

MUVIZU INSTRUCTIONS



MUVIZU INSTRUCTIONS V2
January 2016

Muvizu
education
create. educate. animate.

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Welcome to the world of animated movie making. This instruction manual provides an overview of the animated movie making sandbox Muvizu.

The manual is split into two sections: Create and Animate. The Create section gives an overview of all the elements you can create or change in Muvizu.

The Animate section covers making an animated movie. For more tutorials visit the Muvizu YouTube channel. For help and advice visit the Muvizu user forum or the Muvizu Wiki.

Happy animating,

The Team at Muvizu HQ.



SECTION 1

CREATE

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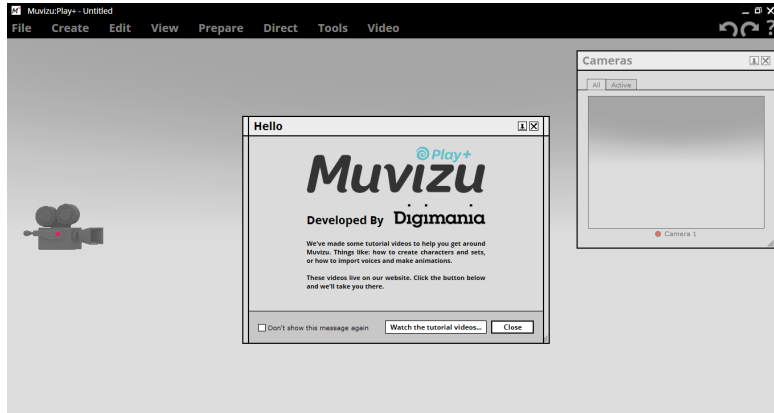
CHAPTER 1

GETTING STARTED

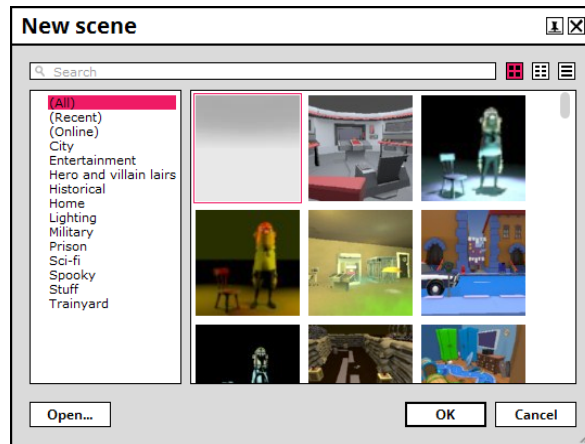
This first section goes over some of the basics of Muvizu and shows how you can create and edit character, objects, effects and cameras.

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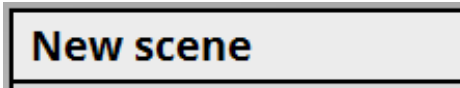
After opening Muvizu you will be shown a welcome screen. From this screen you can watch tutorial videos by clicking the **“Watch the tutorial videos...”** button, or get straight into the action by clicking Close. Before closing the screen, you can check the box **“Don't show the message again”** to stop it from showing again.



After closing the window, you will see the **New scene** window.

BEFORE GOING FURTHER, IT IS WORTH COVERING SOME OF THE MUVIZU BASICS.

General window controls



Clicking anywhere in a window's title bar (except the buttons shown below) will allow you to drag the window around and place it where you would like it. It can be dragged outside of the main Muvizu window.



This button will close the selected window.



This toggle button is used to pin a window to Muvizu.

A window that is pinned will appear within the Muvizu's main window area – and will move relative to the main window (should you move it around).



A window that is unpinned will remain stationary when Muvizu is moved – and can be outside of the main window.



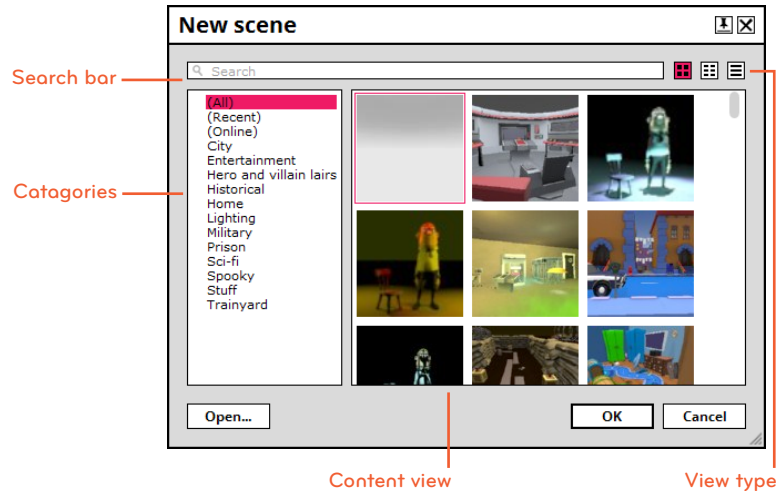
This control will appear in the bottom corner of some windows and is used to re-size the window. If you make the window too small for all of the controls to fit on it a scroll bar will be placed on the window to allow you access to all of the controls.



A Muvizu scroll bar is grey and sits on the left hand side of windows. These can be used to scroll up and down through lists and controls on windows. You can also use your mouse's scroll wheel to navigate through lists.

Working with content lists

In the image below, you can see the **New scene** window – with different areas of the window highlighted.



These areas are generic across all of the content pickers.

► Effects
▲ Feet
Shoes

Categories




Many items such as objects, scenes and animations are split into categories to make it easier to navigate. In cases where there are a lot of items, it may be split into subcategories. Categories with subcategories are shown with arrows depicting if they are "open" or "closed".

Where there are no categories for an item type (such as lights or characters) the categories section will not be present.

Content view

This is the main view for the selected type of content (scenes, objects etc). This is presented as a scrolling list. To select an item, click on it and press OK – or just double-click it.

View type

You can select between the view type icons  (Icon view)  (Tiles view)  (List view) to change how the content is presented to the user.

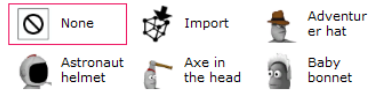
Display the items as large icons



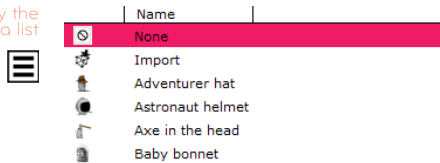
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Display the items as a file, with their names



Display the items as a list



Search bar

You can filter items by entering characters into the search bar.



The content view will only display items with those letters in the name. As you type the list will be refined further.

If you want to cancel your search press the cancel button at the end of the search bar.

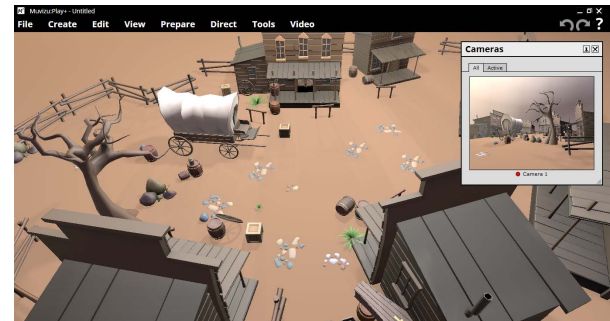
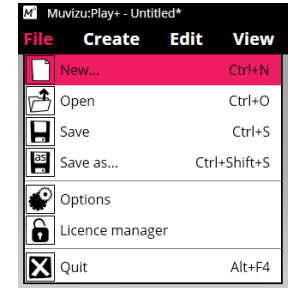


Open a New scene

A scene in Muvizu is like a virtual film set. You build, dress and light your set, add your actors, dialog and direct the animations.

Using the **New scene** window, select a scene and open it. If you have closed the **New scene** window, you can get it back by selecting **New** from the **File** menu.

The example used below is the "Western street" in the Historical category.



Moving around

Use the mouse to move around in Muvizu.
The movement controls are:



Left mouse button and movement

Move the view backwards, forwards and rotate the view from side to side



Right mouse button and movement


Look around in all directions




Both mouse buttons and movement

Move the view vertically and side to side

Muvizu will give hints on the available mouse controls at the bottom of the screen.

 Move and steer the view.

 Look around.

 Move the view sideways and vertically.

You can also use keys to navigate within Muvizu



Move the view up



Move the view left



Move the view forward



Move the view back



Move the view down



Move the view right



Move the view forward, parallel to the ground



Move the view back, parallel to the ground



Rotate the view left



Rotate the view right



Rotate the view up



Rotate the view down

Spend some time exploring the scene you have loaded.

Selecting Items

Items in Muvizu are selected by clicking them with the left mouse button. When an item is selected it will have a red box (called a reticule) drawn around it and its name will be shown as well.



Multiple items can be selected by pressing the Ctrl key and clicking on additional objects. Each additional item selected will also have a reticule drawn around it too so you can see what's selected.



Moving items in scenes

All items within a scene, including cameras, objects, characters and effects, are moved and placed in the same way. First select the item if it is not selected already, then use the following mouse controls:



Left mouse button and movement

Move the item forwards, backwards and side to side.



Right mouse button and movement

Rotates the item. Many items can only be rotated left and right. However some, such as cameras, can be rotated up and down as well.



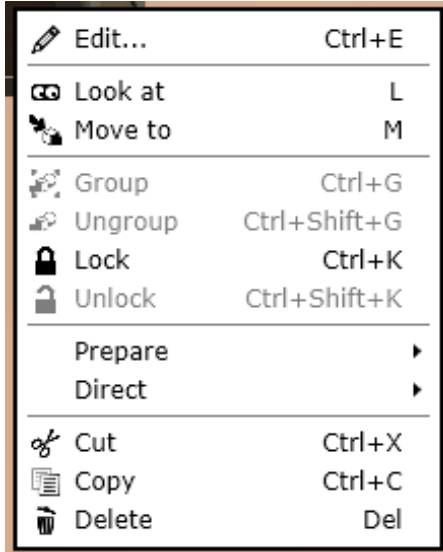
Both mouse buttons and movement

Move the item vertically and side to side.

You can use combinations of the movements. For example, you may select both mouse buttons and raise an object into the air, then remove the left mouse button and rotate the object while still in the air. Or remove the right button to move the object forwards and backwards – this is useful for sitting an object on top of another object. If you have multiple items selected, all of the objects will be moved together and will rotate around the centre point of the group. Get used to using the controls by selecting individual and multiple objects and moving them around the scene.

Context menus

You can right-click on any items that are selected in Muvizu, and you will be given a "context menu" for them.



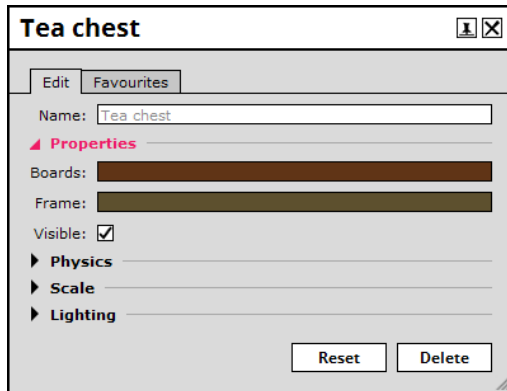
The context menu will vary depending on what the object type is.

Edit...	Edits an object's properties
Look at	Look at the object
Move to	Move to the object (if it is far away).
Group	Groups objects together as if they were one object. Characters cannot be included in groups
Ungroup	Splits a group of objects into their previous parts
Lock	Will lock the object into position – so that you cannot move them
Unlock	Unlocks previously locked objects so you can move them again
Cut	Standard functionality for cut/copy and paste
Copy	Standard functionality for cut/copy and paste
Delete	Deletes the selected objects

Editing objects properties

All objects in Muvizu have properties that can be changed by the user. Most of these properties can also be animated (more on this in chapter 15).

You can edit an object's properties in a few ways. You can use the context menu above to edit the properties, by just double clicking the object, pressing Ctrl+E or selected Edit... from the Muvizu's Edit menu. A window with the objects properties will be shown. These can then be edited as required.

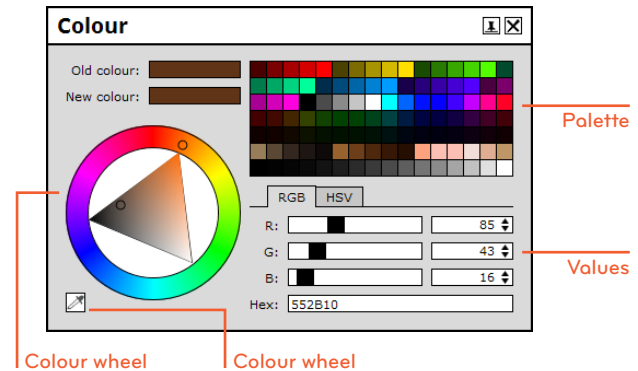


The most common types of properties are shown below.

Colour



A colour property has a label and a colour. The colour will be a long thin rectangle. To change the selected colour, click on the coloured rectangle beside the label and a colour picker will appear.



The colour picker is made from four main sections.

To use the colour wheel move the small circles in the triangle and circle to change the colour. The property on the object should react immediately.

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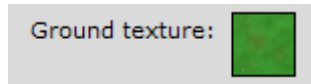
Colours from the palette can be selected and they will be applied to the object's property and the colour wheel will change to reflect this colour too.

The values section can be used to enter RGB or HSV values.

Finally, the colour dropper can be used to sample a colour from another window. Simply click and drag the dropper the colour will update as you move the mouse. To select the colour, just release the mouse button.

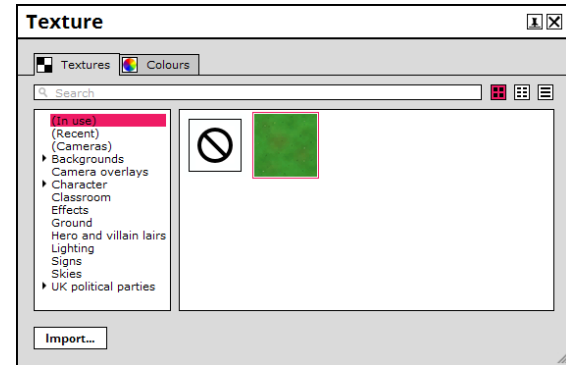
Texture

A texture is simply an image that is mapped onto an object in the 3D world. A texture can be set to a solid colour. Many items – such as the sky and ground will start as colours.



Similar to the colours, the texture property has a label and a representation of the texture. The texture is the square next to the label.

When you click on the texture, you will be shown a **Texture** picker window.



This window has two tabs you can switch between, one is for the colour picker – as detailed above – and the other is a texture picker. The tab that is shown when the picker is displayed will reflect the current setting.

The texture picker works as a content list – as discussed earlier. However, there are a few specialised categories for textures.

In use Shows textures that are currently being used.

Recent Shows the last 10 textures used.

Cameras Allows you to use a view from a camera as a texture.

As a texture is simply an image. Muvizu allows you to import any .jpg, .png or .bmp image file to use as a texture. To import a custom texture click **Import** in the bottom left hand side of the **Texture** window.

Navigate to where you have saved your custom texture, select it and click the **Open** button.

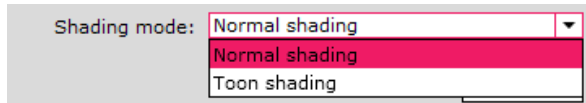
Numeric value

A UI control for 'Ground illumination'. It features a label 'Ground illumination:', a slider bar with a dark bar indicating the current value, and a text box on the right showing '37.4%' with up and down arrow icons.

A numeric value consists of 3 parts, a label, a slider and a number control. The value will have a range dictated by the slider.

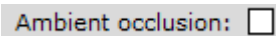
You can interact with the slider, moving the dark bar left and right. Or you can adjust the value by typing a number into the box, or by using the up and down arrows to nudge the value up or down.

Choice

A UI control for 'Shading mode'. It features a label 'Shading mode:', a dropdown menu showing 'Normal shading' with a downward arrow, and a list of options: 'Normal shading' (highlighted in pink) and 'Toon shading'.

A choice presents a drop-down list of options you can use. Click in the box beside the label to see the options.

Check box

A UI control for 'Ambient occlusion'. It features a label 'Ambient occlusion:' followed by an unchecked checkbox.

A check box represents a simple on / off choice. Checking the box will turn the option on, un-checking the box will turn the option off.

CHAPTER 2

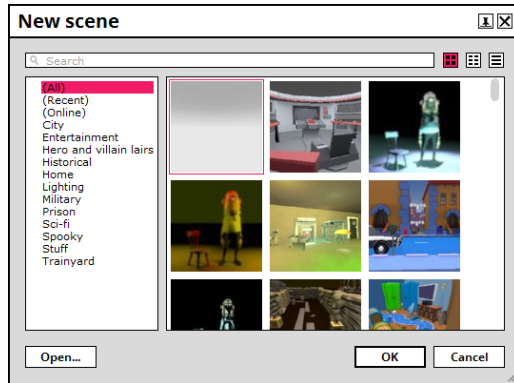
EDITING THE ENVIRONMENT

Editing the environment allows you to control the Sky, Ground, and Lighting of a scene.

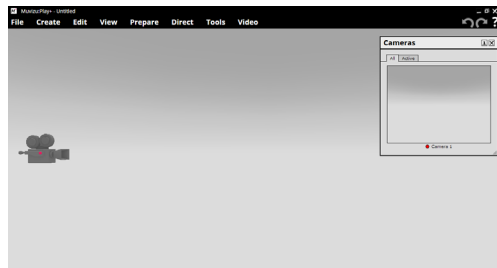
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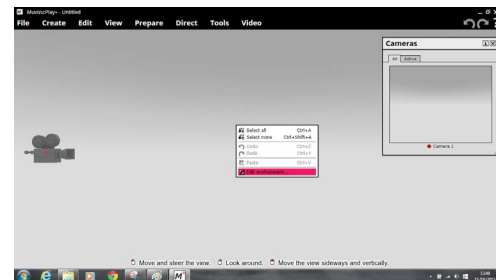
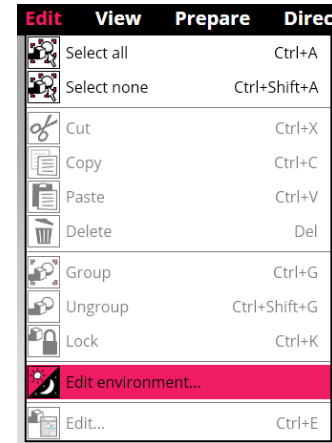
Start with a blank scene; select the grey thumbnail, for the (empty) scene, from the **New scene** window and click **OK**.



A blank scene will be created. This is an empty scene for you to customize. The only item within the scene is a single virtual camera. The view from this camera will be shown in the **Cameras** view window.



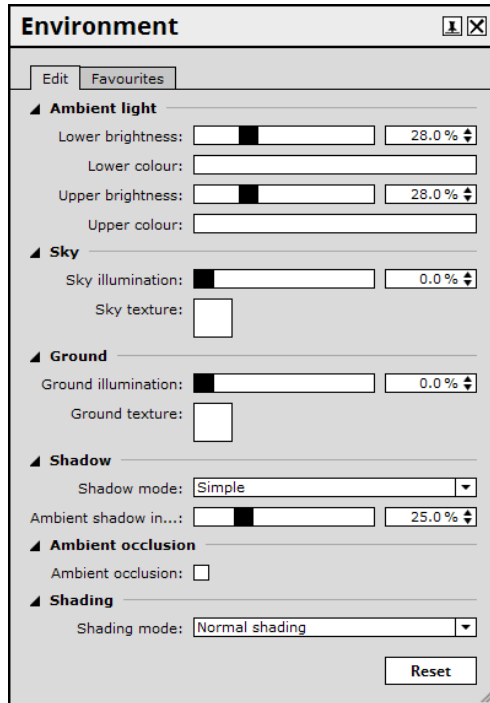
To start editing the environment select "Edit environment" from the Edit menu, or right click anywhere on the grey background and select **Edit environment**.



EDITING THE ENVIRONMENT

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The **Environment** properties window will be shown. The window is split into six categories. Each category can be expanded and collapsed by clicking on the small triangle on the left of the category name.



The screenshot shows the 'Environment' window with the following settings:

- Ambient light**
 - Lower brightness: 28.0 %
 - Lower colour: (empty)
 - Upper brightness: 28.0 %
 - Upper colour: (empty)
- Sky**
 - Sky illumination: 0.0 %
 - Sky texture: (empty)
- Ground**
 - Ground illumination: 0.0 %
 - Ground texture: (empty)
- Shadow**
 - Shadow mode: Simple
 - Ambient shadow in...: 25.0 %
- Ambient occlusion**
 - Ambient occlusion: (unchecked)
- Shading**
 - Shading mode: Normal shading

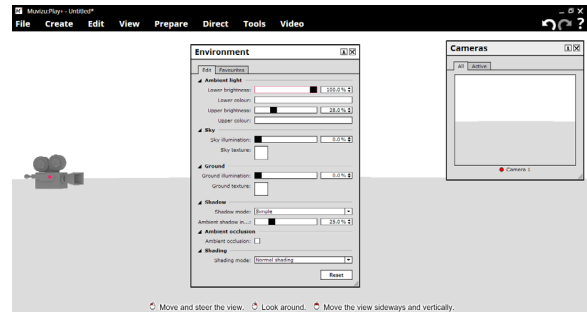
A 'Reset' button is located at the bottom right.

The first category is **Ambient light**.

In 3D graphics ambient light refers to sources of light that are applied universally across all objects. Imagine it as being inside a sphere that is emitting light in all directions. In Muvizu the top and bottom half of the sphere can be changed separately.

You can adjust the ambient light to reflect different scenes, for example, if you were creating a night scene the ambient light could be from the moon and would be quite dark. If it was a day scene then the ambient light would be coming from the sun and would be lighter.

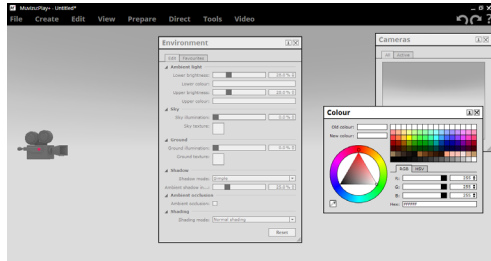
The **Lower brightness** setting allows you to control light travelling upwards (from the ground to the sky). In the picture below the **Lower brightness** has been set at 100%. This maximum level of brightness has turned the sky white.



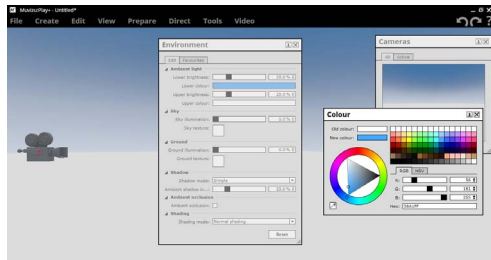
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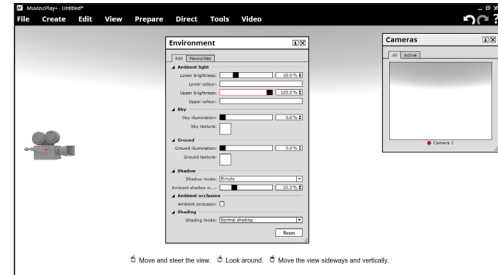
To change the lower colour click in the rectangle next to **Lower colour**. A **Colour** picker will appear, use this picker to select a colour for the lower ambient light.



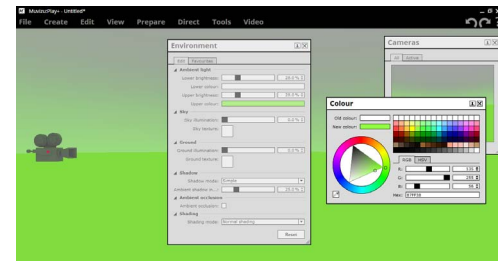
As you choose a colour the environment will change accordingly. Close the colour picker when you are happy with your selection.



