

Please Note

This is a beta version of Worldcraft.

You can get the latest version from:

<http://www.islandnet.com/worldcraft/>

An excellent source of Quake editing information can be found at:

<http://www.infi.net/~nichd/qmapspec.html>

Due to the incompleteness of this documentation, a "Frequently asked Questions" section has been included at the end. If you're having problems, check there first - there's lots of good information! *Print this out – it's only ten pages!*

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Worldcraft Quake-editing User Documentation

Welcome to Worldcraft, the fully-functional Quake MAP editor. With Worldcraft, you can make your own Quake Maps quickly and easily!

Worldcraft uses a technique called Constructive Solid Geometry (CSG) to create maps. CSG is based on a simple idea: using building blocks - cubes, cylinders and wedges - to create more complex shapes - a six-walled room, for example. In Worldcraft, these building blocks are called *solids*. A six-walled room, then, is made up of six cubic solids - one for each of the four side walls, and two for the ceiling and floor.

Compare: If you ever did any DOOM editing, you'll remember that everything was made up of lines. In Quake level editing, there are no single "lines" - each object must be a three-dimensional object with volume.

This concept is simple, but vital. To view an example of a Quake room, load Worldcraft and Open the file ROOM.MAP. This map contains two areas: a sealed room, and a collection of blocks used to make the sealed room. The blocks are moved into touching positions – in fact, they can freely intersect – and the resulting “inside area” is what’s seen by the players in Quake.

One of the really neat features of editing with Worldcraft is that any solid can be used to "carve" a volume out of other solids. Consider that you've made a six-walled room and want to connect a hallway to it - you can't simply stick the hallway onto a side of the room, because the room's walls are solid; there's no way for the player to pass through the wall into the hallway. This is where carving comes in: you can place a solid within the room's wall and tell Worldcraft to "cut it out" of the wall - effectively punching a hole right through it! One of the nice things about this feature is that you're not limited to using cubic shapes as a carving tool: any solid - cylinders, cubes and wedges - can be used to carve other solids.

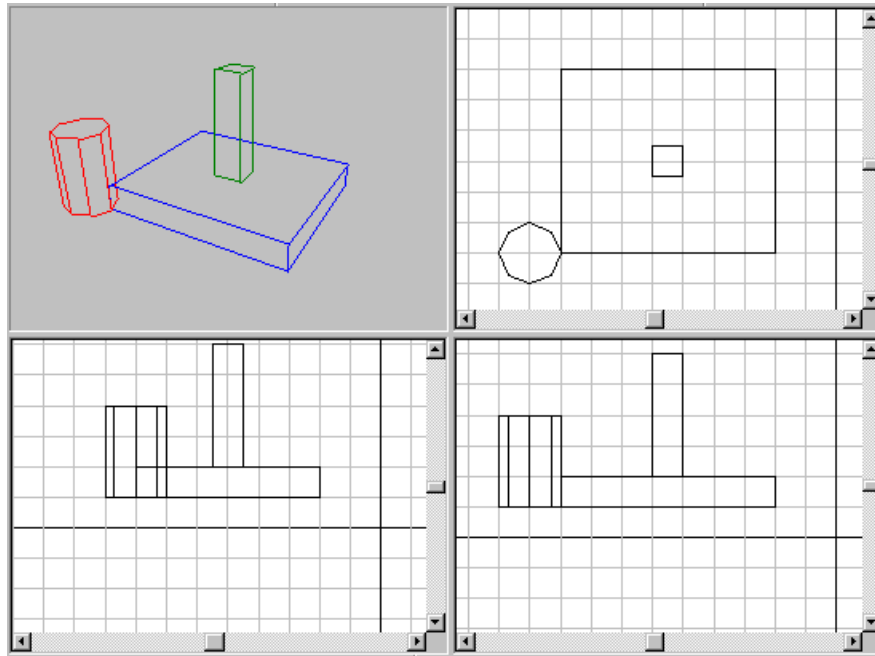
And of course, you can place all your favorite Quake Monsters, Items and Weapons in your new maps with Worldcraft.

