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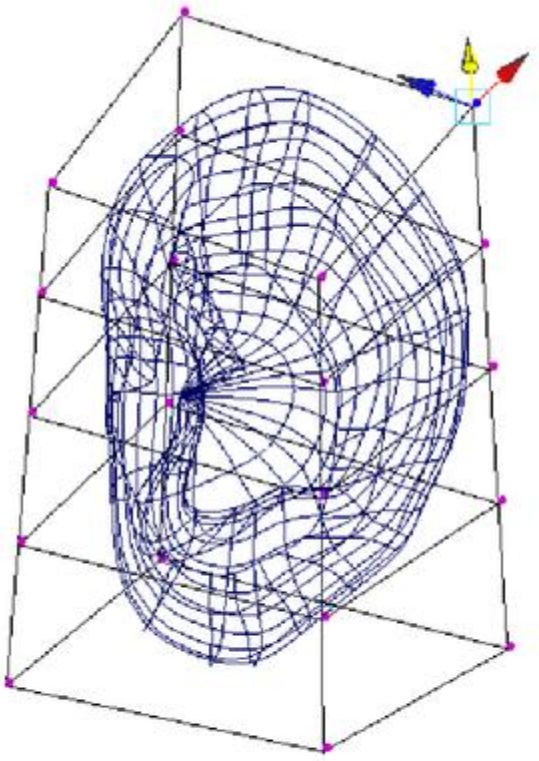
Lattice deformer

Lattice deformers let you deform objects with lattices. A lattice deformer surrounds a deformable object with a lattice that you can manipulate to change the object's shape.



Lattice deformer acting on an ear. You can create deformation effects by moving the lattice's points.

Topics in this section

- Lattices
- Lattice deformers and lattice flexors
- Skinning with lattice deformers
- Create lattice deformers
- Edit lattice deformers

Create lattice deformers

To create a lattice deformer

1. Select one or more deformable objects.
2. Select **Create Deformers > Lattic**e > ❐.

   The **Lattice Options** window appears.
3. Click the **Basic** and **Advanced** tabs and set the creation options.

   See Create Deformers > Lattice and Advanced deformer options.
4. (Optional) As you set the creation options, you can also do the following:
   - Select **Edit > Save Settings** to save the creation options and keep the options window open.
   - Select **Edit > Reset Settings** to reset the options to their default and keep the options window open.
5. Do one of the following:
   - Click **Create** to create a lattice deformer. The options window closes.
   - Click **Apply** to create a lattice deformer and keep the options window open.
   - Click **Close** to close the **Lattice Options** window.

To create lattice deformation effects

1. Move, rotate, or scale influence lattice points.
2. Edit lattice deformer channels and attributes.

   For more information on creating and editing deformation effects, see Lattice deformers and lattice flexors.

Edit lattice deformers

To move, rotate, or scale the influence lattice

1. Select the lattice deformer handle node (default name: ffd*n*Lattice).
2. Move (translate), rotate, or scale the handle to change the effect of the deformation.
3. Move or rotate the handle pivot point by pressing the Insert (Linux and Windows) or Home (Mac OS X) key, moving the pivot point, and then pressing the Insert or Home key again.

   Remember that you can access the deformer handle's local axes (Display > Transform Display > **Local Rotation Axes**), its rotate and scale pivots (Display > Transform Display > **Rotate Pivots** or Scale Pivots) and its selection handle (Display > Transform Display > **Selection Handles**).

To edit by moving, rotating, or scaling lattice points

1. Select the lattice deformer handle node (default name: ffdnLattice).
2. Go into component mode by clicking the **Select By Component Type** button in the Maya toolbar.
3. Select lattice points.
4. Move (translate), rotate, or scale the points to change the effect of the deformation.

Tip

You can navigate along lattice deformer points using the pickwalk hotkeys:

- To navigate left and right press the  or  keys
- To navigate up and down, press the  or  keys
- To navigate in and out press Ctrl + Page Up or Ctrl + Page Down

To edit lattice channels with the Channel Box

1. Select a lattice deformer node (default name: ffd*n*).

   One quick way to select the lattice deformer node is to select the object being deformed, and then select the lattice deformer node in its history from the**Channel Box** (under **INPUTS**).

