



WebFX 3D

Three Dimensional graphics for websites

ProAction

3QD
DEVELOPMENTS LTD

APDL

WebFX3D

© Daniel M Johnson 2026
Distributed by 3QD Developments Ltd
All rights reserved.

No part of this product may be reproduced in whole or part by any means without written permission of the publisher. Unauthorised hiring, renting, lending, public performance or broadcasting of this product or its parts is prohibited.

While every care is taken, the publisher cannot be held responsible for any errors in this product, or for loss of data or consequential effects from the use of this package.

Software and Documentation supplied by
APDL
a part of
3QD Developments Ltd
Single User version downloaded from the free of charge software section of
www.riscos.com.

Please note that any free of charge downloads from RISCOS.com are supplied without any technical support package as per the licence agreement.

This document last edited on 29/09/26



If you have found this application and this manual useful please consider making a donation to help cover the costs of cataloguing, documenting, updating and hosting the APDL applications. Scanning the QR code will take you to our donations page.

WebFX3D

Introduction

WebFX3D is relatively easy-to-use 3D graphics software, which allows you to create 3D text images. WebFX3D can help create stunning publications. Whether you are working on a web page, presentation, report or project, WebFX3D will enhance your work. Objects created in WebFX3D can be rendered and saved as an image of any size and colour (memory permitting), with simulated anti-aliasing to give web pages and on-screen presentations sub-pixel accuracy. WebFX3D can also export the 3D object in VRML format. This can be viewed by most web browsers in 3D. Additionally objects could be loaded into 3D CAD software to form part of larger scenes. Web site developers can also create animations in the form of a sprite file containing one image for each frame. These can be loaded by other software (ie. InterGif 6) to create animating images for the internet etc.

About this Manual

For a full list of the contents of this manual, view the Contents Page (click the top left icon of this window). This manual is divided into the following sections:

Introduction to WebFX3D

An overview of WebFX3D, its uses and terminology.

Getting started

Covers the installation of WebFX3D on your computer, system requirements, how to run WebFX3D and use Online Help.

Creating Objects

How to create objects in WebFX3D, using draw files and Add-ons.

Working with a 3D scene

How to work with your 3D objects. Topics include the 3D display, options, plug-ins, atmosphere, the gallery and exporting.

Lighting

Explains how to use lighting in your scene by looking at light positioning, colours, ambient lighting and attenuation.

Rendering

How to create final rendered images of your scene. Topics include basic settings, animations and filters.

Reference

Various topics relating to WebFX3D, including the 3D co-ordinate system, light colours, and the WebFX3D colour picker.

Hints and Tips, Troubleshooting

Helpful information to help you get the best out of WebFX3D, and to solve common problems, answer questions.

Terminology

The following is a description of terminology used in this manual.

VRML; Abbreviation for *Virtual Reality Modelling Language* . This is a standard file format for describing 3D scenes.

Scene; Everything which forms a 3D environment, including objects, lights, atmosphere, background etc.

Object; A distinct 3D entity, or group of entities. Whatever is in the 3D view is an object.

Mesh; 3D objects are made up of meshes. In WebFX3D, each mesh is a series of triangles.

True Colour; Refers to 24bit colour quality.

Mask; Transparency. Sprite images can hold additional transparency information. When a sprite is shown, its transparency mask is used to determine which pixels you see. Those which are masked allow the background behind the sprite to show.

Co-ordinates; In common with other 3D systems, WebFX3D shows 3D measurements in the form of XYZ co-ordinates. See the reference section for details.

Rendition, Render; Creating a bitmap image of a 3D scene. WebFX3D renders the Render objects in a 3D scene in such a way, that they look 3D, even though being represented on a 2D image.

Join; The part of a 3D object which joins the front face to the back.

Controls; Items in a window which do something (i.e. radio buttons, option buttons, the close icon etc.)

Tabs; A new control which allows a window to show several sets of options in limited space.

Getting Started

System Requirements

The minimum specification of RiscOS system to allow WebFX3D to run and operate is a 4MB system running RiscOS 3.1 or later, fitted with a hard disc drive, and a monitor capable of displaying 256+ colours at 640x480 resolution. We recommend that WebFX3D be run on a RiscPC or faster computer. For serious use, where large renditions of complicated scenes will be generated, more memory will be required. WebFX3D was created and tested on a RiscPC600 with 8MB RAM.

Installation and Running

WebFX3D must be installed on a hard disc drive. An installation program is used to guide you through this procedure. Before you install WebFX3D on your computer, it is wise to back up each of the disc(s) supplied with this product. The disc(s) are not intended for use other than with the install application.

Procedure

Place the WebFX3D disc in the floppy disc drive, and click on the drive icon. Double-click on *!Installer* in the filer window which opens. Follow the instructions supplied by the installer application, these will guide you through the installation process.

Running WebFX3D

To run WebFX3D, open the directory where you installed it, and double click on the *!WebFX3D* icon.

Getting Help

Originally, WebFX3D was supplied with a printed manual. A simplified, software manual was also provided. The printed manual has since been replaced with the software version you are reading *now*. However, the original help (now redundant) is still available, and this is described below. For information on *this* help system, load the *Dansoft Help* manual.

The Original Help

WebFX3D uses simple hypertext based help to provide help when required. Help can be run separately to WebFX3D, or WebFX3D can open help at a specific topic when required.

Running Help

To run help separately to WebFX3D, click menu over the *!WebFX3D* icon and open the App. '*!WebFX3D*' sub-menu. Click on Help. To run help from within WebFX3D, click menu over the WebFX3D icon on the iconbar, and select Help. Additionally, wherever you see a button containing the text 'Help' etc. click and help will be opened at the relevant topic.

Hypertext

Hypertext is a simple way of organising information to allow people to access it easily. The concept is based on hyperlinks, which are connections between pages in a manual. By clicking on a hyperlink, the page associated with a link is opened.

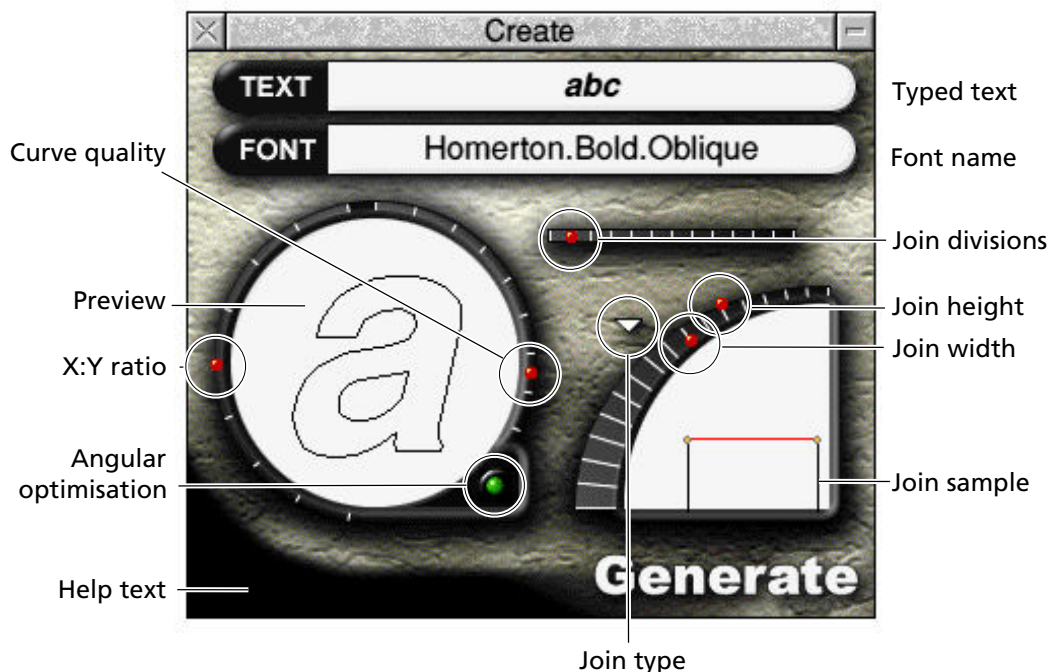
Navigating through Help

In Help, hyperlinks are shown by green underlined italic text. Whenever the mouse is moved over a hyperlink, the pointer changes to a hand. Click on the link to open the related page. To go back to the last page select 'back' from the menu. Click the 'contents' menu item to open the contents page.