The next setting is **Upper brightness**. This works the same way as **Lower brightness** except it controls the light shining down from the sky. The picture below shows the **Upper brightness** set to 100%. This maximum brightness has turned the ground white along with a portion of the Sky.



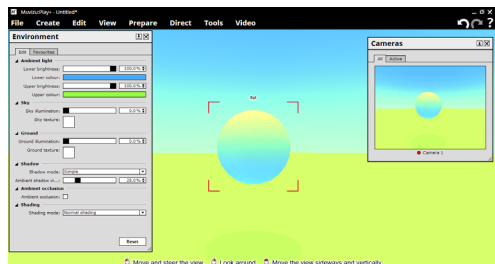
The **Upper colour** setting works the same as the **Lower colour** setting. Clicking the rectangle next to **Upper colour** will display the **Colour** pallet and allow you to change the colour.



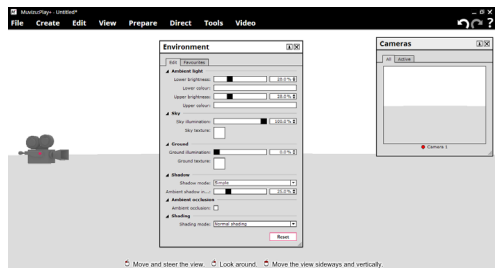
EDITING THE ENVIRONMENT

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The colours and brightness set will create a default lighting environment that will affect all objects and characters within the Muvizu scene. In the image below, you can see the white sphere being affected by the ambient lighting.

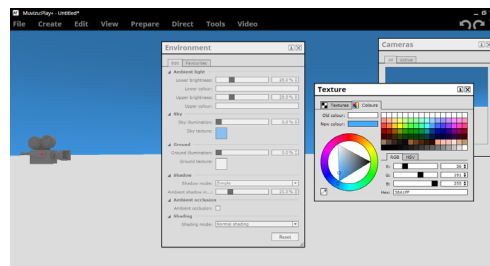


The next section of the **Environment** properties window is **Sky**. This section allows you to change the illumination and texture of the Sky. The **Sky illumination** value allows you to control how the sky reacts to lights in the Muvizu scene. When set to 100% the sky will always be fully illuminated and show the colour or image in the **Sky texture** setting – lights in Muvizu will have no effect on the sky. When it is set to 0% the sky has no self illumination and will fully react to the lighting in the scene, including the ambient light. The picture below depicts the setting raised to 100% illumination. This maximum illumination setting has turned the Sky white.



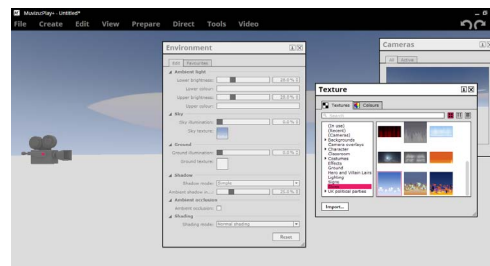
The next setting is the **Sky texture**. To edit the **Sky texture**, click on the white square next to the text. The **Texture** window will now open, as the default sky is a colour, it will be open on the colour tab.

The picture below shows the Sky texture set as a solid blue colour.



To load a pre-made sky texture select **Skies** from the texture categories on the **Textures** tab. Select a sky texture and the image will be loaded onto the sky.

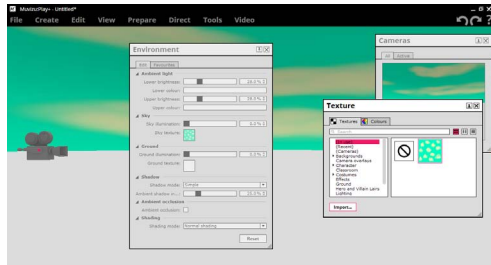
The picture below shows a cloudy day texture set as the Sky texture.



EDITING THE ENVIRONMENT

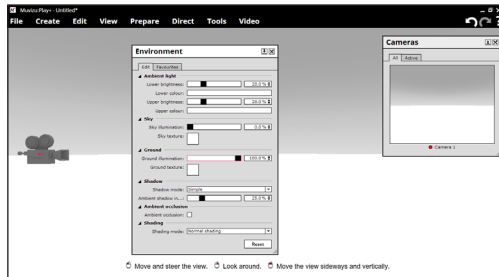
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As with all textures, you can import your own texture, the picture below shows a custom texture loaded onto the sky.



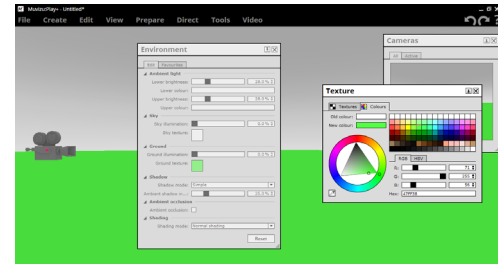
Once loaded, changing the **Sky illumination** control will change how much the texture is affected by the scene's lights.

The **Ground** setting works the same way as the **Sky** setting. **Ground illumination** controls how the ground reacts to lighting. The picture below depicts **Ground illumination** set at 100% - fully illuminated. This level turns the ground white - the same as the **Ground texture** setting.

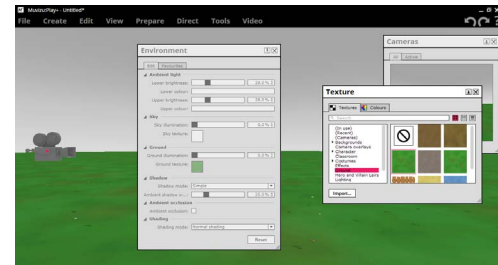


Clicking on the white square to the right of **Ground texture** will open the **Texture** picker window.

The picture below shows the **Ground texture** set as solid green.



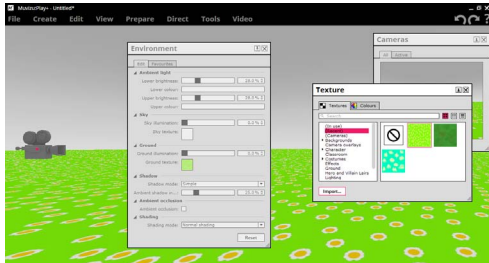
To load a pre-made ground texture click the **Textures** tab in the **Texture** window and select the **Ground** category. Select the ground texture you would like. This texture will be applied to the ground in the scene.



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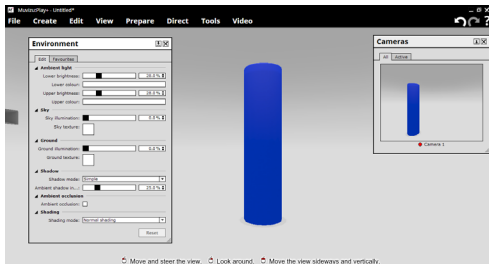
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As with all textures, you can load a custom texture on to the ground. The picture below shows a custom texture loaded onto the ground of the scene.



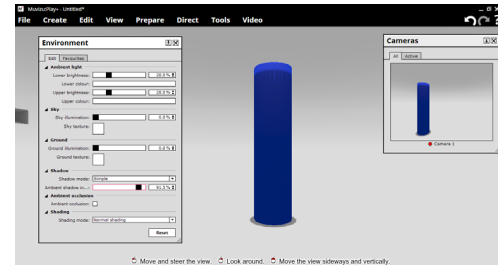
The **Shadow** section in Muvizu allows you to control the type of shadow and the intensity and sharpness of shadows. The default mode is **Simple**.

The picture below shows the ambient shadow of a cylinder in the scene. The ambient shadow is the grey shadow around the bottom of the cylinder.

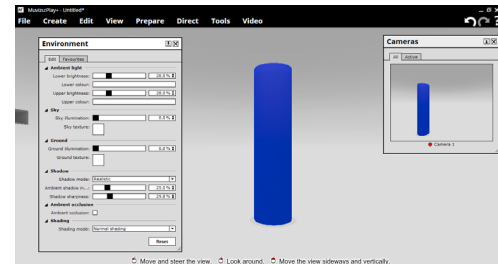


The **Ambient shadow intensity** property controls the how dark the ambient shadows are.

The picture below shows increased ambient shadow intensity. Notice that the ambient shadow of the cylinder has become darker.



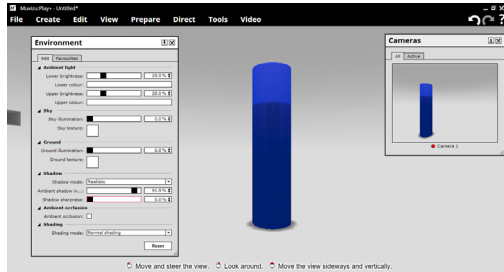
The **Realistic Shadow** mode also allows you to adjust **Shadow sharpness**.



The **Ambient shadow intensity** property works in the same way as the simple mode.

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The **Shadow sharpness** setting increases the resolution of the shadows. The higher the value, the sharper the shadows will look. However, they also take more system resources to generate. The default setting is a balance between performance and visuals. The example below shows the difference between the default setting and the highest setting.



100% shadow

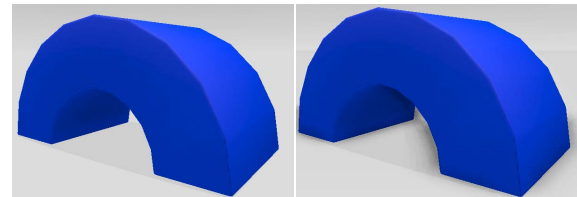
Default shadow

The obvious stepped nature of the shadows is only really visible when viewed in certain conditions.

The **Custom shadow** mode allows you to control the **Individual shadow intensity**. In Muvizu, by default, shadows from lights will be assumed to be part of a general lighting environment. In custom mode, each light has a property that will allow the light to cast an individual shadow. This setting allows you to control the darkness of the shadow.

The **Ambient occlusion** section allows you to turn ambient occlusion on or off by ticking or un-ticking the check box.

Ambient occlusion is a shading technique, which calculates how exposed each point in a scene is to the ambient light. For example inside a tube is more occluded (darker) than the top of a table. In the image below, you can see that while the effect is quite subtle, in the image on the right there is more shadowing under the arch...



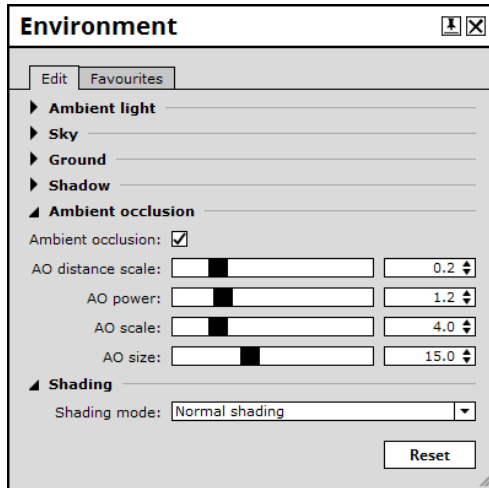
No ambient occlusion

With ambient occlusion

EDITING THE ENVIRONMENT

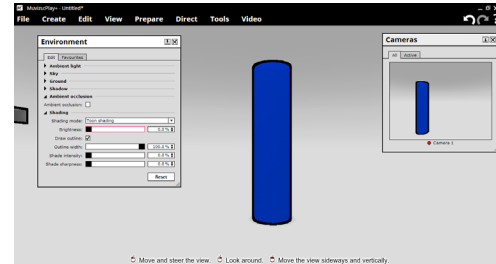
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There are four settings that can be used to adjust the ambient occlusion. These four values interact in complicated ways. Changing any value may require you to adjust the others to keep things looking natural.

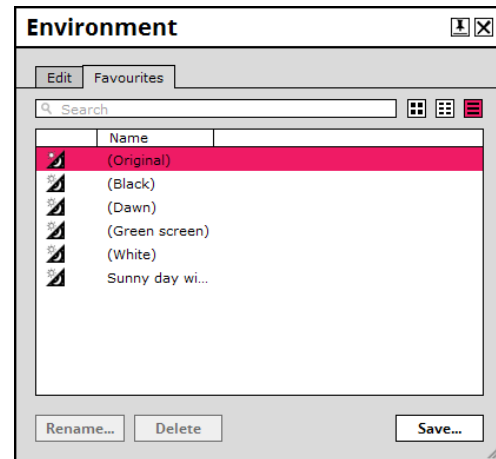


The last section of the **Environment** properties window is **Shading**. Clicking the drop down box option allows you to select Toon shading functions.

Toon shading is designed to make 3D computer graphics appear to be flat. This gives a comic book effect to objects in the scene.

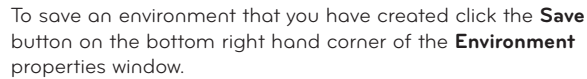


The **Favourites** tab on the **Environment** window allows you to save the environment you have created, or change the environment to a pre-set or previously saved environment. To select an item just select it in the list.

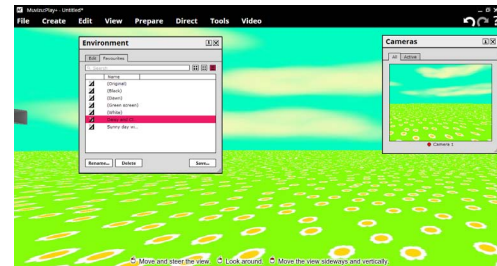
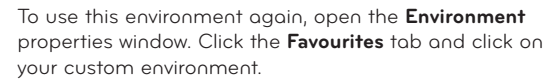


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The picture below shows a formerly saved environment
Sunny day with clouds.



The picture below shows the saving of a custom environment made with custom textures.



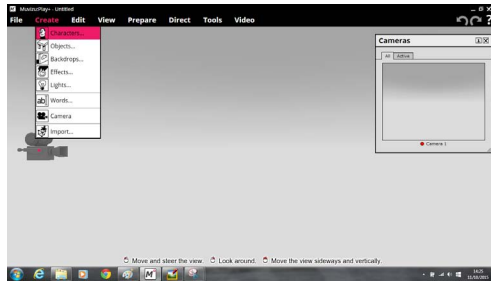
CHAPTER 3

CREATING A CHARACTER

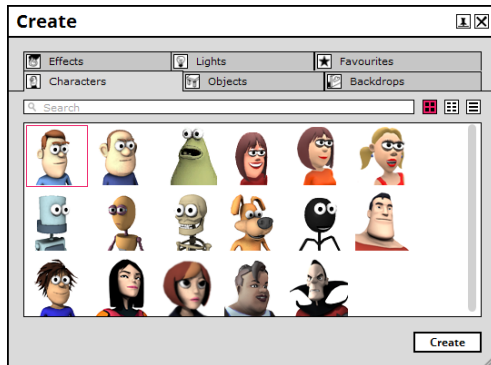
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Select Characters from the **Create** menu as shown below.



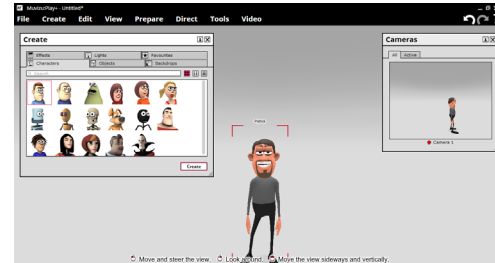
The **Create** window will open with the **Characters** tab selected.



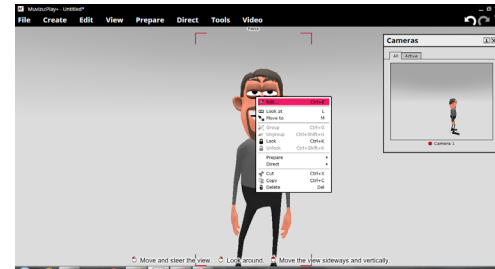
Select the type of character you would like and click **Create**, or double-click the character. Muvizu will spawn a random character of the type you have selected.

You can select, move and place your character using the controls outlined in Chapter 1.

The picture below shows a newly created male character.



To edit the character right click on the character and select **Edit** (or double-click the character).



CREATING A CHARACTER

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The character properties window will appear.



To rename the character click in the **Name** field and type the character's name.



The **Appearance** tab in the character-editing window contains everything you need to customize your character.

This includes attachments like hats, gloves and shoes, along with the ability to change eye shapes and hairstyles.

Everything within the appearance tab is customizable.

To select an attachment simply click on it. It will automatically appear on your character. The attachment's properties window will also appear.

CREATING A CHARACTER

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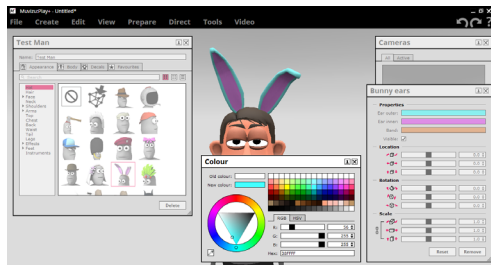
The picture below shows the selection of **Bunny ears**. Once selected the character automatically wears the **Bunny ears** and the **Bunny ears** properties window appears.



The attachment's properties window allows you to edit the colours, location, rotation, and scale of an attachment. The properties will depend on the attachment.

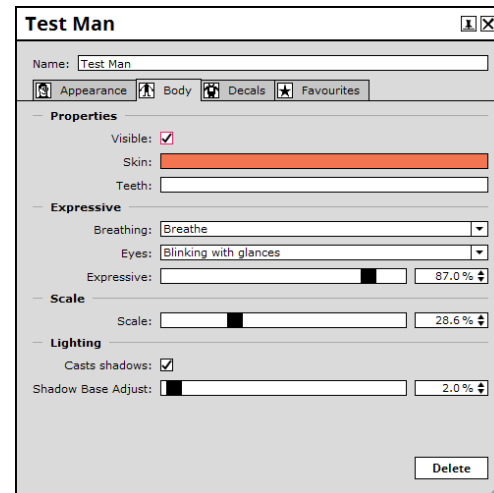
You can edit the attachment's properties in the same way as you did for the environment.

The picture below shows the **Ear outer** section of the **Bunny ears** being changed.



The second tab in the character's property window is **Body**. The **Properties** section allows you to change the character's skin and teeth colour. The **Visible** check box will turn the visibility of your character on or off. If you uncheck the box your character will disappear (it will appear to be a transparent grey silhouette when selected, but will not appear in any output.)

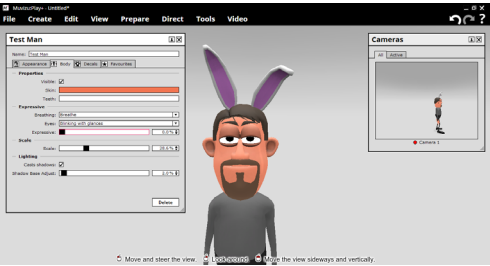
The **Expressive** section controls how expressive the character is. **Breathing** controls whether the character is breathing or not. The **Eyes** control can be used to turn off the random eye movements (blinking and eye darts). The **Expressive** setting changes how much of the character's mood is displayed. By default a character's mood is happy, so changing the **Expressive** percent controls how happy the character is.



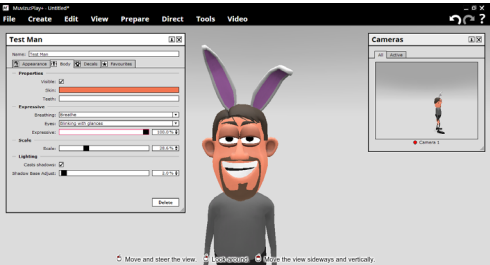
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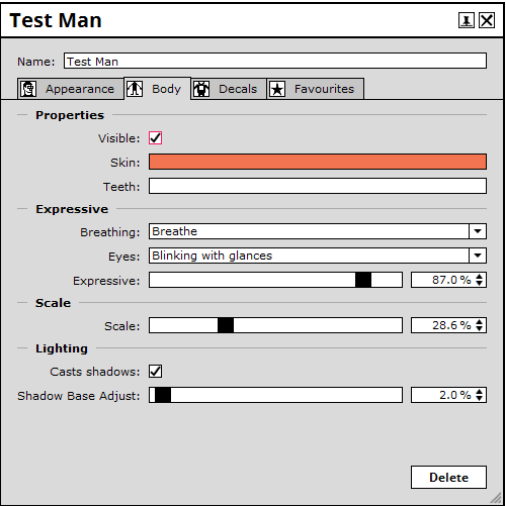
For example, if the **Expressive** scale is set to 0% the character has zero expression and looks neutral.



Raising the scale to 100% makes the character very happy.



The **Scale** setting controls the size of the character. The **Lighting** section allows you to set whether or not the character casts a shadow and allows you to adjust the shadow base.

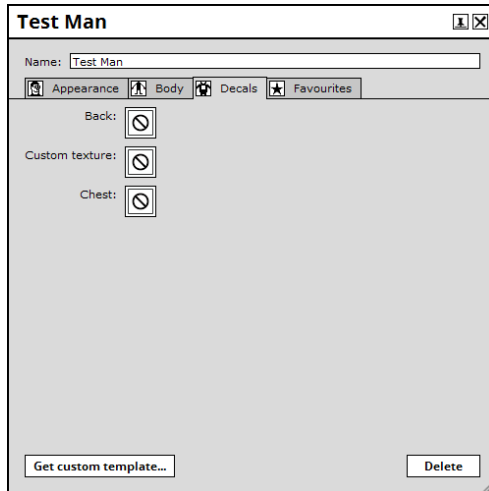


The shadow base determines how close to the character or object the shadows start.

CREATING A CHARACTER

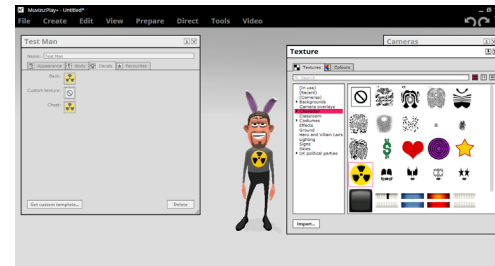
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The third tab in the character-editing window is **Decals**. A decal is an image or texture that can be placed onto the current character's skin. For standard character types, Muvizu allows you to load decals on the back and chest of your character or load a custom texture for the whole character's body.

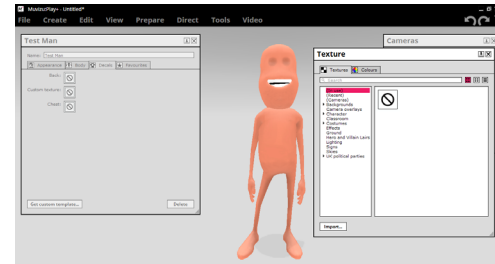


Clicking on **Back** or **Chest** will show the **Texture** window. There are a range of pre-made textures to choose. Or you can import your own by clicking the **Import** button.

The picture below shows a pre-made texture loaded onto the back and chest of the character.



The **Custom texture** function allows you to change the entire texture (or skin) of the character. To load a **Custom texture**, click on the square to the right of the text. This will show the **Texture** window. When loading or creating a custom texture it is best to start with a blank character. To make a blank character, remove every attachment using the **Appearance** tab.



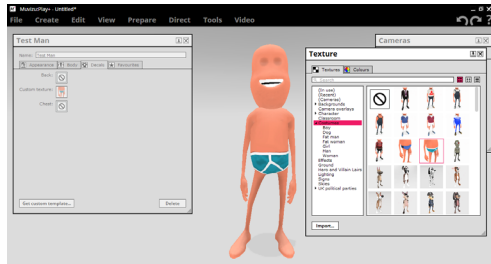
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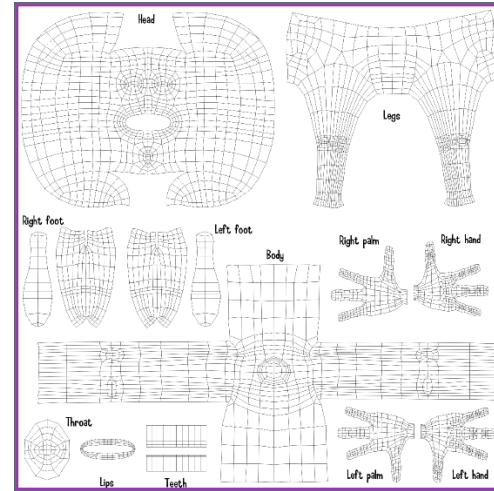
To load a pre-made custom texture, choose **Costumes** from the menu on the left hand side of the **Texture** window. All available pre-made custom textures will show as thumbnails. Each character type has its own subcategory and you should use textures from the correct category. To load a texture, simply click it and it will automatically load onto your character.

