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System Requirements

	Minimum Spec	Recommended Spec
Processor	400 MHz Pentium II	600 MHz Pentium III
Operating System	Windows 95/98/2000/ME	Windows 95/98/2000/ME
DirectX Version	7.0a	8.0a
Ram	64 MB of RAM	128 MB of RAM
CD-ROM Drive	4x Speed CD-ROM	16x Speed CD-ROM
Hard Drive Space	600 MB of hard disk space	600 MB of hard disk space
Graphics Card	Direct X compatible 3D Accelerator required (8MB+)	Direct X compatible 3D Accelerator required (16MB+)
Sound Card	Direct X compatible Sound Card	Direct X compatible Sound Card

1. GETTING STARTED

INSTALL INSTRUCTIONS

- After turning on your computer, place The 3D Gamemaker CD into your CD-Rom drive.
- The 3D Gamemaker is a Windows "AutoPlay" CD-ROM. This means that by putting the CD into the drive for the first time, the installation program should start automatically.
- If the AutoPlay feature does not work when you put the CD into the drive, do the following:
- Double-click your "My Computer" desktop icon
- In the window that opens, double-click your CD-ROM drive (it is usually the D: drive)
- In the list that appears, find the file called setup.exe and double-click it.
- The installation program will now begin.

During installation you will be presented with a choice between a "Typical" or "Minimal" installation. The "Typical" installation takes up more hard drive space but is strongly recommended, it will allow for large scenes to be loaded much faster than a "Minimal" installation will.

RUNNING The 3D Gamemaker

To start The 3D Gamemaker simply double-click the icon located on your desktop. If you opted not to install a desktop icon you can locate The 3D Gamemaker from the Windows Start menu under T3DGM Software.

After The 3D Gamemaker has loaded you will be presented with the BEGINNER or STANDARD mode selection screen. For more information, jump to chapter 3: CREATING YOUR FIRST GAME.

Note: You MUST ensure that you have a copy of DirectX 7.0 or higher installed on your PC. We have provided you with a copy of DirectX on The 3D Gamemaker CD. If required run the directx\setup.exe program to install. We also recommend you ensure that you have the latest drivers for your video card installed, please see the web site of your video card manufacturer for further information.

INTRODUCTION

Ever wanted to create your own first person shooter, running through a darkened crypt against hordes of zombies? Or how about making a fast paced racing game across expansive icy tundra? The 3D Gamemaker gives you the power to do so with nothing more than your mouse and a healthy imagination. Gone are the days of slaving over a hot keyboard programming for hours, now you can simply select the objects you require and drop them into your own action packed title.

Using an intuitive graphical interface The 3D Gamemaker allows you to quickly and effortlessly build the type of game you want from a massive selection of genres, scenes and elements. Choosing the look and feel of your game is as simple as clicking on a picture.

And if what you are looking for isn't there, you can use The 3D Gamemaker's advanced image, sound and object importing tools to place your own graphics and objects into your games. If you had ever fancied starring in your own production, now is your chance!

But it doesn't stop there. With a multitude of additional options and settings to change for each part of your game, from the speed of your bullets to the intelligence of your foes, you can literally tweak your creation to your hearts content making each and every game unique.

Once you are happy with your creation you can save it as a stand-alone game and take it around to your friends to play even though they won't need to own The 3D Gamemaker to enjoy it.

ADVANTAGES OF The 3D Gamemaker

The 3D Gamemaker is unique and there is nothing else like it currently on the market. For the first time non-technical people have been given the power to create their own games within minutes and have lots of fun doing it. Here are some key benefits of The 3D Gamemaker:

- No programming skills are required.
- Easy to use, Creative, Fun and Imaginative.
- The 3D Gamemaker handles all the complex maths for you including collisions.
- A variety of player controls are available including keyboard, mouse and joystick.
- Enemies and end of level Bosses have a wide range of AI options.
- Adding different players, game items or enemies is as simple as clicking on a picture.
- Single or Two player options are available.
- The 3D Gamemaker can connect to the Internet for free updates including object models, sounds and music.

Have Fun!

Our wish is that The 3D Gamemaker will allow you to unlock your creative potential, make some great games and have fun to boot! All of us love making games and hope to inspire many others to participate in this enjoyable activity. We've worked hard to remove all of the complex work from the creation process so you can concentrate on pure games design.

Please share with us your thoughts and projects via our ever-growing World Wide Web site at www.the3dgame maker.com

2. THE MAIN INTERFACE

These icons let you build your game step by step, adding elements as you go.

The last two icons access the global settings and save game options.

The options window shows items available for use in your game



Game category selection

The preview window displays the selected item in more detail.

The Help bar displays the current area, mode and game size.

Click this test button at any time to play your game so far.

MAIN MENU

The main menu can be accessed at any time by clicking The 3D Gamemaker icon on the top row.



MAKE GAME	Click this to begin a new game
LOAD GAME	Allows you to load a previously saved *.3DG* game.
MAGIC GAME	Click here and The 3D Gamemaker will create a game for you
PREFERENCES	Takes you to the editor preferences
SWITCH TO STANDARD MODE	If you started The 3D Gamemaker in Beginner mode this will take you into the Standard Mode (and visa versa)
EXIT THE 3D GAME MAKER	Returns you back to Windows.

MAGIC GAME

Feeling too lazy to create your own game? Then why not let The 3D Gamemaker do it for you?! Just click on Magic Game and you'll be taken into this new sub-menu. The options are as follows:



RANDOM GAME	If you want The 3D Gamemaker to create you a truly random game then tick this box. It will select a random scene, player, enemies and objects for you.
MAGIC GAME ID	There are 99 games built into The 3D Gamemaker and this allows you to select which one of them is built. Just tick the box and drag the Game ID slider from 1 to 99, each will give you a different but fully playable end-result.
GAME ID	This sets the game to be created for the Magic Game ID option.
OK	Click to start the Magic game creation process.
CANCEL	Click if you want to cancel a Magic Game.

THE EDITOR PREFERENCES

The editor preferences allow you to change certain aspects of The 3D Gamemaker.



BUTTON VOLUME	To set the volume for the button sounds click on the sliding bar and drag to the volume required. Setting this value to zero will ensure you hear no sound when clicking within the interface.
PLAY MUSIC IN TEST	If this option is ticked then music will always play when you're testing your game. It's handy to be able to turn this off so that you can tweak the sounds in your game as you create it.
ALWAYS RESET TEST	When you test a game, The 3D Gamemaker will re-position all the game elements and let you test the game from the start. If this option is not ticked, then the level is not reset and you'll continue testing from your last test point.

ICONS AND THEIR FUNCTIONS

There are two sets of icons on the main screen, one for selecting game elements and the other for selecting the game category.

The game element icons from left to right are

Icon	Name	Description
	Main Menu	Displays the main menu in the options window.
	Scenes	Displays the available scenes from the currently selected graphics category.
	Player	Shows the player objects from the selected category.
	Bullets	Lists the bullets that a player object can shoot.
	Enemies	This is for displaying the enemy objects that you can choose to populate the levels of your game.
	Flak	Each enemy can shoot a weapon and this icon shows all the types of enemy bullets available.
	Obstacles	Add obstacles using this icon.
	Boss	At the end of each level of your game you can choose one of the many end of level Boss objects with this button.
	Items	Add strategy to your game by including power-ups, extra energy capsules, health medic-kits etc.
	Global Game Settings	This takes you to a menu that provides functions for setting up your game's title page and hi-score display, the difficulty of the game, adding a 2 player mode and much more.
	Save Menu	Once you've made your masterpiece, save it as a standalone game here so that you can pass it to friends or colleagues that don't have The 3D Gamemaker.

The game category icons from left to right are:

SHOOTER	For first person perspective shooter games
HORROR	For horror styled games
WAR	For war games
SPACE	For space games including free-flight shooters
DRIVING	For driving based games
JUNGLE	For games set in the jungle
CARTOON	For cartoon styled games
SILLY	For silly games!
USER	For your own creations
WEB	For downloading new objects from the official 3D Gamemaker web site.

PREVIEW WINDOW CONTROLS



The preview window allows you to view the different animations for each element of your game. The element selected will determine what controls are available.

The controls from left to right top row are

	A stop button to stop the animation
	A play button to play the animation
	Scroll bar to show animation length & preview a scene from start to finish

The controls from left to right on the bottom row are

	Walking button plays the walking animation for element
	Idle button plays the Idle animation for an element
	Fidget button plays the fidget animation for an element
	Firing button plays firing animation for an element
	Hurt button plays the animation for an element being hurt
	Die button plays the animation for an element's death

The last three buttons (piano, chequered globe and green right arrow) allow you to change an element's music, sound FX, textures and to access the other properties available for that game element (see chapter 4).

To rotate the element manually, click and hold down the left mouse button on the element within the preview window, moving the mouse around will now rotate the element.

3. CREATING YOUR FIRST GAME

This section of the manual will guide you through the basics of creating your first game within The 3D Gamemaker. What this section will not tell you is which game to make as that choice is up to you!

RUNNING THE 3D GAME MAKER FROM WINDOWS

Select The 3D Gamemaker icon from the Windows START menu or from the desktop icon. The 3D Gamemaker will now load up and run within it's own user interface.