WebFX3D

Creating Objects

To create objects using WebFX3D, open the Create window (click on the WebFX3D icon on the iconbar), which is shown below:



Text and Font Settings

Typed text

This displays the text which will be used to create a 3D object, in the selected font. Click on the bar to edit this. Where a drawfile will be used instead of text, the path and filename of the drawfile is shown here. **Font name** The selected font is shown here. Click on the bar to change the font. Only fonts which have outlines are used to create 3D objects. The system font is excluded from the list as it has no outline.

The Preview

The first letter of the typed text is shown in the circle. This preview shows how the 3D object will appear. You can adjust the Y:X ratio, curve quality and toggle angular optimisation.

X:Y ratio

This adjusts the height of the object, in relation to the width. Initially it is set to 1 : 1. However some fonts may look better with different ratios. To make text taller, increase the ratio, tho make smaller, decrease. To adjust, simply drag the red ball around the circular track. At the top the ratio is highest, at the bottom it's lowest. When you release the ball, the preview is updated to show your adjustment.

Curve Quality

When the text is converted to 3D, curves which are infinitely smooth as text must be converted to straight line segments. By dragging this ball around the circular track, the quality of curves is adjusted. At the bottom very few line segments are created per curve, at the top many segments are used to create smoother curves. However, more segments create larger 3D objects, which take longer to render etc.

Angular optimisation

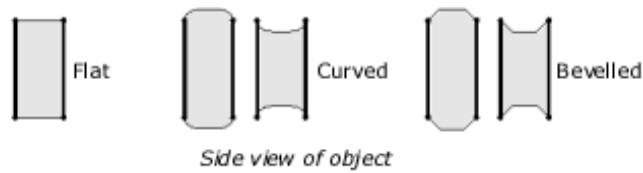
Click this button to toggle angular optimisation on/off. When its green, angular optimisation is on, red is off. Angular optimisation reduces the size of large 3D objects by limiting the number of points generated. The technique is best explained by an example: If a curve is nearly straight, a single straight line is created instead of several segments. If some text is not converted to 3D properly, toggling this option can make it work.

Join

The *join* is the section which joins the front face of text, and the back face. This join can be flat, curved or bevelled with a variable number of divisions. The following options affect the join:

Join type

There are 3 join types. They are described by the illustrations below.

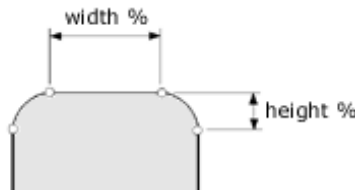


Join sample

This display shows the type of join selected, and how the width/height settings will affect it. Note that it does not show how the number of divisions will appear.

Join Width and Height

These settings affect the proportions of the join. For flat joins they have no effect. The diagram below shows how each is measured as a proportion of the total width of the join. The height setting can also take negative values, which allow the join to curve inwards.



Join divisions

The join can be divided up into a number of divisions. The default setting is 1 to conserve memory. For flat and bevelled joins, it is the flat horizontal bit which is divided up into a number of segments. With curved joins, the curved areas are divided up instead of the straight areas.

Using a Drawfile

A drawfile can be used instead of text to generate a 3D object. Simply drag the file to the enter text window, or onto the WebFX3D icon on the iconbar. The drawfile name and path is shown where the text is normally displayed. A drawfile icon is shown over the font as an additional indication that a drawfile is loaded. All the settings work the same as with text. To cancel the drawfile and type text, click on the text or font bar. When converted to 3D, only path elements in the drawfile are used. Open paths will cause an error, as 3D objects must be closed completely. Layered objects, can have an undefined result when rendered or displayed, as these elements are all the same distance from the camera, and it is difficult to work out which is in front of the other. Make sure that any text in the drawfile is converted to path in !draw first or it will not be converted to 3D.

Create Menu

A menu is opened when you click menu in the Create Window. There are three menu entries:

Font

Allows the font to be changed (See Text and Font Settings).

Reset

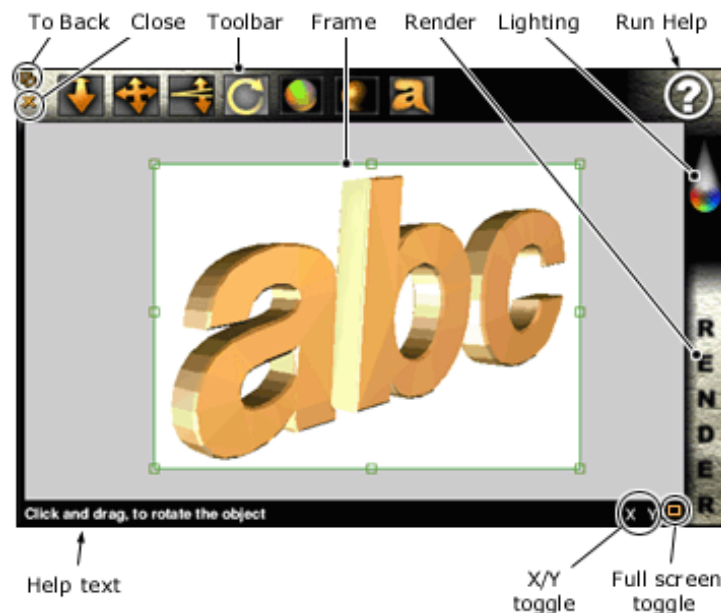
Resets all options in this window to their default values.

Re-scale scene

This is an option. When ticked, the 3D view will be re-scaled to fit the new object you create. If not ticked, the scale will not be adjusted. The purpose of this option, is to allow you to create several objects, one after the other, and to be able to leave the scaling the same for all of them. Without this option, it would be difficult to create several titles, of exactly the same size.

Working with a 3D scene

Now that you have created a 3D object, you have the opportunity to work with it before rendering an image/animation. The main 3D view is shown below.



Surrounding the 3D view are all the controls you require to work with the scene. Click menu over the 3D view to open a menu with some additional options which are described later. The icons at the top left corner of the window allow you to *close*, or put the window *to the back*. To bring the window to the front, click select on the top bar. To open this view at any time, click adjust on the WebFX3D iconbar icon. Click on the Render, Lighting and Help controls to open those windows. This can also be done from the menu.

X / Y toggle

These toggles control in which axes/direction other controls work in. Click the X or Y to toggle each on or off. The other controls which work according to the X/Y toggle are Camera move and Object rotate.

Full screen toggle

Click this to increase the window size to full-screen. Click again to return the window size to normal.

Frame

The frame which surrounds the object is used for rendering only. It defines the region which is rendered. You can alter the size of the frame by dragging one of the boxes around the frame. Be careful to create a border for anti-aliasing or a shadow.

The menu

Click menu over the 3D view to open the 3D view menu. See the relevant sections of this manual for information about what each menu entry does when it is clicked on.

