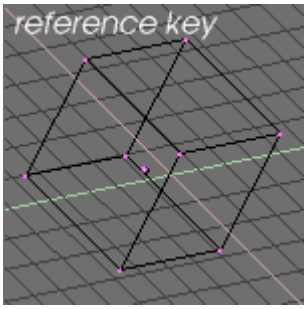
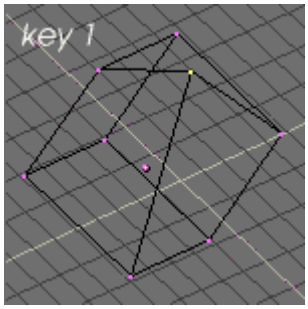
Relative Vertex Key Basics

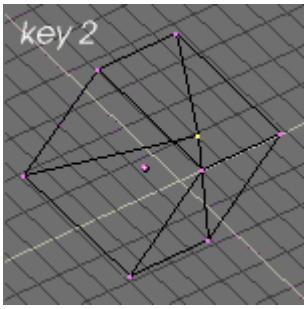
Using relative vertex keys in blender can seem a bit intimidating at first but it's really pretty straightforward once you learn the basics.

What are relative vertex keys (RVK) anyway? Simply put, RVK's give you the ability to make several versions of the same mesh and, with the help of IPO curves, allow you to morph between them.

In this tutorial, we will create a simple system with two relative vertex keys for controlling a cubic mesh.

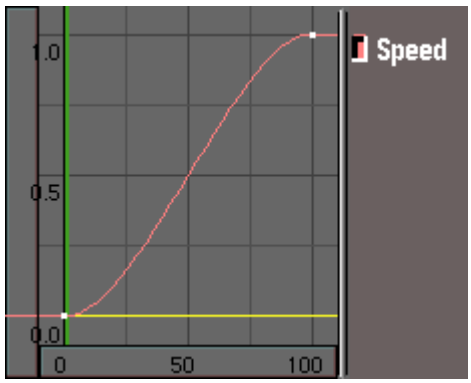




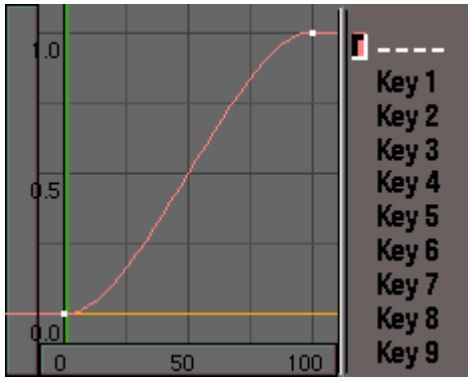


1) Create a simple mesh and exit edit mode. For this example I chose the cube labeled above as "reference key". This will be the base or reference mesh from which the relative keys will deviate.

2) Press the (I) key and select mesh. You have just created what will be become the reference key. Go to the IPO window and select the vertex button .Press the (home) key on your keyboard and you should see something like the image on the right.



3) The first two steps are the same as the procedure you would follow to create normal vertex keys. To use relative keys, go to the animation buttons and press the relative keys button shown above. In the IPO window you should now see something like this. The red line (what used to be the Speed IPO) is now irrelevant and may be deleted. The orange line is now the reference key selector. Whenever you right click on it (outside of edit mode) the mesh will revert to the reference we created above.



You may need to left click on the key selector button  and press the (home) key again to see this.

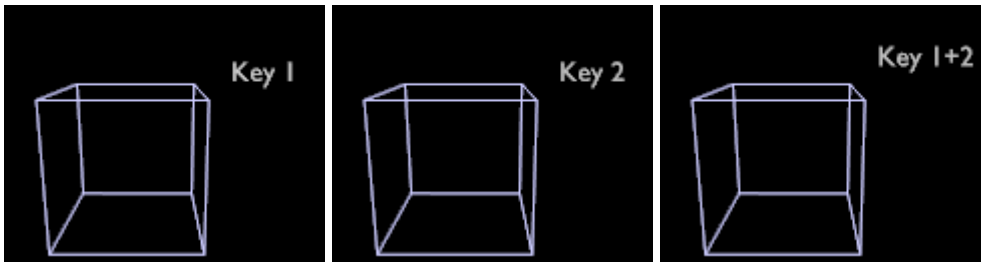
4) Go back to the objects window and insert another mesh key (press (I) and select mesh). When you do this a blue line will appear in the IPO window. This is the selector for the first relative key "Key 1". You have just created your first relative vertex key!

5) Press tab to enter edit mode and modify the mesh however you like. This will be the target mesh for this key. Exit edit mode and select the blue line in the IPO window with the right mouse button and move it a litte above the orange reference key selector.

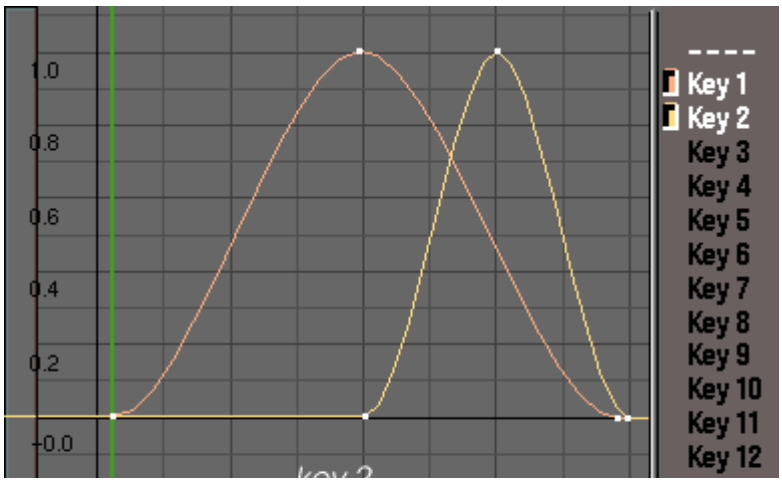
6) To create an IPO for this key, click on Key 1 in the side bar of the IPO window with the left mouse. It should change color from black to white. Now hold down the control key and press the left mouse button a few times in the IPO window to form the shape of the IPO for key 1. The height of the IPO curves determine the degree to which the reference mesh will be morphed into the relative key mesh at a given frame.

7) Add more keys by Repeating steps 4)-6). You will want to experiment with how multiple keys affect the morphing. Have Fun!!

IPO Window Details



On the right is the ipo screen for a mesh with two relative keys. The orange line at the bottom is the reference key selector. If you select it with the right mouse button (Rm) you should see the original mesh in the object display window. Going into



edit mode and modifying the mesh after selecting this key modifies the base or reference mesh. Similarly, right clicking on the blue line just above the reference key allows you to select and modify the mesh corresponding to the first vertex key mesh and so on. If you select one of the lines while you are in edit mode you will see a message "Copy key after edit mode?". If you accept, the mesh corresponding to the key you selected will be replaced by the one you were just editing.

The order in which the blue lines are arranged actually determines the number assigned to that reference key. The bottom line is key 1. The next line is key 2 etc. When you create a new key the blue line is always created at the same place. It's a good idea to select it and move it with the (g) key right away to avoid the confusion of having several key selectors on top of each other.

The orange and yellow lines are the time IPO's corresponding to key 1 and key 2 respectively. As mentioned above, The height of the IPO curves determine the degree to which the reference mesh will be morphed into the relative key mesh at a given frame. A value of 1 for a relative key IPO corresponds to a 100% change from reference to relative key. The IPO's in the figure cause 100% of key 1 to be actualized at frame 20 and 100% of key 2 at frame 30.

Tutorial by Jonathan DuBois 02/07/00