CHOOSING BEGINNER OR STANDARD MODE

Load THE 3D GAME MAKER from your programs menu in windows. When the editor mode selection screen appears click on Beginner Mode.



When the main menu appears click on MAKE GAME in the options window.



The screen will now change to the main game creation screen and the rows of icons along the top will be accessible. If you haven't already done so now would be a good time to read the previous chapter that gives you information on the main interface and its icons.

SELECTING A GAME CATEGORY

To select a game category click on one of the icons in the second row, the default selection is 'SHOOTER'. Each game category has its own selection of game elements.



Remember the arrows at each end can be used to move the game category icons along and display more game categories.



PICKING A SCENE

Once you have decided which type of game you would like to make it's time to set the scene for your game. To do this click on the second icon in the top row, the sunset, this is the game scene icon.



In the options window on the main view screen a selection of the game scenes will appear displayed in thumbnail form:



To select the scene you require click once on the thumbnail. There will be a short pause as the scene is loaded and a preview will be displayed in the preview window. In the example here, we've clicked on the "Church01" scene.



Now that a Scene has been chosen for the game to be played in, just one more selection is required to actually start playing the game.

PICKING A PLAYER

- Click on the Player select icon to view all the player objects available within the currently selected graphics category.



The options window now changes to display thumbnails of all the available players for the game category you have selected.



To select the player you wish to use, click once on the thumbnail in the options window and a preview of it will appear in the preview window. We've chosen "Plasma Pistol" in this example:



Now that you've chosen both a Scene and a Player, you have the first two items of your game that allow you to start testing out what you've chosen. To test your game, click on the test button:



THE 3D GAME MAKER will now load in the scene and the player object that you've chosen and present you with the game in the preview window:



The music assigned to this scene will be playing and you can move around using the arrow keys on your keyboard and the mouse can be used to look around. Go on try it! You can also jump by pressing the right mouse button. Explore around the scene and when you want to come out of TEST mode press the "X" key.

When you're in TEST mode you can swap to a Full Screen display by pressing the "L" key. In our example the window will now look like this:



Notice that THE 3D GAME MAKER is handling all the collisions with wall, logic for the number of lives, your player's energy and the score.

PICKING WEAPONS FOR YOUR PLAYER

Ok now you have a game scene and a player that moves around it, now lets add some weapons. Make sure you're out of TEST mode (press "X" to quit TEST).

Click the forth icon along, a row of bullets, this is the player weapons icon:



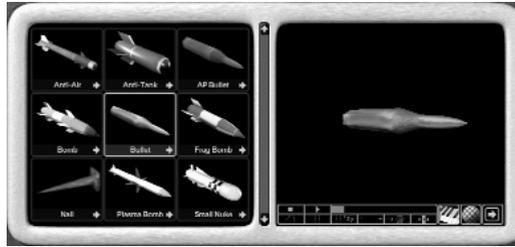
The options window now changes to display thumbnails of all the available weapons for your player:



This time we'll not use any of the bullets from the SHOOTER category, we'll change the category to WAR. Do this by clicking on the "WAR" icon:



You'll see that all nine bullets change to new ones. Select the "Bullet" object:



Now we have a Scene, a Player and a Bullet. Click on the TEST button:



Now as you move around the Church scene you can also fire your chosen bullet by pressing the "Control" key on your keyboard.

Well, there's absolutely no challenge in this game, we need some enemies to shoot!

ADDING ENEMIES

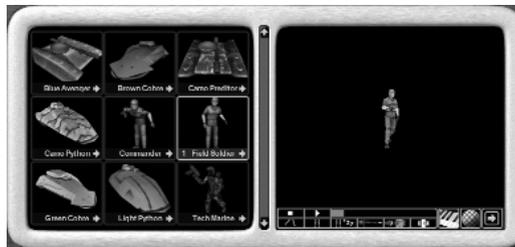
Click the fifth icon, a face wearing dark glasses, this is the enemies icon.



The options window now changes to display thumbnails of all the available enemies from the WAR category:



Select the "Field Soldier" object from the nine enemies:



Up till now, each game element could only have one selection (one Scene, one Player object). A game would be a bit boring if there was only ever one enemy. So notice that once an enemy is clicked on, a number appears to the left of the enemy's name:



This number represents the enemies' selection number. It helps you match up the bullets that each enemy shoots.

Now click on the "Commander" enemy thumbnail and you'll see that you have two enemies selected:



Now you have added some enemies to the game let's test it again and have some shooting practice. Click on TEST and after a short walk through the scene you should be confronted by your first choice of enemy:



Remember to press the "Control" key (repeatedly) to shoot your bullets.

The enemies have what's called a melee attack. They use this when they're up close to you, so watch your energy and back off to make room to shoot them. Don't forget to use the mouse to move around and the cursor keys to walk/strafe. The right-mouse button will also let you jump.

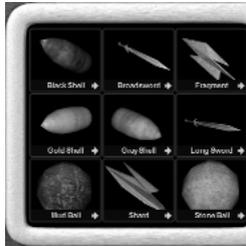
To make the game more challenging we need to provide weapons for the enemies, so press the 'X' key to exit back to the game editor.

GIVING YOUR ENEMIES WEAPONS

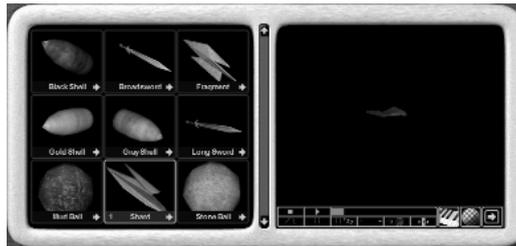
Click the sixth icon along which looks like a man holding a gun. This is the enemy weapons icon:



You'll now see all the enemy bullets from the current graphics category (which should still be WAR):



Click on the "Shard" bullet:



Again notice that the thumbnail has a number assigned to it. This signifies that an enemy with the same number will shoot the bullet (which in this example is "Field Soldier". If you don't select the same number of enemy bullets, as there are enemies then they will all shoot the same bullet.

OK, time to test your game again. Click on TEST and this time get ready to dodge those enemy bullets!

CAUSING AN OBSTACLE

Click on the seventh icon, the yellow and black barrier, this is the obstacle icon.



You'll now see the obstacles available within the WAR category:



Click on the "Scrapiron" obstacle to select it:



This obstacle will now appear within your game. Press TEST to play the game again.

AN END OF LEVEL BOSS

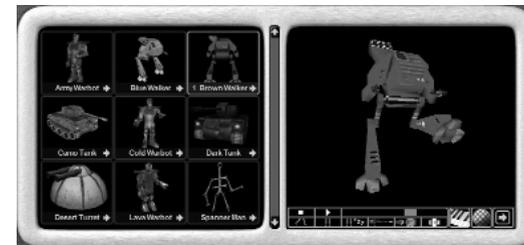
Now it's time to add an end of level boss character to the game to give a goal to the end of each level.



The options window now changes to display thumbnails of all the available end of level bosses.



Select the Boss labelled "Brown Walker"



ADDING GAME ITEMS

Items are objects that appear during the game. They can give the player extra energy, more points, extra lives etc. Click on the following icon to show the item objects for the WAR category:





Choose the object with the medical red cross on. This is an Energy boost item:



Now TEST the game again to see these crates scattered around the scene.

FINAL GAME TESTING

Now that you have finished your first game it is time to test it out before saving it.

Play the game through a few times and try out different routes. Although you have infinite lives (because you're in test mode) don't always play to win, let yourself get killed to see how easy/hard it will be for the real player.

SAVING YOUR GAME

To save your game click on the save game icon, a floppy disk.



The options window changes to display the save options, click on the 'SAVE GAME' button:



When the file select screen appears in the options window navigate to the directory that you want to save your game into.

Simply enter a file name for your game and press the enter key.



When done, click on the OK button and your game will be saved.

PLAYING YOUR GAME

This is the fun part, playing your own finished game.

Playing your game differs from testing your game in two ways.

1. You will NOT have infinite lives and the game will end when your lives are used up.
2. The game will load with a title page & highest score table.

So, to play your complete game, click on the save game icon if you're not already in that section:



The options window changes to display the save game options, click on 'PLAY GAME'. The default title screen will display and you will notice it contains details of the controls used in the game.

Play and enjoy yourself!

To return back to the editor from the game, die or win the game and when you're at the title page press the ESCape key.

SAVING A STAND ALONE GAME

To save your game as a stand alone executable click on the save game icon:



The options window changes to display the save options, click on the 'Save As Standalone' button.

When the file select screen appears in the options window, navigate to the directory that you want to save your game into.

Click in the file name box at the bottom of the file window, this is the box above the OK button and enter a name for your game.

When you have done, click on OK and your game will be saved to the location you selected.

THE 3D GAME MAKER cleverly packs all the associated files into the one 'exe' file for you. So you can easily copy it and pass to your friends and colleagues.

LOADING A SAVED GAME

To load a saved game click on either The 3D Gamemaker or the Save Game icon. The options window changes to display the relevant menu, click on the 'Load Game' button.

When the file select screen appears simply click on the name of the game you want to load and click on OK. The saved game will now be loaded.

USING ELEMENTS FROM OTHER GAME CATEGORIES

You are not limited to using just the game elements from the game category you selected at the beginning. It is completely possible to change the game category at any time.