Like all textures in Muvizu you also have the option of importing an image file you have created.

It is best to use a template to help you design a texture for a character.



A UV map defines how a texture is mapped onto a 3D object. These will usually be flat representations of the object. For a Muvizu character the UV map will be the various parts of the body unwrapped and flattened out. These maps can be used for templates. An example for the standard man character can be seen below.

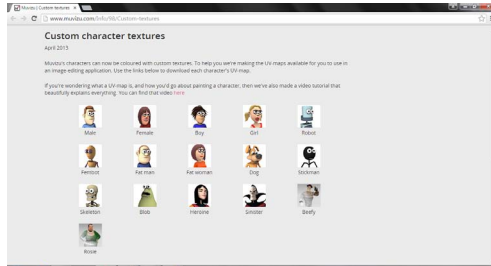


The Muvizu character UV maps are transparent image files (in .png format). All of the white areas are transparent.

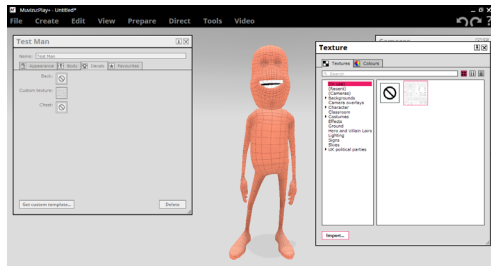
The "UV Maps" for Muvizu Characters can be downloaded from www.muvizu.com/Info/98/Custom-texture.

Click the **Get custom template...** button on the **Decals** page to visit this page.

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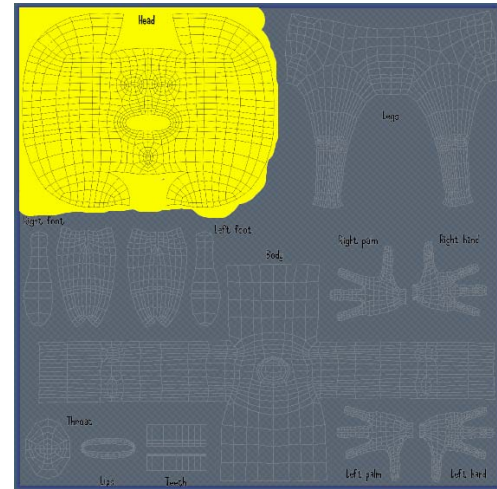


If we load one of the downloaded templates onto a character all you can see is the guidelines of the template.



To create your own custom texture, load the template into a 2D art package which has the ability to add layers. Add a transparent layer under the template and start to paint on it, using the template as a guide. It doesn't matter if you go over the lines!

The picture below depicts the head section of a layer underneath the template coloured yellow.



CREATING A CHARACTER

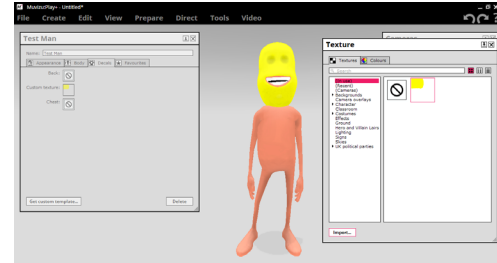
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Before saving as a .png file, delete (or hide) the template layer.

Now the image file looks like a yellow blob in the left hand corner.



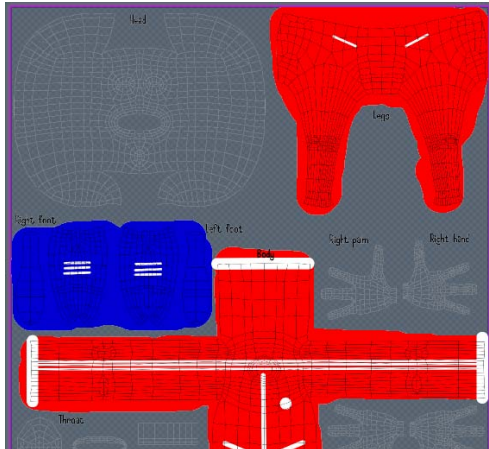
When we import the image onto the character you can see that only the head has turned yellow. This is because the image is transparent apart from the area we painted.



You can use custom textures to create new clothes and costumes for your characters.

CREATING A CHARACTER

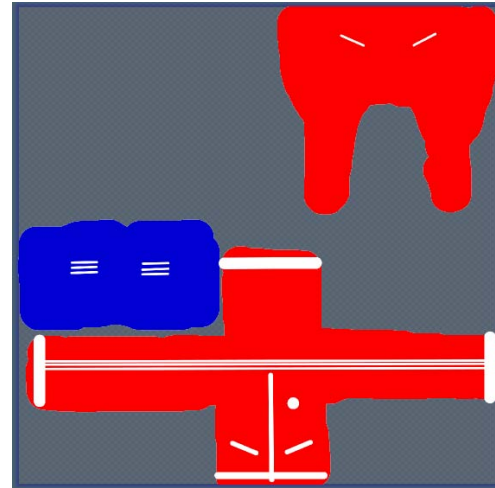
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The picture above shows a simple costume created using the template as a guide. Notice that the head and hands have not been painted. This means that the head and hands will be controlled by the **Skin colour** setting in the **Body** tab of the character-editing window.

Again, before saving the image as a .png you should delete or hide the layer containing the template.

This is how the image file looks with the template removed.

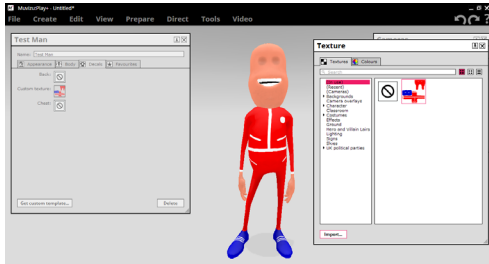


When we import the custom texture we can see how it looks on the character.

The next step is to add some hair, eyes and other accessories from the **Appearance** tab.

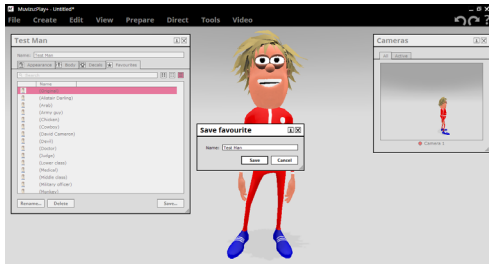
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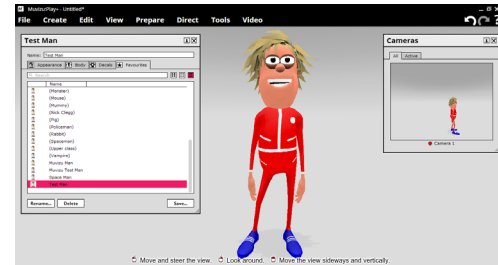


Now that you have completed our character, you can save it to the **Favourites** section of the character properties window for use in other scenes.

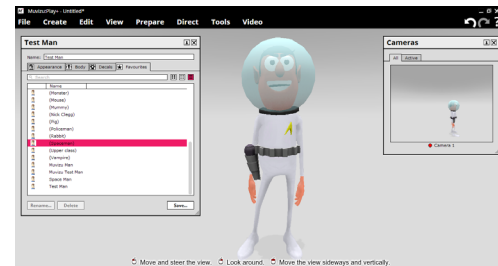
Click the **Favourites** tab and click **Save**. Name your character and click **Save**.



The character is now saved to the **Favourites** section and can be reloaded again and again.



The **Favourites** section also contains a range of pre-made characters. All of the pre-made characters will have brackets around the name, for example: (cowboy). Before creating a new character it is always wise to check the **Favourites** section to see if there is already a pre-made character you can use.



CHAPTER 4

CREATING AND EDITING OBJECTS

Objects are used to create and decorate your scene. Muvizu contains a wide selection of pre-made objects ranging from buildings, walls, sofas and picture frames to superhero lairs and rocket ships. Muvizu also contains a set of basic shapes such as cubes and spheres. All of the objects can be customized.

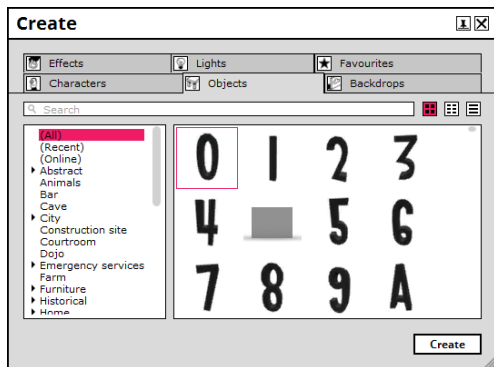
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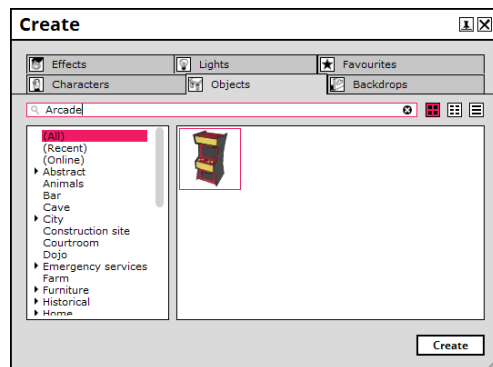
To create an object click **Objects** from the **Create** menu.



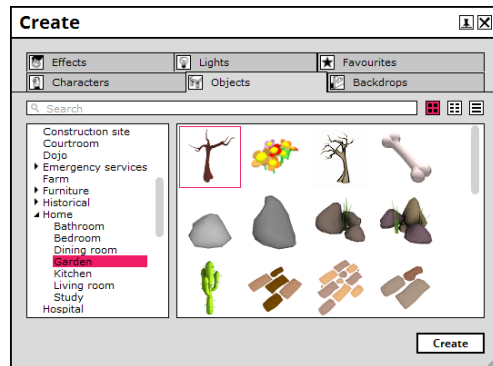
The **Create** window open with the **Objects** tab selected. You can view all available objects by clicking (All) in the menu on the left hand side of the window.



As with all of the content browsers, you can search for an object by typing the name in the search field.



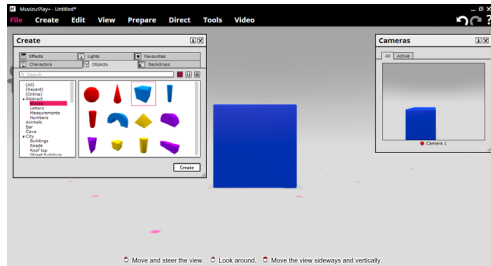
As there are a lot of objects, they are split into categories and sub-categories. You can use this to help if you are browsing for certain objects.



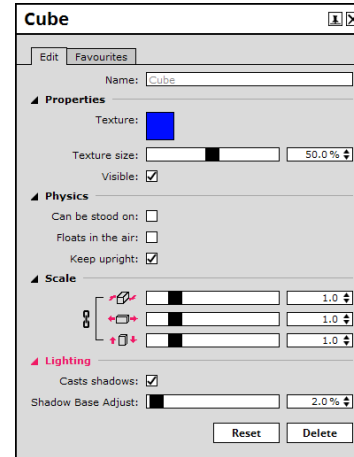
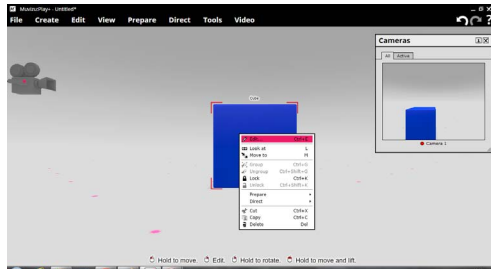
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To create an object in your scene double click the thumbnail, or select it then click Create. The object will spawn into your scene. You can move the object around using the controls in Chapter 1.



To customize an object right click on the object and select **Edit** or just double-click the object.



The object's properties window will appear. The properties window is split into four sections. **Properties**, which controls the object's appearance, **Physics** which controls some of the physical properties of the object, **Scale** which allows you to adjust the size of the object, and **Lighting** which allows you to change the object's shadow options.

The **Properties** that are shown will be different for each object. The options presented will usually be made up of Colours and Textures, but other options can be present, such as "opacity" for glass objects.

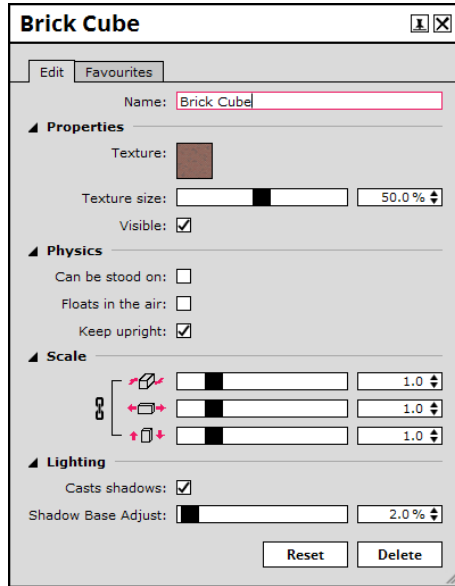
If you select multiple objects, properties that are common across those objects will be shown and can be changed at the same time.

All objects have a **Visible** setting. Un-checking this will make the object invisible – as with the character it will appear as a transparent grey silhouette when selected, but will not appear in any output.

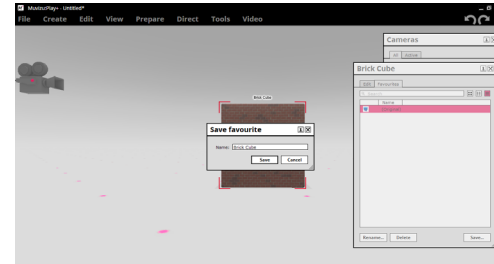
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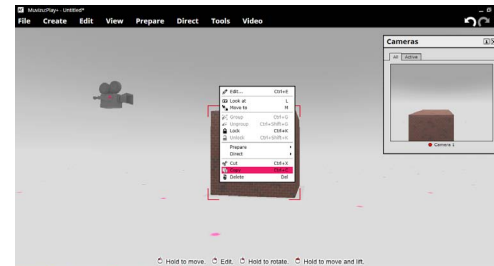
Once you have customized your object, you can name it by typing in the **Name** field. If you have a busy scene this can help you find it in the scene window.



Like characters you can save the object as a favourite, so you can re-use it later. To save the object, click on the **Favourites** tab in the properties window and click **Save**.



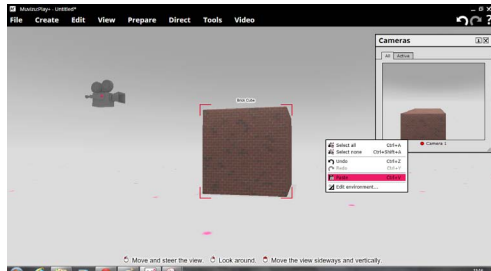
All objects in the Muvizu world (characters, objects, effects etc) can be copied and pasted. To copy an object, right click the object to get the context menu and select **Copy**, press Ctrl+C, or select **Copy** from the **Edit** menu.



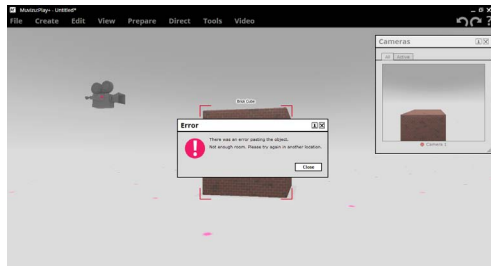
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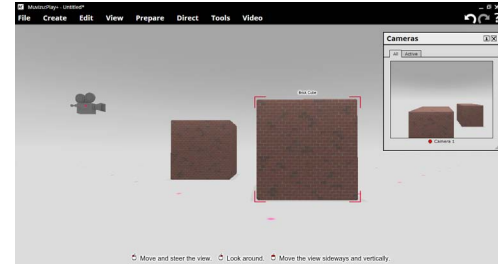
Then right click anywhere on the environment and select **Paste**, or press Ctrl+V.



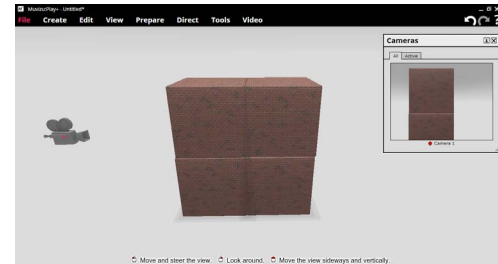
If you do not have enough room available to paste an object you will receive an **Error** message.



Close the error message and zoom out to make more room for pasting the object.



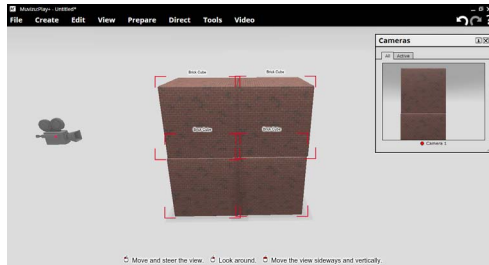
Muvizu allows you to stack objects on top of each other.



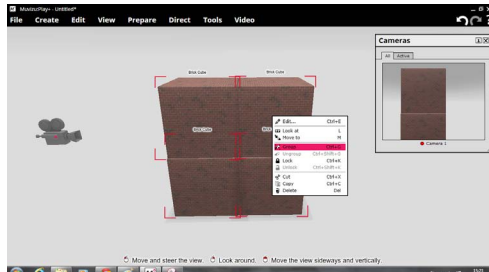
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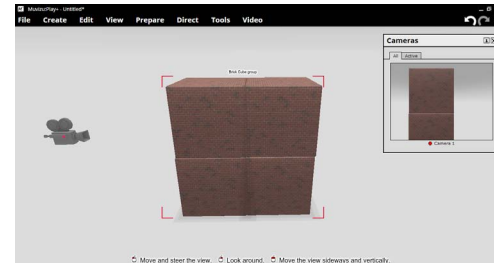
To group objects together hold down the Ctrl key and select all the objects you would like to group together.



Then right click and then select **Group** from the context menu or press Ctrl+G.

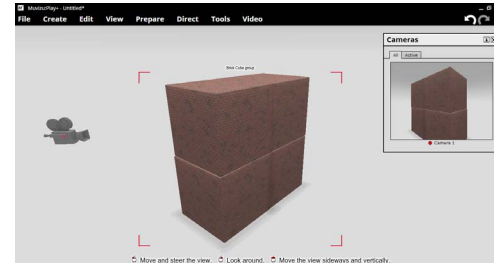


The objects are now all grouped together.



Now the objects are grouped you can move them all at the same time. You can also set the properties the objects have in common for the entire group. You edit the properties in the same way that you would for a single object, right click and select edit, or double click an item in the group.

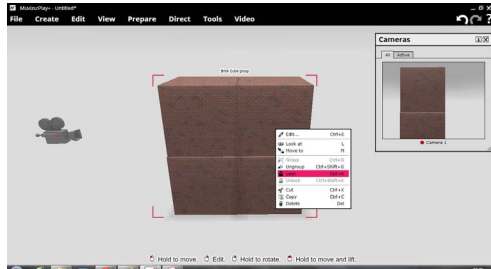
To ungroup objects, right click on one of the objects and select **Ungroup**, or press Ctrl+Shift+G.



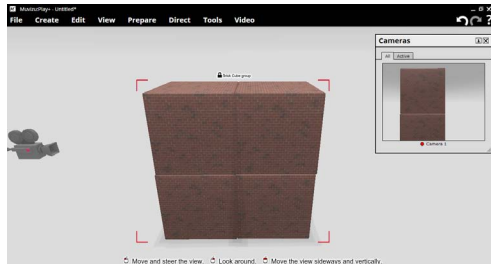
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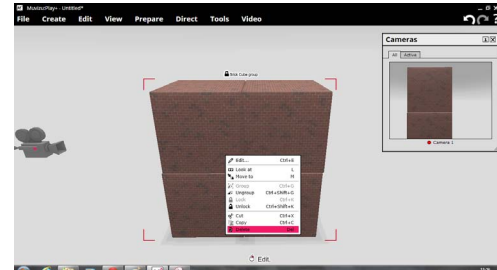
To lock an object to a fixed position right click the object and select **Lock**.



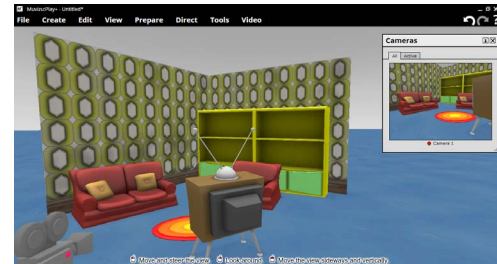
A pad lock will appear above the object next to the object's name. Now that the object is locked in position all movement controls for the object are disabled. If you would like to move the object you will have to **Unlock** it.



You can delete any objects by right clicking on them and selecting **Delete** or by pressing the delete key – or pressing **Delete** on the object's properties window.



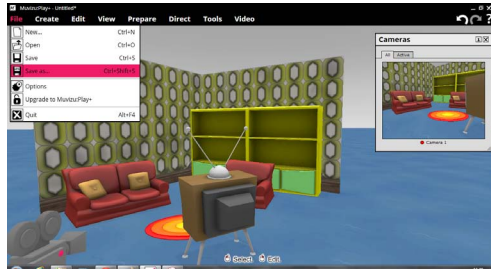
You can make scenes very quickly by only using a few objects. The Living Room scene below is made from only five objects and a backdrop.



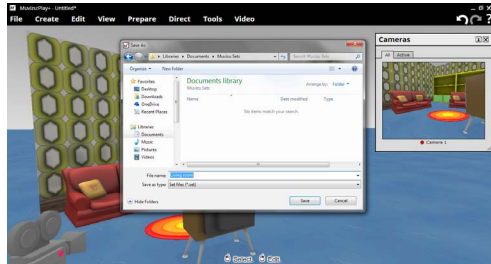
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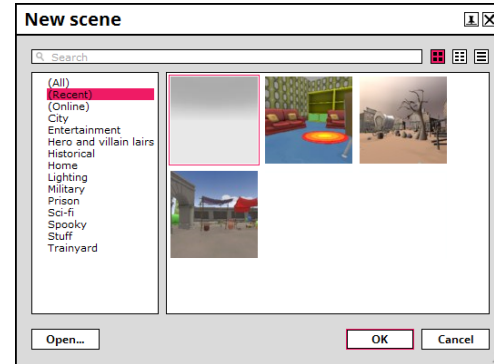
When you are happy with your scene save it by clicking **File** from the top menu and selecting **Save as**.



Choose a place on your PC to save the scene, name it and click **Save**.



When opening a new scene, all recently opened scenes will appear in the **(Recent)** category of the **New scene** window. Alternatively click **Open** and load your scene. All Muvizu scenes are saved as a .set file.



CHAPTER 5

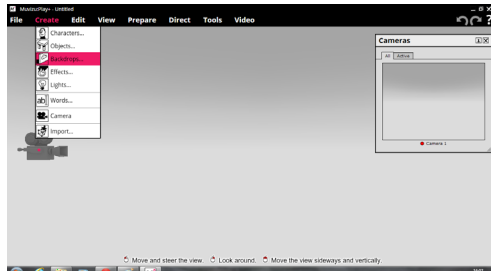
CREATING AND EDITING BACKDROPS

Backdrops are extremely useful when making a scene in Muvizu. The most common use of a backdrop is a wall. However backdrops in Muvizu have very powerful properties that can be used to create a host of effects.