The toolbar

Along the top of the 3D view, is a toolbar. The first four tools allow you to adjust your objects positioning, and how the camera views it:



Move Camera forwards/backwards; Drag the mouse left / right to move forwards / backwards (Click adjust on this icon, to adjust numerically).



Move Camera left, right, up and down; Dragging the mouse, moves the camera in the direction you move (Click adjust on this icon, to adjust numerically).



Field of View; Drag the mouse left/right to decrease/increase the Field of View. (Click adjust on this icon, to adjust numerically).



Rotate; Drag the mouse left/right, up/down to rotate the object. Click adjust on this icon, to undo the last rotate. The next two tools control you objects surface appearance. Note that these changes will apply to every object in your scene. If you want to set different colours to different objects, import a drawfile.



Colour; Sets the colour of the object.



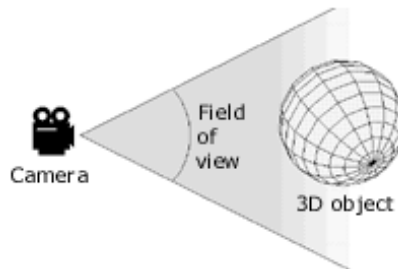
Shininess; Sets how shiny the object is (see below). Shininess details. The last tool (on the right) allows you to run plugins:



Plug-ins; Opens a list of available Plug-ins.

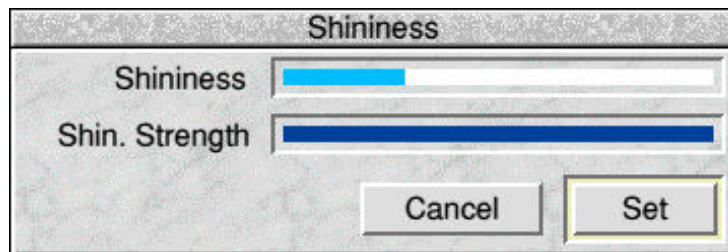
Field of View

The *field of view* controls how much of what is *in front* of the camera is actually *seen* by the camera. It can be thought of as a *zoom* tool. Imagine a cone extending from the camera (see diagram below), everything inside the cone is seen (the shaded region).

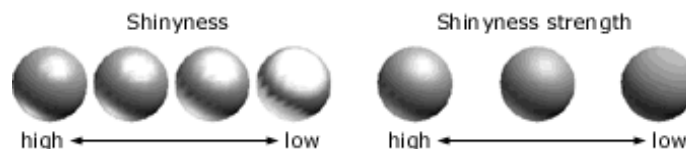


Therefore by increasing the field of view, more of the object will be shown, and decreasing the field of view reduces what is seen by 'zooming in'. You can control perspective by altering the field of view.

Shininess Details



Shininess is controlled through two settings. The first *shininess* defines whether the highlight is small (high values) or large (small values). The second value *shininess strength* defines how strong the highlight is. High values show a bright highlight, lower values reduce the brightness until it is undetectable. The diagram below shows the effects of various settings

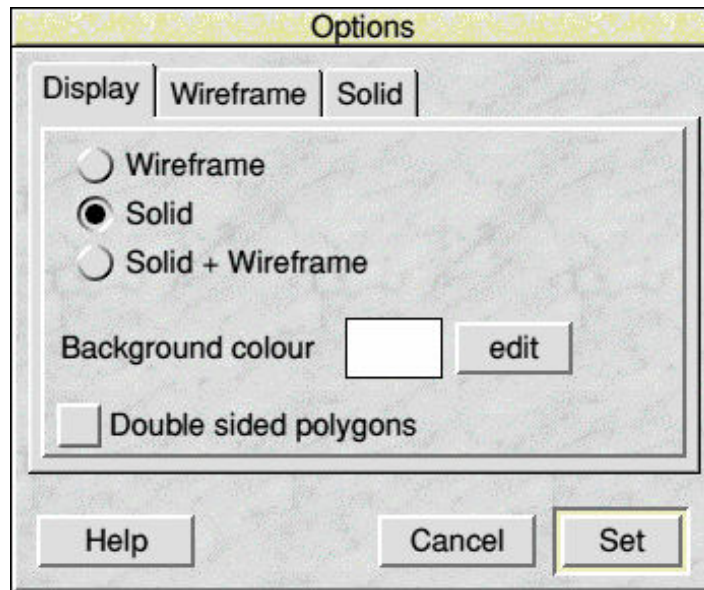


Plug-ins

Plug-ins are separate programs to WebFX3D, which reside within the !WebFX3D application. Each plug-in performs an operation on the 3D object to change it in some way. Although plug-ins are separate to WebFX3D, they integrate seamlessly with WebFX3D and as far as the user is concerned, a separate program is not even running.

3D view options

The options dialog is opened from the 3D view menu by clicking Options... You can then set the appearance of the 3D view, which affects how a rendition will look. The options dialog is shown below.



There are 3 tabs: Display, Wireframe and Solid. The Display tab contains general settings, the 2 other tabs contain specific settings which are effective depending on the settings of the Display tab. Each tab is described below.

Display

The option defines the type of display. There are 3 settings: Wireframe, Solid and Solid + Wireframe. The colour of the wireframe is set on the Wireframe tab, the type of solid fill is set on the Solid tab. The background colour sets the colour of the background, click edit... to change this. Tick Double sided polygons to use these opposed to single sided polygons. Each object is formed by a series of faces. At any time, many of these are facing away from the camera (i.e. are on the other side of the object), and don't need to be drawn. A speed increase of 50% is achieved when these are not drawn. However on a few occasions, when an object is drawn without some faces, Double sided polygons will need to be ticked.

Wireframe

The second tab contains settings for drawing the object wire frame. Firstly you can set how the wireframe colour is decided - either the colour of the object (Use object colours) or a different colour which is defined lower in the window. Click edit... to change this colour, which is also used as the wireframe colour in exported draw files.

Solid

Tick Shaded to display the object with each face rendered, alternatively the object will be filled with its solid colour. If Shaded is ticked, the options in the Shading options group affect the way the object is rendered. These options are explained below.

Phong; When ticked, objects are rendered with phong highlights. If not ticked, there will be no highlights.

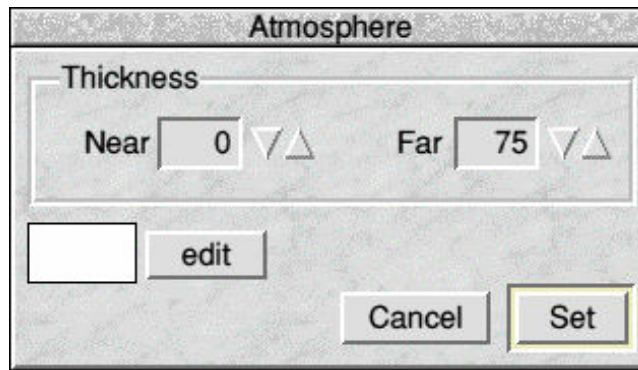
Directional lights; If unticked, light emits from each light source in all directions. If ticked, light shines in the direction from the light to the origin of 3D space. So the actual position of each light is not as important as it only defined the direction the light shines. Renditions are quicker if directional lights are used (ticked).

Attenuation; Tick this option to show attenuation, other wise no attenuation will be used. For more information on attenuation, see the lighting section. **Atmosphere;** Tick this option to render objects in an atmosphere. For more information on the atmosphere, see the section on Atmosphere.