Changing the game category allows you to use all the game elements available within THE 3D GAME MAKER, making your games much more varied. For example you could have a player from the War section, enemies from the Silly section and flak from the cartoon section!

To change to a different game category simply click on the game category button you want to use, all the game elements for that game category are now available to use.

4. GENERAL PROPERTIES

JUST WHAT ARE PROPERTIES ANYWAY?

Although The 3D Gamemaker provides you with a large selection of scenes, objects and enemies it would soon become rather dull if every game you created had the same old enemies roaming around or the same sounds and explosions. By using the properties you can not only change the audio effects but also the size in any or all three dimensions! This makes it easy for you to take a harmless looking spider and turn it into a giant monster sure to send a chill down even the hardest players.

ACCESSING THE PROPERTIES

When you first select an enemy or item you are presented with a range of thumbnails. Up to now you've been just picking the default setting. However in the bottom right-hand corner of every thumbnail is a green arrow that when clicked will expand the properties out for you. Alternatively when previewing an object, directly underneath it there are the various icons detailing the animation types, textures and sounds. On the far right of this row of icons is another green arrow, clicking this has the same effect as clicking the arrow on the thumbnail. You use the scroll bar on the right-hand side to move up and down the properties should they cover more than the visible window area. Often you can expand the properties of an item many times so keep clicking the arrow to expand them even further.

This chapter will deal with the basic properties that apply to all objects and items within The 3D Gamemaker. More specific properties will be covered in later chapters and detail more advanced settings such as enemy movement or flak speed.

CHANGING AN ELEMENT'S SIZE

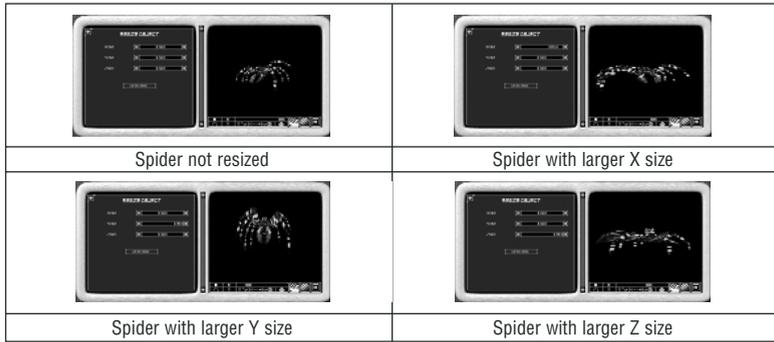
The element resize icon can be found within the properties:



Choose the spider enemy object from within the Horror section, edit its properties by clicking on the arrow as explained above and then click on the resize icon:



The options window will now change to display the sliding bars used for changing the size of an element. The X sliding bar changes the width of your character, the Y sliding bar changes the height of your character and the Z sliding bar changes the length of your character. Here's what happens to the Spider when the sliders are moved:



To revert to the default size of a character, just click on the 'RESTORE' button.

Using this technique you can quickly make more menacing enemies, create huge bullets, distort an end of level boss or make a game with tiny people in!

CHANGING AN ELEMENT'S EXPLOSION

To change the type of explosion on an element, click on the explosion icon within the element properties:



The left window will change to display a number of thumbnails each one a different type of explosion.



Click on the explosion you want to use, the explosion will be selected and you will be returned to the main element options screen.

5. ADDING YOUR OWN SOUNDS AND GRAPHICS

CHANGING THE SOUNDS IN YOUR GAME

The element sounds icon can be found in the preview window when viewing an element or within the element's properties. Select the Player icon, then the SPACE category and then the 'Blue Fighter' object:



To change the sound effects of this element click on the music icon:



The options window will change to display a list of the current sounds for the element



To change a sound just click on the name of the sound you want to change.

The options window will again change to display a file list. In the default directory you'll find an extensive list of sound files specifically designed for game making effects. There are hundreds of sounds for when game objects have to appear, disappear, create an engine noise, have footsteps, impact, jump, land, shoot.



Click on OK and the sound will be loaded and the options window will change back to the list of sounds for the element. The sound you have just selected will now appear in the list.

To change the other sounds repeat the steps above. To listen to a sound click on the play button next to that sound's name.

Remember you can use the centre scroll bar to move up and down the list. To exit the sounds option screen click on the arrow at the top left of the sounds list.

RECORDING YOUR OWN SOUNDS

To record your own sounds for an element, first select the element and then follow this button sequence:

			
Click on the Music icon	Select the name of the sound you want to record over	Click on the 'RECORD' button	Sound Record Dialogue

Note: You must have a microphone connected to your PC to record sounds.

Simply select RECORD when you're ready to create your sound in front of you PC microphone. It's important to time your recording so that it starts as soon as you click the RECORD button, otherwise you may have a gap of silence at the start of the sound.

To listen to the sound you have recorded click on the PLAY button.

To save your sound, click on the cancel button and in the file list type the name you want to save your file under and click on OK. The file will be saved and you will be returned to the recording options screen. To return to the list of sounds for the element click on the arrow at the top left of the recording options screen. The sound you have just recorded will now appear in the list.

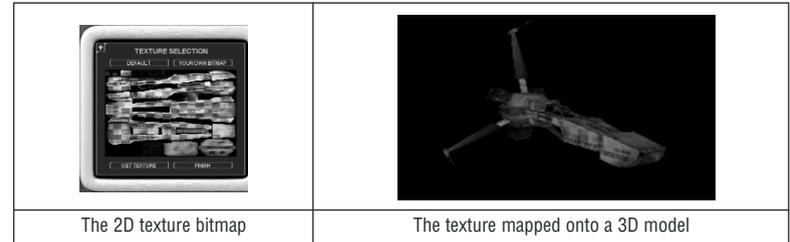
USING MP3 MUSIC IN YOUR OWN GAME

As well as providing sounds for your game The 3D Gameworker also provides plenty of music. However just as with sounds, you're not restricted to using the music that comes with The 3D Gameworker because it also allows you to import your own MP3 tunes.

To edit the music of your games you need to open the properties of a scene and select the piano icon (see the next chapter).

CHANGING AN ELEMENT'S TEXTURES

A texture is a 2D image that gets wrapped around a 3D model. Here's a standard texture and what it looks like wrapped and mapped onto a 3D model:



To change an element's texture first click on the object's thumbnail and then click on the textures icon.

To explore object texturing, select the player bullet object 'SPACE / Blue Fighter'. Then click on the texture icon in the preview window:



The options window will change to display a list of the current textures for the element. At the bottom of this list are two buttons 'Restore' and 'Update'.



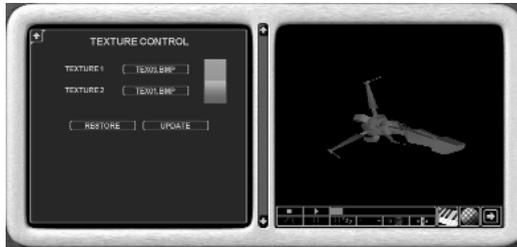
The restore button brings back the original texture for the selected object should you mess it up horribly! The update button is used to re-fresh the rotating model with a newly selected texture, there will be a slight pause as The 3D Gameworker loads the texture onto the object.

To change an object's texture you can do it one of two ways:

1. The first and easiest is to just click on the name of the texture and then select one of the many pre-installed textures:



Just choose one and you'll have updated the Space ship resulting in something like this:



The "C" texture represents the default texture, so select this if you want to revert back to the original image file.

2. Should you wish to use your own bitmap instead of the ones provided, you can do so. Start by clicking on the name of the texture you wish to replace then click on the "YOUR OWN BITMAP" button after which you'll be shown the actual texture image.

Click on "GET TEXTURE" and you'll be shown a file selector:



THE 3D GAME MAKER wants you to select a picture file containing your texture. So navigate the directories on your PC until you have located one, select it and then click OK.

You also have access to a PICTURE SCAN tool. Click it and you can scan 100 pictures at a time. Small thumbnails of every picture found are displayed to help you choose. You can quit the scan by pressing the 'Escape' key. The scan will start in the current directory and work its way recursively down the directory structure until it either runs out of images or finds 100 of them, whichever occurs first.



Having found a picture with your texture, click OK to load it and then choose the area of the picture that you want to copy over into the texture of the current object. You can specify the region you want to grab by using the yellow rectangle – simply resize it by clicking and dragging on the corner pieces and move it by clicking and dragging it from the centre.



Having pressed 'GRAB IMAGE' you can then paste the image into the texture. Here we see a face being pasted into the 'HORROR/Axe Madman' player object.



When you've placed the object exactly where you want it click on "PASTE". The PASTE button will now change to 'FINISH' and at this point you can either grab more images or end the customising. Having clicked 'FINISH' you'll be back at the Texture Control page, a final click on 'UPDATE' here will transfer the image onto the 3D model.

Note that some objects are more complex than others and will have more than one texture.

Scenes can also be edited in this way. The difference with Scenes is that they are made up of many textures. You can very easily change the whole look and feel of a scene by just altering the textures used within them.