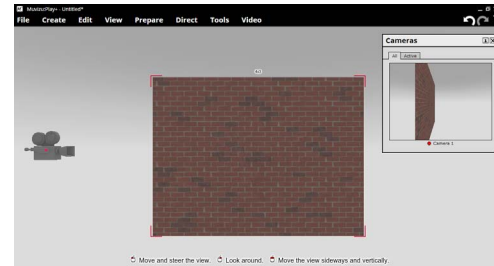
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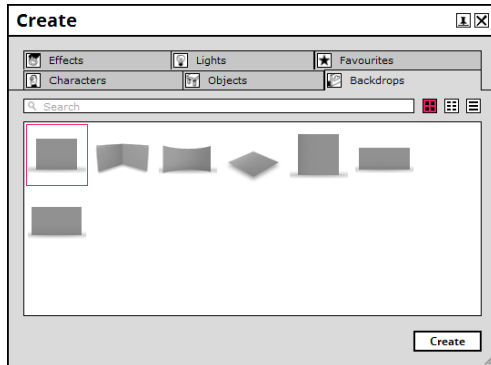
To create a backdrop click **Create** from the top menu and select **Backdrops**.



A backdrop will spawn. Edit the backdrop by right clicking on it and selecting **Edit** or double-clicking it.

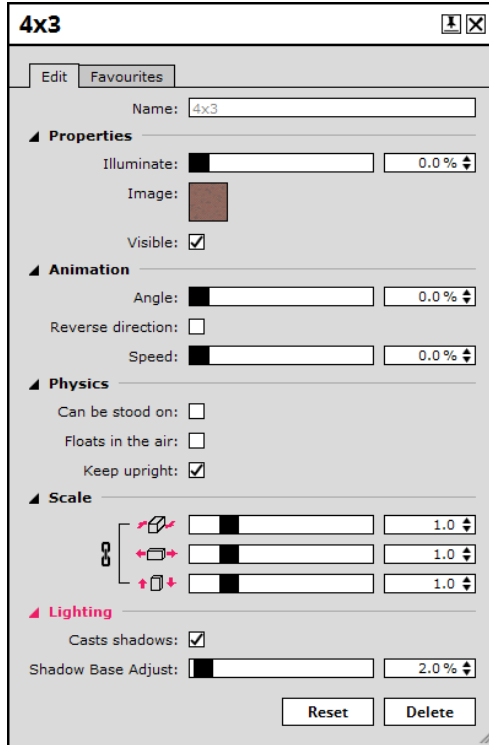


The **Create** window will appear, opened on the **Backdrops** tab. Select the backdrop you would like and click **Create**.



CREATING AND EDITING BACKDROPS

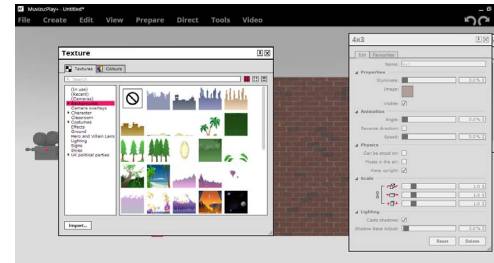
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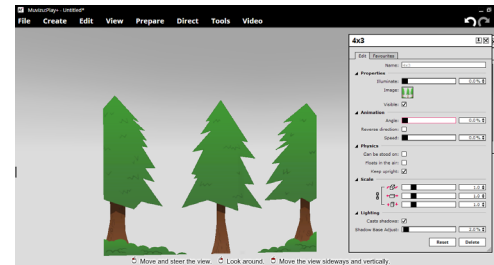
The backdrop properties window is split into five sections. **Properties** controls the illumination, image and visibility; **Animation** allows you to scroll and rotate the image; **Physics** controls the backdrop's physics; **Scale** controls the size of the backdrop; and **Lighting** allows control of shadows.

The properties can be changed in the usual way.

The **Backgrounds** texture category contains the pre-made textures for backdrops. Click on a thumbnail to be applied to the backdrop. As with all textures, you can import your own image.



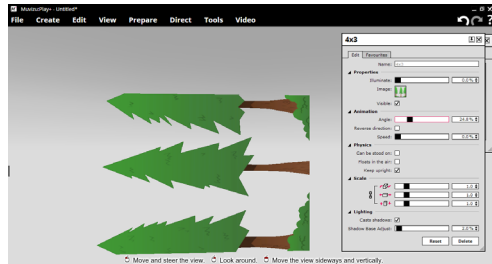
If a texture is partially transparent you will be able to see through the gaps in the texture.



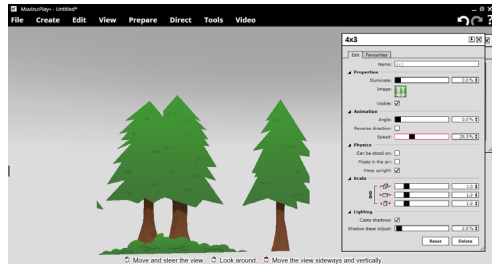
CREATING AND EDITING BACKDROPS

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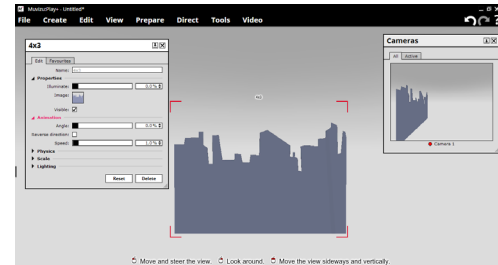
To change the angle of the image, use the slider bar next to **Angle**.



The **Speed** slider controls the speed of the image scrolling across the backdrop. To reverse the direction of the scroll, click the **Reverse direction** box.

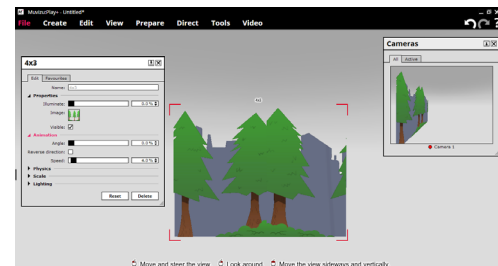


You can create layers of backdrops by positioning them in front of each other. Below is a city image loaded onto a backdrop. The speed is set to 1% so it is scrolling across the backdrop very slowly.



A second backdrop is positioned in front of it and the speed is set to 4%. This gives the illusion that the scene is moving. The city in the background and the trees in the foreground are moving at a different rate and create a "parallax" effect.

As with all items, you can save them as a favourite for later use. To save a backdrop click the **Favourites** tab on the properties window and click **Save**.



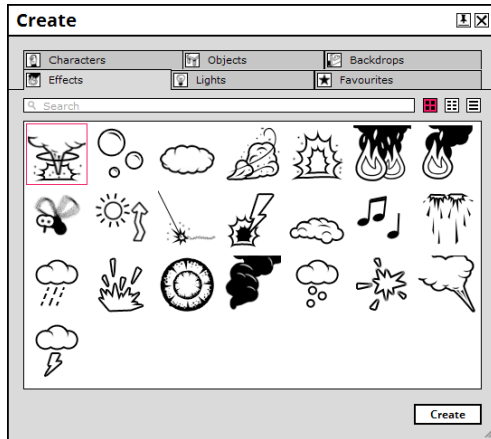
CHAPTER 6

CREATING AND EDITING EFFECTS

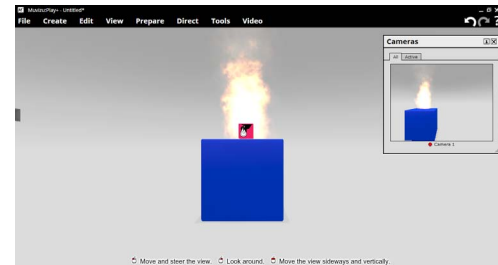
Muvizu contains a number of special effects that can be used in your movie.

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The **Create** window will appear opened on the **Effects** tab.



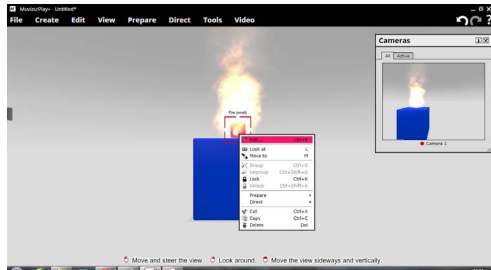
You can move and position an effect using the standard controls.



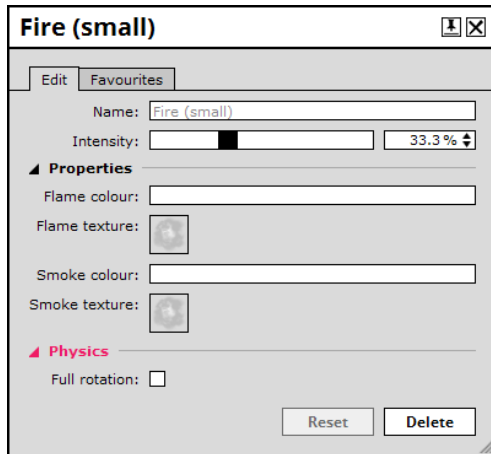
CREATING AND EDITING EFFECTS

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To edit an effect right click on it and select **Edit** or double click it.

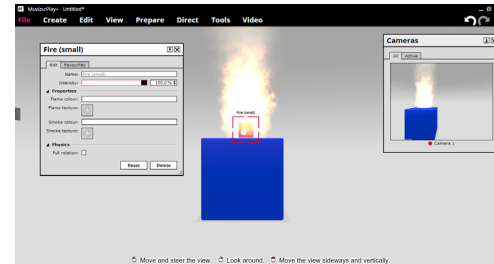


The effects properties window will appear. The number of sections and properties available will depend on the type of effect. The properties for the small fire are shown below.

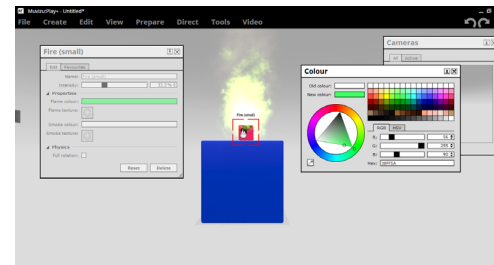


Raising the Intensity of the fire effect makes the flame stronger and larger. **Intensity** is a property that is present in a lot of the effects. Set the intensity to 0% to turn the effect off.

You can see in the **Cameras** view window that the cube looks like it is on fire.

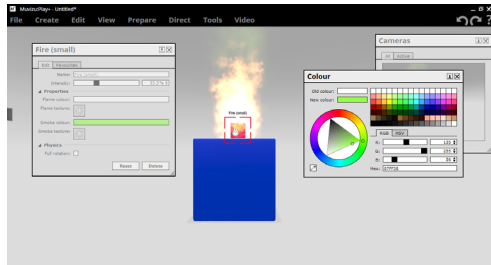


In the case of the fire you can set the colour of the flames and the smoke.

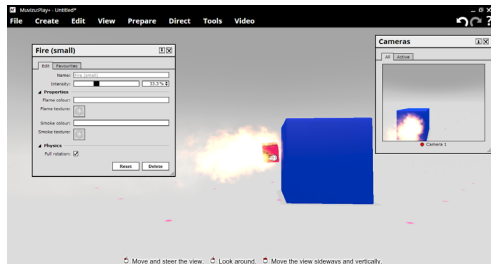


CREATING AND EDITING EFFECTS

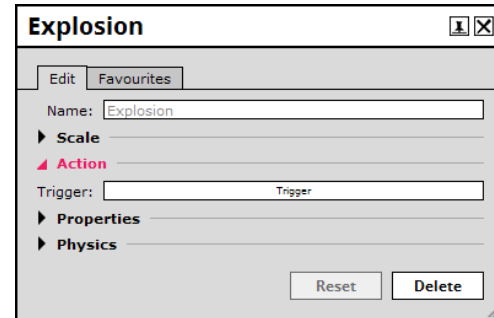
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By default effects will only rotate left and right. If you check the **Full rotation** property in the Physics section you will be able to rotate in the effect in all directions. Below the effect has been rotated so it appears that the fire is shooting out of the side of the cube. **The Full rotation** property exists for all effects.



Some effects, such as explosions, happen when triggered.



They will initially trigger when they are spawned into the scene or if you press the trigger button. The trigger, like most properties, can be animated so you can time it to appear in your movie

CHAPTER 7

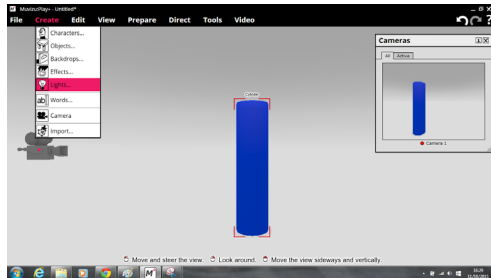
CREATING AND EDITING LIGHTS

As well as the global ambient light, Muvizu allows you to add extra lights to a scene.

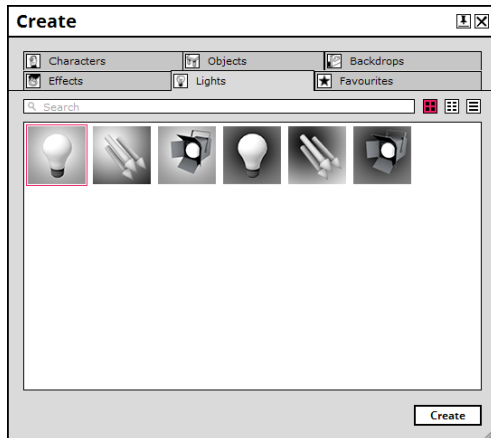
CREATING AND EDITING LIGHTS

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To create a light, click **Create** from the top menu and select **Lights**.

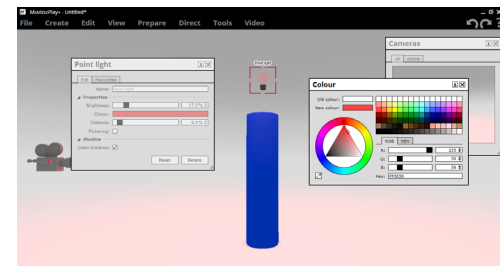


The **Create** window will open on the **Lights** tab. To create a light click the thumbnail of the light you would like and click **Create**.

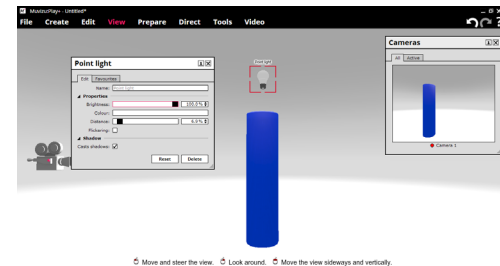


All lights in Muvizu have three common properties.

Colour Allows you to set the colour of the light.




Brightness Adjusts the brightness of the light – a brighter light will have a larger range.

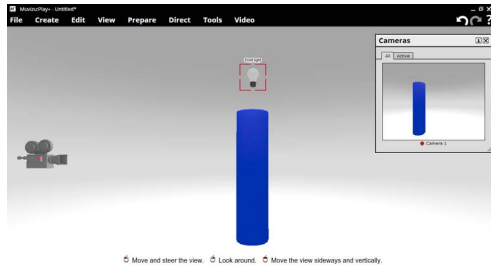
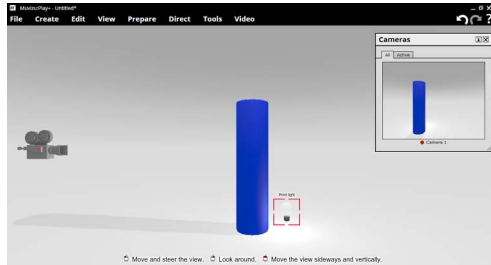


Flickering This check box makes the light flicker. This effect can help to create spooky or atmospheric lighting (like broken fluorescent lighting.)

CREATING AND EDITING LIGHTS

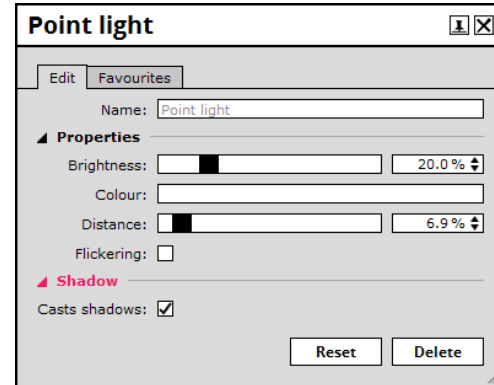
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The first light  is a **Point light**. A point light radiates light in all directions, and has a certain position in the scene. It will light an object depending on the position of the object relative to the light. For example:

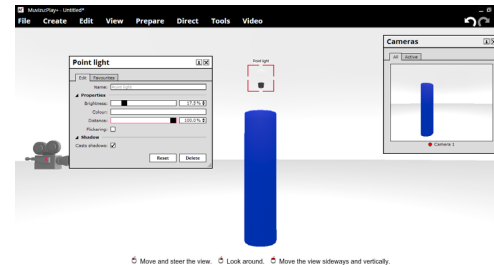


A point light has a range, as objects get further away from the light, it will have less effect.

To edit a light, like all objects, right click on it and select **Edit** (or double-click it). The light's properties window will appear.



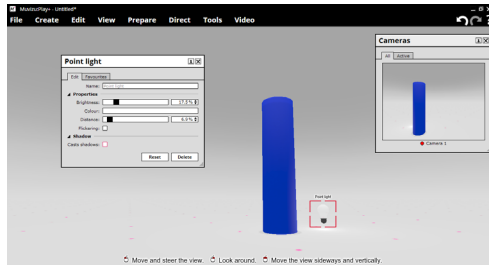
Brightness, Colour and Flickering are described above. The **Distance** property allows you to set the range of the light.



CREATING AND EDITING LIGHTS

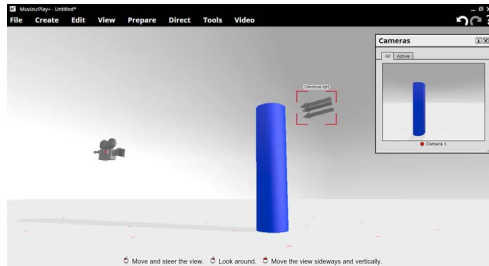
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Unchecking the **Casts shadows** box turns off any shadows cast the light.

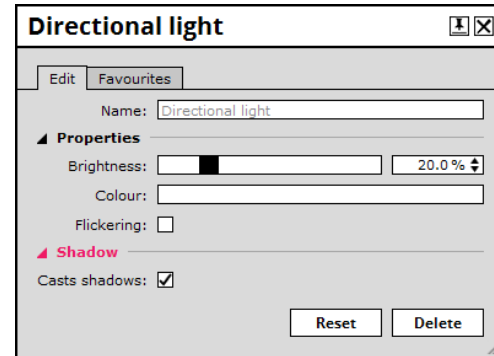



The second type of light is a **Directional light** .

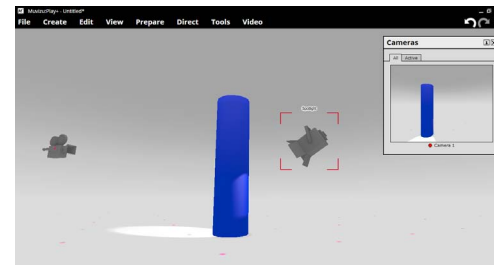
A directional light illuminates all objects from the same direction – as if the rays of light were parallel. These lights are often used to represent the sun or moon.



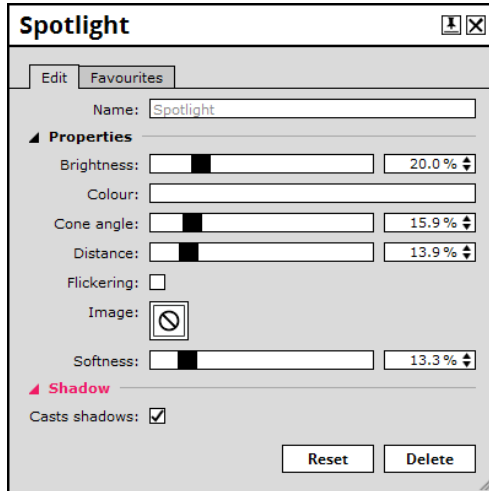
The directional light only has the basic light properties.



The third type of light is a **Spotlight** . A spotlight projects a bright beam of light onto a particular space. A spotlight is most commonly used in concerts, musicals or stage productions, or can even be considered as something like car headlights.

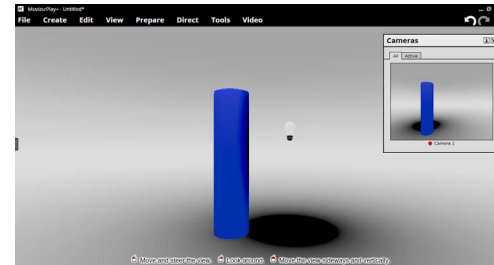


As well as the common lighting controls the spotlight's properties also allows you to control the **Cone angle**, **Softness** and to load an **Image** onto the light.

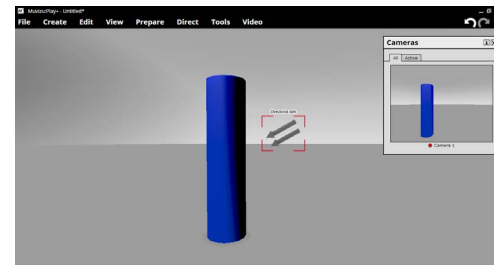


The final three lights are "dark" variants of the point light, directional light and spotlight. Dark lights work in reverse to normal lights. Instead of emitting light they "suck" light out of the scene – effectively darkening the scene instead of lightening it.

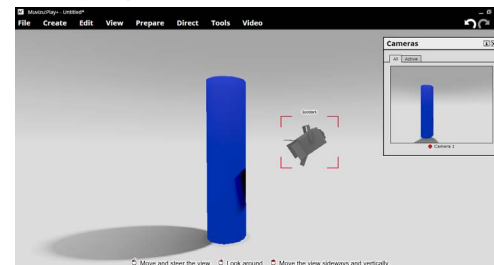
Dark Point light



Dark Directional light



Dark Spotlight



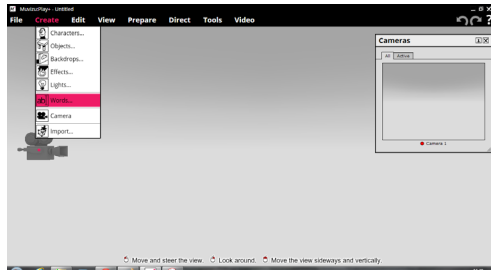
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CREATING AND EDITING WORDS

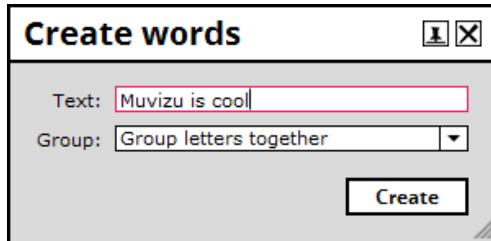
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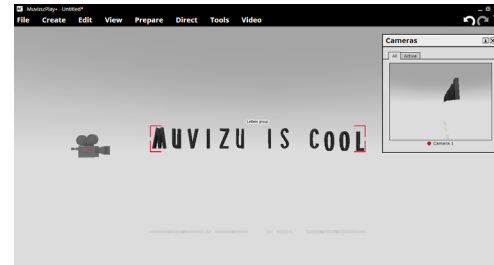
To create words in Muvizu click **Create** in the top menu and select **Words**.