Let's get down to it!

Editing Maps in 3D with Worldcraft

Worldcraft uses a fairly standard way to display maps - three, 2-dimensional views and one 3-dimensional "camera" view. You'll do most of your editing in the 2D views, and the camera view is useful for getting a good view of your map before you test it in Quake.

The 2D views each offer a different perspective on your map: a Top (bird's eye) view, a Side view, and a Front view. Since each view offers a different representation of your map, you can shape objects in all three dimensions.



**Worldcraft's 4 map views. Clockwise from top left:
3D view, Top view, Side View, Front View**

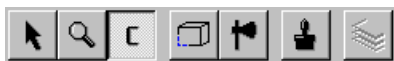
Navigating in the 2D views

Each 2D view has two scrollbars that can be used to move the area you're looking at. You can also use the arrow keys to scroll the Active view.

To change the Zoom factor for the Active view, use the grey + and - keys on the right side of your keyboard, or use the Magnification tool (the magnifying glass icon on the left-hand side of the screen) - click the left button to zoom in, and the right button to zoom out.

The 2D views will also display a grid – you can change the size of the grid with the [and] keys (European users can use the A and S keys.) By default, objects that you move and make are “snapped” to the grid – a common feature among CAD programs that makes alignment much easier. You can turn off this feature with the P key, or by using **Map|Snap to Grid**. You can also turn the grid off with **Map|Show Grid**.

Navigating in the 3D view



To navigate in the 3D view, select the camera tool.

Click and hold the **right** mouse button to strafe with left and right movement, and move forward and backward with up and down movement.

Click and hold the **left** mouse button to rotate the view and to look up and down.

You can also use the **D** and **C** keys to move the camera forward and backward.

Tip: The camera tool can also be used in the 2D views to place a precise viewpoint.

Tip: You can change the kind of display the 3D window uses - wireframe, solid, and textured - by pressing one of the three buttons at the top of the screen. **Note:** The textured view may take a long time to load, depending on the speed of your computer and the size of the map you're working on.



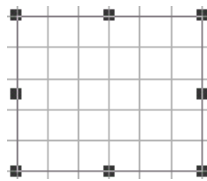
Creating solids



To create a solid, select the block tool.

To create a solid, you must first make the box that the solid will be contained in. This allows you to specify the size and position of the solid before it is created. Start in the top, right view and drag out a box - here, you're working in the X (horizontal in the view) and Y (vertical) dimensions. You'll notice that the box is reflected in the two lower views, but not in the X and Y dimensions - the lower, left view displays the Y (horizontal in the view) and Z (vertical) dimensions, and the lower, right view displays the X (horizontal) and Z (vertical) dimensions. Using the three views, then, you can give the box width (X), depth (Y), and height (Z).

After you release the left button, a box with "handles" will appear in the three views; here is what it might look like in the top, left view:

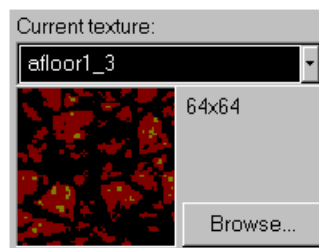


A box with handles.

You can resize the box as many times as you like using the three views.

When the box is the size you want, hit ENTER to create it. You'll see the cube displayed in the 3D view. Try moving around in the 3D view (see "Navigating in 3D", below) to view the cube from all sides.

Note #1: The "texture" that is used to color the walls of a created object is the texture that is currently selected on the texture bar, pictured below. If you want to change the texture of existing solids, check the next section for information!



The Texturebar

Note #2: This version of Worldcraft can create four types of solids in this manner: cubes, wedges, cylinders and cones. To create an object other than the cube, use the Object Toolbar and select a different kind before you press ENTER to create the object. If the object you've selected can have a variable number of faces, select the number of faces you want to create with the edit field to the right. Try them all!