6. SCENE PROPERTIES

SCENE SETTINGS

To access the additional settings for a scene, first click on the scene icon:



From the thumbnails that appear in the options window click on the one you want to use, the scene will load and a preview will appear in the preview window. To access the additional options for the scene just click on the green arrow in the bottom right of the thumbnail:



The options window will change to display the scene properties. There are two scene properties screens in Beginner mode and four in Standard mode. To open them all just keep clicking on the green arrow in the bottom right corner of the properties windows.

To leave the options screen and return to the thumbnails you must scroll back up to the first options screen and click on the arrow in the top left, the options window will then be closed.

Each Scene presented in THE 3D GAME MAKER can have up to 20 levels. There are two systems used to populate these scenes with enemies, obstacles and items. The first system is the easiest to use as all elements for the game are pre-calculated based on your choices from the main game editor. The second system is based on you customising each level using the placement editor and literally placing the objects where you want them within the scene. Only one system can be used for your game, yet you have the flexibility to switch between them.

As a default, all scenes will auto populate the levels. It's not until you enter the placement editor that the levels become customised.

Options screen 1

The first options screen shows the name of the scene and allows selections for scene fogging and draw depth.



The default setting will be for "Full Depth". The difference between the three options are as follows:

Full Depth means that The 3D Gameworker will draw all 3D elements in the players field of view regardless of how far away they are. So if there is a tree on a hill in the far distance, The 3D Gameworker will still draw it. This causes two things – first of all it means your games look great because they have

a good depth to them, but it also means they may perform slower if there are a lot of objects on-screen due to the amount of data being drawn by your 3D card. The Depth Fog and Depth Clip options are there to overcome this.

Depth Fog allows you to turn on an eerie fogging style effect, commonly seen in FPS and racing games on the PC. You can select the colour of the fog by clicking on a colour in the box below and the effect will be seen in real-time in the scene preview window on the right. You can often create good looking effects by using fogging but it also has the benefit of making things faster because what you can't see (because it's hidden by the fog) the 3D card doesn't have to calculate and draw. The range (distance) of the fog can be set with the Depth slider with 99 being far away from the player and 1 being as close as possible.

Depth Clip allows you to control just how far away 3D objects should be before they are drawn. As explained above Full Depth means everything is drawn regardless of distance from the player, but with Depth Clipping you can control how close an object has to be before The 3D Gameworker worries about drawing it. Again this can be used to speed up your games and the value is set by sliding the Depth slider. Experiment with different values, some levels will look okay with a close range while others will require a large Depth Clip in order to keep their appearance.

The following three screen shots show the different styles in action:

Full Depth	Depth Fog	Depth Clip (notice how you can't see the trees in the distance and the hill looks less defined)

Options screen 2

Options screen two allows you to change the music & sound effects and also change the textures used within the scene.



Details on how to use these settings is described in the previous chapter.

Options screen 3 (Standard mode only)

Options screen three allows you to create your custom levels one by one, up to a total of 20. You can also delete any previous creations or revert back to the ones originally created by The 3D Gamemaker.



Tick the "Use Custom Layouts" box if you do not wish to use the level layouts that come with The 3D Gamemaker and instead wish to create your own. You'll then have to edit each level and build them yourself.

Click the "Clear All Selections" button to remove the level assignments. Next to each level you'll see a box showing the name of the level (in the example above the level is called "THIS SCENE"). By clicking the "Clear All Selections" button you remove the level settings without actually deleting the layouts you've created.

To edit a level simply click the EDIT button next to the level you wish to modify. If everything goes horribly wrong and you want to erase your work, just click the "DELETE ALL CUSTOM LAYOUTS" button and it will remove anything you've created and let you start from scratch.

Options Screen 4 (Standard mode only)

These options allow you to choose an EAX setting. EAX is the term given to Environmental Audio. If your sound card support this feature then you can use one of the four styles to make your game sound more interesting. The selections are DEFAULT, GENERIC, UNDERWATER and PSYCHOTIC.



For instructions on using the level editor see Chapter 7.

7. THE PLACEMENT EDITOR

Now that you've learnt the basics to THE 3D GAME MAKER it's time to learn about the deeper options that can help you make your game highly personalised. Without these additional features you would soon find many of your games have a similar plot and are not challenging enough.

If you make a game by just clicking on the various game types then you leave the placement of enemies, obstacles and items up to THE 3D GAME MAKER. Yet when you're in Standard mode, a whole variety of new options can be used to edit and customise your game.

Check to see if you're in Standard mode, the base of the screen should look like this:



If you're in Beginner mode (blue strip), simply select the SWITCH TO BEGINNER MODE menu item from the Main Menu.

EDITING LEVELS WITHIN A SCENE

Before using this feature, select at least one Enemy object, one Obstacle, one Item and an end of level Boss.

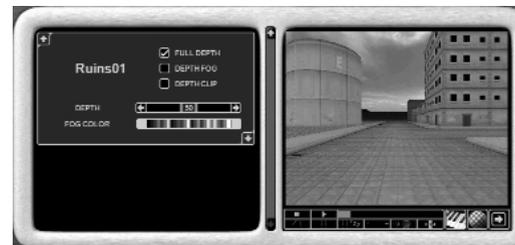
Now access the Scene by clicking on the scene icon:



From Scene thumbnails that appear, click the one you want to use.



To locate the properties of a scene, click on the green arrow in the bottom right of its thumbnail. Here we see the properties of the scene 'Ruins01' being opened up:



You'll notice that there's another arrow at the bottom right of the properties, click this to reveal the next tier of properties:



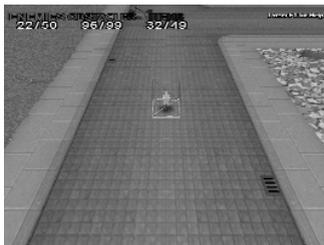
As there's now more information than can fit within the window, the slider bar is active. Use it to move up and down the list of properties.

To return to the scene thumbnails you can either scroll back up to the top of the properties and click on the arrow in the top left or click anywhere above the properties window.

Selecting a level to edit

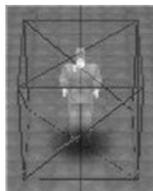
To edit a level, click on the EDIT button next to one of the level numbers in the scene properties. Your games can have up to 20 levels but must contain at least one level.

The scene editor will now load and the screen will change to display the editor window:



The Main Placement Editor Window

The editor window displays the level from above and behind the editor cursor. The editor cursor indicates where an object will be placed within the level. An outline or ghost of the object currently selected is also shown on the cursor. In the above screen, the cursor is shown like this:



To exit the editor and return to the scene options screen press the Escape key at any time.

Editor controls

The editor is controlled using the mouse and keyboard:

F1	Display Help Page	
F2	Select Enemy Objects to place	
F3	Select Obstacle Objects to place	
F4	Select Item Objects to place	
Keys [1]-[9]	Select an Object from the type chosen with F1 – F3	
Keys [0]	Select any identity.	
Arrow Left	Move 3D cursor left	
Arrow Right	Move 3D cursor right	
Arrow Up	Move 3D cursor forward	
Arrow Down	Move 3D cursor backwards	
Page Up Key	Move 3D cursor Up (in height)	
Page Down Key	Move 3D cursor Down (in height)	
Keys [<] & [>]	Rotate 3D cursor left & right 90 degrees	
Home	Move 3D cursor to the start of the current level	
End	Move 3D cursor to the end of the current level	
Ins	Step forward through the level	
Del	Step backward through the level	
Space	Create or Delete object within the level at current cursor position	
Shift & Cursor Keys	Change current object's scale	
Mouse left and right	Rotates the camera around the 3D cursor	
Mouse + left button and forward/back	Zoom in and out from 3D cursor	
Backspace	Display the Clear Menu	
	<ol style="list-style-type: none"> 1. Clear All Objects 2. Clear All Enemies 3. Clear All Obstacles 4. Clear All Items 5. Clear Object Type 6. Exit Clear Menu 	<p>Clears all the objects in the current level</p> <p>Clears just enemies from the level</p> <p>Wipes all the obstacles</p> <p>Removes all items</p> <p>Only removes objects of the current type from the level</p> <p>Exits this clear menu</p>

Placing an object

To place an enemy, object or item into the scene just move the cursor around with the cursor keys and then press F2, F3 or F4 to set which item you're using. Pressing F2 will allow you to place enemies, F3 will place obstacles and F4 will place game items (such as power-ups). Once you've selected a group by pressing F2, F3 or F4 you can access the items within that group. Just press the keys 1-9 and the current item under the cursor will change. You can only place objects that you have previously selected from their relevant sections of The 3D Gameworker. For example if a brick wall object was the only obstacle you'd selected before you entered the editor, then it will be the only object available to you within the editor.

When you have selected the object you want press the space bar to add the object to the level.

If the object is not the one you wanted or it is not in the place you wanted it to be, then move the cursor onto it and press the space bar again to remove it.

To rotate the object 90 degrees press the < and > keys on your keyboard. The < key rotates the object left and the > key rotates the object right.

To change the size of an object hold down the shift key and then press the arrow keys to make the object larger or smaller. The Up and Right arrow keys make an object larger and the down and left arrow keys make an object smaller. NOTE: you cannot have the same object at different sizes, if you change the size of an object all occurrences of the object within the scene will be changed to match.

If you place objects using the 0 key, then The 3D Gamemaker will keep producing elements from the total number available until you run out. So if you had two enemies it would produce 24 of the first type and then switch to the 2nd type until none are left.