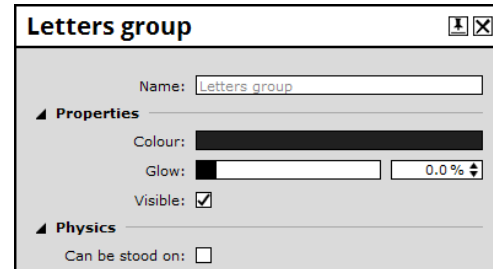
You will be prompted to type the words you would like to create. When you have finished typing, click **Create**.



You can move the letters around the scene with the standard controls.



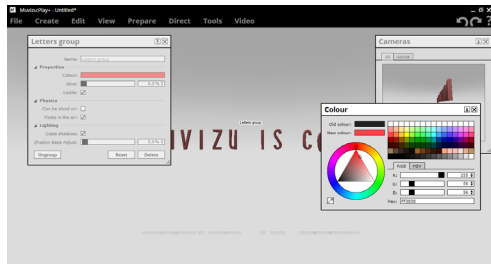
To edit the words right click on them and select **Edit**. The letter's properties will appear.



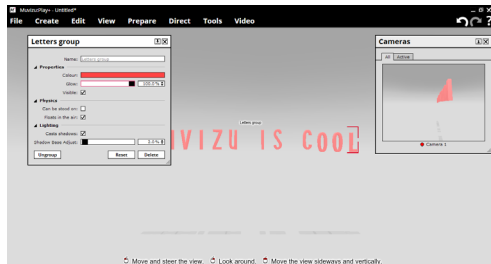
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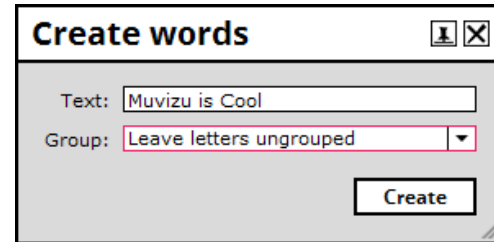
You can change the colour of the words in the usual way.



The **Glow** setting increases the letter's self-illumination.

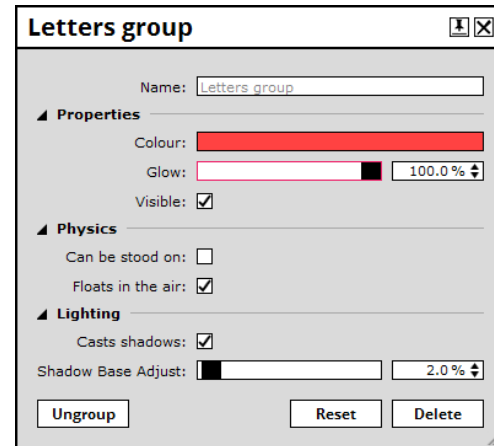


By default, words are created with the letters all grouped together. However, the letters can be created as individual objects, by changing the **Group** option on the **Create words** dialog.



It is usually more convenient to have them grouped together.

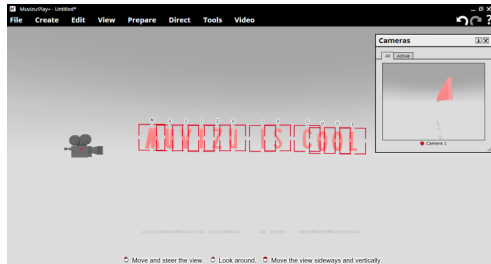
To edit individual letters in the words click **Ungroup** from the Letter's properties window, or press Ctrl+Shift+G.



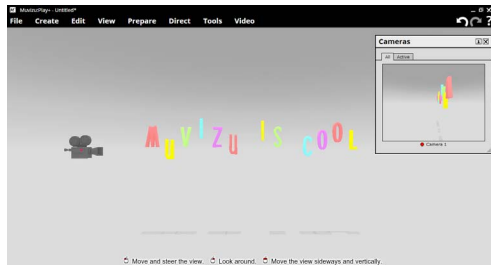
CREATING AND EDITING WORDS

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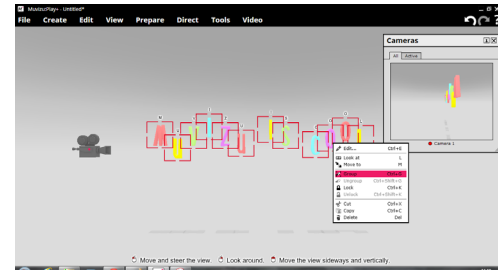
Each letter will now appear separated.



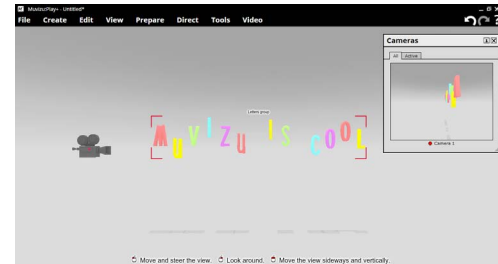
This will allow you to reposition and change the properties of individual letters.



To regroup the letters hold the Ctrl key down whilst clicking on the individual letters. When they are all selected, right click and select **Group** (or press Ctrl+G).



The letters will now be grouped back together.



CHAPTER 9

CREATING AND EDITING CAMERAS

In Muvizu cameras are very important. When you make your animated movie only the view from a camera (or cameras) will be rendered into the video file.

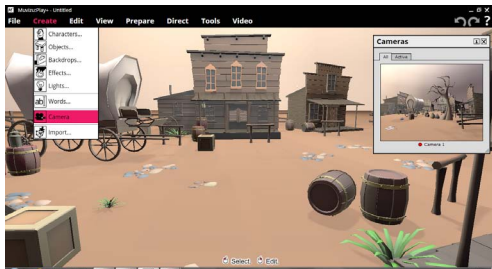
CREATING AND EDITING CAMERAS

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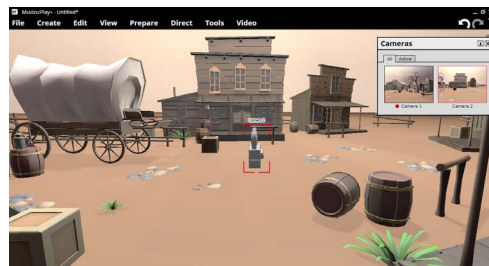
Pre-made Muvizu scenes will already include one or more cameras. Below is the **Western street** scene (from the historical category). As you can see there is already a camera in the scene. The **Cameras** window shows the views from the cameras in the scene.



To create a new camera start by moving to the area of the scene you wish to capture. Then click **Create** from the top menu and select **Camera**.



A new camera will appear. You can move and reposition a camera as required.



Notice that now the **Cameras** view window now shows the view from both cameras.

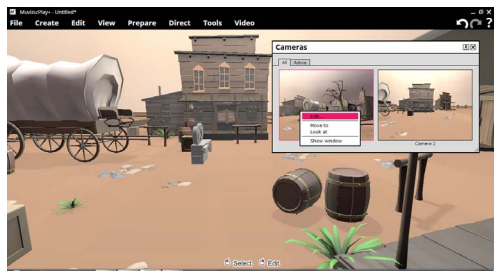


In addition to the usual way of selecting a camera, you can also select the camera by clicking on the image in the Cameras window. In the cameras window a selected Camera will have a red border round the image or black if not selected.

CREATING AND EDITING CAMERAS

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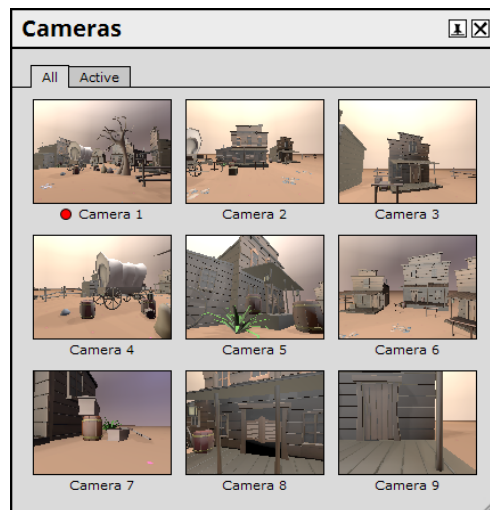
Right clicking a camera view will show a small context menu, which will allow you to navigate to or edit the camera.



The **Show window** will create a popup view of that camera window, which you can resize to get a clearer view and make finer adjustments with the position of the window.



As **Cameras** are created, they are numbered. Muvizu supports up to 9 cameras in a scene. The cameras are numbered by their position in the Cameras window. Deleting any camera will cause subsequent cameras to be renamed accordingly.

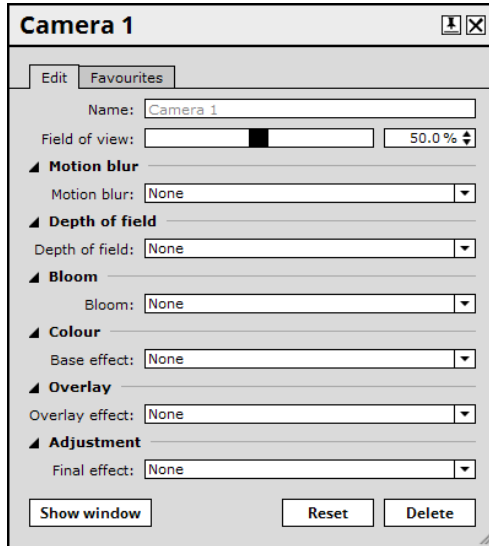


You can delete a camera by selecting it, and pressing the delete key.

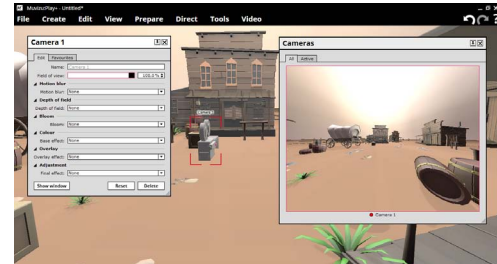
To edit the camera either right-click on the view in the **Cameras** window or on the camera and select **Edit**. The camera properties window allows you to change the settings of a Muvizu camera to deliver the required effect for your movie.

CREATING AND EDITING CAMERAS

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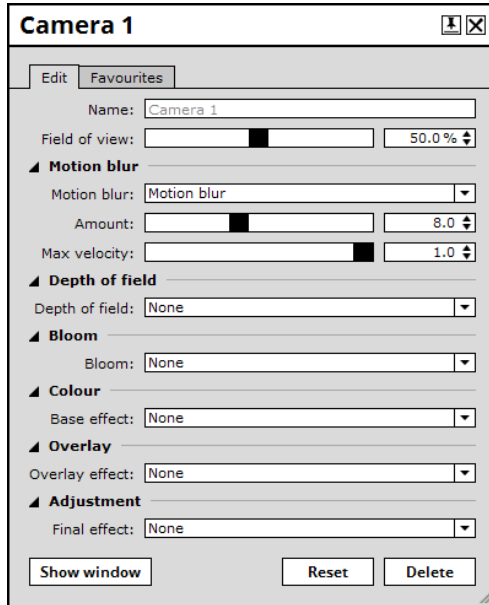
The first setting is **Field of View** (FOV). The field of view defines how wide the viewing angle of the camera is. It is the equivalent on a real world camera of a zoom / wide angle control. If the field of view is small, then it is the equivalent of a zoom lens. If it is higher, it is the equivalent of a wide angled lens.



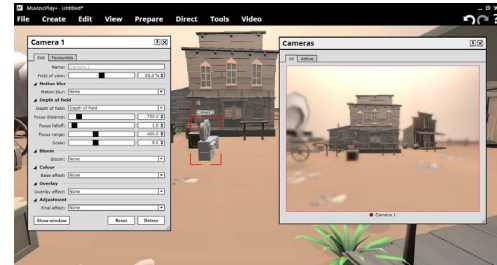
Motion blur can be turned on by selecting it from the drop down next Motion blur. Motion blur simulates the apparent streaking of rapidly moving objects. The Motion blur controls allow you to adjust the amount and velocity.

CREATING AND EDITING CAMERAS

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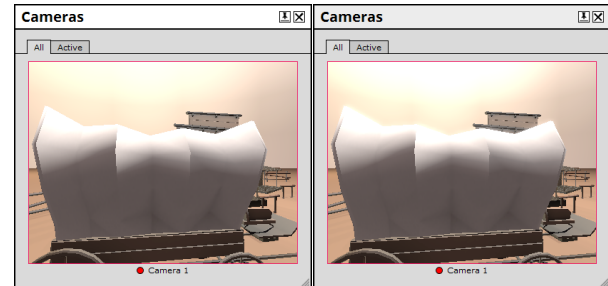


The next setting is **Depth of field**. Depth of field (DOF) is the distance between the nearest and farthest objects in a scene that appear acceptably sharp in an image.



Turning on the **Bloom** settings allows you to create a light bloom effect. This artefact produces fringes of light extending from the borders of an object emulating glare off of an object. Adjusting the Bloom settings with contribute to the illusion of an extremely bright light. Real cameras often capture these types of effects.

The image below on the left has no bloom. The image on the right does, you can see the effectively “blown out” white at the top of the wagon and the glare around it.



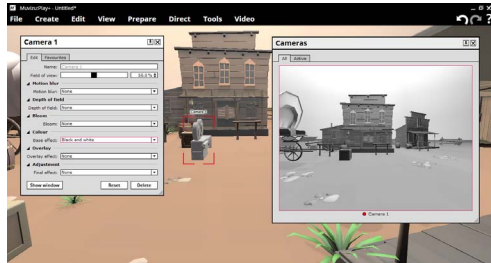
No bloom

With bloom

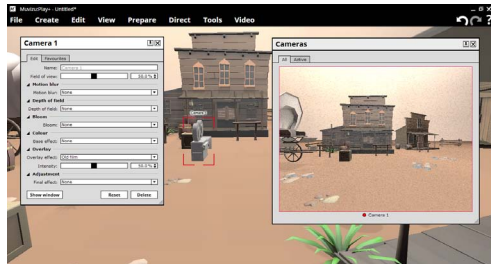
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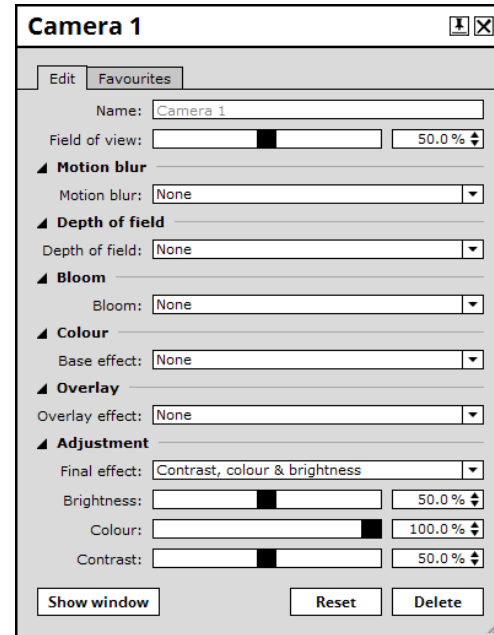
The **Colour** section of the camera editing window allows you to choose from several pre-set **Base effects**. Here is the effect achieved from selecting **Black and White**.



The **Overlay** setting allows you to choose an overlay effect. This will give the camera an added effect such as making it appear like CCTV footage, or underwater footage. Here is the camera with the **Old film** overlay setting enabled.



The final section is **Adjustment**. This setting allows you to adjust the **Brightness**, **Colour** and **Contrast** of the camera.



To save your camera for later use select the **Favourites** tab and click **Save**. Remember to name your camera so you can remember what settings it has. For example if you have a camera with an old film overlay, name it something like "Old Film Camera".

SECTION 2

ANIMATE

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CHAPTER 10

DIRECTING CHARACTER MOVEMENT

MAKING A MOVIE

This section of the instruction manual is a tutorial on how to create a short movie. There are a few concepts and controls that it's useful to know before starting.

DIRECTING CHARACTER MOVEMENT

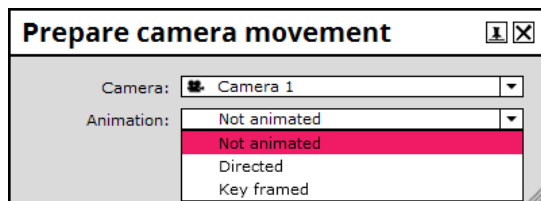
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Muvizu animation

Muvizu was designed to be fun to animate with and the main concept was that you were a puppeteer and controlled character's behaviour and actions dynamically. Since it would be too complicated to puppeteer everything at once you can record each individual part in separate passes. Of course, you can also redo passes – or take over half way through what you've recorded if you're not happy with it.

Preparing and directing

Often before animating or directing something, you have to tell Muvizu that you want to do this. On the main menu you will see Prepare and Direct options. The prepare camera movement dialog is shown below. This is typical and applies to movement and properties for objects, cameras, events and characters.

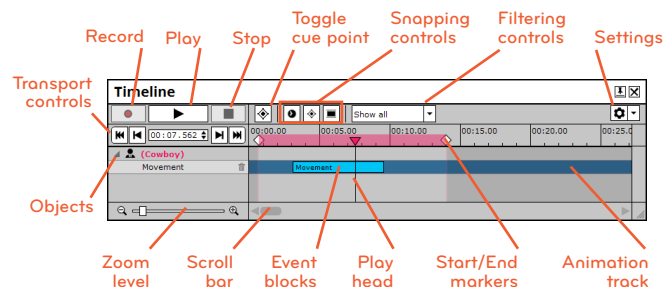


In the case of camera movement, it allows you to choose which cameras are animated and how they are animated. Not animated means the camera doesn't move. Directed means that you drive or "puppeteer" the camera, and key framed allows the more traditional key framing of camera positions.

Once you have selected the animation type, you can switch to the direct mode and create your animation.

The Timeline

The timeline is central to all animation and playback within Muvizu. There are various sections to the timeline which are shown below.



The timeline is required for all animation and playback within Muvizu. The controls parts of the timeline are described below.

Record

Like a video recorder this starts recording any directed movement.



Play

Plays back the events on the timeline – starting from the current play head.



Stop

Stops recording or playback.



Transport controls

The transport controls allow you to move through your animation. Alongside the time/frame number control in the middle. There are four controls:



Go to the start of the movie.



Skip back one event



Skip forward one event



Go to the end of the movie

Zoom level



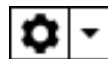
Controls how much of the timeline you can see. If you move the slider to the left it will fit more in, if you move it to the right, it will zoom in – and give you more granular control.

Scroll bar



Moves the viewable portion of the timeline left and right.

Settings



Switch between frames and time, and turn on all the filtering options.

Objects

Objects that have animated tracks be shown, each object type has an icon to help differentiate what it is – and will be displayed with the object's name.

Characters



Cameras



Lights



Objects



Effects



Animation tracks

An animation track shows which properties of an object are animated, and have "blocks" on it. These blocks are animation events or key frames.

Event blocks

Event blocks show on an animation track and define an animated property or key frame. They can be repositioned, deleted and in some cases edited.

The Play head

The play head shows where the play or record position is in the current movie. The play head can be dragged backwards and forwards to scrub through the animation.

Start / End markers

These two markers define where the recorded movie starts and ends. You can move them on the timeline to define the length of your movie.

Toggle cue point

A cue point is a marker that can be placed on the timeline and can be used to help line up events, such as sounds and animations.

Snapping controls

You can enable these settings when editing on the timeline to make objects snap to time markers, cue points and other events.

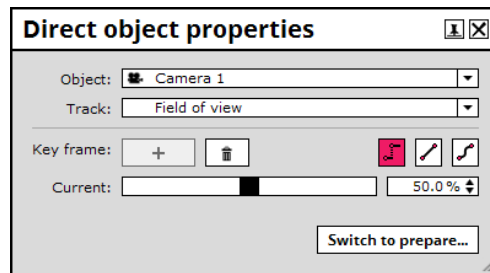
Filtering controls

This controls what is shown in the timeline. If you have a movie with a lot of different items being animated the timeline can become cluttered. The filtering controls allow you to simplify what is shown.

There are two modes for the timeline in Muvizu. When directing any animation, the timeline will be in a recording mode and will only show the items being animated. This version of the timeline is shown when any of the items in the Direct menu are selected. The full timeline can be shown by selecting Timeline from the Tools menu. The full timeline will allow you to see all items within the scene.

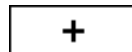
Key-framing

To Key-frame in Muvizu in the prepare dialog for the item, select **Key framed** from the drop down list, then press the **Switch to direct...** button. The direct object properties window will appear.



The controls on the window will depend on the property being animated. The common controls are:

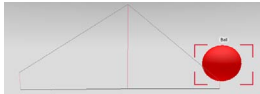
Adds a key frame at the current time. This button will be disabled if there is already a key frame at this point.



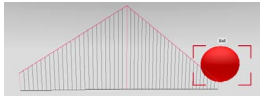
Deletes the key frame at the current time. If there is no key frame at the current time, the button will be disabled.



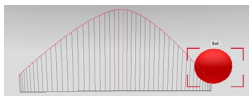
Sets the key's interpolation type to "stepped". This means that it will remain at this value / position until the next key frame. The visual representation here shows that the item stays in one position then moves in one key.



Sets the key's interpolation type to "linear". Linear keys move in a straight line between values.



Sets the key's interpolation type to be "auto". These keys will move in a smooth curve between all the values.



Use the timeline skip controls to move back and forwards between key-frames –and move them on the timeline.

When a key frame is selected on the timeline, any changes to the position or property will be updated directly. You can then use the timeline to play or step through the animation.

A texture's key type can only be stepped.

DIRECTING CHARACTER MOVEMENT

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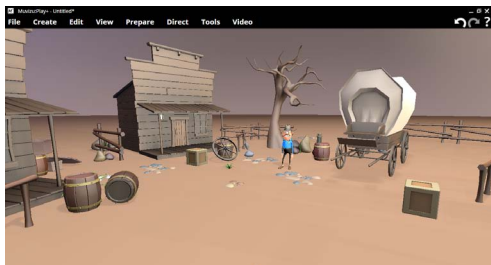
Animation tutorial

Chapter 10

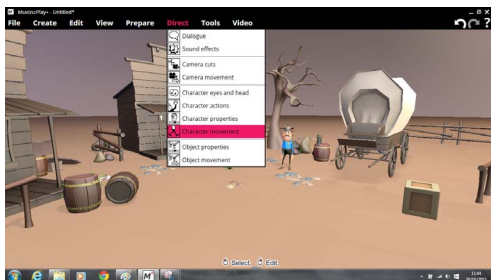
Directing Character Movement (Locomotion)

Muvizu uses a mouse-based system to move characters from A to B. This type of movement, in Muvizu, is called Locomotion.

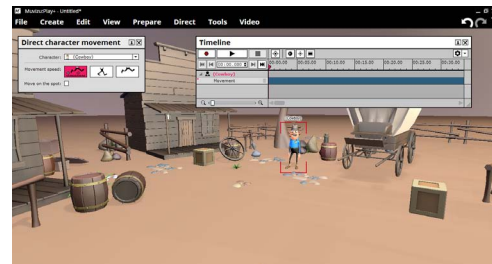
Open the **Western street** scene and create a character using the cowboy favourite. Position the view so you can fully see the area the character will be moving around in.



Click **Direct** from the top menu and select **Character movement**.

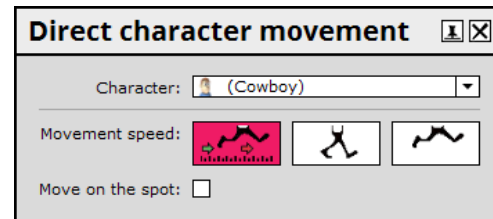


The **Direct character movement** window will appear along with the Timeline. The **Direct character movement** window allows you to choose how you would like the character to move.



The drop down **Character** box allows you to choose which character you would like to direct. This is important when creating an animation with multiple characters.