The Object Toolbar

Giving a different texture to existing solids

This is a simple, three step process:

1. Select the solids you want to re-texture
2. Select the texture you want to use to texture the solids using the texture bar
3. Click the paintbrush icon.



The paintbrush icon.

Applying textures to individual faces

This method differs from the method above because it allows you to apply a different texture to individual faces, instead of entire objects. To activate this feature, click the Texture Application icon on the toolbar, or use the menus and select Tools|Texture Application.

Tip: You can still move the viewpoint with the camera tool (see "Navigating in 3D", above) when you're in texture application mode.

Selecting existing Solids and Items

To select a solid, click on one of its lines in the 2D views. Or, if you have a clear view of the object in the 3D view, click on it there. The object will be highlighted in Red in the 3D view, and a selection rectangle - a box with handles - will surround the object in the 2D views.

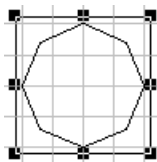
To select an Item or Monster, click on it in one of the 2D or 3D views.

Tip: You can select multiple objects by holding down the CTRL key before selecting another object. When multiple objects are selected, most of Worldcraft's features will work with all the selected objects.

To clear the selection - to unselect all objects - press C or use Edit|Clear Selection.

Moving and Manipulating the selected objects

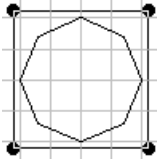
Using the selection rectangle, you can scale/move, rotate, and shear (or "slant") the selected objects. To toggle between the three modes, click the left mouse button once (without dragging the mouse) inside the selection rectangle.



Scaling and movement: To **scale** the object(s), move the cursor over one of the handles and click and hold the left mouse button. Then, drag the box to resize it to the desired proportions and release the left mouse button. The 2D and 3D views will be updated to reflect the change in size. To **move** the object(s),

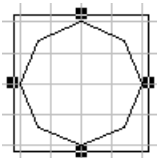
move the mouse *inside* the selection rectangle (but not on the handles!) and click and hold the left mouse button. Drag the objects to the desired location and release the mouse button.

Tip: Hold down the ALT button to temporarily disable the snap-to-grid feature while you're moving or scaling the objects.



Rotation: To rotate the objects, click and hold the left button on one of the four corner handles. Drag your mouse around to rotate the object, and release the left button when you've rotated it to the desired angle.

Tip: Hold down the SHIFT key to constrain the rotation angle to multiples of 15 degrees.



Shearing: To shear the objects, click and hold the left button on one of the four side handles. Drag the mouse left/right or up/down to shear the object, and release the left button when you've sheared it to the desired angle.

Copying, Cutting, Pasting and Deleting selected objects

These standard features are available through the Edit menu.

Tip: You can cut and paste objects into different maps!

Creating Monsters and other items



To create a Monster or other item, select the ax tool.

You create a Monster or item (herein simply "Items") in much the same way as you create a solid - the difference is that an Item requires you to specify just one 3D point. Start by clicking inside the top, right view again - this time, a purple crosshair appears at wherever you drag the cursor to. When you've positioned the crosshair, press ENTER to create a new Item.

The default Item that Worldcraft creates is the Player 1 start, called "player_info_start". If you want to create a different Item, select the Item from the Object Toolbar before you press ENTER.

Tip: Items appear as purple boxes in the views.