The Placement Editor Status Panels

		
At the top left the "Enemies" text is highlighted, this indicates that you're editing enemies with the cursor. The values 10/49 is advising you that 10 out of a possible 49 enemies have been placed within the level.	F3 has been pressed and so the "Obstacles" text is now highlighted. 81/99 is telling you that 81 out of a total of 99 obstacles have been placed within the level so far. So an additional 18 can still be placed.	Items is now highlighted. 0/0 indicates that no items can be placed (because nothing was selected in the game editor). Also notice that the 3D cursor changes colour to reflect the type of object being placed.

8. MAKING YOUR OWN SCENES

WHY WOULD YOU WANT TO MAKE YOUR OWN SCENES?

It's all very well using the well crafted scenes that are supplied with The 3D Gamemaker, but what if you want to make something more unique? Perhaps you'd like to create your own jungle scene, or re-create the hull of a space ship and populate it with your own aliens. The scene editor allows you to do just this.

USING THE SCENE EDITOR

To get into the scene editor you must first click on the scenes icon. Then scroll along the list of scene types (Shooter, War, Space, etc) until you find the one called "User". Select this and you'll see a new screen:



Click the "Make New Scene" icon and the scene editor will load. The first thing you'll notice is that the familiar two-pane window approach has been replaced in favour of a larger editing area. The default scene looks like this:



In this picture you can see an 8x5 grid. Each square of the grid represents an area of the scene and can be filled with a tile of your choice. Please note that one grid square is actually larger than you first might think. Within one square you could fit a couple of objects and enemies, so the default layout shown would actually give you a healthy sized playing area.

Down the left of the screen you can see the map tiles. There are 6 tiles with which you can build your scene, however most of the tiles can also be rotated (in 90 degree steps) providing a total of 14 different combinations. The colour of the tile dictates from which type of scene you are working. The default red is the "Shooter" type. At the top of the screen you will notice the other category types (horror, war, space, etc) each with their own colour. You can mix and match as many of these as you like when building your scene. This means it's perfectly possible to have a jungle-style walkway leading out into an open "cartoon" area.

The top right corner of the screen provides you with the current tile and the scene size (in this case 8x5). Finally the bottom three buttons let you view your scene in 3D mode, OK (save the scene) or Cancel back to the main editor.

At any time you can press the F1 key to display the integrated help screen.

BUILDING A SCENE

Use the mouse and click on a tile to select it. Pressing the left mouse button with a tile selected anywhere on the grid will place that tile. If you then click the left mouse button a second time it will place the same tile again, but it will automatically rotate it for you by 90 degrees. You can continue this process until the tile is the correct way around.

However you don't have to use this method to rotate a tile, although useful it's quite slow work if you need to place a lot of "rotated" tiles. Instead after selecting the tile you can press the < and > keys on your keyboard to rotate the tile in the desired direction. This change remains no matter how many tiles (of that type) you wish to place. For example if you wished to create a scene with a road running horizontally across the grid, you'd select the 2nd tile from the top and press the > key to rotate it. You can then "paint" with this new rotated tile.

To erase a tile simply click with the right mouse button.

With some clever rotation and planning you could easily build a scene such as the following. In this scene you can see we've used the "Driving" scene tiles to create a city block style layout:



NOTE: One thing to remember when building your scene is that the diagonally striped area of the tiles will appear "solid" to the player and function like a wall.

ADDING START, END AND BOSS POINTS

At the bottom of the selection of tiles are three special tiles. They are "S" (green), "B" (yellow) and "E" (red). They stand for "Starting Point", "Boss" and "Ending Point" respectively. You need to place one of each type of tile before being able to test your scene in 3D mode.

The Start Point determines where in the scene the player will begin their journey. You may want to create some kind of corridor leading up to a large open area, so you'd place the "S" tile at the beginning of this corridor. The End Point tells The 3D Gamemaker where you wish the scene to be declared as "over" once the player reaches it. For example in a driving game you may want the player to complete a lap of the level, so you'd set the start and end points appropriately. The Boss tile places the end of level boss within the scene. By using this tile you could create some sneaky scenes, perhaps hiding the boss just around the corner from the end of the level, great for building suspense and tension!

Here is our sample scene with the special tiles placed:



NOTE: You can see from the green arrow on the Start tile that the player will initially be facing North when this level starts.

MODIFYING THE SCENE DIMENSIONS

Although you begin with an 8x5 scene you are not restricted to this. By holding down the SHIFT key and pressing the cursor keys you can modify the size of the scene both horizontally and vertically. It would be perfectly possible to create a scene 4 squares wide by 16 tall.

When you are dealing with scenes larger than 8x5 you need to be able to move around the grid easily and quickly. You can scroll around the grid by pressing the cursor keys on their own in all 4 directions. However if you hold down the CONTROL (CTRL) key and then press the cursor keys you'll jump in steps of 10 squares, this provides you with a much faster way of moving around a large scene.

Here is an example of a more complex scene that is 8x10 in size and features tiles from multiple game types, you can see War (blue), Jungle (green) and Space (purple) in use here, also notice the End and Boss tiles – you'd have to battle your way through that boss before being able to reach the end of the level! :



Another useful key for when you're dealing with scenes larger than the viewable area is the 'Z' key. It will produce a reduced version of the scene compressed so that the entire scene fits onto the screen at once. By clicking on a tile within the reduced scene you're taken to that point within the scene.

TESTING YOUR SCENE IN 3D

Now you've placed your tiles and added the required start, boss and end points you are ready to test your scene in full 3D! Simply click on the "View In 3D" button and after loading the textures the scene will appear. Use the cursor keys to move around the scene and check that everything is built the way you imagined it to be. It's also useful to use this mode to get an idea of scale. Within the 3D test press the X key to exit back to the editor. You can repeat this process (place tiles, test in 3D, exit) as often as you like until you're happy with the scene you've just created.

SAVING YOUR SCENE

Click on the OK button when you're ready to leave the scene editor and save your scene. Your scene must include the S (start), B (boss) and E (end) markers for it to be a valid scene. You will be prompted to add any markers that are missing before you can save.

You will be prompted for a filename, enter this and press RETURN. When you get back to the main editor you'll see a new icon showing a small thumbnail of the scene you've just built, clicking on this will load the scene into the preview window as usual and you're now ready to start adding your enemies, objects and items.

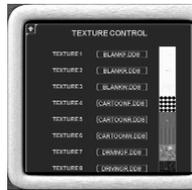
If you press F8, The 3D Gamemaker will create a new thumbnail for the newly created scene – it creates a small image showing the 3D view at the start of the scene.



ADDING YOUR OWN SCENE TEXTURES

When you build and test your own scene the first thing you will notice is that you are assigned default textures for each of the types of game (shooter, horror, etc). As with most things in The 3D Gamemaker however, you can change the textures that are used. When you have finished building your scene and saved it, the thumbnail appears on the list of User scenes. Access the scene properties by clicking the green arrow in the bottom corner of the thumbnail in the usual manner and expand the properties window down until you see the texture icon (chequered red ball).

Clicking the texture icon presents you with a list of all the textures being used within your custom built scene, a small thumbnail of the texture is displayed alongside the name:



You can modify the texture used by simply clicking on the name button (i.e. CARTOON.DDS). The bitmap selection window will appear and you have the option of choosing one of the in-built textures or loading your own. The process is exactly the same as loading a new texture onto a model (see Chapter 5).

By using this technique you can not only create a new layout for your scene, but also a totally brand new look too.

KEYBOARD CONTROLS

ESC	Exit from the scene editor
F1	Show or Hide the help page
Mouse	Move the tile cursor around the scene
Left Mouse Button	Place a tile. Press again to place a 90 degree rotated version of the tile.
Right Mouse Button	Erase current tile.
Left Arrow Key	Move the scene to the left.
Right Arrow Key	Move the scene to the right.
Up Arrow Key	Move the scene up.
Down Arrow Key	Move the scene down.
SHIFT & Up Arrow Key	Increase the vertical size of the scene.
SHIFT & Down Arrow Key	Decrease the vertical size of the scene.
SHIFT & Left Arrow Key	Decrease the horizontal size of the scene.
SHIFT & Right Arrow Key	Increase the horizontal size of the scene.
CTRL & Arrow Keys	Move around the scene in steps of 10.
< and > keys	Rotate the currently selected tile by 90 degrees in the chose direction.
U	Undo last action.
Z	View Full Map.

9. PLAYER PROPERTIES

WHAT A PLAYER IS FOR

The Player in the game is you! Whether you're a monkey running around a jungle scene or a tank rolling across a city, the player object is the main star under keyboard, mouse or joystick control. Without a player your game has no objective for there will be no-one for the enemies to interact with or for the person sat playing at the computer to control. The 3D Gamemaker provides a wealth of player objects nearly all of which can be customised to your hearts content! How about putting some wings on a walking tomato to make it fly? No problem! Or some human legs onto the body of a car! Experimentation is the key to fun player object creation.

PLAYER SETTINGS

To access the additional settings for a player, click on the player icon, the joystick.



You can access the individual properties of a Player object by clicking the small arrow in the bottom right-hand corner of the thumbnail image. This will expand the window down, revealing the additional properties. The player options screen has four separate options windows in beginner mode and five in Standard mode.