Atmosphere

Atmosphere settings control the colour and density of the atmosphere surrounding your object. If coloured white you can create fog, or black to add a distance cue. Select Atmosphere... from the 3D view menu to set

atmosphere settings. The atmosphere can only be turned on/off through the 3D view options dialog. The atmosphere settings dialog is shown below:



Thickness

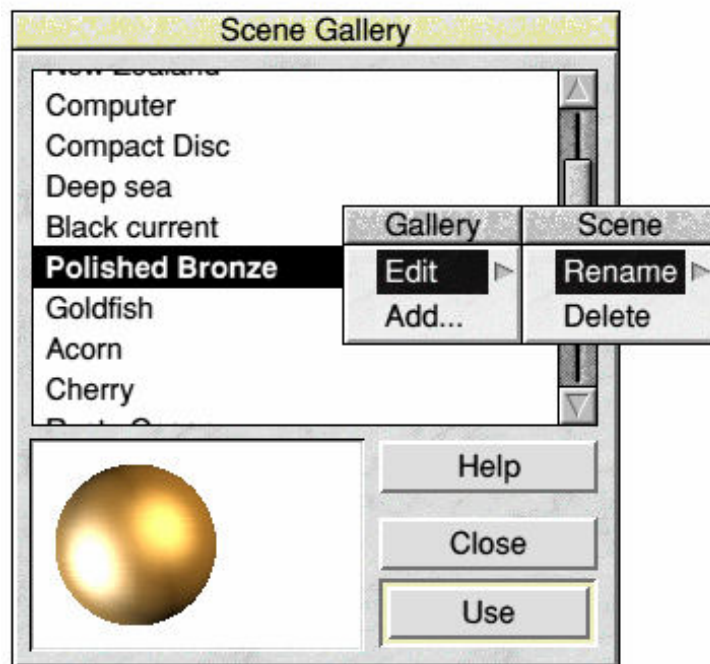
The Thickness settings define how dense the atmosphere is. The Near value sets how thick the fog is at the nearest part of the object from the camera. The Far value sets the thickness of fog at the furthest part of the object from the camera. Each is measured as a percentage. Typically, the near value is set to 0 so there is no fog close to the camera, and the far value is set to a higher setting. Therefore the thickness of the fog increases the further the object gets from the camera.

Colour

The filled box at the lower left of the dialog window (above) sets the colour of the fog. Click edit... to change this. If you require a fog effect, is it a good idea to set the background colour to the fog colour to give a fog background, i.e. the object fades into the background.

The Scene gallery

The Scene Gallery is a facility for storing components of a scene so they can be applied to other objects in the future. The surface material, lighting, background and fog settings are given a name and stored in the gallery. You can then browse through the stored scenes to quickly find the effect you're looking for. Additionally you can apply one component from a gallery scene to your scene (such as lighting, or the surface material). The scene gallery is opened from the 3D view menu:

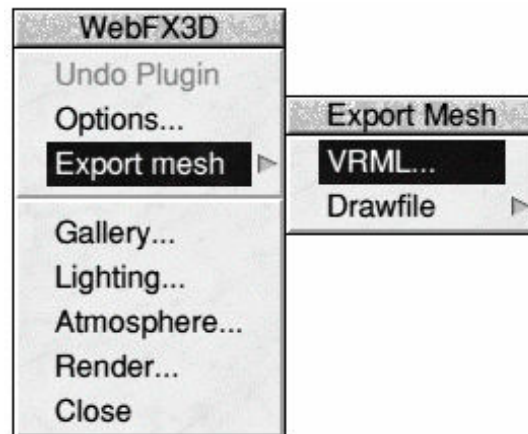


A list of stored scenes is shown as a scrollable list. Click on one and a preview of it is rendered on a sphere at the lower left corner of the window. To show if fog is applied to the object, the text near and far is shown to the right of the object in the colour it would appear at the near and far parts of the object. The sphere itself does not show the effect of fog. To use a gallery scene, select it and click Use. A dialog window will pop up

where you can set what parts of the scene to apply to your scene. Click use in that dialog and your scene will be updated. When selected, you can also rename or delete a scene from the gallery by clicking the menu mouse button over the list. Additionally, you can add a scene to the gallery. Simply set up the scene (object colour, lighting positions etc.), open the gallery, click the menu button over the list and select the Add... menu entry. A dialog will open where you can type the name of your scene. This is handy if you will need to render several different objects, and each must have the same theme.

Exporting

WebFX3D allows you to export an object as a draw file or VRML file in addition to rendering bit-mapped images. To export an object, open the Export menu which is a sub-menu of the 3D view menu:

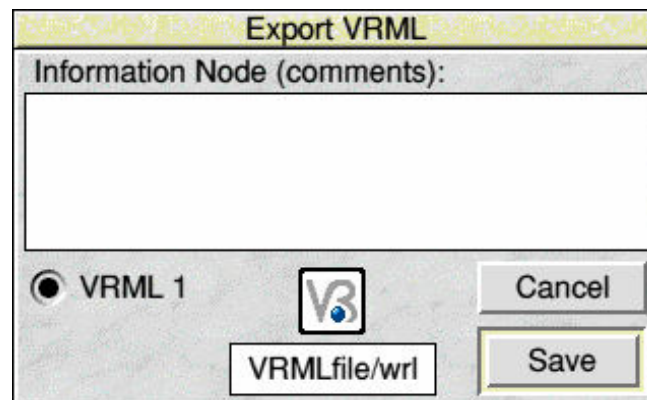


Exporting a Draw file

To save as a drawfile use the standard process of dragging the draw file icon to a filer window or another program. The draw file will look exactly as the 3D view, however it will not be shaded. A draw file either has a wire frame, solid fill or both depending on the 3D view options. The wire frame colour is set to the colour of the Wire frame on the second tab of the options dialog.

Exporting a VRML file

VRML (Virtual Reality Modelling Language) is a format used to describe 3D scenes on the internet. When you click on the VRML menu entry the Export VRML dialog pops up (below).



VRML files are text files, and can have information about the author (you) inside them as an Information Node. Anything you type into the white text area will be put into the file. At the moment, the VRML version 1 format is supported. Drag the file icon to a filer or other application to save the VRML file. VRML files can be viewed on all computer platforms by most popular web browsers and 3D graphics programs. On the Acorn platform, Apex Software develop the most useful VRML viewer which we recommend you use.

Bend Plug-in

This plugin bends the object around a circular path. It only works in the XY plane (i.e. parallel to the screen). It is best suited to a line of text.

Angle

The angle in which the object will fit. 355° bends the object around a complete circle, 180° a half circle and so on.

Radius

The radius of the circle to create, as a percentage of the overall width of the object. A larger radius should be used in conjunction with a small angle, however you will need to experiment a lot.

Center of object

Whether the center of the original object will be at the top or bottom of a circle.

Colourise Plug-in

This plugin allows you to set the colour of the join between the front and back faces of your object. It is suited to object created by WebFX3D, not add-ons.

Join colour

The colour is defined by RGB values. Move the sliders to set the amount of Red, Green and Blue in the colour of the join.

Type of Join

Select the type of join you used when creating the object. If this is not set correctly, the object will not be coloured correctly.

Scale Plug-in

This plug-in provides a simple way to scale the object in any axis. There are 3 scale factors, one for each axis. To enlarge or reduce the size of the object, set all scale factors the same. To extend in the z-axis only, leave the X and Y factors as 1.0, and increase the Z value.

Twist Plug-in

The twist plugin twists the object about an axis. One end of the object is held still, while the other end is rotated.

Axis

Which axis to twist the object about.

Revolutions

How many times to rotate the end. 1.00 to rotate 360 degrees, 0 for no rotation. 3.00 will rotate 3 times, 0.5 will rotate only 180 degrees etc.