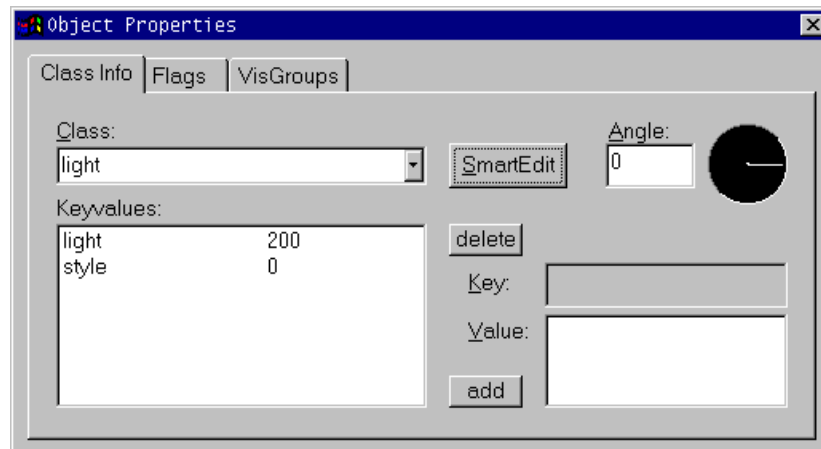
Editing existing Items

Once you've placed an Item, you can edit its properties - you might want a Monster to appear only on the most difficult skill level, for example.



To edit an item, you must first select it using the selection tool.

Select the Item you want to edit, and press **Alt+Enter** or choose **Edit|Properties** to edit its attributes. The following dialog box will be displayed:



The Item properties dialog box

Using the object properties dialog box, you can change the Item's type (its "Class"), the angle it faces, and various attributes called Keyvalues. Some examples of keyvalues are:

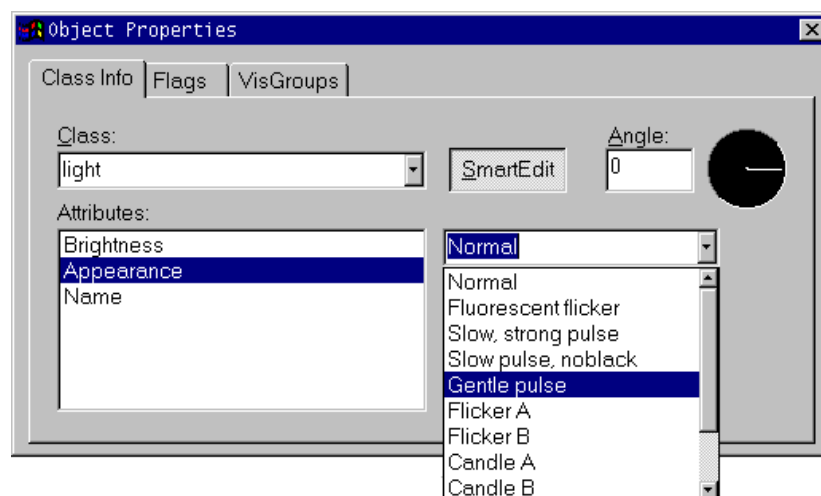
"speed" "40"

"target" "east_door"

"targetname" "gold_bridge"

Some Classes don't require any keyvalues at all. For example, a teleport destination Item (info_teleport_destination) doesn't require any. For those items that DO require keyvalues, Worldcraft includes a great feature that allows you to edit the values without remembering the required keys. This feature is called "SmartEdit", and you can access it using the button to the right of the Class combobox (see above picture.)

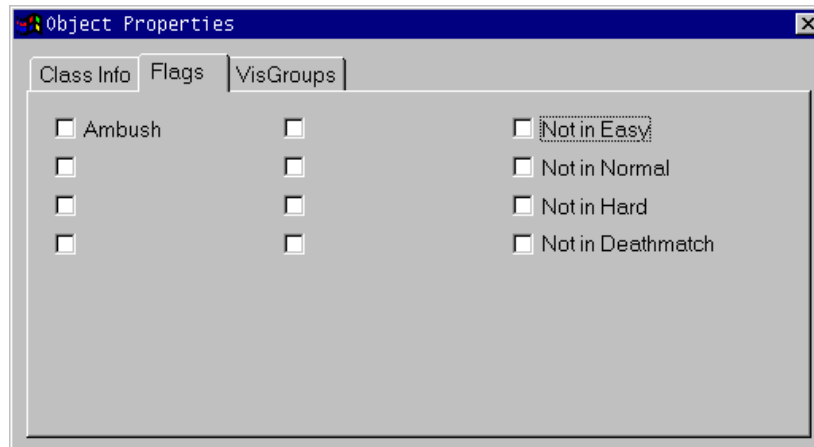
When SmartEdit is enabled, the "Keyvalues" listbox changes to a list of Attributes that are valid for the Item's class. Compare the image below to the one above. Smartedit is enabled, making the Attributes of a *light* item much easier to edit.