Options screen 1

Options screen one allows you to decide if the player will run, drive or fly around the scene. This picture shows a Player object that is defaulted to RUN. This means that in the game you'll be running and jumping around the scene that you've chosen.



It's easy to change the mode of play by just clicking on DRIVE or FLY. There are however some scenes where player objects are fixed to FLY only.

Options screen 2

Options screen two allows you to change the music & sound effects of the player, the textures of the player, the size of the player and the explosion for the player.



How to use these options is clearly explained in previous chapters.

Options screen 3

This row of options controls the appendages of the player object.



Choosing a different appendage

To choose a different appendage for your model click on the left most icon in the row – it will be labelled legs, wheels or wings.

The left window will change to display a number of thumbnails each one a different appendage.



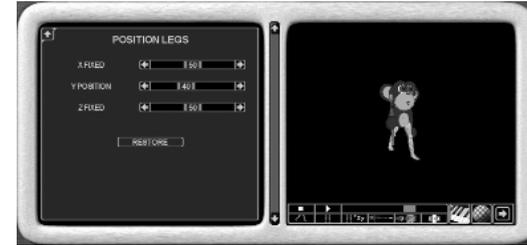
Click on the appendage you want to use, it'll then be added onto your chosen object.

Viewing a model with or without appendages

To view your model with or without an appendage, click on the NORMAL/FIXED icon.

Positioning an appendage on the player

Sometimes an appendage needs to be moved so that it looks just right for the selected player object. Use the POSITION icon to take you to this screen:



Using the slider bars you can position the appendage so that it fits well with the object, every change made can be seen in the right hand side preview window. The restore button will reset the appendage back to its default position.

Options screen 4

Here you can select how the player object is controlled. In a two player game you need different controls for each player. A two player game will create two players from the selected player object (in this case two monkeys). See Global Game Settings on how to set a game up to be two players.



Options screen 5 (Standard mode only)

In this section you can set the number of lives, the strength and the speed of your player, to have 'Rapid' fire on, and the Depth, Height and Angle of the game camera.



Setting a players number of lives, strength and speed

Slider bars are to be used for setting the start number of lives of the player, the start strength and the initial speed. When setting up the game play aspects of your game you should be thinking about how easy or hard you want to make it. Giving the player lots of lives will be helpful. Having a slow speed can make a game very difficult.

The Rapid Fire option is a tick box. When ticked, the player just needs to hold down the fire button to shoot. If it's unticked, the player has to repeatedly press the fire button to shoot.

The camera settings allow you to create a unique game view. The changes you make with these sliders will be shown in the preview window.

If the MOVE FORWARD tick box is selected, then the player object will always be forced to move forward during gameplay. This is useful if you want to make a game with say a bird or balloon.

10. PLAYER WEAPON PROPERTIES

WHAT A PLAYER WEAPON IS FOR

If you want your player to be able to shoot then you're going to have to tool them up and give them a weapon! This section allows you to select and configure the weapon they use, you could have anything from intelligent homing missiles to dumb apples shooting wildly. Advanced options such as elevation and descent rate allow you to create authentic arc-based cannon fire such as from a tank.

PLAYER WEAPON SETTINGS

A players weapon is chosen by clicking on this icon:



You can then choose one weapon from the thumbnails that appear and open the properties by clicking on the expand arrow.

The options window now changes to the first weapons options screen, the weapons options screen has two sections in beginner mode and four in Standard mode.

Option screen 1



Options screen one allows you to decide if a weapon is normal, dumb, homing or intelligent. Simply tick the level of intelligence that you want to set for your bullet.

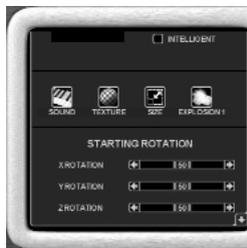
NORMAL	These shoot directly forward
DUMB	When shot they have a random angle at which they can head off in (not very accurate).
HOMING	Bullets that are homing will shoot towards the nearest enemy in a straight line.
INTELLIGENT	Intelligent bullets will actively move towards enemies as they are flying through the air.

Option screen 2



Here you can edit the sound effects, textures, size and explosions of a weapon.

Options screen 3 (Standard mode only)



The bullet's starting rotation can be set here. Simply modify the X,Y and Z axis to setup the angle at which you want the bullet to appear as it's fired.

Options screen 4 (Standard mode only)



Exciting dynamics of the player's bullet are customised in this screen. The damage value represents the effect the bullet will have on any enemy it hits. The Speed of the bullet is set with the second slider.

The Decay value dictates how long the bullet will last before it disappears. A high value will shoot far, whereas a low value has a short range.

By tweaking elevation and descent rate you can create bullets that fire in an arc.

11. ENEMY PROPERTIES

THE ROLE OF ENEMIES IN A GAME

You have a great looking scene, a player that can roam around freely and fire at will – but what are they firing at?! Enemies form the staple part of almost every genre of computer game from shoot-em-ups to space sims. They are your adversaries and this section shows you how to modify them to fire back, attack with intelligence and re-spawn to try their luck at defeating you again.

ENEMY SETTINGS

To add enemies to your game and to set their properties click on the enemy icon on the main toolbar (it looks like a sinister face wearing dark glasses).



The enemy options screen has four separate sections in beginner mode and six in Standard mode.

Options screen 1

The first options screen shows a thumbnail of the enemy you have chosen.



Options screen 2



Here you can edit the sound effects, textures, size and explosions of an enemy.

Options screen 6 (Standard mode only)

Here you can customise many of the default settings of an enemy.



STRENGTH	Set this low to make the enemy easy to kill. You must also balance the players bullet strength with this value.
POINTS	The number of points awarded to the player for killing this enemy.
SPEED OF	The speed at which this enemy moves.
ATTACK RANGE	The range at which the enemy notices and starts to attack the player.
DAMAGE WHEN JUMPED ON	If ticked, then the enemy will collect damage from the player jumping on top of it.
FIRE RATE OF	The rate at which the enemy shoots at the player. The higher the rate, the quicker the repeat fire.
DROPS A POWER-UP	If ticked then the enemy will drop a power-up item. Choose the item using the options in the menu above this set.
SPAWN RATE OF	After the enemy has been killed it can re-spawn (re-enter the game). A re-spawn will occur in X number of seconds, where X is the value of this slide bar. If a value of zero is used then the enemy will never come back.

12. ENEMY FLAK PROPERTIES

ENEMY FLAK SETTINGS

Flak is the enemy fire that your player must avoid during game play. To choose FLAK for the selected Enemies, click on this icon:



Select a weapon and open up its properties. Enemy properties have two options windows in Beginner mode and four in Standard mode.

Options screen 1

Options screen one allows you to decide if the flak is normal, dumb, homing or intelligent.



NORMAL	These shoot directly forward
DUMB	When shot they have a random angle at which they can head off in (not very accurate).
HOMING	Bullets that are homing will be shot towards the nearest player in a straight line.
INTELLIGENT	Intelligent bullets will actively move towards the player as they are flying through the air.

Options screen 2



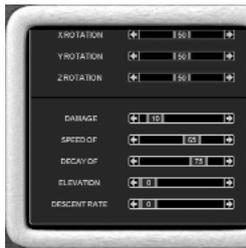
Here you can edit the sound effects, textures, size and explosions of the flak.

Options screen 3 (Standard mode only)



The enemy flak's starting rotation can be set here. Simply modify the X,Y and Z axis to setup the angle at which you want the bullet to appear as it's fired. Changing the starting rotation from the defaults will cause the flak to rotate as fired. For example changing the starting X rotation would cause flak to spin as it flies through the air, useful if your enemy are throwing flak such as knives at you.

Options screen 4 (Standard mode only)



DAMAGE	This value determines the affect the flak will have on the player when hit by it.
SPEED OF	The speed at which the flak moves.
DECAY OF	If set high then the flak will last a long time and can be shot over a long distance (depending on speed of). A low value gives the flak a short life span within the game.
ELEVATION	This is the rate at which the flak flies up into the air when shot from an enemy.
DESCENT RATE	If this is set high, the flak will fall to the ground quickly. Use this with Elevation to create interesting arc effects.

13. OBSTACLE PROPERTIES

WHAT USE ARE OBSTACLES IN A GAME?

While the player progresses through a level you don't always want to make it too easy for them to advance. Often placing an obstacle of some kind in their path will add more of an edge to the challenge of completing the level. For example you could block off a roadway with an invulnerable pile of debris, forcing them to turn down a nearby alley despite the fact they can see over the debris to the other site. It not only builds suspense but also diversity. Obstacles can also be set to be destroyed providing for a more temporary diversion for the player, but one they must still consider none-the-less. If they're busy trying to shoot at a horde of oncoming soldiers yet the only way for them to advance is blocked, they must think carefully about shooting both the obstacle and the enemy. Obstacles can also drop power-ups once destroyed, so you could hide a powerful new bullet type in some innocent looking barrels lying around for example. Use obstacles strategically for maximum impact.

OBSTACLE SETTINGS

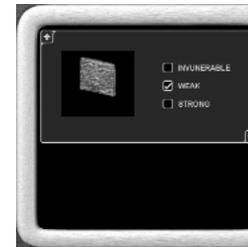
Game obstacles are edited once you press this icon:



There are three levels of properties in Beginner mode and five in Standard mode.

