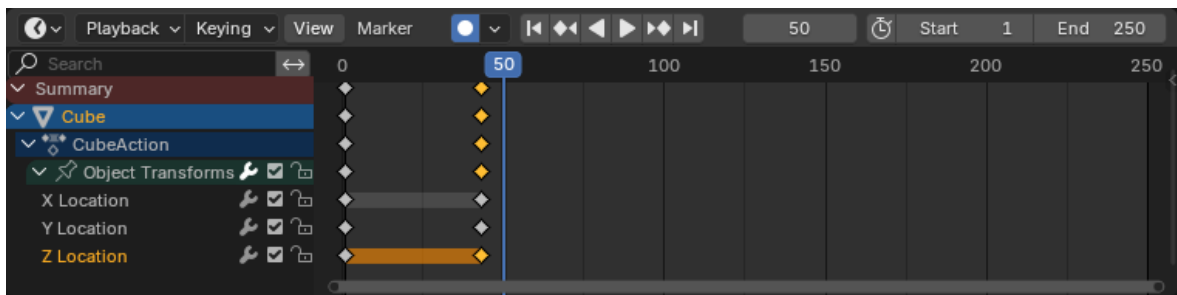# Timeline

The *Timeline* editor is used to jump to different frames, manipulate keyframes, and control animation playback.

The Timeline.

Main View

The X axis represents time, with the numbers 0/50/100/… being frame numbers. The blue line is the *Playhead* indicating the current frame, and the diamond shapes are *Keyframes*, points where you specified a certain value for a certain property at a certain time.

Adjusting the View

Panning is done by dragging MMB .

Zooming is done by dragging Ctrl - MMB , rolling the mouse Wheel , or pressing NumpadMinus / NumpadPlus .

You can also use the scrollbars located at the bottom and the right of the editor.

Playhead

The *Playhead* is the blue vertical line showing the current frame number.

It can be moved to a new position by clicking or dragging LMB in the scrubbing area at the top.

You can also move it in single-frame increments by pressing Left or Right , or jump to the beginning or end frame by pressing Shift - Left or Shift - Right .
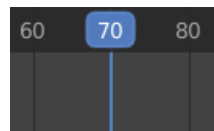
Playhead.

Frame Range

The *Frame Range* determines the length of the scene's animation. By default, it's set to start at frame 1 and end at frame 250. You can change this using the Start/End inputs in the Timeline header, or in the Output Properties.

Keyframes

By default, the timeline only shows keyframes for selected items. You can make it show all keyframes by unchecking View ‣ Only Show Selected.

You can click a keyframe to select it (and deselect all others), or click it while holding Shift to add it to the selection (or remove it if it was already selected). You can also drag a box to select multiple keyframes in one go.

To move the selected keyframes, simply drag one of them. Alternatively, you can press G , move the mouse, and click LMB to confirm (or RMB to cancel). You can also press S to scale the keyframes in relation to the Playhead.

Markers

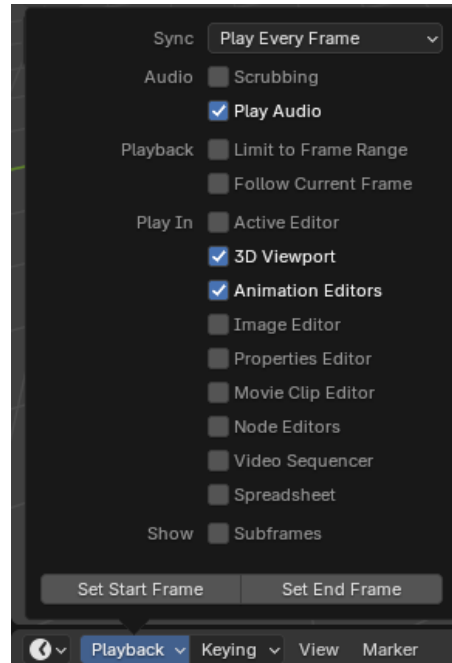See the Markers page for more information.