SmartEdit is enabled.

Why not permanently enable Smartedit? The answer is expandability: Advanced users might create their own Items using Quake's built-in programming language, and Worldcraft can't know about them without some customization to its configuration files. Therefore, it makes sense to allow people to edit the "raw" keyvalues during the development of these items.

Some Items also allow you to specify a set of "flags", each of which is either on or off. A typical Item's Flags tab looks like this:



The Flags page

In the example above, the flags for the Item *monster_army* (the shotgun trooper in Quake) are shown. Here's what they mean:

- *Ambush*, when checked, means that the Monster will only start to attack you after it sees you. When it's not checked, the Monster will try to attack you as soon as it hears your gunshots.
- *Not in Easy*, when checked, means that the Monster won't appear in the Easy skill level. This setting, combined with the other skill flags – *Not in Normal* and *Not in Hard* – allows you to make your maps more difficult for people who think they can take it!
 - *Not in Deathmatch* means that the Monster won't appear in Deathmatch games.

Note: The "Not in ..." flags apply to many objects besides monsters - for example, health paks and shotgun shell paks could be made more abundant in the easier skill levels.

Making Solids Move

This section covers creating Moving objects, like doors and platforms (*and is fairly incomplete!*)

The first thing you have to do to make a solid move is to convert it into an "Entity." To do this, select the solid or solids you want to use, and click the "toEntity" button at the toolbar, or use **Tools|Tie to Entity**. The solid(s) are now all part of the Entity, and when you select one, all of them are highlighted.

Tip: You can break the association between an Entity and its Solids by using **Tools|Move to World**.

Frequently asked questions

Q: How can I run maps that I've made in Quake?

A: Worldcraft includes a feature that will build your map into a playable "BSP file", and run Quake. You can activate this feature with the **F9** key, or use **File|Run Map** in Quake. This feature might not work on all computers, though, since QBSP (the included program that turns MAP files into BSP files) requires a lot of memory. If you find that the feature does *not* work, here's how you can do it yourself:

1. Choose File|Export to Quake MAP. This will save your level as a Quake MAP file instead of a Worldcraft RMF (“Rich map format”) file.
2. Exit Worldcraft, and bring up an MS-DOS Window (use the Windows95 Start menu, choose “Programs”, then “MS-DOS Prompt”).
3. Change into your Worldcraft directory (for example, type `cd\worldcraft.`)
4. Run RUNMAP.EXE with your map file. RUNMAP takes two parameters: one, the name of your map file, and two, your quake directory. For example, if you were working with a file named “mymap” and your copy of Quake was located in D:\Quake, you’d type:

```
c:\worldcraft> runmap mymap d:\quake
```

Q: What’s the scale of maps in the editor to how they’re displayed in Quake?

A: You get a feel for this over time, as you’ve edited some maps and tried them out in the game. A measurement that might help in the meantime is that the size of the player is about 25 units wide and 60 units high.

Q: When I start up Worldcraft, I don’t see anything in the 3D views. What’s wrong?

A: Make sure that you’ve loaded a MAP file or created something to be displayed. Remember, solids aren’t created until you press the ENTER key after drawing them!

Note: Matrox Millennium cards have real problems with Microsoft’s Direct3D, which is what Worldcraft uses to display your maps. If you have a Matrox card, try to get new drivers from Matrox or Microsoft – these drivers weren’t available at the time this was written, but might be available by now.