Radius

While twisting, the object can also be expanded about the axis. This allows a helix to be created from the object. No radius, will just twist the object. Set the radius, and if the result is not as you require, *Undo* the plugin, and try again with a different radius.

Wave Plug-in

The wave plug-in puts a wave through the object.

Plane

Which plane to put the wave through. The default is XY, so the wave is put horizontally through the object from left to right.

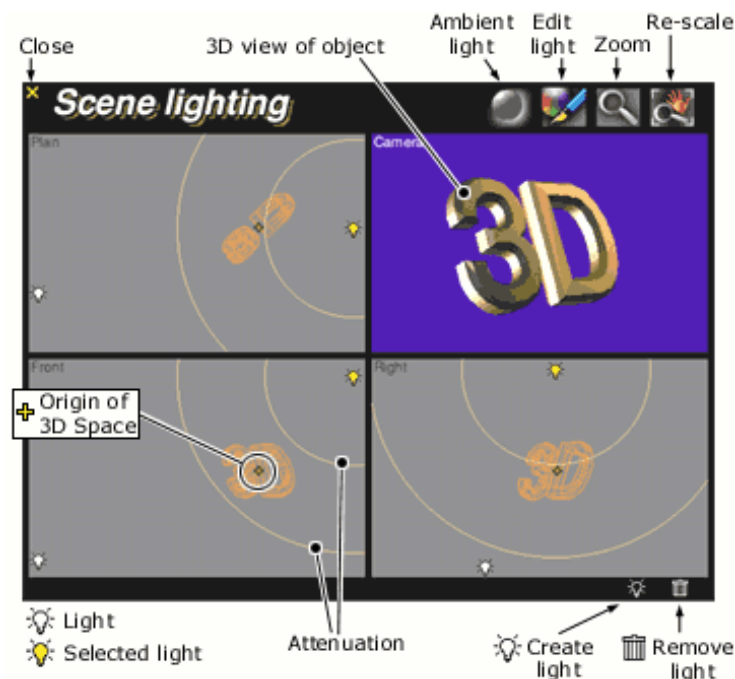
Amplitude

The height of the wave, as a percentage of the height of the object.

Waves

The number of waves to put through the object.

Scene Lighting



WebFX3D provides some very powerful lighting facilities. From a users perspective, lighting is possibly the most complicated part of WebFX3D, as it requires an understanding of the 3D co-ordinate system , and Light Colours. We recommend that you store your scene in the gallery once lighting has been set so you can get the same settings in the future easily. There are 4 views of the scene: 3 orthographic projections, and the 3D view. The projections include a plan (top left), front projection (bottom left) and right elevation (bottom right). Each projection shows the wireframe object, lights and the origin of 3D space. The wireframe is set to the colour of the object. You can change the background colour by clicking menu over a view and selecting background... if its too similar a colour to the wire frame colour. The 3D view is a copy of the main 3D view. It provides a way to see how the lights affect the rendition of the object. If the main 3D view is set to wire frame display, click on the 3D view (in the lighting window) and it will be rendered. This is handy for slower computers which don't need the 3D view re-rendered every time you move a light, but only when you want to see how your changes look.

Working with lights

To add a light to the scene, simply drag the light icon (lower right of the window) to a projection. It will be created where you drop it and selected. To select a light, just click on it - the selected light is shown in yellow. To move a light, drag it to a different location (in the same view you dragged it from). To remove a light, drag it to the bin at the lower right of the window. There must be at least one light in the scene.

Ambient Light

The lighting which exists in a scene without any light sources present is called ambient light. In the real world ambient light is created when light is bounced off objects and reaches areas where there are no lights (such as day light reaching the ceiling of a room through a window). In WebFX3D, ambient light is constant for all faces of an object. Normally there is no ambient light (black), however you can set this by clicking on the Ambient light icon.

Edit Light

Click the Edit Light icon to edit the light colour and attenuation settings. For more information, see Editing a Light.

Zoom

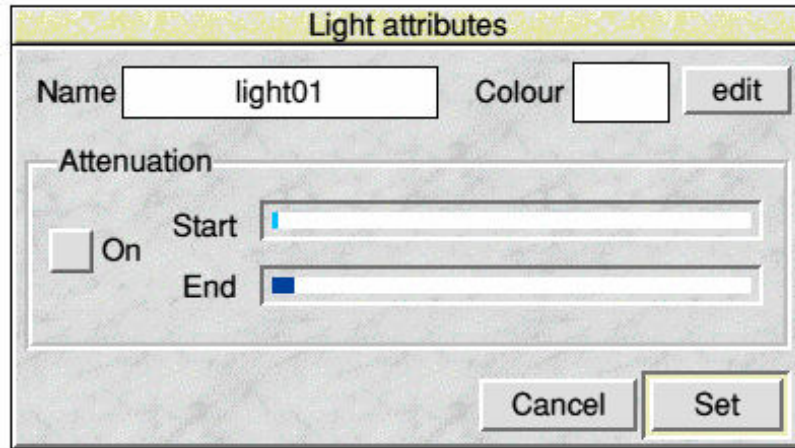
Click on the zoom icon to open the zoom menu. This allows you to zoom in or out for all projection views. The zoom always scales the view by 2 or a half depending on the option (in or out). You can also press the + and - keys to zoom the views as a short cut.

Re-scale

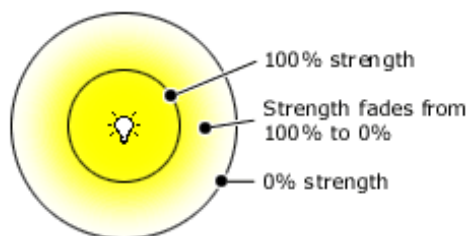
The projection views can be re-scaled. This sets the scale and position of the projection views to fit all objects as closely as possible. Often you will need to zoom out after a re-scale to make room for moving the lights around

Editing a Light

In the Scene Lighting display, select a light to edit, and click the *Edit light* icon. The Light attributes dialog will open (shown below).



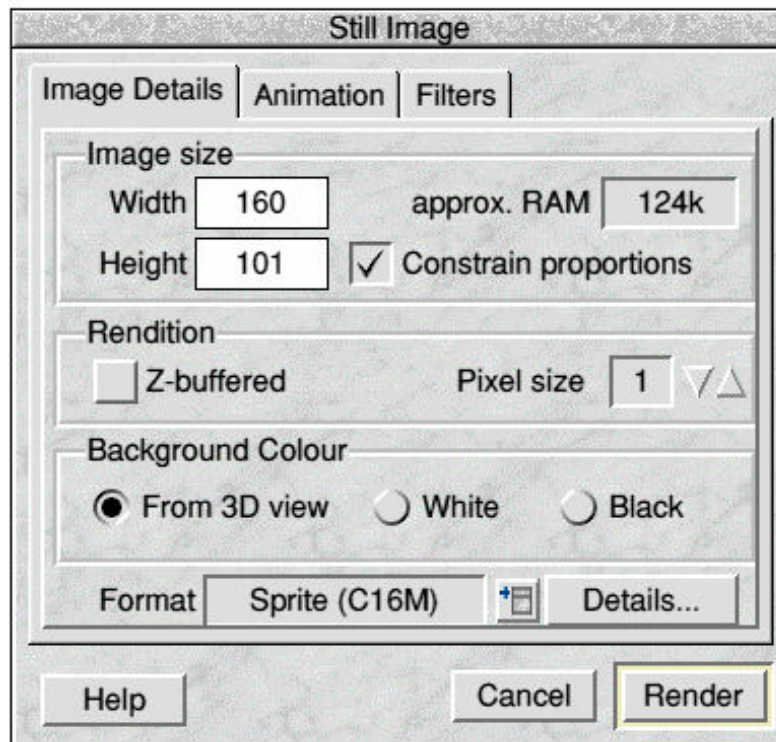
The name of the light in the dialog is not relevant in WebFX3D, but provides for expansion in the future. Ignore the Name field. The colour of the light can be set by clicking on edit... beside the colour. The light colour is set to white initially, for information on light colours see the reference section. Attenuation refers to the way light becomes weak the further it gets from the light source (i.e. light from our Sun is strong as its close to the Earth, but light from stars is weak as they are far away). To turn attenuation on, tick the On option box. Start sets the distance up to which the light strength is full. The End distance sets where the light strength fades to no light at all. You will have to adjust the distances until you get the desired effect. When ON, the light will have 2 circles drawn around it to show where the light starts to fade (*Start*), and where it fades to nothing (*End*).