Options screen 1

The top level of properties allows you to set how strong the selected obstacle will be during game play. There are three possible settings; Invulnerable, weak and strong. Just tick the one you require.



Options screen 2



Here you can edit the sound effects, textures, size and explosions of the obstacle.

Options screen 3



This screen deals with the frequency and order of the obstacle within your game.

Whenever AUTOMATICALLY REORDER is ticked, then each time a new obstacle is picked, the Frequency of all obstacles is recalculated. There can be up to 99 obstacles within a level. Each time you choose another obstacle for the game, the 99 is split evenly between the obstacles, so say 3 obstacles are chosen, there would be 33 of each within the level.

The obstacle with an ORDER NUMBER of 1 will be the first obstacle to appear within the level.

Imagine that you only want 20 obstacles of one type to appear and you want them to be the last obstacles seen by the player. What you'd do is untick the AUTOMATICALLY REORDER option and set the Frequency to 20. Then you'd set the ORDER NUMBER to a value higher than the number of obstacles already chosen (say 4).

THE 3D GAME MAKER rennumbers the ORDER NUMBERS to ensure no obstacles have the same order number.

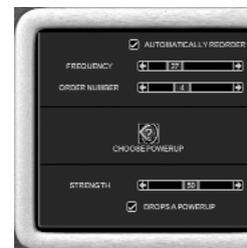
The Frequency value is also used by the Placement Editor to determine how many obstacles you can place down in customised positions.

Options screen 4 (Standard mode only)

When an obstacle gets destroyed by the player's bullets, you can choose to reveal a special power up. To choose which item will be revealed, click on the icon in this screen and then click on a thumbnail from the selection shown. Remember that you can choose any of the categories too (you're not restricted to the category shown when the thumbnails first appear).



Options screen 5 (Standard mode only)



Here's where you can tweak the strength of the obstacle. The higher the number, the stronger the obstacle and the more shots it will take to destroy. If an obstacle is set to Invulnerable, then this value has no effect.

You can also choose to not let this obstacle drop a power-up by un-ticking the DROPS A POWERUP option.

14. BOSS PROPERTIES

THE ROLE OF A 'BOSS' IN A GAME

The 'Boss' or 'End of level baddie' as they are more commonly known is that giant enemy that makes an appearance at the end of a level and does its hardest to stop you from completing. With increased strength, speed or fire rate they should prove a challenge for the player to kill. For example you could create a boss that has vastly increased speed over the player, but doesn't take many hits to kill. Equally the boss could be static and slow, but eats lead like there's no tomorrow. Just remember to not make them impossible.

END OF LEVEL BOSS SETTINGS

Editing an End of Level Boss starts with a click on this icon:



Choose a Boss from the preferences and click on its arrow to edit the properties. There are 2 sections in Beginner mode and 4 in Standard.

Options screen 1

The first property window provides a choice for setting the Boss in either STATIC or MOVING mode.



If the Boss is STATIC then it will always stay around the area that it appears in the game (near the end of the level). If you tick MOVING then the Boss will chase the player around the scene once the player has discovered it.

Options screen 2

Options screen two allows you to change the music & sound effects, textures, size, and explosion for the Boss.



Here you can edit the sound effects, textures, size and explosions of the Boss.

Options screen 3 (Standard mode only)

Here you can choose the bullets for the end of level boss. To choose the bullets click on the bullets icon and from the thumbnails select the one you require.



Options screen 4 (Standard mode only)

Options screen four allows you to set the end of level boss' strength, speed and rate of fire.



A Boss is typically much stronger than an enemy object. The player must really battle away to destroy a boss. So careful play testing of the STRENGTH of the Boss is essential when designing your game.

SPEED OF will set how agile the Boss will be and FIRE RATE OF will determine how many times the Boss will shoot at the player. Also be aware that the bullet you choose the boss to shoot can be edited by you to make it more or less powerful. In fact all the other settings that can be set for flak objects.

15. ITEM PROPERTIES

THE PURPOSE OF ITEMS WITHIN YOUR GAME

Everyone loves a power-up! You've been struggling to fight through a nasty level, your energy is low but the end of level boss is in sight and there in-front of you is an energy item that will seal your victory once you get to it. It's always nice to tempt and encourage the player on by providing items that will benefit them in some way. Within The 3D Gamemaker they are called 'game items' and this section will show you how to add, modify and enhance the items available.

ITEM SETTINGS

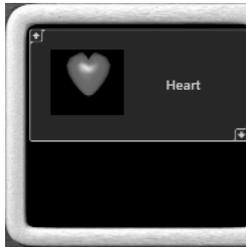
To access the game items with The 3D Gamemaker click on the following icon:



There are three property windows in Beginner mode and five in Standard mode.

Options screen 1

The first screen shows the selected item as it will appear in the game and its name.



Options screen 2



This allows you to edit the sound effects, textures, size and explosion animation of the item.

Options screen 3

Here you can choose the frequency with which the item will appear and also where the item will appear within your game's levels.



Tick **AUTOMATICALLY REORDER** if you want The 3D Gamemaker to auto-order the number of items within each level.

Set the **FREQUENCY** that the items will appear and the **ORDER** in which they appear with the slider bars.

For a more detailed description to the logic used by these values, read the same section within Enemy and Obstacle Properties.

Options screen 4 (Standard mode only)

This screen defines what effect the item has once the player has collected it.



POINTS	This value will be added to the players score when this item is collected.
IS COLLECTABLE	Tick this box if you want this item to be a collectable item. The Global game settings (which are explained later) can be set so that the goal of a game is to collect all of a certain type of item.
IS A POWER-UP	Tick this to indicate that this item is now a power up item. When ticked, the next four options affect the game.
EXTRA LIVES	Set the number of extra lives the player will receive if the item is collected by the player.
EXTRA ENERGY	Set the value of energy that this item will give the player.
EXTRA STRENGTH	The strength of the player will increase if you set this to a value higher than zero.
EXTRA SPEED	The players speed will increase if this value is greater than zero and when the IS A POWER-UP option is ticked.
IS NEW BULLET POWER UP	Tick this if a new Bullet for the player is to be given once this item is collected. See the next properties window.

Options screen 6 (Standard mode only)



If the item has been set to create a POWER UP and the tick box IS NEW BULLET POWER UP is ticked, then use this option to choose the bullet that the player will receive.

You can use this feature to create a power-up that significantly improves the weapon the player current has. For example the default bullet the player might fire could be slower and do less damage, but you could create a new bullet type with a faster speed and more damage but they only receive this bullet via a power-up item.

16. GLOBAL GAME SETTINGS

GLOBAL GAME SETTINGS

Once all the elements of your game have been selected it is time to finish the game off with the features in the Global Settings menu. Click on the Globe icon to display the global settings menu:



There are eight main options:



SET OBJECTIVES

This is where you decide what the player must do to complete each level of your game. The selection screen looks like this:



Let's look at each item in detail.

DESTROY ALL ENEMIES	If ticked, all the enemies in the game must be destroyed before the player can progress to the next level.
COLLECT ALL PICKUPS	If you tick this then the player must pick up all the pickups within the level.
COMPLETE LEVEL	The end of the level must be reached by the player.

These three tick boxes can be used in combination with each other. So you could tick the first two which will mean the player has to destroy all enemies and collect all pick ups, after which the next level will load.

LAPS	In driving scenes you can make the objective of the game one where the player has to make 'x' circuits of the scene.
COMPLETE OBJECTIVES	If ticked, then The 3D Gamemaker checks for the completion of the first three items, otherwise it will base the objective on laps and/or timer only.
MINUTES	Set the start time for how long a level should take to complete. The required objective must be completed by the time set here, otherwise the player loses a life.

SET DIFFICULTY

Choosing things like the strength of the player's weapons, player, enemies, bullets, flak etc, sets the initial difficulty of a game. As each level advances you can increase the effective strength of enemies, their speed and the damage they do to the player.



START STRENGTH	This sets how much more strength Enemies, Flak and Bosses will have above their initial values on the first level. This is usually set to zero because you're likely to have this set right.
INCREMENT BY	This is the value by which the Enemies, Flak and Bosses strength increases each level, making them tougher to kill after each level.
SPEED START	The initial speed increase for Enemies, Flak and Bosses on level one.
INCREMENT BY	The value by which their speed increases each level.
START DAMAGE	The initial damage that Enemies, Flak and Bosses inflict on the player on level one.
INCREMENT BY	The increment added each level to their damage.

This is how it works: The "Start Strength" is the amount of strength an enemy will gain on the first level above what they already have set. "Increment by" is the value by which their strength will increase on the 2nd level and thereafter. If an enemy had a strength of 10 and the "increment by" was set to 10, then on level 2 they would have a strength of 20 (10+10) and on level 3 a strength of 40 (20+20), next would be 70 (40+30) etc. So you can see how you can create an envelope effect to make the game increase dramatically hard over subsequent levels.