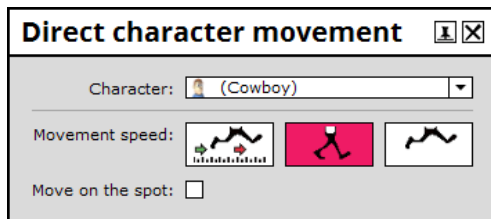
The images next to **Movement speed** are the different locomotion modes. The first mode is **Normal**, in this mode the character will switch between the walk and run depending on the speed of your mouse movement. If the mouse movement is fast the character will start to run.



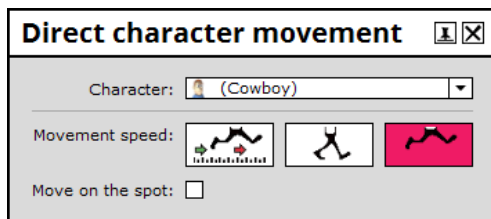
DIRECTING CHARACTER MOVEMENT

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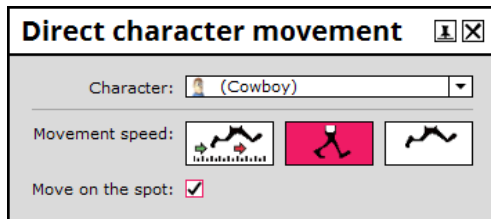
The second mode is **Walk**. No matter how fast you move the mouse the character will always walk.



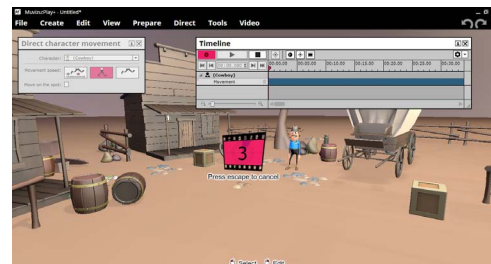
The third mode is **Run**. No matter how fast you move the mouse the character will always run.



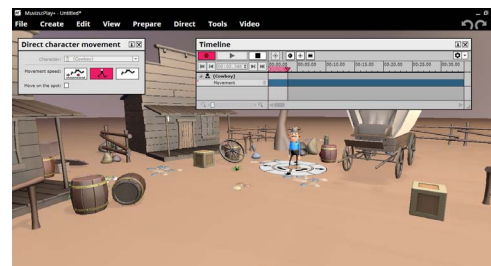
Clicking the **Move on the spot** box will stick the character to the spot whilst moving. Much like walking or running on the spot. This is a handy function to use with a scrolling backdrop.



When you are ready, click the **record** button on the timeline. A three second countdown will begin.



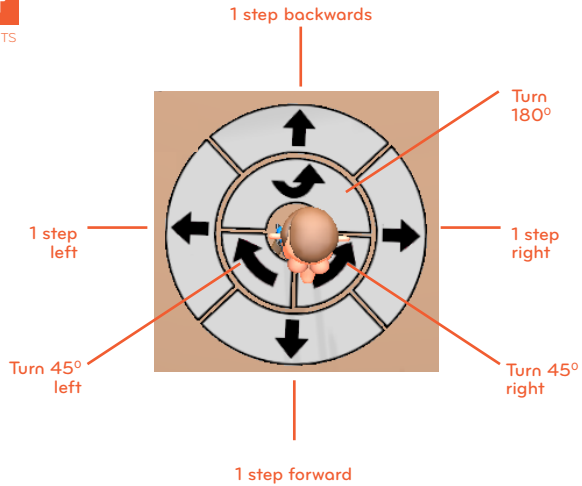
After the countdown a movement dial will appear at the feet of the character. This dial allows you to control the path of the movement by clicking and dragging the mouse.



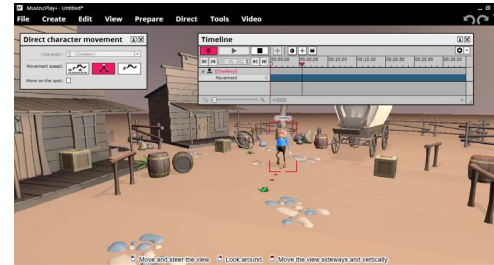
DIRECTING CHARACTER MOVEMENT

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The controls of the dial are shown below.

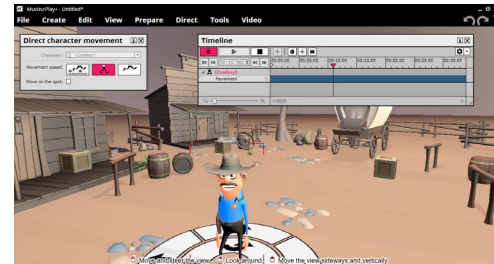


Click the dial and then drag it (by keeping the left mouse button down as you move the mouse). As you drag the mouse, draw the path that you would like your character to move. You will see a green arrow to show you the direction and pink spots depicting the characters path. In this case, draw the character walking towards you.



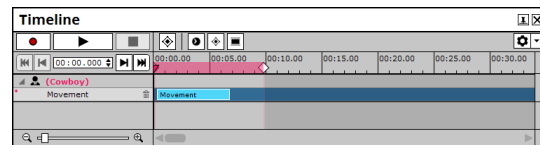
Alternatively you can make the character walk in a straight line by simply double clicking on the area you would like the character to go to. You can also click on any of the buttons on the movement dial, and the character will perform that action.

When the character has reached the end of the movement path, click the **stop** icon on the timeline.



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The screenshot displays the Unity 5.6.0f3 development environment. The top menu bar includes File, Create, Edit, View, Prepare, Direct, Tools, and Video. The main 3D viewport shows a Western-themed scene with a wooden building, a horse-drawn wagon, and a character in a red shirt. A red bounding box is visible around the character. The bottom status bar contains the text: "Move and steer the view" (with a mouse icon), "Lock anchor" (with a padlock icon), and "Move the view sideways and vertically" (with a four-way arrow icon). On the left, a "Direct character movement" panel shows a "Character" dropdown set to "Player" and a "Position" field with a value of 0.0, 0.0, 0.0. The right side features a "Timeline" window with a playhead at 0:36 and a track labeled "Movement" showing a blue bar representing movement data over time.

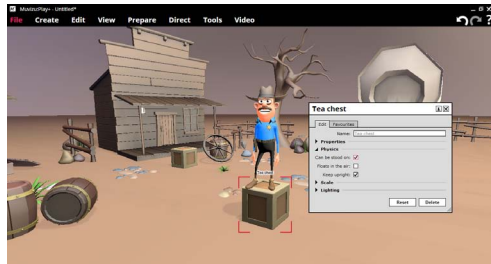


The screenshot shows the Blender 2.79 interface. The top menu bar includes File, Edit, View, Prepare, Direct, Tools, and Video. The 'Direct' tab is active, showing the 'Direct character movement' panel on the left and the 'Timeline' panel on the right. The 3D viewport displays a scene with a character in a blue shirt and a red box around them, indicating movement tracking. The timeline shows a sequence of frames with a red bar indicating the current frame range.

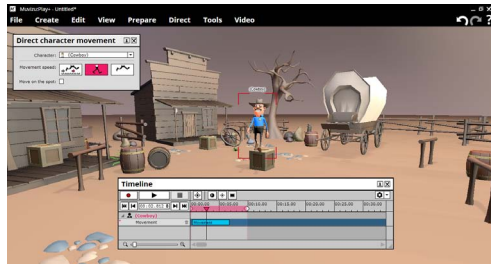
DIRECTING CHARACTER MOVEMENT

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In the Physics section of the objects property window, click the Can be stood on box. This mode will automatically take effect.



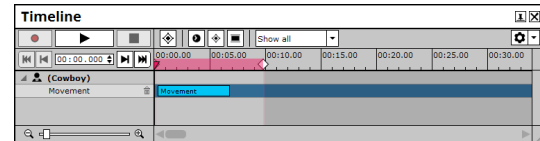
The character will now walk up onto the object and back down again.



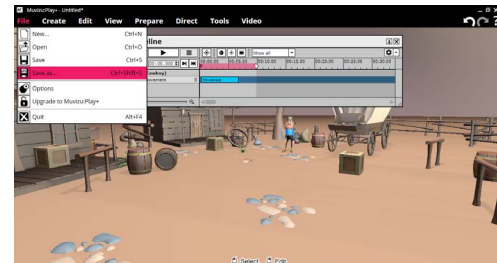
If you have closed the **Timeline** window you can recall it by clicking **Tools** from the top menu and selecting **Timeline**.



The **Show all** drop down allows you to view all elements in your animated movie or just the element that has been selected. It is usually best to select show all as it gives a complete picture of all the elements in your animation. If your animation is very complex, then you can choose the Show selected option to show just the selected items.



To save your animation click **File** from the top menu and select **Save** or **Save as**.



CHAPTER 11

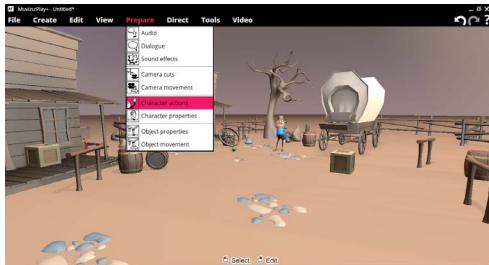
PREPARING AND DIRECTING CHARACTER ACTIONS

Muvizu has a large selection of pre-made actions for your character. These actions revolve around the mood of a character and are split further into types.

PREPARING AND DIRECTING CHARACTER ACTIONS

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To prepare character actions click **Prepare** from the top menu and select **Character actions**.



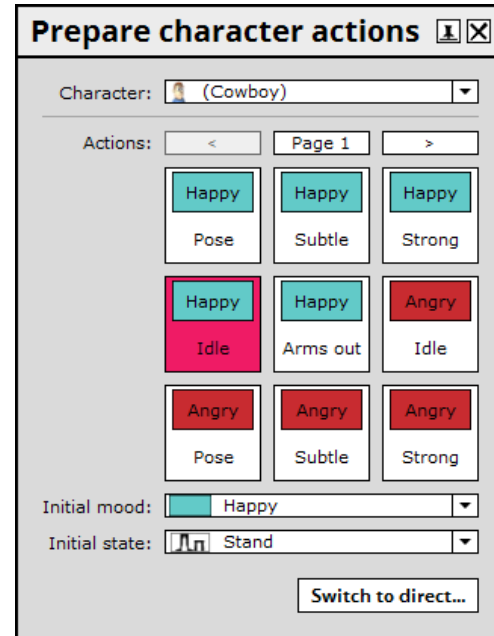
The **Prepare character actions** window allows you to build a pallet of actions to use in your animated movie.

The **Character** drop down allows you to choose which character you are preparing actions for.

You can have up to 5 pages of actions to define your pallet. Use the left and right arrows at the top to move between the pages.

The default palette sets the basics for each mood, and allows a random selection of the animations in each one. The coloured text box is the character mood and underneath is the type of the action.

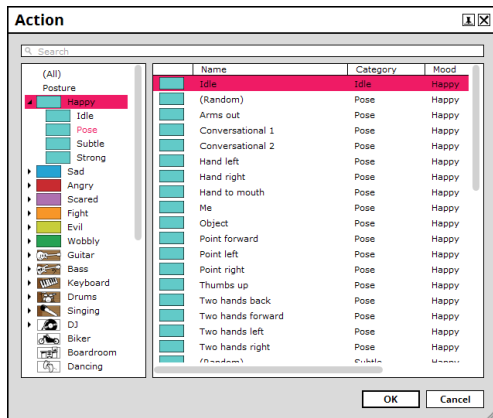
Each of the nine boxes can be customised. To start creating a pallet, click on the first box.



PREPARING AND DIRECTING CHARACTER ACTIONS

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The **Action** window will appear. This is a database of all actions available for your character. The categories on the left allow you to select actions of a particular mood.

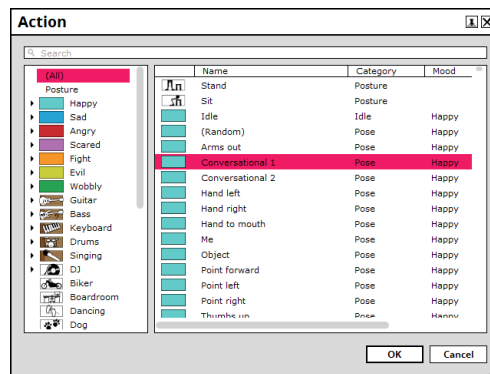


Each mood is broken into four different action types:

- Idle** This is the default idling animation.
- Pose** These actions will hold their last animation frame until another animation is selected.
- Subtle** These are subtle animations. These animations will return to the idle animation after they have completed.
- Strong** These are more dynamic than the subtle animations.

There are other additional categories that contain animations that are not based on moods, but are situation or category instead. These are categories such as Dancing, Biker and Sci-Fi. These actions are just presented as a list and are not subcategorised.

For our scene, we want the cowboy to have a conversation whilst he is moving so selected **Conversational 1** from the happy category. Clicking on an action will automatically trigger a preview of the action on your character. This way you can check the action before adding it to your pallet.





When you are happy with the action you have selected, click **OK**.



PREPARING AND DIRECTING CHARACTER ACTIONS










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Conversational 1 action is now the first action box of the pallet.



Prepare character actions

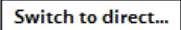
Character:  (Cowboy) 

Actions:  Page 1 

 Conversational 1	 Subtle	 Strong
 Idle	 Arms out	 Idle
 Pose	 Subtle	 Strong



Initial mood:  Happy 



Initial state:  Stand 














Repeat the process to build a pallet of all the actions you would like in your animation.



Prepare character actions

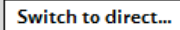
Character:  (Cowboy) 

Actions:  Page 1 

 Conversational 1	 Conversational 2	 Hand to mouth
 Idle	 Arms out	 Point left
 Point right	 Point forward	 Thumbs up

Initial mood:  Happy 

Initial state:  Stand 



PREPARING AND DIRECTING CHARACTER ACTIONS

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Changing the **Initial mood** drop down of the prepare character actions window will change your characters mood. As well as happy the available moods are:

Sad



Angry



Scared



Fight



Evil



And Wobbly



PREPARING AND DIRECTING CHARACTER ACTIONS

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There are some special moods based on playing instruments.



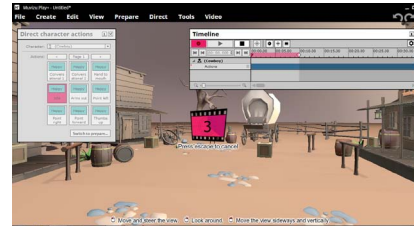
The initial state of can be set to either **Stand** or **Sit**. If you are creating an animated movie where the character is sitting down, select Sit from the drop down menu.



Once you have all the actions you need in the pallet click **Switch to direct**. The **Timeline** will appear.



To start recording actions onto your character click the **record** icon in the timeline. The three second countdown will begin.



When you want the character to perform an action click it in the pallet. In our case we want to select **Conversation 1, Conversational 2, Arms Out** and then idle.



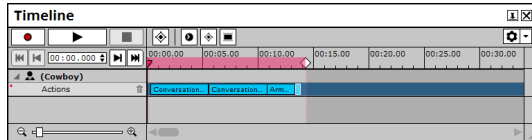
The actions will be recorded to the timeline.



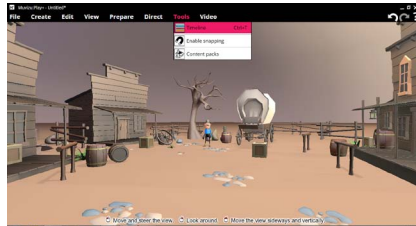
PREPARING AND DIRECTING CHARACTER ACTIONS

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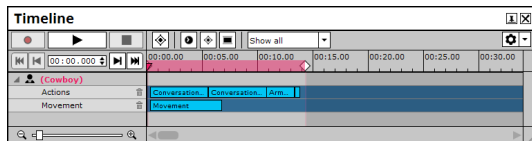
You can reposition the actions by dragging their rectangles to the desired position on the timeline. Below the actions have been repositioned to start at the beginning of the animated movie.



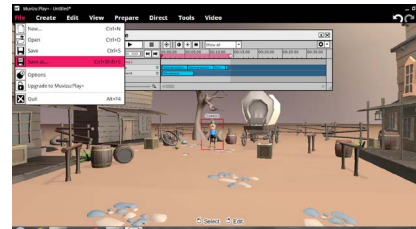
Show the full timeline by clicking **Tools** from the top menu and selecting **Timeline**.



Now the timeline shows the actions and the original movement elements. You can play back your animated movie by using the video controls in the timeline.



Save your animation by clicking **File** from the top menu and selecting **Save** or **Save as**.



CHAPTER 12

DIRECTING EYES AND HEAD MOVEMENT

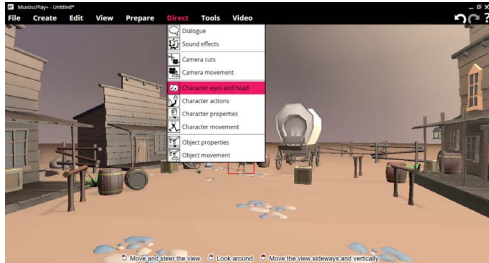
Now we have recorded movement and added actions onto the character we will record head and eye movement.

DIRECTING EYES AND HEAD MOVEMENT

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If you haven't already, load the set you saved in chapter 11.

Click **Direct** from the top menu and select **Character eyes and head**.



The **Direct character eyes and head** window will appear along with the **timeline**. The **Direct character eyes and head** window will open on the **Eyes** tab.



Dragging the pupils around the window will move the character's pupils. For rapid eye movement click on the part of the eye you want the pupil to move to, or use the numbers on the numeric keypad to control the eyes – 5 on the keypad is looking straight ahead.



The **head** tab allows you to control the head movement by dragging the small black dot around the white circle. This head movement will be overlaid onto any other animations that are playing in the background. Clicking the Release button will set the position back to looking forward and allow any underlying animations to control the head position.

The **Look at speed** allows you to adjust how quickly the head moves.



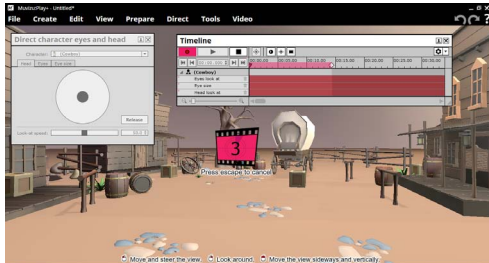
DIRECTING EYES AND HEAD MOVEMENT

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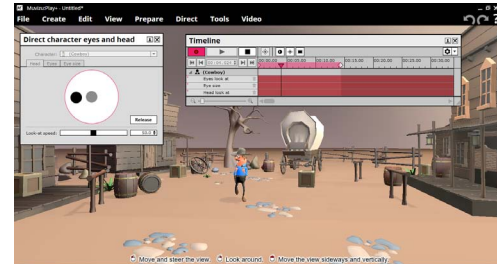
The **Eye size** tab allows you to control how big the character's eyes appear. This is a great effect to add a look of surprise (wide) or suspicion (squinting) to your character.



For this animation we want the cowboy to be looking around as he is moving and end by looking to the left. Select the **Head** tab and click **record** on the timeline. The three second countdown will begin.



As the character is walking move the head control around, remember to look to the character's left at the end.



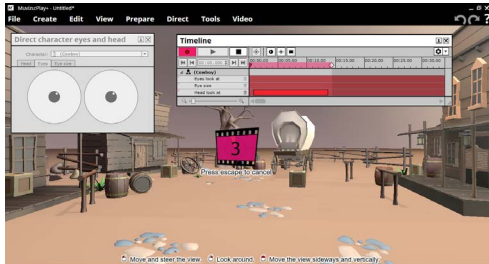
When finished click the **stop** icon on the timeline. The head movement is represented as a red event block on the timeline.



Click the rewind to start button on the timeline, then to record eye movement select the **Eyes** tab and click the **record** icon on the timeline. The three second count down will begin. Then drag the pupils to the position you would like them in during the section of the animation.

DIRECTING EYES AND HEAD MOVEMENT

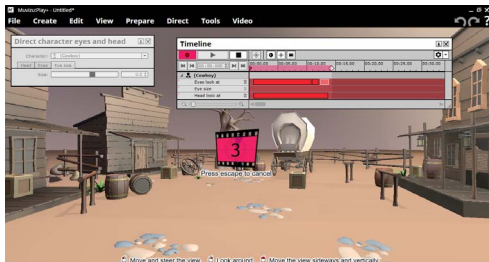
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When finished click the **stop** icon in the timeline. The Eyes movement will be saved onto the timeline.



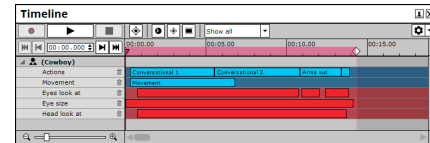
Repeat the process for the **Eye size**.



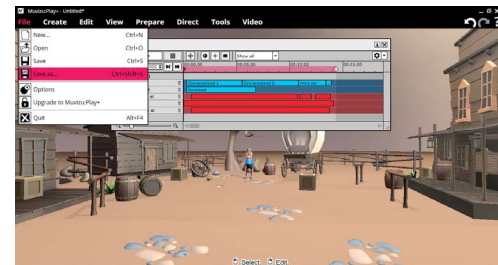
As the character animates we want him to be surprised as he looks to his left, so make the eye size larger as he does so.



Bring up the full timeline by clicking **Tools** from the top menu and selecting **Timeline**. Now our timeline contains Actions, Movement, Eye movement, Eye size, and Head movement. Play back the animation using the video controls in the timeline.



Save your animation by clicking File from the top menu and selecting **Save** or **Save as**.



CHAPTER 13

PREPARING AND DIRECTING AUDIO AND DIALOGUE

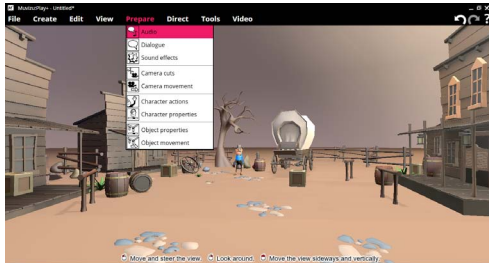
Now that we have recorded the character animation let's make him talk by preparing and directing audio and dialogue.

PREPARING AND DIRECTING AUDIO AND DIALOGUE

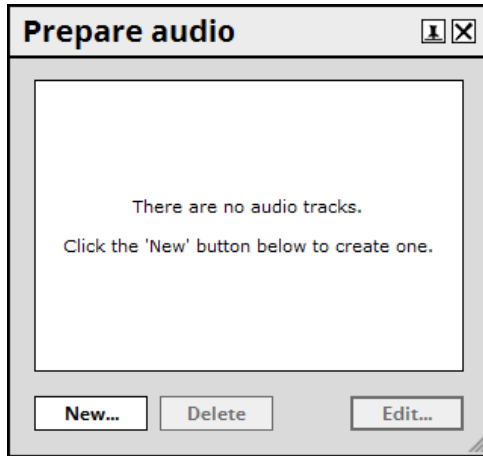
[RETURN TO CONTENTS](#)

If it isn't already loaded, load the set you saved in chapter 12.

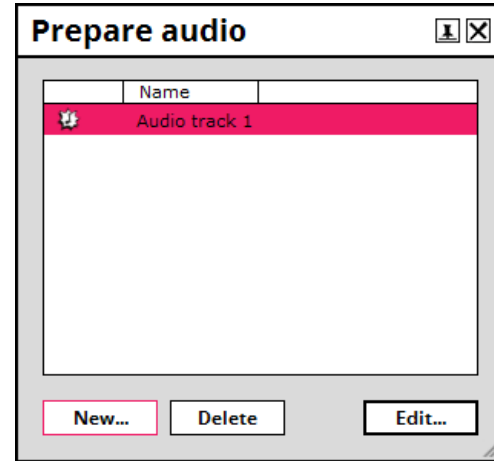
Click **Prepare** from the top menu and select **Audio**.