The diagram above shows a light source. This emits light in all directions. When attenuation is On, the *Start* value defines the radius of the inner circle. The *End* value defines the radius of the outer circle.

Rendering

Click *Render...* from the 3D view menu to open the render dialog, shown below.



There are 3 tabs: *Image details*, *Animation* and *Filters*. The Image details tab lets you set options required for all renditions. The other tabs contain extra options which are not required to render a standard single image. When you are ready, click *Render* and the image will be rendered. Then you can then drag the new file to a filer window or another application.

Image Details

Image size

The width and height controls allow you to set the dimensions of the image in pixels. If *Constrain proportions* is ticked, the width and height values will be kept in the same proportions as the width and height of the frame in the 3D view. Approx. Ram reports the approximate memory requirement for the rendition, taking into account the Z-buffer, and pixel size (note that this is not the file size of the image to be created).

Rendition

Tick *Z-buffered* to use a Z-buffer for the rendition. This will use twice the memory, and is not normally required. However some objects with large faces can be drawn incorrectly if this is option is not ticked, and will therefore need to be re-rendered with the Z-buffer on. The pixel size parameter controls anti-aliasing. A value of 1 uses no anti-aliasing, 2 = normal, 3 = best. Note that the higher the value, the more memory is required. Keep an eye on the approx. RAM indicator. Note that these options do not significantly affect the speed of a rendition, only the memory requirement.

Background Colour

There are 3 options for the background colour. Select *From 3D view* to use the colour shown in the 3D view. The other 2 options allow you to set white or black background. These are the most useful backgrounds and are provided to ensure that these colours are pure (ie. to make sure you have a white page not a slightly grey one).

Format

There are several image formats provided : *Sprite* (16M = 16 million colour / 256C = 256 colour), *JPEG*, *Targa* and *PBM* (24bpp binary). Select the format you require from the list, and click *details...* to set options specific to that format. Some of these options are explained below: *Sprite (16M) transparency channel* - This option uses the unused byte of a 16M colour sprite as a transparency channel. This is a higher level of sprite masking.

Although all programs should be able to load the sprite, only a couple can take advantage of the transparency channel. *Sprite (256C) palette* - The 256 colours in a sprite can be set to different colours than the Acorn 256 colour palette. A grey scale sprite sets each of the 256 colours to shades of grey. An optimised palette sprite uses a palette of the best 256 colours for displaying the sprite (i.e. an image of red text will have a palette of generally red colours).

Animation

Animations will be created by WebFX3D if you tick the Animate option on the Animation tab. Animations are saved as a sprite file containing several images - one for each frame of the animation. Creating an animation is easy - all you do is select the type of animation you require, and WebFX3D does the rest. The sprite file can then be loaded into other programs (such as InterGif to create animated Gifs for the internet). The Frames field sets the number of images which form the animation. The more frames in the animation, the longer it will take to render. Additionally you should keep the file size in mind. If your animations are for the internet, use the minimum number of frames that look presentable. There are a selection of different types of animations to choose from. Click the Details... button to set options specific to each type of animation. Each of these is described below:

Object Revolution

This simply rotates the object about one axis (X, Y or Z). Tick Half a revolution to only rotate half way (180°). By combining this with Rotate 90° first the animation appears to rotate all the way, but any text will always be facing the front and is therefore always readable. Tick Reverse direction to rotate in the opposite direction.

Orbital Lights

This option rotates the lights about one axis (X, Y or Z). The lights effectively orbit about the object. Best results are achieved when the lights are close to one axis and therefore do not move very much - but enough to move highlights on an object in an interesting way. Animating Gifs created from this type of animation should compress well as most of the image does not change.

Fade to Background

The object is made progressively transparent against the background, and appears to fade away - then fade back. You can set how transparent the object is when most faded, by dragging the Fade how much? bar. Low values do not fade the object much, large values fade the object completely.

Scale Object

This option scales the object smaller, then scales it back to full size. You can set the amount by which the object gets scaled as a proportion of original size. Low values scale the object really small, large values do not scale the object by much.

Filters

A filter is a process which is applied to an image after it has been rendered. There is currently one filter: Drop Shadow. Filters require a little more memory than a standard rendition, but not much. More filters are a possibility for future releases.

Drop Shadow

The drop shadow creates a shadow of the object on the background, and can also create a glow around the object. To create a drop shadow, tick On in the Drop Shadow group. The Colour of the shadow is shown, and can be changed by clicking Set... Blur sets how soft the shadow is. Low values do not blur the shadow much and create a jagged effect, larger values blur the shadow more. Transparency controls how transparent the shadow is against the background, measured as a percentage. Low values create a solid shadow, higher values fade it away. The X-offset and Y-offset, set the displacement of the shadow in pixels. Positive X-offset values move it right, negative = left. Positive Y-offset values move it up, negative = down. Values of 0 do not move the shadow from behind the object. Enlarge by increases the size of the shadow in pixels.

Image Map

This filter allows you to use an image as a surface material, in addition to the colour of any objects. *!ChangeFSI* is required (must be installed on your computer). The image is not mapped onto your object in a traditional 3D sense. To understand how it is mapped, consider the following: The texture is scaled to fit the size of the rendition, and is mapped directly onto your object. Thus if your texture has only 2 pixels:red and white, your object will have 2 halves, one will be red, the other will be white. To use this filter, tick On.

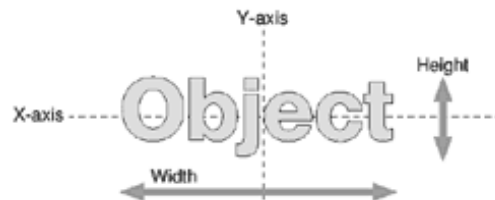
Overlay; At 100%, the texture will be used to colour the object. At 0% the original colour of the object will be used. At 50% half the original colour, and half the texture colour will be used.

X,Y tile; The texture can be tiled.

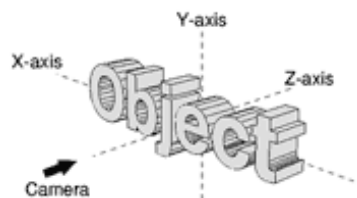
Image; The path of the image map is shown here. Drag a texture here to use it as the image map.