Header

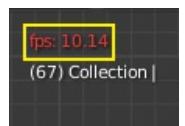Popovers for Playback and Keying; transport controls; and frame controls

Popovers

Playback Popover

Sync

If animation playback can't keep up with the desired Frame Rate, the actual frame rate (shown in the top left corner of the 3D Viewport) will turn red, and the *Sync* option determines how the situation should be handled.

3D Viewport red FPS.

Play Every Frame

Play every frame, even if this results in the animation playing slower than intended.

Frame Dropping

Drop frames if playback becomes slower than the scene's frame rate.

Sync to Audio

Drop frames if playback becomes too slow to remain synced with audio.

Audio

Scrubbing

Play bits of the sound in the animation (if there is any) while you drag the Playhead around.

Play Audio

Uncheck to mute all sound.

Playback

Limit to Frame Range

Don't allow moving the Playhead outside of the Frame Range using the mouse.

Follow Current Frame

Automatically pan the view to catch up when the Playhead goes off screen.

Play In

Which editors to update on each animation frame. If an editor is unchecked, it'll only be updated once playback stops (with some exceptions when it'll update on each frame anyway). When starting playback in either the Graph Editor, Dope Sheet or the NLA Editor, all editors will play back regardless of the settings. This is a feature requested by animators to easily play back all views.
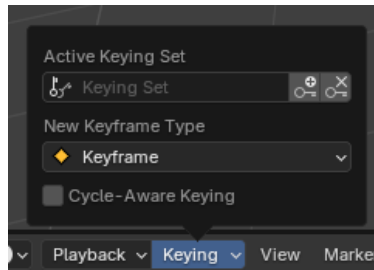
Show – Subframes

Display and allow setting fractional frame values for the current frame.

Set Start/End Frame

Set the scene's start/end frame to the current frame. If the Preview Range is active (see Frame Controls), that one is changed instead.

Keying Popover

The *Keying* popover contains options that affect keyframe insertion.

Active Keying Set

A *Keying Set* is a named collection of animatable properties. If you select one and then press I while not hovering over any input field, Blender will create keyframes for the properties in that keying set.

If you don't have a keying set selected, you'll get keyframes on a default set of properties instead (e.g. Location/Rotation/Scale for objects).
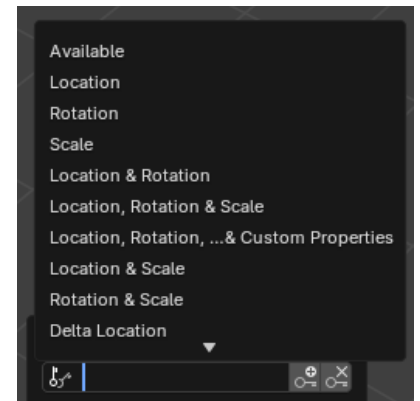
There are a number of predefined keying sets, but you can also create your own in the Keying Sets panel.

Insert Keyframes ⚬ I

Insert keyframes on the current frame.

Delete Keyframes ⚬ Alt - I

Delete keyframes on the current frame.

Timeline Keying Sets.

New Keyframe Type

The keyframe type for newly created keyframes.

Cycle-Aware Keying

When inserting keyframes into trivially cyclic curves, special handling is applied to preserve the cycle integrity (most useful while tweaking an established cycle):

- If a key insertion is attempted outside of the main time range of the cycle, it is remapped back inside the range.
- When overwriting one of the end keys, the other one is updated accordingly.

In addition, when adding a new curve into an action with a Manual Frame Range and *Cyclic Animation* enabled, the curve is automatically made cyclic with the period matching the frame range. For convenience, this check and conversion is also done before adding the second keyframe to such a curve.

Auto Keying

When the record button (●) is enabled, Blender will automatically create keyframes on the current frame whenever you transform an object or bone in the 3D Viewport (or change one of its transform properties in the Properties Editor).

One special use case is to record a camera path as you fly through the scene. See Fly/Walk Navigation.
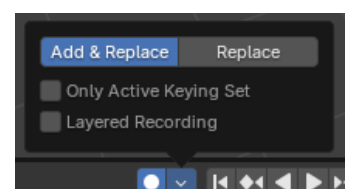
Auto Keying button.