SET 1/2 PLAYER MODE

THE 3D GAME MAKER lets you create games that are two player based, set this up within this dialogue:

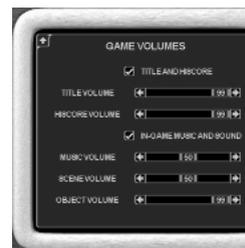


ACTIVATE 2ND PLAYER	Tick this to enable 2-player mode.
TEAM BASED PLAY	If this is ticked then both players will be seen on screen at the same time. You work together to fight your way through the levels. This type of 2-player game is best used for outside scenes. As the game shows both players on screen at the same time, there's a limit to how far both players can be from each other. So teamwork is essential!
TURN BASED PLAY	When this is ticked, each player takes it in turns to play and complete each level of the game.

Please note that you cannot have two team based play in "Shooter" (FPS) style games.

SET VOLUMES

The various game sound volumes are controlled from this dialogue:



TITLE AND HI SCORE	Tick this box to choose music for the title and hi-score screens.
TITLE VOLUME	Sets the volume of the music played when the title screen is being displayed. A high value sets a loud volume.
HI SCORE VOLUME	Music played on the Hi Score table has its volume set here.
IN-GAME MUSIC AND SOUND	Tick this to allow both music and sound effects within the game. If un-ticked only sound effects will play.
MUSIC VOLUME	Set the volume of the in-game music here.
SCENE VOLUME	Set the Scene sound effects volume here.
OBJECT VOLUME	Sounds of enemies, flak, bosses etc are set here.

SET FONT STYLE

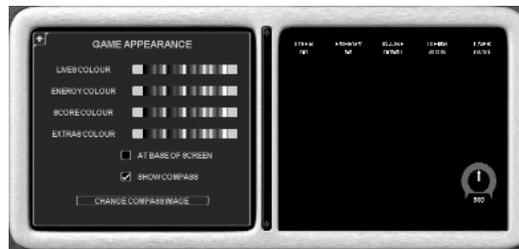
The font style used within the game can be chosen from this dialogue.



Simply tick one of the options to choose the style that best suits your game, a preview of your choice will be displayed on the right.

SET APPEARANCE

These settings dictate how the game information displays will look.



It's very simple to follow, just choose a colour for each of the displays using the appropriate colour palette. Your selection will be previewed on the right side of the screen.

There's also a tick box that will toggle the display from the top to the base of the screen.

The compass display can be turned on or off and you can even use your own bitmap to surround the arrow and distance number.

TITLE SCREEN LAYOUT

THE 3D GAME MAKER wraps your game up nicely with a title screen, hi-score table and even an intro animation. This is the dialogue that allows you to customise your title screen:

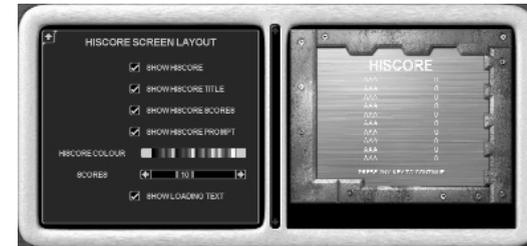


On the left side are the options and on the right is a preview showing you how it'll look.

SELECT INTRO FMV	If you have a video file you wish to play to start the game (to take the form of an intro sequence) then you can click this to select it here.
SHOW INSTRUCTIONS	If ticked the instructions you type in with EDIT DESCRIPTION are printed onto the title screen.
TITLE COLOUR	Choose the colour used by the font of the title page.
EDIT TITLE	Enter the name of your game. You actually get to type it onto the screen so you easily judge the spacing.
EDIT AUTHOR	Enter your name as the game creator!
EDIT DESCRIPTION	Type in a description of how the game works.
SELECT BACKDROP	Choose one of the default backdrops or select a picture of your own making. This can make your game look very individual and different. If you also untick the instructions then you can make a screen in an art package with all your own images and special fonts.

HIGH SCORE SCREEN LAYOUT

To change the settings for the hi-score screen click on the hi-score layout button.



SHOW HI-SCORE	If ticked on then the game will display the hi-scores after a game has been played.
SHOW HI-SCORE TITLE	You can choose to have the text "HI-SCORE" on or off.
SHOW HI-SCORE SCORES	Some times games just show the names, if you want a game that does this, then un-tick this here.
SHOW HI-SCORE PROMPT	The Prompt is just a text line asking the player to press a key. You may not want this.
HI SCORE COLOUR	Select the colour of the text for the hi-score display.
SCORES	Set the number of scores that are to be shown in the list.
SHOW LOADING TEXT	If ticked it will display a Loading status bar while your game loads.

17. UPDATING VIA THE INTERNET

HOW TO UPDATE The 3D Gamemaker VIA THE INTERNET

Built into The 3D Gamemaker is the ability for it to connect to the official 3D Gamemaker web site in order to check for free updates, news, models and objects. Every section of The 3D Gamemaker can be updated via the Internet with the sole exception of "scenes".

To access the web connection feature click on the 'web' button in game categories:



Select the section of The 3D Gamemaker you wish to update. For example to update the Game Players you would click on the Player icon (the joystick).

The options window now changes to display the web "Synchronise" button.



By clicking on the Synchronise button, the options window changes to display the web sync options. These are as follows:



Select the option you require by clicking in the box next to it. A tick will appear on the box, now click on OK to continue.

If you select to "Update Thumbnails" or "Download models" then The 3D Gamemaker will connect to The 3D Gamemaker web site and download any available updates for the section you previously selected (i.e. enemies or game items). The help bar will display information about the status of the connection.

Updates will be shown as thumbnails in the options window alongside the Synchronise button. Selecting one will cause it to be downloaded to your machine.

If you select 'Go To Website' you will be returned to Windows and your default web browser will be opened and the website of The 3D Gamemaker will be displayed.

When you have finished using the Web Site close your web browser and you will be returned to The 3D Gamemaker automatically.

The fourth option "Auto-Disconnect" will tell The 3D Gamemaker to hang-up your modem (if applicable) once it has completed its tasks.

Note: -

Web access requires a connection to the Internet via an Internet Service Provider. This is not provided with The 3D Gamemaker.

If you do not have an active connection to the Internet when you select one of the web sync options The 3D Gamemaker will use your default Dialup connection and attempt to connect with that.

18. IMPORTING 3D MODELS

HOW TO USE YOUR OWN 3D MODELS

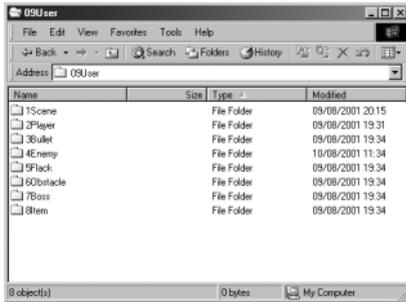
This section is for advanced users only. Although the models that come with The 3D Gamemaker are great, and new ones are provided free of charge on the web site, you will also want to expand your own games in the future by using your own custom models. The 3D Gamemaker allows for this.

SETTING-UP THE DIRECTORIES

All custom models appear within the "User" section of The 3D Gamemaker. In order for your model to appear you have to do the following:

Using Windows Explorer, go into the Objects directory within The 3D Gamemaker (typically this is C:\Program Files\Dark Basic Software\The 3D Gamemaker\Objects – depending on the path selected when you installed the program).

You will find a folder called "09User". Open this and you'll find 8 more folders as follows:



In this example we're going to import the model of an alien into the Enemy section, so open the folder "4Enemy".

You have to create a directory with the same name as your model. Our model is called alien.x, so we use Windows Explorer to create a new folder called "alien".

It is very important to name the folder exactly the same as the filename of the model.

Now you are ready to copy the model into the folder.

ACCEPTABLE OBJECT TYPES

The 3D Gamemaker will only work with DirectX format 3D models (.X models). This means if your source model is a 3D Studio file for example (.3DS) then it'll need to be converted to the .X format before you can import it. There are many great packages on the market that will do this for you, one of the best and easiest to use is 3D Exploration by X Dimension Software and you can download a free trial version from their web site at: <http://www.us.righthemisphre.com/3dexploration/>

Once you have your model in .X format, you should double check that the filename matches the folder you've just created. If your folder is called "alien" then the model should be called "alien.x".

Copy your model and any associated texture files into the directory. The texture files must be in BMP or DDS format and are typically generated by the 3D package used to create or convert your model. The textures are internally referenced by the model itself, so do not have to be renamed (indeed your model will appear un-textured if you do so).

CREATING A THUMBNAIL

So you've got your model in .X format, you've created the folder and copied everything across – the only thing left to do is create a thumbnail to appear within The 3D Gamemaker window. How you create the thumbnail is up to you, perhaps you might like to render a small version of it or screen grab from your 3D package. Whatever you decide there are 3 things to bear in mind:

1. The thumbnail must be 110x97 pixels in size.
2. The thumbnail must be a 16-bit BMP file (or higher).
3. The thumbnail file must be called "thumb.bmp"

Once created, copy the thumb.bmp into the folder containing your model. You can now launch The 3D Gamemaker and when you click on the "Enemy" button and then "User" your thumbnail will appear. Clicking on the thumbnail will load your object and you can then modify it's properties just as if it was any other 3D Gamemaker supplied object. Here you can see our alien model and thumbnail:



ADVANCED TECHNIQUES

It is beyond the scope of this manual to cover techniques such as animating your 3D model, please check the advanced tutorials to be posted onto The 3D Gamemaker web site for further information, hints and tips.



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SOFTWARE LTD

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19 CREDITS

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Thanks to...

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NOTES