3D co-ordinate system

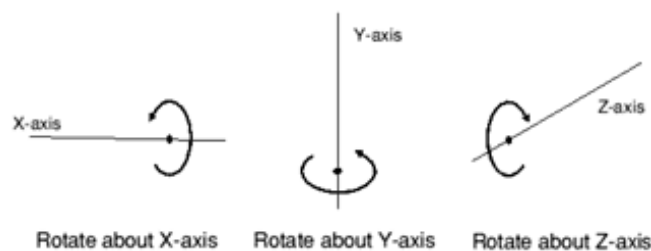
WebFX3D works with objects in 3 dimensional space. It is advisable that you understand the basics of the 3D environment created by WebFX3D, if you intend working with animations and lighting. **Introduction to 3D** When you use an application such as !Draw, you are working in 2 dimensions. If you create some text, it has width and height. Additionally, the position of the text is defined by X and Y co-ordinates. X measures the distance from the origin horizontally (X-axis), and Y measures the distance from the origin vertically (Y-axis).



In WebFX3D, this concept is extended by adding depth to objects (give the text thickness). The diagram below shows the object in 3D space. There is now a new axis: the Z-axis which measures how thick objects are and how far they are from the viewer (Depth).



The X and Y axes are still the same, but there is now an new axis to measure depth. Most plug-ins use these axes as parameters (ie. the scale plug-in, scales the object by a set amount in each axis), additionally the lighting and animation parts of WebFX3D requires knowledge of this 3D system. **Rotating about Axes** The Object Rotation plug-in is one example where you are required to set which axis to rotate something about. Rotating about an axis is shown by the following diagram.



Planes

A plane is like a sheet of paper in 3D. It defines a 2 dimensional area. There are 3 important planes in 3D, which are described by the axes they follow. The XY-plane describes a plane as a wall in front of the viewer along the X and Y axes (ie. The page you are reading is an XY plane). The XZ-plane describes a plane on the 'ground' (ie. horizontal). The ZY-plane describes a plane as a wall in the Z-axis(ie. vertical).

Reference

Light Colours

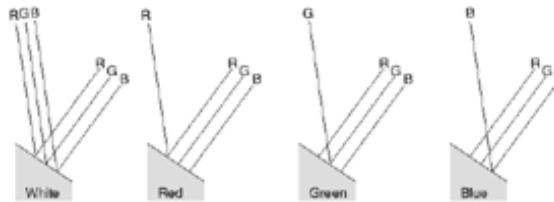
When white light hits a red object, you see red. However if blue light hits a red object you see black. Why? An understanding of how light of different colours interacts with object of various colours will help if you are working with lighting in WebFX3D.

The colours of light

Light is made up of different amounts of 3 primary colours: Red, Green and Blue. The colour of the light depends on the amount of each component. Any colour is possible by mixing 3 components. When R,G and B are present you get white. When no light is present you get black (or no light).

How it works

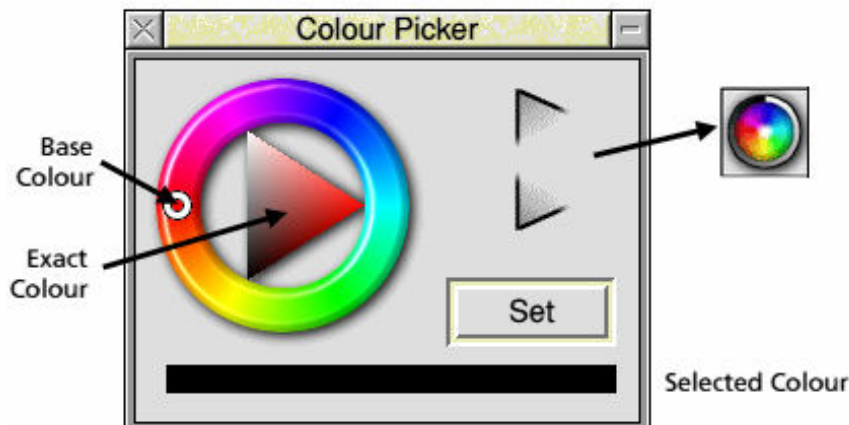
Humans see objects in the world around us by using light which has bounced off objects and entered our eyes. Objects do not generally emit their own light, so it must be provided by a light source. The colour of light changes when it bounces off objects, and this is how we distinguish objects of different colours. White light is made up of R,G and B components. When it hits an object, some of the light is reflected, this is the light which we see. Which parts of the light are reflected depends on the colour of the object. Red objects reflect only red light. Blue objects reflect only Blue light. White objects reflect all light. Black objects reflect no light.



So it all depends on what colour of light hits an object, and which light is reflected, which defines how the object appears. More than one light source can cast light on an object, and the same rules apply. For example, you have a white object (white reflects all light), which is lit by a red light. Only the red component can be reflected. The object appears red in white light. Now if you add a blue light, so that red and blue light hits the object. Both the Red and blue light will be reflected as mauve. Take the lights away and no light hits the object, and it appears black. Now take a yellow object (yellow is made up of red and green). In white light, the object appears yellow, as red, green, and blue light hits the object but only red and green are reflected. Use a red light instead, so only red light hits the object. Now it appears red as only the red light can be reflected. Now use a mauve light (red and blue). The object is still red because although red and blue light hits the object, only the red is reflected. By thinking carefully about lighting, many effects can be achieved. A white object can be lit on one side by a blue light, on the other side by a red light. So it looks blue on one side and red on the other. Just because an object appears a colour, you can't assume that is its true colour until you know what light is hitting it.

WebFX3D Colour Picker

WebFX3D uses a new colour picker. The reason for using this instead of the standard Acorn picker is that specific colours are not required in WebFX3D. If you want a red, you click on red. It doesn't matter if its 99.6% red or 95.3% red - its a red! If you want a colour between red and another colour its easy to find, and explore other possibilities. Additionally this colour picker supports transparency, although this is not used in WebFX3D.



How to use it

The large triangle shows colours you can select. Clicking in this triangle selects a colour, which is shown in the bar at the bottom of the window. The colours of the corners of the triangle can be changed, thus allowing you to mix combinations of colours. To change the colour of the right corner of the triangle, click on the circular ring around the triangle. This displays the colours of the rainbow. To change the colours of the other corners, click on the outline of each corner on the right side of the window. A small window will open allowing you to select any colour you see in that window. For example, to find a brown colour: make the top colour red, the bottom green, and the right a yellow. Now the colours in between these 3 are shown in the triangle, one of which will be the brown you require. You can easily change the right corner, allowing you to find tints of the colour you have selected. Note: A 100% pure white is difficult to find on the picker. Therefore when you render an image with a white or black background, you set the background to pure white or black on the first tab of the render dialog.

Add-ons

Add-ons are completely separate to WebFX3D. They create an object, then pass it on to WebFX3D.

Add-ons:

Spheroid designer

Torus designer

Mapper

VRML1.0 Loader

Note that any object currently in WebFX3D will be removed without informing you that this has/will happened.

Spheroid Designer

The spheroid designer creates a sphere in WebFX3D. This can be rendered and used for *bullets* in lists of items etc. You can control the number of segments in the horizontal and vertical directions.

Torus Designer

This program is an add-on for WebFX3D, which creates a torus (tyre tube). You can control the number of segments forming the circular cross-section, and the number of segments forming the tube itself. The radius of the hole is measured as a percentage of the overall radius. Small values give a small hole, large values give a large hole.

Mapper

This program is an add-on for WebFX3D, which creates a 3D object based on an image file. 1. Drag an image file to the program window. 2. Set the size of the 3D object in squares. The size of the original image is shown to give an idea of quality.

Note

!ChangeFSI is required to load the images. Therefore you can use any image file !ChangeFSI can load.

