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| **ProximitySensor** |
| **What is it?** |
| **The ProximitySensor node is a trigger event activated by the user getting within certain distance from an object. Once the user is within specified box parameters an event will generate as determined by you, the author. For example, if the user gets close to the object it may animate, other objects may animate, a sound file may be launched, etc. For more details about this node, check out the**[**VRML 2.0 Spec**](http://vag.vrml.org/VRML2.0/FINAL/spec/part1/nodesRef.html#_blank) |
| **Create the scene and add Cameras** |
| **1) First create a scene with all the objects, materials,**[**NavigationInfo**](http://www.dform.com/inquiry/tutorials/3dsmax/navinfo/index.html#_blank)**and animation that are needed. To the right, we have created a simple world for you to use as an example.** |
| **2) Next it is a good idea to add at least one 'Camera' which will be a 'Viewpoint' in the VRML file, but the file will still work without Viewpoints. NOTE: The more Viewpoints the better in VRML files. The different browsers have various navigation abilities and restraints, therefore the Viewpoints are the one consistent way the user can view the file.** |
| **3) To add a Camera, go to the Creation panel/press the 'Camera' button and Choose 'Target' as the Object Type.** |
| **4) With your mouse, drag the Camera in the 'Top' viewport and stretch it out.** |
| **5) To view what the Camera is seeing, go to the Perspective viewport and press 'c' on the keyboard. And there you are from the Cameras point of view.** |
| **6) The Camera is easy to adjust with the Move and Rotate buttons, so test them out.** |
| **7) Also it is good to name your Cameras. The Camera name is what the user sees in the VRML browser as the name of the Viewpoint. Otherwise it will default to Camera01, Camera02 etc. Which is pretty boring, if you have a great viewpoint to show off.** |
| **8) Viewpoints help tell a story in the VRML file, because you can lead the viewer to ideal viewing points of the model which they might not otherwise explore.** |
| **How to implement a ProximitySensor into a MAX file:** |
| 9) Now move on to the**ProximitySensor**. Go to the 'Creation' panel and choose 'Helpers'. Under 'Helpers' use the pull down the menu and choose VRML 2.0. Then choose the Object Type 'ProxSensor'. |
| 10) Then go to your scene and drag the mouse anywhere. You will see an icon of a hand that signals to you that you have placed the ProximitySensor. |
| 11) Select the **Pick Action Objects**button. The action objects are the objects that have an event that will occur due to the user coming within the proximity you designate. The events can be animation, cameras, anchors or sounds. |
| 12) You can either select the objects with your mouse OR press the keyboard letter 'H' and the 'Selection' menu pops up. From the 'Selection' menu select your animated objects and these will appear in the Pick Action Objects box. Now don't forget to turn off the 'Pick Action Objects' button by pressing it again. |
| 13) Make sure that the **Enabled** box is checked. |
| 14) To alter the parameters of the ProximitySensor, adjust the **width, length, and height** of the bounding box. Also the box easily moves around to surround the objects that are the focus of the trigger. NOTE: the bigger the box, the further out the user will be when the ProximitySensor is set off. If you are out of the creation panel, you will need to go to the 'Modify' panel. The same panel for the node will appear as before. |
| 15) Next choose the object linked to the event that will occur as the user gets within the distance parameters. This will either be the animated object or any of the VRML helpers (i.e. sound, anchor). |
| 16) In the **Icon Size** box, you can designate a larger or smaller icon size for the ProximitySensor node---but this is only for the MAX file and has no bearing on the VRML file. |
| 17) Now you have successfully implemented a ProximitySensor into your file. |
| 18) **To check**, go to the 'Selection' menu! NOTE: You can name your ProximitySensor in MAX in the 'Name' field. |

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| **How to Export MAX files to VRML:** |
| 19) Now choose 'File' and choose 'Export'. The Exporter knows that you are referring to the file that is open and requests that you name your file. |
| 20) So first choose '.wrl' filetype Then name your file, i.e. 'SuchAndSuch.wrl' |
| 21) Suggestion: Because you might need to go back to the MAX file and adjust part of your world, it is a good idea to keep the filename between to two files the same. |