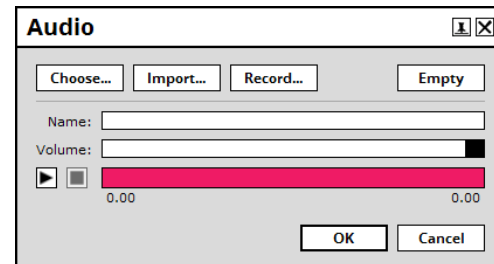
The **Prepare audio** window will appear. Click **New** to create a new audio track.



A blank audio track will appear. Click **Edit**.



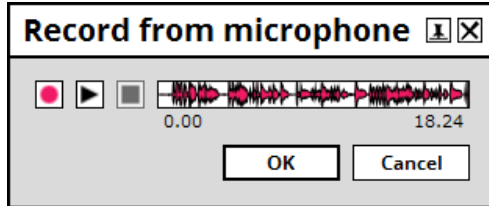
You can import pre-recorded audio by clicking **Import**. To record your own from your PC's microphone click **Record**.



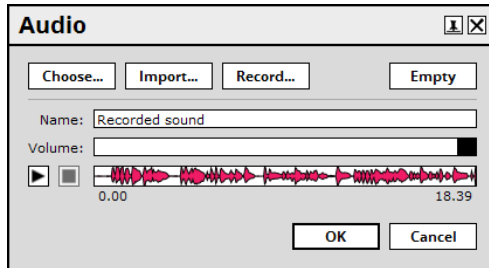
PREPARING AND DIRECTING AUDIO AND DIALOGUE

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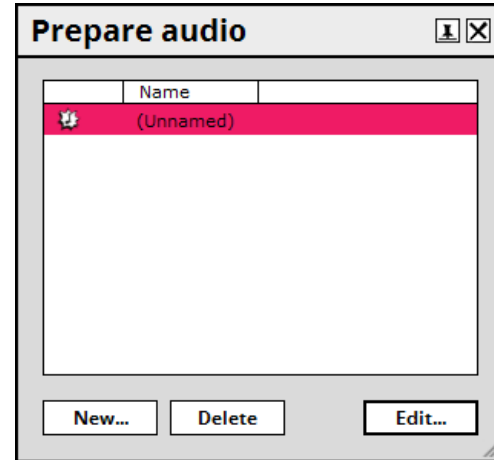
The **Record from microphone** window will appear. Click the **record** icon to start recording and click the **stop** icon when you have finished. You can play back the audio by clicking the **Play** icon. When you are satisfied with what you have recorded, click **OK**.



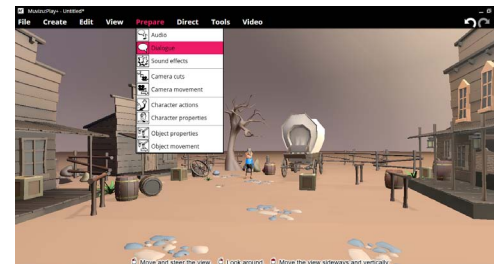
The recorded audio will now appear in the **Audio** window. Click **OK**.



The audio will now be saved to the **Prepare audio** window.



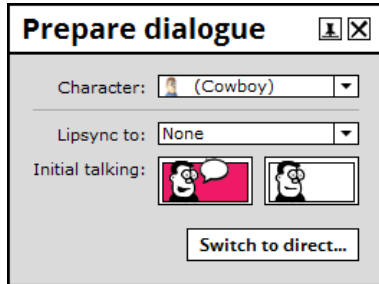
The next stage is to use the audio track as dialogue. Click **Prepare** and select **Dialogue**.



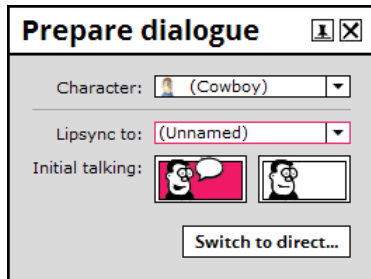
PREPARING AND DIRECTING AUDIO AND DIALOGUE

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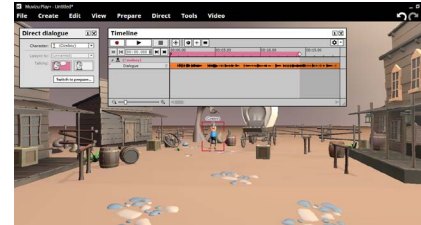
The **Prepare dialogue** box will appear. The **Character** drop down allows you to choose which character you are preparing dialogue for.



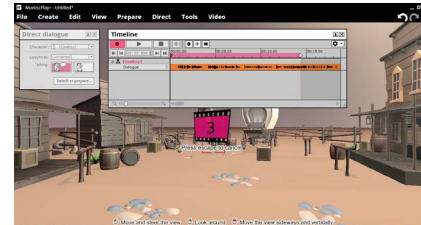
The **Lipsync to** drop down box allows you to choose the audio track the character will lip sync to. Select the audio track you have just recorded. The **Initial talking** boxes can be set to talk or shush. The "shush" setting stops the character lip-syncing at the start of the audio.



Clicking **Switch to direct** will show the timeline and prepare for recording the dialog. Notice that the audio has been loaded into the timeline.



To record the audio and lip-syncing to the timeline click the **record** icon on the timeline. The three second countdown will begin.



Sit back and watch as the character runs through its actions and movements whilst lip-syncing to the audio track. If there are parts of the track that you do not wish the character to lip sync to click the shush box. To turn lip-syncing back on, click the talk box.



PREPARING AND DIRECTING AUDIO AND DIALOGUE

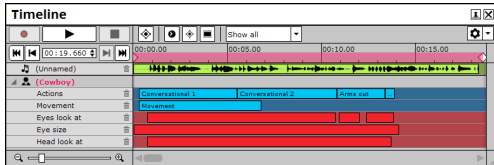
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When finished click the stop icon on the timeline.



Show the full timeline by clicking **Tools** and selecting **Timeline**.

The timeline now includes a lip synced audio track, character actions, character movement and head and eye movement.



Play back your animation using the video controls in the timeline.



Save your set by selecting **Save** or **Save as** from the **File** menu.



CHAPTER 14

PREPARING AND DIRECTING SOUND EFFECTS

Muvizu contains a wide range of pre-made sound effects to add to your animated movie.

PREPARING AND DIRECTING SOUND EFFECTS

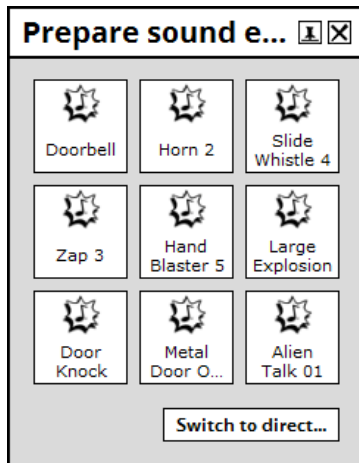
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If it's not already loaded, load the set from Chapter 13.

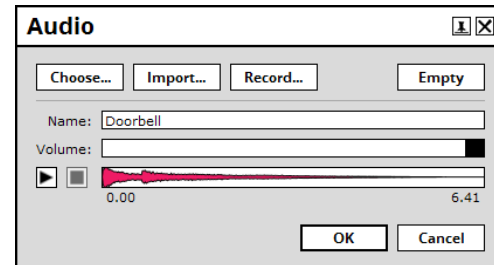
Click **Prepare** from the top menu and select **Sound effects**.



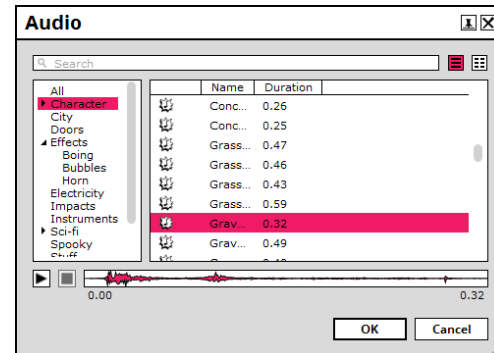
The **prepare sound effects** window will appear. This is a pallet of sound effects you wish to use in your animated movie, similar to the one for animation. To change one of the sound effects click on the box.



The sound effects **Audio** window will appear. To choose another sound effect click **Choose**.



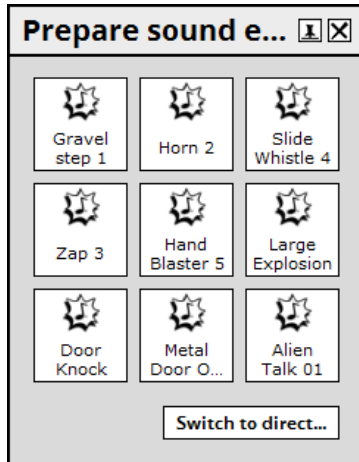
The **Audio** selection window will appear containing all available sound effects. To add the sound of our cowboy walking I have chosen **Gravel step 1**. When you have selected the sound effect click **OK**.



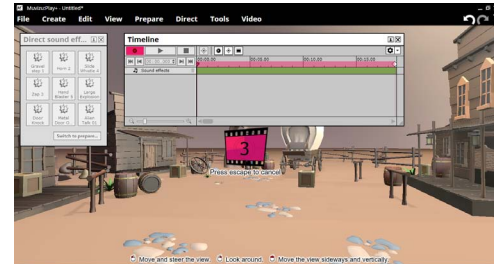
PREPARING AND DIRECTING SOUND EFFECTS

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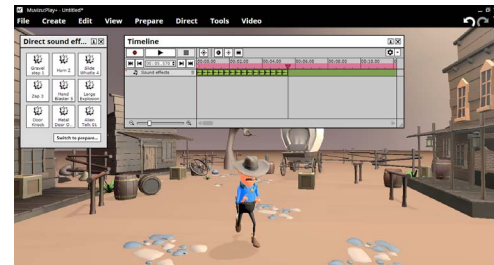
The sound effect you have chosen will now replace the effect you originally clicked. A collection of sound effects is called a soundboard. When you have made your soundboard, click **Switch to direct.**



The timeline will appear. To start recording the sound effects click the **record** icon on the timeline. The three second countdown will begin.



To add a sound effect to the timeline, click on its box at the right time (or press the appropriate key on the numeric key pad). In the screenshot below, I have added the gravel step sound effects when the cowboy is walking. Once your cowboy has stopped walking, click the stop button.

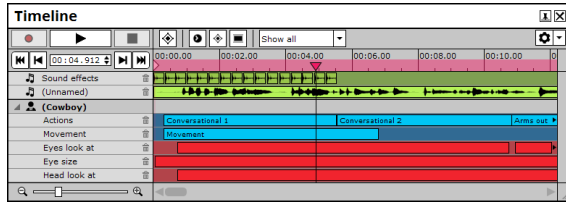


Show the full timeline by clicking **Tools** and selecting **Timeline**.

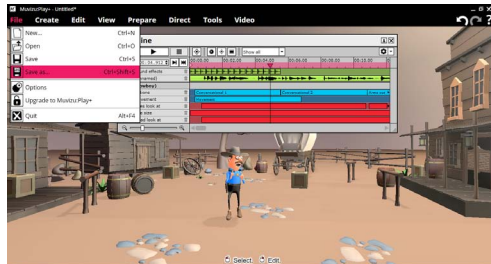
PREPARING AND DIRECTING SOUND EFFECTS

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Now we have sound effects, a lip-synced audio track, character actions, character movement and head and eye movement saved to the timeline. Play back your animation using the video controls in the timeline.



Save your animation by clicking **File** from the top menu and selecting **Save** or **Save as**.



CHAPTER 15

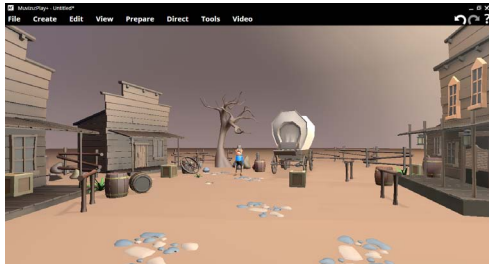
PREPARING AND DIRECTING SPECIAL EFFECTS AND PROPERTIES

Special effects are a great addition to your animated movie. Muvizu contains both world effects and character effects.

PREPARING AND DIRECTING SPECIAL EFFECTS AND PROPERTIES

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Start by loading your scene from Chapter 14.

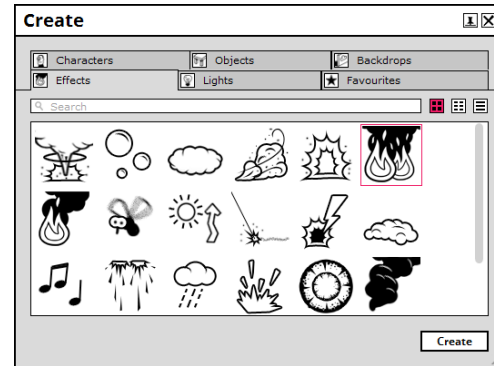


Environment effects

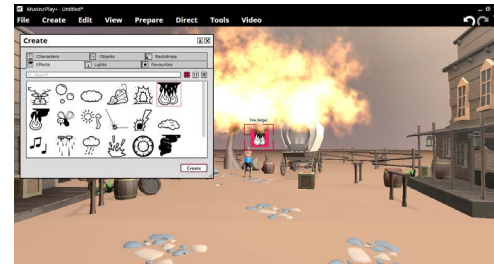
Click **Create** from the top menu and select **Effects**.



For this scene we want to create a fire. Once you have selected the effect click **Create**.



The effect will spawn in to the scene.



PREPARING AND DIRECTING SPECIAL EFFECTS AND PROPERTIES

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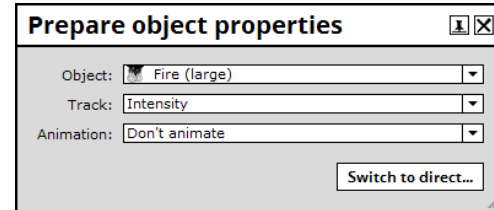
Move the effect to the area in the scene where you would like it. For this scene we want to start a fire in between the buildings.



With the effect selected click **Prepare** and select **Object properties**.



The **Prepare object properties** window will appear.



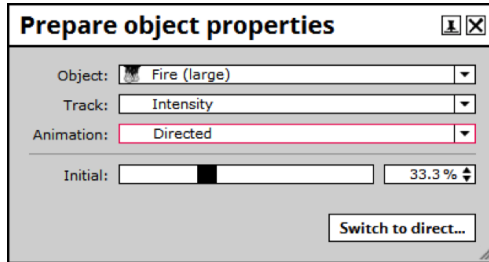
Clicking the drop down **Track** menu will allow you to view what properties of the object you can prepare and direct. I want the fire to start small and then grow as the cowboy walks towards it. So I have selected **Intensity**.



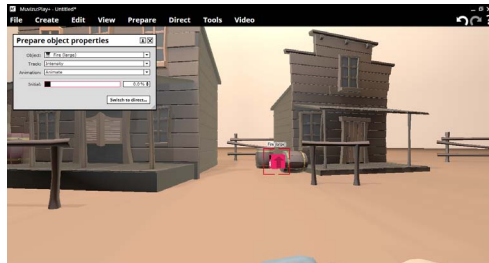
Now I have selected **Directed** from the animation setting. This will allow me to animate the intensity of the fire and add it to the timeline. You could also key-frame the values too (see the beginning of Section 2 for more information on this).

PREPARING AND DIRECTING SPECIAL EFFECTS AND PROPERTIES

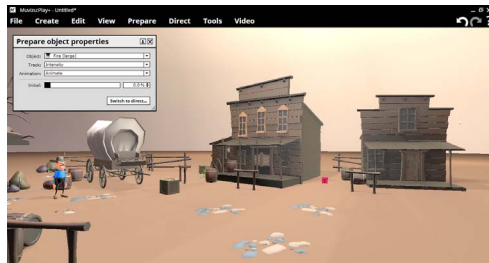
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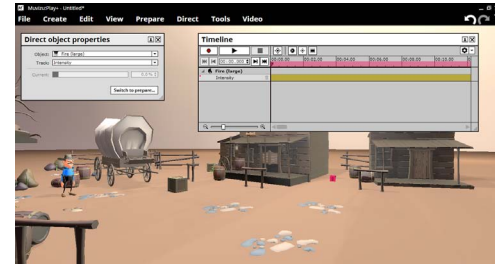
Start with the **Initial** slider at zero.



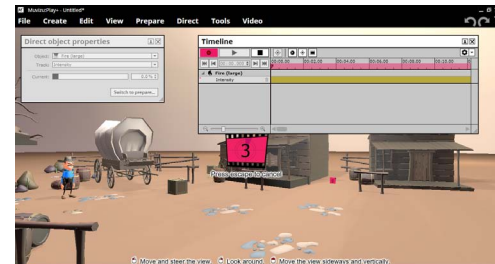
Position yourself so you can see the effect and the character and click **Switch to Direct**.



The timeline will appear.



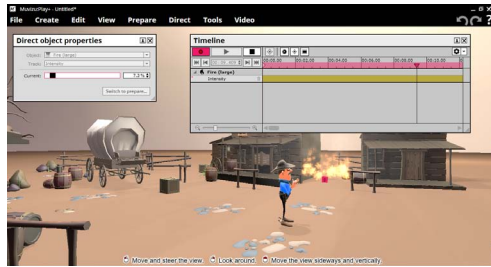
To start animating the effect and recording it to the timeline click the **record** icon. The three second countdown will begin.



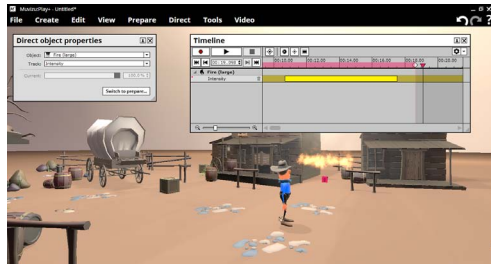
PREPARING AND DIRECTING SPECIAL EFFECTS AND PROPERTIES

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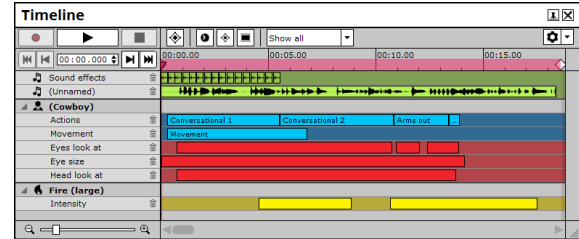
As the character walks towards the fire, increase the intensity by moving the slider.



As the character turns his head, increase the intensity to 100%. Once finished, click the **stop** button on the timeline. The effect's intensity animation is now saved and shown on the timeline as a yellow event block.

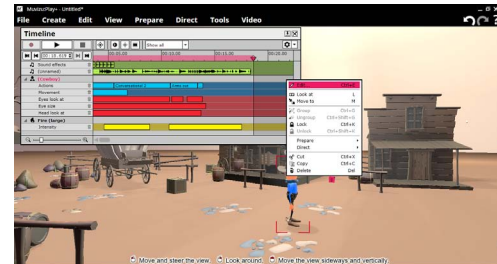


Show the full timeline by selecting **Timeline** from the **Tools** menu. You will see it now includes all the elements of the audio, character animation and effect animation.



Character effects

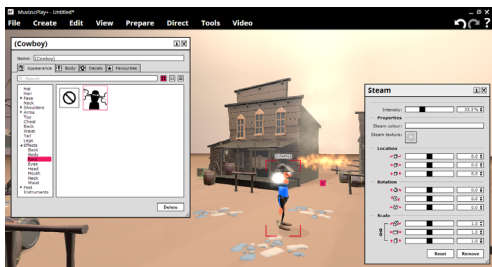
To add a character effect as a reaction to looking at the fire, right click on the character and select **Edit**.



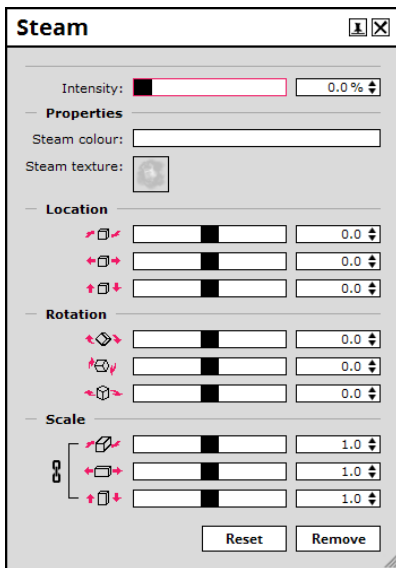
The character-editing window will appear. All available character effects can be viewed by clicking the **Effects** category on the left hand menu of the character properties window. The effects are categorized further into different body parts. For the effect we want, select **steam** in the ears category.

PREPARING AND DIRECTING SPECIAL EFFECTS AND PROPERTIES

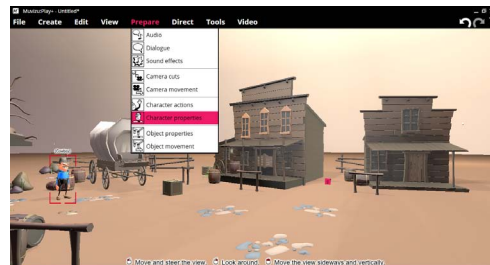
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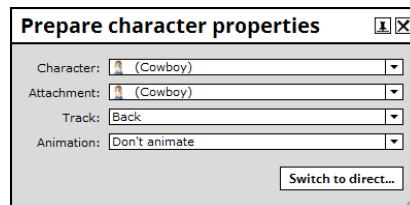
Turn the **Intensity** to zero.



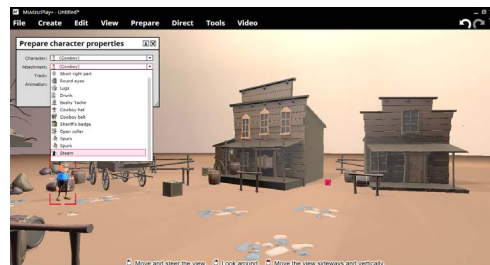
To prepare the character effect for animation, click **Prepare** and select **Character properties**.



You can prepare and animate most properties of a character. Effects are found in the **Attachment** drop down.



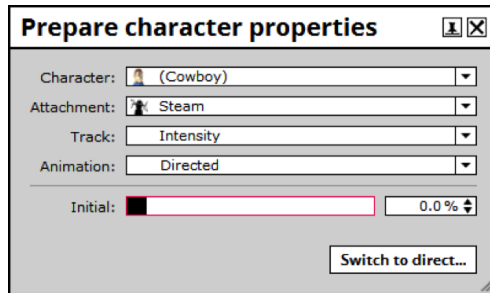
Select the effect from the **Attachment** menu.



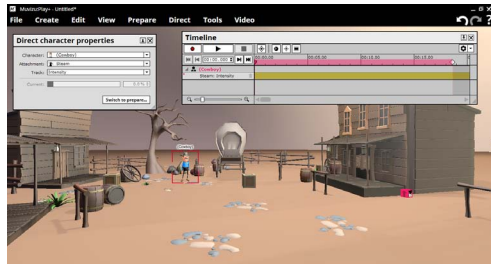
PREPARING AND DIRECTING SPECIAL EFFECTS AND PROPERTIES

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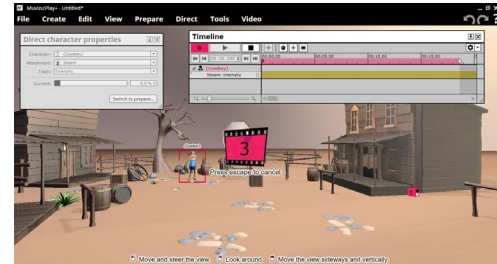
Select **Intensity** from the **Track** menu and **Directed** from the **Animation** menu. Now click **Switch to direct**.