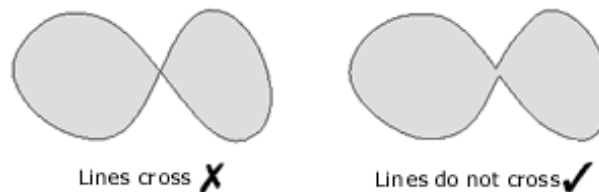
VRML 1.0 Loader

This program is an add-on for WebFX3D, which allows VRML1.0 files to be loaded. Note that only the mesh component of VRML files is loaded, and no lighting/fog is loaded. Use the Scene Gallery to remember this. We are sure that this loader will allow you to export any file from WebFX3D, and reload it. However files not generated by WebFX3D may not load.

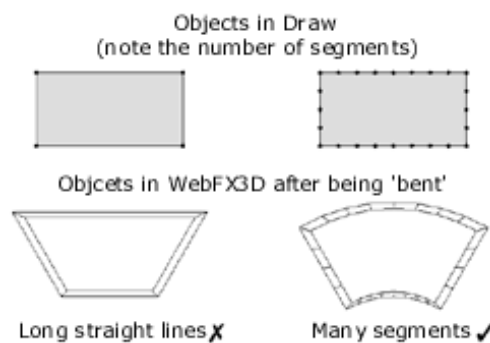
Hints and Tips

Using Drawfiles

The drawfile import facility of WebFX3D is quite powerful but there are restrictions on the type of drawfile you can use. Only closed path objects can be converted to 3D objects successfully, open paths may not work. Any other drawfile objects will be ignored. If you intend to use a drawfile, try to keep the objects simple, and do not let the lines of one object cross (see diagram below).



If you intend to manipulate the 3D object in the future (ie. by using a plugin) you should make sure that all long straight line segments are formed by several straight lines. The reason for this is that a 3D object in WebFX3D is made up of many triangles. When you manipulate an object, its points are moved, but the straight lines of triangles joining the points remain straight (see diagram below).



Perspective Tricks

By altering the distance between the camera and the object, you effectively zoom the view. The view can also be scaled by altering the field of view. When these 2 concepts are combined, you can control the effect of perspective. Perspective is the way an object gets smaller the further it is away from you. When the camera is close to an object and the object fits in the view (adjust Field of View to fit object in view), the effect of perspective is strong. Move the camera back and the object appears smaller, as well as reducing the effect of perspective. The field of view must then be adjusted to fit the object into the view again.



Therefore there are 2 steps to controlling perspective:

Zoom the camera in (perspective) or out (no perspective).

Adjust the Field of View to fit the object in the view (its size on screen will change when you zoomed in/out). If you are dealing with long lines of text, it is best to reduce the amount of perspective so that the text will be easier to read. However you can achieve some interesting effects by adjusting the amount of perspective with smaller objects.

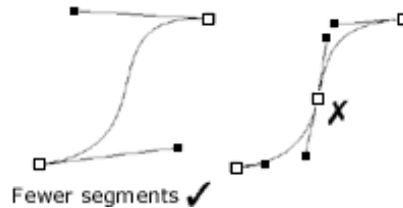
My drawfiles contain sprites?

That's ok. The sprite objects within the drawfile will be ignored. Everything which is not a *path object* is ignored.

Will a complex drawfile load?

There should be no trouble, given that the objects within the drawfile are *closed path* objects. However exceptionally complicated shapes may not load due to massive memory requirements, and will take longer to

convert to 3D. It is best to use simple shapes, with as few line segments as possible. In the diagram below, you can see that the same curve can easily be created with one line segment opposed to 2 by moving the control points in !draw.



I want simple bold colours

Highlights, and lots of shading can look cool. But sometimes its best to use very simple, bold, uniform colouring. To achieve this, select *Directional lights* and unselect *Phong* (on the *solid* tab of the 3D view options dialog). The object will be rendered without a highlight, and each light behaves like a sun: shining light in one direction only. Therefore, any faces facing in the same direction, will be coloured in the same way. You could also reduce the *shininess strength* of your objects highlights instead of unselecting phong.

My object is too chunky!

Increase the *curve quality* before the object is created. However this will require more memory, and operations will take longer to complete (ie. rendering). The default setting should be acceptable for most situations.

Why would I use fog?

Fog is an effect which can be used to give a finishing touch to your renditions. However you will not normally need to use it. A thick white fog could be useful if you want your text to fade into a white page. A weak blue/green fog could provide an underwater look against a blue background. You may just want your text to be tinted in the distance, in which case a weak fog would be used.

Which background colour?

The background colour you choose, depends on where your image will be viewed. If you render to a *transparent* background, the image will still be anti-aliased to the background colour you have chosen. Obviously, text to go on a white page, should have a white background. However, 3D objects usually look better against a black or dark background. A transparent background can be applied if you are saving a *sprite* (see the file format options).

Object creation problems

Sometimes the actual 3D object cannot be created correctly. If you have used a drawfile, then you may have open paths or text objects in the drawfile not converted to path. Some characters of a few fonts may not work correctly. There are several reasons for this, but usually the fonts are drawn in such a way as to make it very difficult for WebFX3D to create a 3D object from them. If you have trouble and are not using a drawfile, then create the text object in !draw, convert to path, and move some points a little in relation to each other. With the points in new positions, WebFX3D should handle the objects with no problem.

Which fonts work best?

Simple fonts which are easy to read are best. Therefore most fonts are suitable. Complicated fonts such as old English types, and fancy fonts, may not be the best choice. Fonts which have bold curves (Garamond/London) can look very impressive with a simple curved join.

What join quality is best?

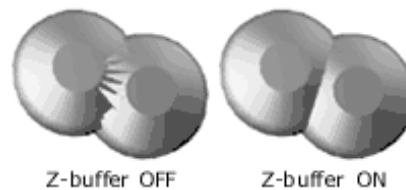
A join quality of 1 or 2 is usually more than enough. As the join is usually projecting away from the viewer, it does not need to be detailed. If the join type is bevelled or flat, the quality will have no apparent effect, only on the curved joins will an increase in quality be noticeable.

Can I export the wire-frame?

Yes, as a drawfile. Make sure the 3D view is shown as a wireframe, click menu over the 3D view and open the Export Mesh sub-menu. Save the drawfile as you would from any application. Wireframe drawfiles look particularly technical, and can look complicated, yet be of simple construction. A ghosted wireframe could make a good background.

**Do I need the Z-buffer?**

The Z-buffer ensures that when an object is drawn, its components are drawn in the correct order. Close parts of the object need to be drawn last to overlap the parts further away. Usually the z-buffer is not required. However if several objects overlap each other the z-buffer may be a good idea. The diagram (below) illustrates 2 objects intersecting without the z-buffer. The intersection is shown correctly on the right with the z-buffer ON.



Note that the z-buffer requires twice the memory for rendition.

My object is missing triangles!

When the camera is very close to an object, some of the triangles which form the object are not drawn. The result is usually the background showing through where the triangle should be. To fix this, tick double sided polygons (3D view options), and render with the z-buffer.

Jpeg quality

The quality depends on how large you want the file to be, and how much detail you want to retain in the image. The quality is specified as a percentage. If you require very small files, try reducing the quality to very low settings, and see what you get. Generally, 75% reduces the size of the file incredibly, while retaining almost all the detail. This is the default option.

I want the Acorn colour picker

You can use the Acorn colour picker if you like. Simply open the 'cfg' text file, which can be found within the !WebFX3D application (shift-double-click to open), and make the following change:

Change: acorn_picker:FALSE **To:** acorn_picker:TRUE

Here are just a few of the other products you will be able to
download from RISCOS.com free of charge
(You can make a donation to help support future product releases but this is entirely voluntary)



This Documentation is © 3QD Developments Ltd 2026
Some of the products shown above might not be available immediately.
Not all products will run on all versions of RISC OS, check the product information page for details.

Other Products list last updated 29/2/26