

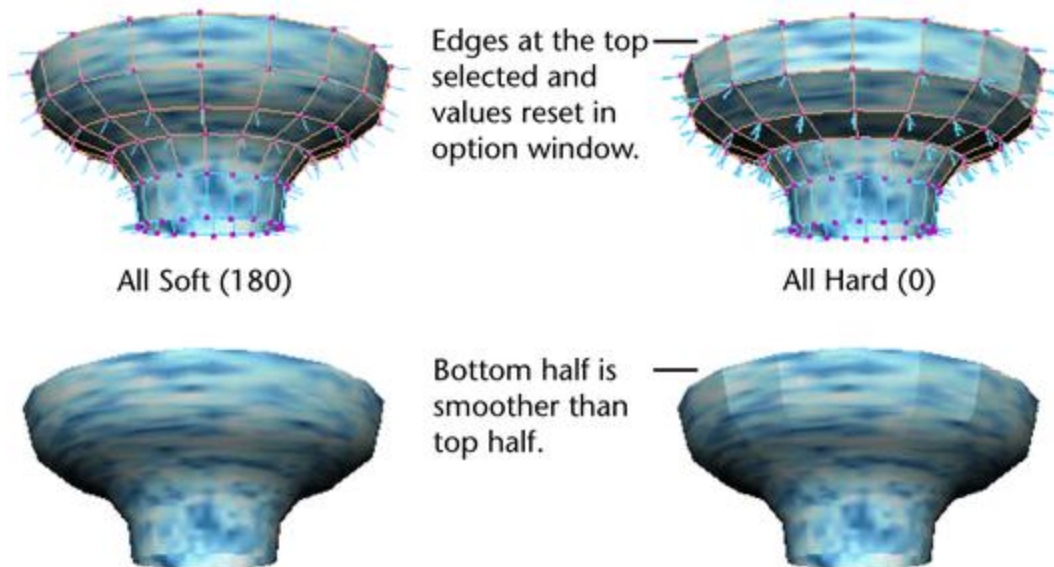


Edit the vertex normals to affect polygon shading

You can modify the shading of individual polygons by manually editing the vertex normals associated with the polygon mesh.

To control vertex normal direction manually

To...	Do this
Show vertex normals.	Select the mesh and select Display > Polygons > Vertex Normals.
Make edges appear sharp in shaded mode.	Select the edges and select Normals > Harden Edge .
Make edges appear soft in shaded mode.	Select the edges and choose Normals > Soften Edge .
Lock or unlock vertex normals to their current direction.	<p>Select the vertices and choose Normals > Lock Normals or Normals > Unlock Normals.</p> <p>Select the locked vertices and select Normals > Set Vertex Normal > <input type="checkbox"/>.</p> <p>Turn off both Lock Normals and Unlock Normals.</p>
Force normals to point along a certain vector (by entering values numerically).	<p>Use the text boxes to enter the X, Y, and Z rotation values for the vector, then click Set Normal.</p> <p>Select the vertices and choose Normals > Vertex Normal Edit Tool.</p>
Force normals to point along a certain vector (by adjusting a manipulator)	Use the manipulator to adjust the direction of the normals.



Note The **Normals** features create history nodes that actually change the normals. The correct way to reverse one of these actions is to delete the node.

Do not try to reverse the effects of one of these actions by applying the action again with the opposite setting. Doing so will probably not have the effect you want, and will just add another node to the dependency graph.

To set vertex normals to the same direction as the face normals

1. Select one or more vertices or vertex face components.
2. Select [Normals > Set to Face](#) > ☐.
3. Set the options, then click **Set to Face**.

This has the same effect as hardening the adjacent edge.

Tip

Using **Vertex/Face** selection lets you set normals on a per-vertex per-face basis.

To average vertex normals

1. Select one or more vertices or vertex/face components.
2. Select [Normals > Average Normals](#) > ☐.
3. Set the options, then click **Average Normals**.

Tip

Using **Vertex/Face** selection lets you set normals on a per-vertex per-face basis.

You can do any of the following:

- You can average the vertex-face normals at a single vertex.

- You can increase the tolerance and average the normals of several vertices in the same region to give the area a flattened look.
- You can pick vertices on opposite sides of a seam and average them to smooth across the seam.
- Using a small tolerance, you can select all the vertices along a seam, and each group of close-together vertices will be averaged separately.

Notes

- If these actions can achieve their effect using **Soften Edge** or **Harden Edge** they will, however they will usually force explicit normal directions.
- **Average Normals** works in object space, so if you want to average normals across two different shapes, make sure that the scene hierarchy for each shape has the same transforms.
- Use the **Vertex Normal Edit Tool** ([Normals > Vertex Normal Edit Tool](#)) or the **Set Vertex Normal** ([Normals > Set Vertex Normal](#)) when you want to manipulate the direction of the vertex normal and lock the direction of the normal. That is, setting the vertex normal with these features implies that you want to override the normals that Maya automatically computes and then lock them in the position you set.
- When you unlock a previously locked vertex normal, Maya will automatically calculate the normal for the face based on its default normal calculations.

Related topics

- [Normals > Vertex Normal Edit Tool](#)
- [Normals > Unlock Normals](#)
- [Normals > Set Normal Angle](#)
- [Normals > Average Normals](#)
- [Normals > Set to Face](#)
- [Normals > Soften Edge](#)
- [Normals > Harden Edge](#)