> **Note**
>
> Auto Keying only works for transform properties (Location, Rotation, Scale). It won't create a keyframe if you change, say, the color of a material – you still have to do that manually.

Mode

> **Add & Replace**
>
> > Add or replace keyframes as needed.
>
> **Replace**
>
> > Only replace existing keyframes.

Only Active Keying Set

> By default, Auto Keying will create keyframes even for properties that are not in the active keying set. Use this checkbox to change that.

Layered Recording

> Adds a new NLA Track for every pass made over the animation to allow non-destructive tweaking.

Menus

View Menu

Adjust Last Operation

> Displays a pop-up panel to alter properties of the last completed operation. See Adjust Last Operation.

Channels

> Show or hide the Channels region (the tree of objects and animatable properties on the left).

Frame All **Home**

> Pans and zooms the view so that all keyframes are visible.

Frame Scene/Preview Range

> Reset the horizontal view to the current scene frame range, taking the preview range into account if it is active.

Go to Current Frame **Numpad0**

> Centers the Timeline to the Playhead.

Show Markers

> Shows the Markers region (if any markers are defined). When disabled, the Marker Menu is also hidden and marker operators are not available in this editor.

Show Seconds **Ctrl - T**

> Shows the time on the X axis and the *Playhead* as timestamps instead of frame numbers. A timestamp such as 01:03+02 means "1 minute, 3 seconds, 2 frames."

Sync Visible Range

> Synchronizes the horizontal panning and scale of the editor with other time-based editors that also have this option enabled. That way, they always show the same section of time.

Only Show Selected

> Only show keyframes related to the selected items. This could be objects, bones, nodes, and so on.

> **Note**
>
> If this option is enabled, the Timeline may not show all material keyframes of the selected objects. Instead, it only shows the keyframes belonging to the selected nodes in the Shader Editor.
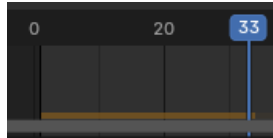
Only Show Errors

Only show curves and drivers that are disabled or have errors. Useful for debugging.

Cache

Show Cache

Which simulation caches to show on the timeline.

Baked simulations will be shown as fully opaque, cached simulations will be slightly transparent, and invalid caches will be slightly transparent with dark diagonal stripes.

Timeline Cache.

Area

Area controls. See the user interface documentation for more information.

Marker Menu

Markers are used to denote frames with key points or significant events within an animation. Like in most animation editors, they're shown at the bottom the Timeline.

Markers in an animation editor.

For descriptions of the different marker tools, see Editing Markers.

Transport Controls

These buttons are used to set the current frame and control playback.

Transport controls.

Jump to Start ◄ **Shift - Left**

Sets the Playhead to the start of the frame range.

Jump to Previous Keyframe ◄◄ **Down**

Moves the Playhead to the previous keyframe.

Rewind ◄ **Shift - Ctrl - Spacebar**

Starts playing the animation in reverse.

Play ► **Spacebar**

Starts playing the animation.

Jump to Next Keyframe ►► **Up**

Moves the Playhead to the next keyframe.

Jump to End ►| **Shift - Right**

Sets the Playhead to the end of the frame range.

Pause || **Spacebar**

Stops playing the animation.

Frame Controls

Current Frame Alt - Wheel

The number of the frame that's currently being displayed in the 3D Viewport. This is also the location of the Playhead.

Use Preview Range ↻

The Preview Range is an alternative Frame Range that you can use for focusing on a particular part of the animation. It lets you repeatedly play a short segment without having to manually rewind or change the frame range of the entire scene.

This range only affects the preview in the 3D Viewport; it doesn't affect rendering.

The boundaries of the Preview Range are shown in dark orange. You can quickly configure and enable it by pressing P and dragging a box. To disable it, you can press Alt - P .

Start/End Frame

The start/end frame of the scene (or the preview range, if active).