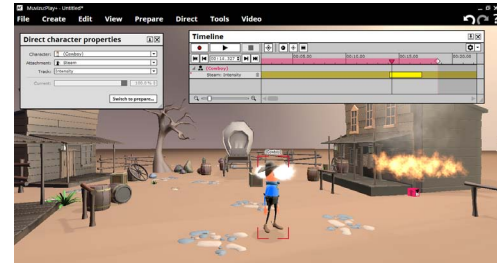
The timeline will appear.



Make sure the timeline is set back to the beginning of the animation or to the point you want the effect to animate. Click the **record** icon on the timeline. The three second count down will begin.

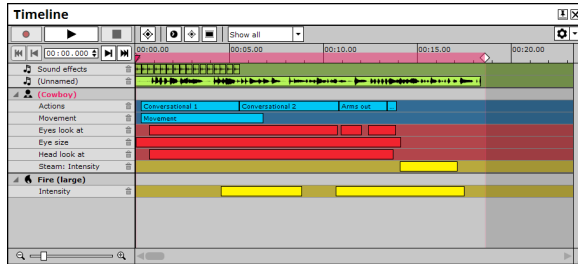


At the right moment raise the intensity of the effect by sliding the bar up, then back down to give the effect of a short sharp blast of steam coming out of the Cowboy's ears.

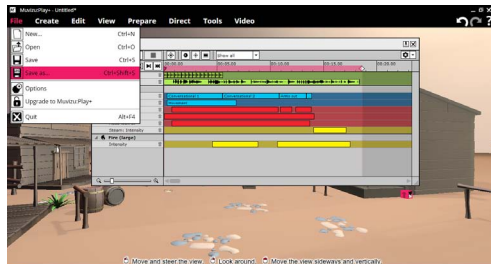


When finished click the **stop** icon from the timeline. The **Steam** effect animation is now saved and will appear on timeline in the character's section.

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Save your animation by clicking **File** from the top menu and selecting **Save** or **Save as**.



CHAPTER 16

PREPARING AND DIRECTING CAMERA CUTS AND MOVEMENT

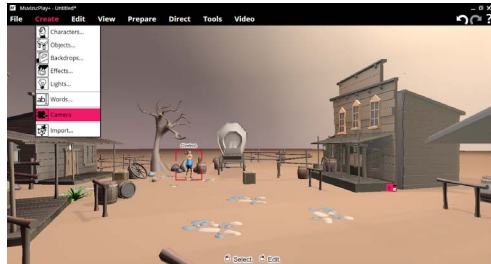
Now we have completed the character movement, character actions, dialogue, sound effects and special effects, its time to start adding cameras to the scene.

PREPARING AND DIRECTING CAMERA CUTS AND MOVEMENT

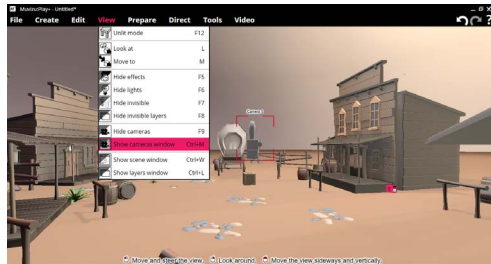
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Cameras are extremely important. When you come to output your animated movie, Muvizu will make a video from the views of the cameras in your scene.

Load your scene click **Create** and select **Camera**.



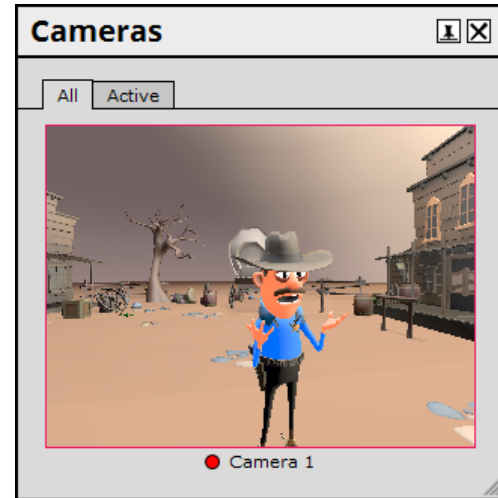
Make sure that the **Show cameras** and **Show camera window** are enabled. These settings can be found in **View** from the top menu.



For this scene I want the first camera to capture the cowboy walking towards it. Using the timeline skip to the correct position of your animation and position the camera so that the character can be seen in the **Cameras** view window.



Adjust the camera position until you have the correct shot.



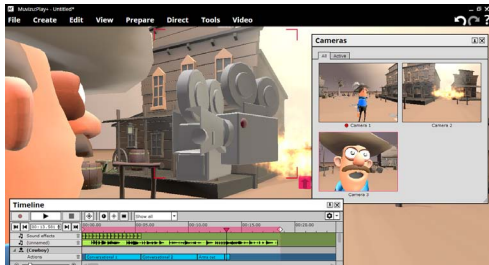
PREPARING AND DIRECTING CAMERA CUTS AND MOVEMENT

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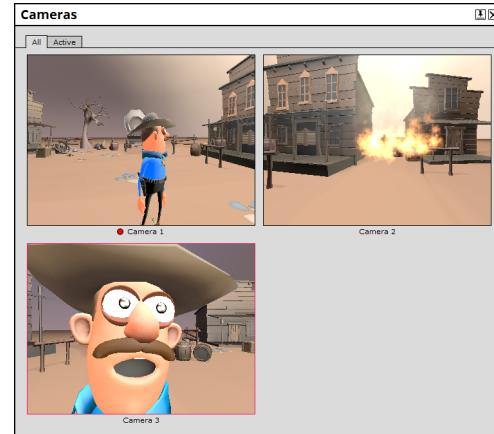
We also want to capture the fire effect, so place a second camera pointing at the fire effect. This new camera is displayed as **Camera 2** in the **Cameras** view window.



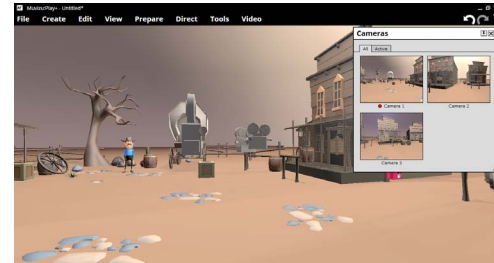
We also want to capture the cowboy's reaction to the fire. Using the timeline to find the correct part of the animation and create a third camera pointing at the character's face at the time of the reaction. This is represented as **Camera 3** in the **Cameras** view window.



Camera 1 captures the cowboy walking across the scene. **Camera 2** captures the fire effect. **Camera 3** captures the cowboy's reaction.



Playing back through the animation using the timeline will let you check that the cameras are in the correct position.



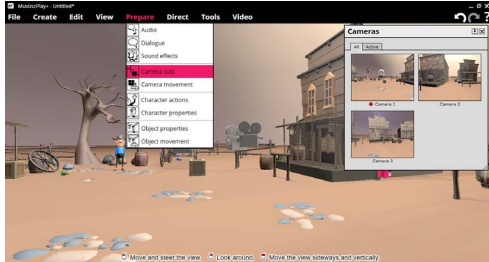
Now it is time to **Prepare camera cuts**. Camera cuts will allow you to change which camera is being viewed during your animated movie. For this scene we will start with the cowboy walking across the scene, cut to a view of the fire, cut back to a view of the cowboy walking, cut back to the view of the fire, cut to the view of the cowboy's reaction.

PREPARING AND DIRECTING CAMERA CUTS AND MOVEMENT

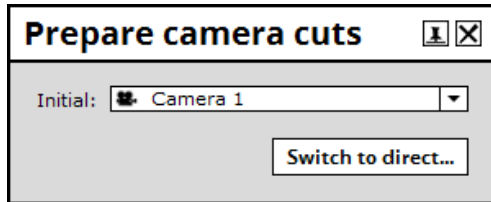
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So the camera cut sequence is;
Camera 1, Camera 2, Camera 1, Camera 2, Camera 3.

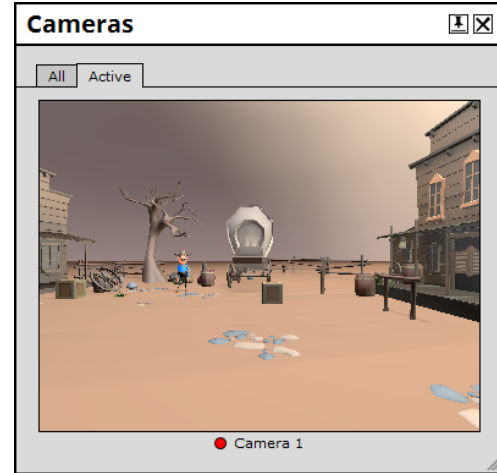
Click **Prepare** and select **Camera cuts**.



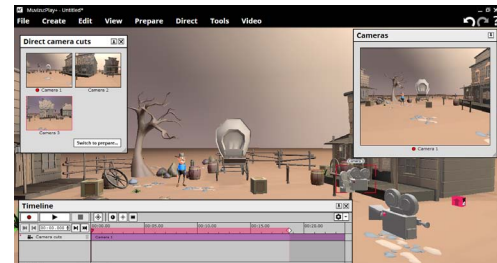
The **Prepare camera cuts** window will appear. The **Initial** drop down allows you to select which camera you start with.



Clicking the **Active** tab on the **Cameras** window allows you to view the active camera. As our Initial camera is camera 1 the view in the Active section of the Cameras window is the view from Camera 1.



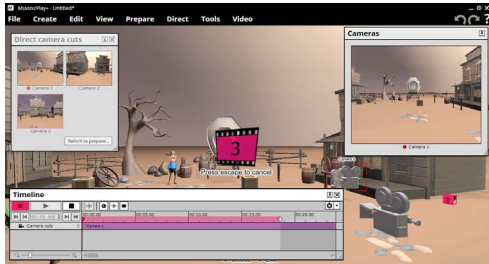
To start Directing the camera cuts click **Switch to direct** on the **Prepare camera cuts** window. The **Direct camera cuts** window and the timeline will appear.



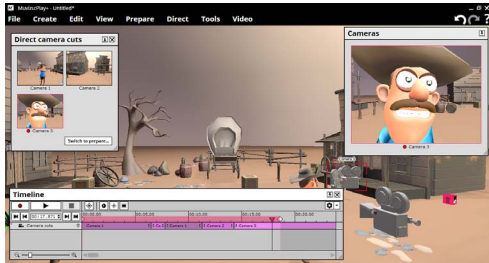
To record the camera cuts to the timeline click the **record** icon on the timeline. The three second countdown will begin.

PREPARING AND DIRECTING CAMERA CUTS AND MOVEMENT

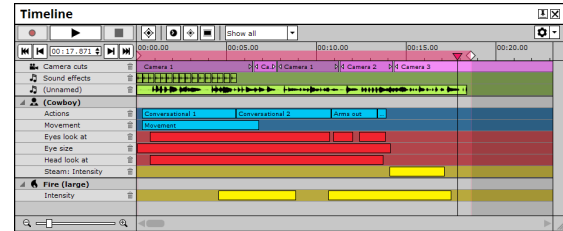
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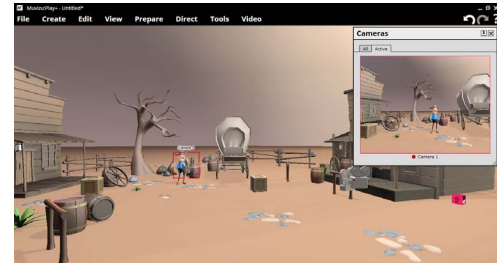
When you want to cut to a different camera click the camera view in the **Direct camera cuts** window. The active camera is indicated by a little red circle under the camera view in the **Direct camera cuts** window. When you are finished, click the **stop** icon on the timeline. If the timing of the camera cuts is not right, you can adjust them by dragging them in the timeline.



Our timeline now contains all the elements of the animation and the camera cuts.



You can also animate a camera's movement. This could be a camera panning around the scene, or following a character as they walk. For this scene I want to have the camera follow the character as he walks forward. Start by positioning a camera in front of the character.



PREPARING AND DIRECTING CAMERA CUTS AND MOVEMENT

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The new camera is camera 4.

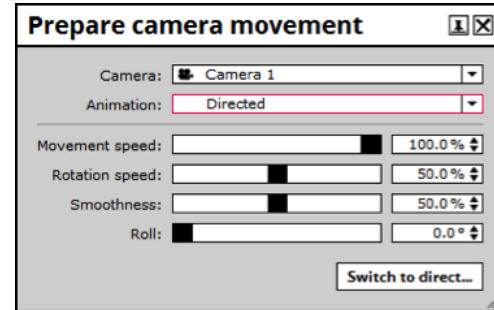


Click **Prepare** from the top menu and select **Camera movement**.

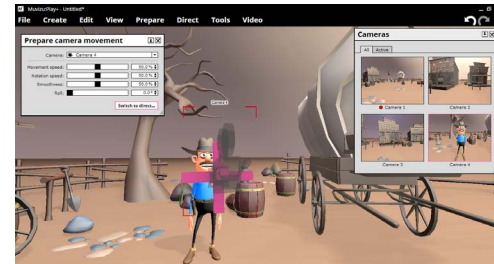


The **Prepare camera movement** window will appear. The sliders allow you to control **Movement speed**, **Rotation speed**, **Smoothness**, and **Roll**.

Set the camera's Animation type to be directed. Notice that now the camera has pink cross, this is the camera's rotation (or pivot) point. You can select this and move it away from the camera. When you rotate the camera, it rotates around this cross.



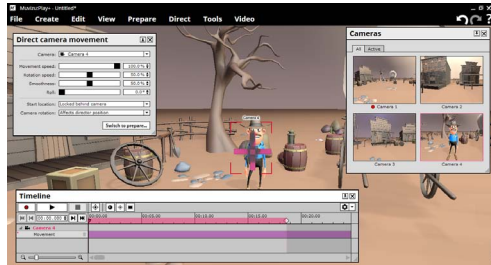
You can move the camera to set its default position in the usual way.



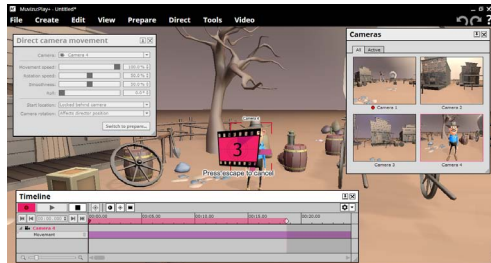
After you've made your final adjustments click **Switch to direct**. For this scene I have set the **Movement speed** to 100%.

PREPARING AND DIRECTING CAMERA CUTS AND MOVEMENT

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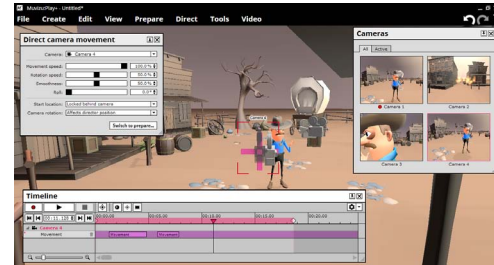


When ready click the **record** icon from the timeline. The three second count down will begin.

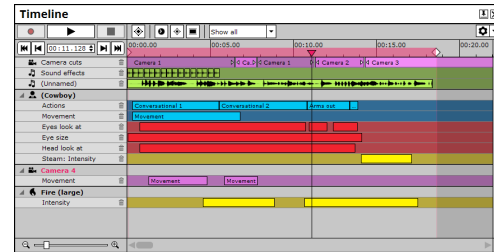


To animate the camera's position, you can move the director around as you would normally. Or you can use the movement keys described in chapter 1.

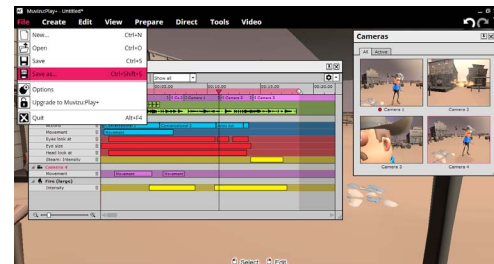
When finished click the **stop** icon. The camera movement is saved to the timeline. To add this camera to your animated movie go back to direct camera cuts and cut to the camera at the required time.



Play back and watch your animation using the video controls on the timeline.



To save your animation click **file** from the top menu and select **save** or **save as**.



CHAPTER 17

MAKING A VIDEO

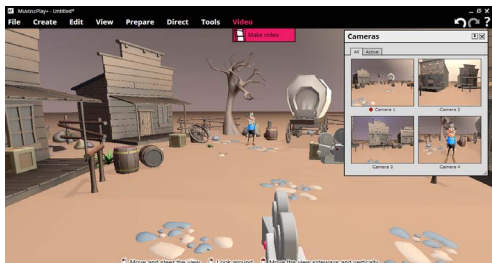
Now that we have finished our animated movie, it's time to turn it into a video. The **Make video process** will create 25 images for each second of animation and join them together in a video file.

MAKING A VIDEO

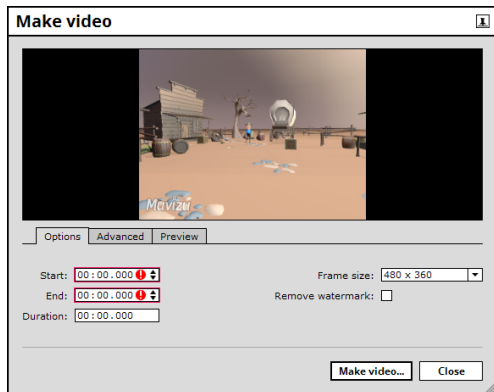
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If it's not already loaded, load the set you saved in Chapter 16.

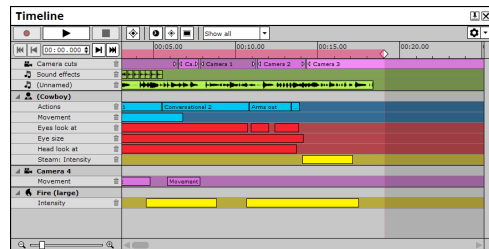
Click **Video** on the top menu and select **Make video**.



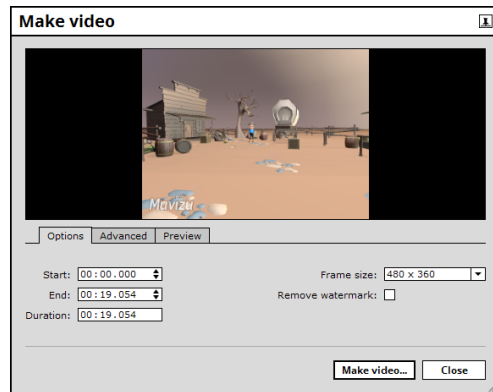
The **Make video** window will appear. If the **Start** and **End** times are not set, they will have a warning and you will need to set the start and end position for your animation. You can adjust the start and end fields by clicking the small up and down triangles in the fields.



However, it's easier to set the start and end positions using the timeline. Just drag the markers to define where the movie starts and ends.



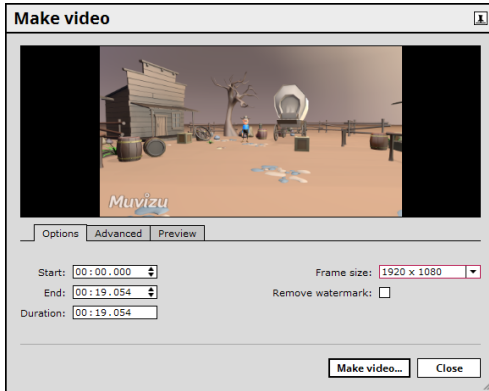
Once we have the values set correctly, the warning symbols will be gone.



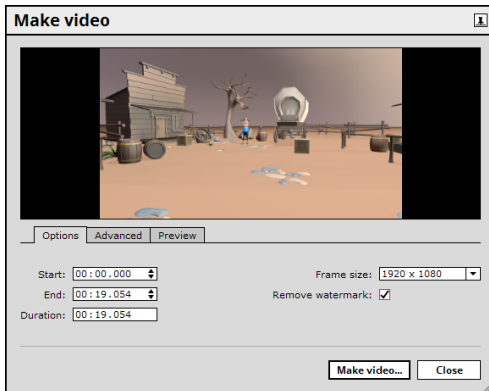
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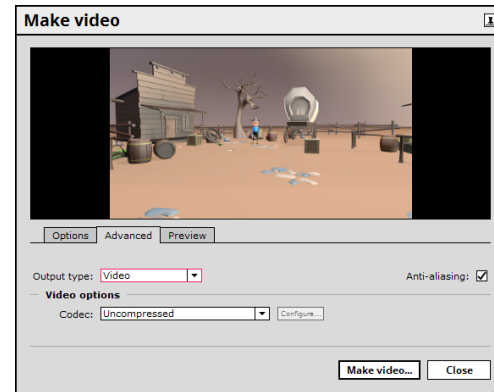
Frame size is the resolution of the final video. Full HD is 1920x1080. The larger the **Frame size** the longer the video file will take to make.



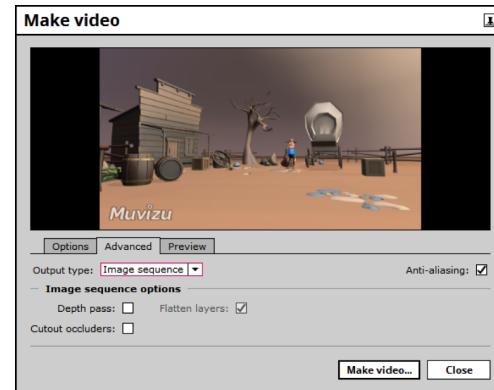
To remove the Muvizu watermark click **Remove watermark**.



The **Advanced** tab allows you to select the **Output type** and set any parameters for the output.



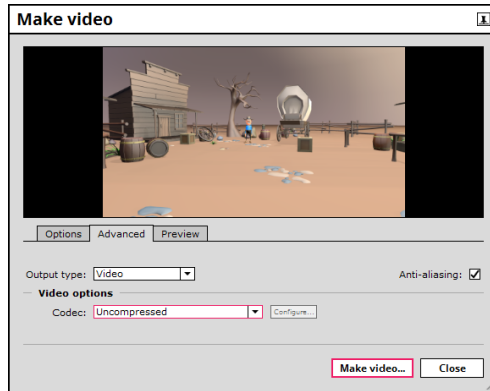
As well as Video you can also output your animation as an **Image sequence**. Each frame from the animation is saved as an image. The sequence can be saved in PNG or TGA format.



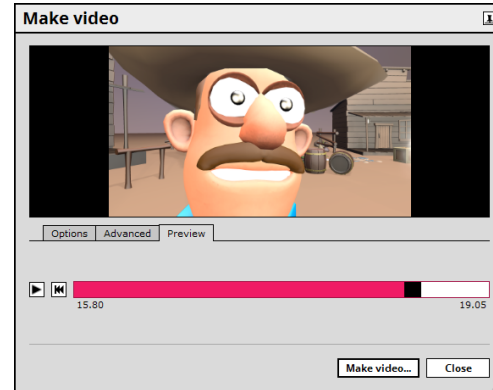
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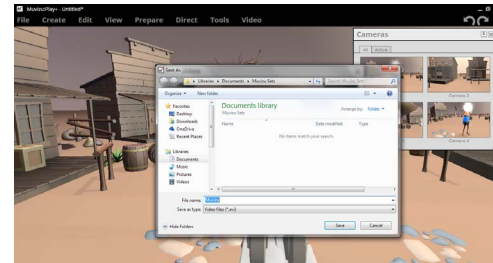
When saving as a Video, Muvizu will output the video as a Microsoft .avi file. The **Codec** option determines how the video will be compressed. Muvizu will only output a file under 2GB in size. If your animation is very long, try rendering sections of the video individually and put them together using Muvizu's video joiner function.



The **Preview** tab allows you to view your movie. When you are happy with it, click **Make video**.



Name your video and select a place to save it on your PC. Then click **Save**.



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The movie file will then be generated.



Once completed, you will receive a **Recording complete** message. If you have a number of videos to join together click **Video joiner** if not click **OK**. Your finished video will be located where you chose to save it on your PC.



THE END

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