   Note that you can control which attributes are listed as keyable attributes (channels) in the **Channel Box** with the **Channel Control** editor (selectWindow > General Editors > Channel Control).
2. In the **Channel Box**, the following channels are listed by default:
3. Click the name of the channel you want to edit.
4. In your scene,  -click and move the mouse to the left or right. By moving the mouse, you interactively change the value of the selected channel. As you move the mouse, note that pressing the Ctrl key gives you finer control, and pressing the Shift key gives you less control.

To edit lattice attributes with the Attribute Editor

1. Select the lattice deformer node (default name: ffd*n*).
2. Open the **Attribute Editor** by selecting Window > Attribute Editor. The default shortcut is Ctrl+a.
3. Edit the attributes.

   See ffdLatticeShape.

To reset the lattice

1. Select the lattice.
2. Select Edit Deformers > Lattice > Reset Lattice.

   See Edit Deformers > Lattice > Reset Lattice.

To reset lattice points after tweaking

1. Select the lattice.
2. Select Edit Deformers > Lattice > Remove Lattice Tweaks.

   See Edit Deformers > Lattice > Remove Lattice Tweaks.

To prune lattice deformer set membership

1. Select deformable objects whose currently unaffected points you want to prune from the deformation.
2. Select Edit Deformers > Prune Membership > **Lattice**.

   Maya removes the deformable object's points currently unaffected points from the lattice.

   Note

   Prune Membership only removes points from the deformation if they are currently not affected by the deformer. Therefore, if you try to prune the membership of an object whose points are all controlled by the deformer, you will receive the error message "No components could be pruned."

To select the lattice shape display

1. Select the lattice deformer.
2. Select Display > Animation > **Lattice Shape**.

   The lattice deformer selects between displaying its lattices and the "L" icon.

To turn lattice shape display on or off

1. Select the lattice deformer.
2. Select Display > Animation > **Lattice Points**.

To show all lattice deformers

1. Select Display > Show > **Show Deformers** > **Lattices**.

To hide all lattice deformers

1. Select Display > Hide > **Hide Deformers** > **Lattices**.

Toggling lattice shape handle (L icon)

1. To help control screen clutter and display performance, you can select between displaying an "L" icon as the lattice deformer handle and displaying the deformer's lattices.

To group the deformed lattice and the base lattice

1. Select the deformed lattice and base lattice.
2. Select Edit > Group.

   If you have grouped the base lattice and the deformed lattice, a simple way to select the two lattices in the scene (without opening the **Outliner**) is to select the deformed lattice and press the Up Arrow key to get the group node.

You can also parent the lattice to the geometry in two ways, depending on when you're parenting.

To parent the lattice to the geometry

1. Do one of the following:

- After you create the lattice, open the **Outliner** and  -drag and drop the lattice onto the geometry. An alternate way is to select the lattice, then the geometry, and choose **Edit Parent**.
- Before you create the lattice, open the **Lattice Options** window (select Create Deformers > Lattice > ❒) and turn on the **Parenting** creation option.

To change lattice deformer performance settings

1. Select Window > Settings/Preferences > Performance Settings.
2. In the **Performance Settings** window, note the **Deformers** section.
3. Click the performance of **Lattices** to **On**, **Off**, or **Interactive**. (For more information, see Lattice deformers and lattice flexors.)
4. When you're done, click **Close**.

To change lattice resolution settings

1. Select Window > Settings/Preferences > Performance Settings.
2. In the **Deformers** section, set the **Lattice Resolution** to **Per Node**, **Global**, or **Interactive**.
3. Click **Close**.

To delete a lattice deformer

1. Select the lattice you want to delete.
2. Select Edit > Delete or use the default shortcut 

(Linux and Windows) or 

(Mac OS X) key.

   All the lattice deformer's nodes are deleted, and the deformed object is returned to non-lattice deformed state.

If you want to delete a lattice deformer and preserve its lattice deformations, you need to delete history as follows:

To delete a lattice deformer and preserve the deformation

1. In the scene view, select the deformed object and then select Edit > Delete by Type > History.

   All the lattice deformer's nodes are deleted and the lattice deformations are preserved.

   Warning

   Deleting history deletes all your deformed object's history nodes, not just those associated with the lattice deformation.