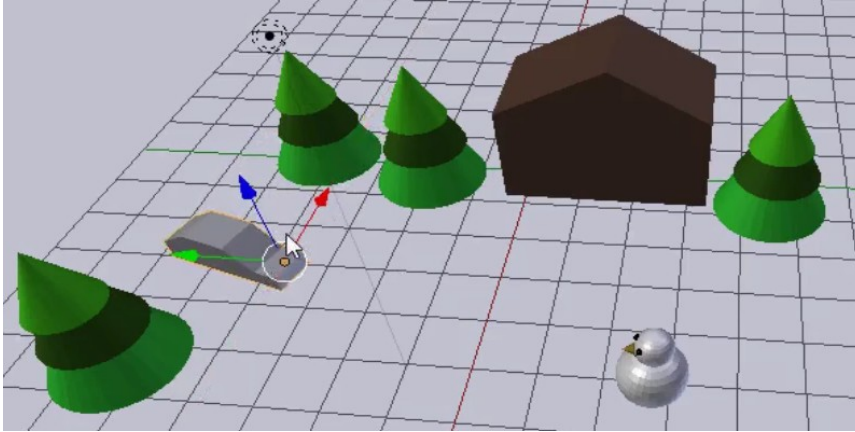
### ✓ Activity Checklist

- ☐ Click the **Pause** button on the controls to stop the animation.
- ☐ Move the green bar on the timeline to frame 40, or type 40 in the box at the bottom.





Move the car to a good position between the trees.



Click the **Key** icon again to create another key frame. Now there should be three yellow bars on the timeline.

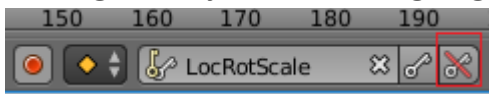


Click the **Play** button.

The car now drives around the trees towards the snowman. However, you may have noticed that the angle of the car (its rotation) makes the car look like it is sliding rather than driving. You can fix this by also rotating the car in frame 40.



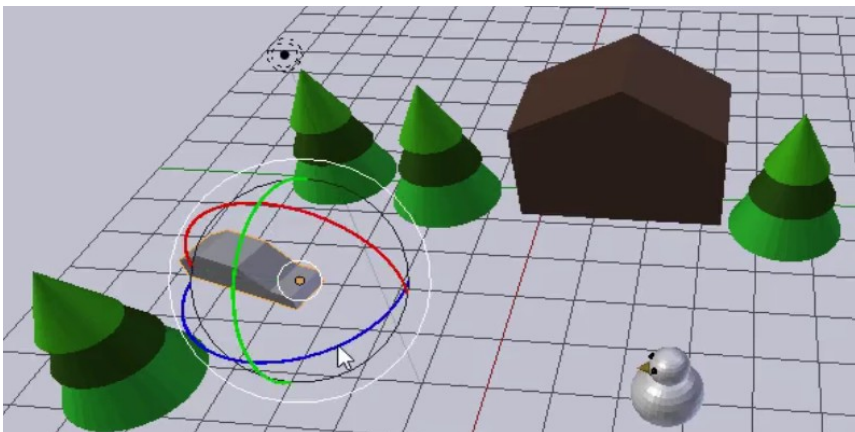
Select frame 40 on the timeline and remove the key frame you just made by clicking the key with the line going through it.



Select the **Rotation** tool.



Rotate the car so that it is pointing in the direction of the snowman.



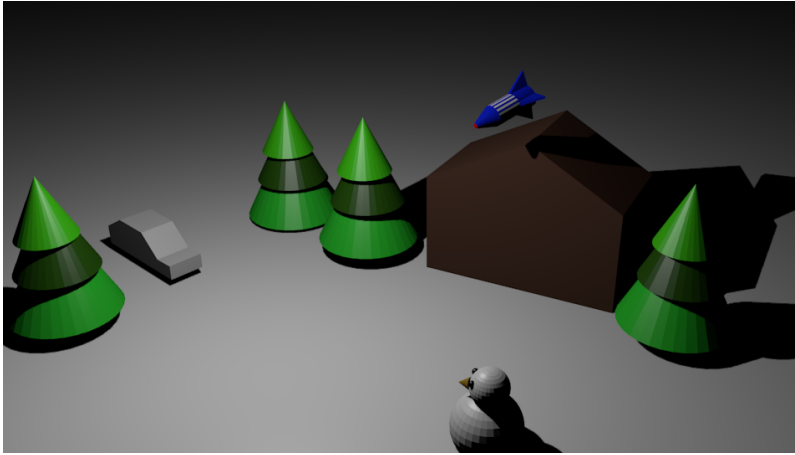
Click the **Key** icon to re-add the key frame.



Click **Play** to see what it looks like. It probably looks like the car is driving on ice. Quite funny, but good enough for now. Try to improve the animation.

## Challenge: launch the rocket

- There is a rocket hidden behind the hut. Can you get it to launch, fly across the scene, and squash the snowman?



- You can download another scene to animate [here](#). It looks like this:

