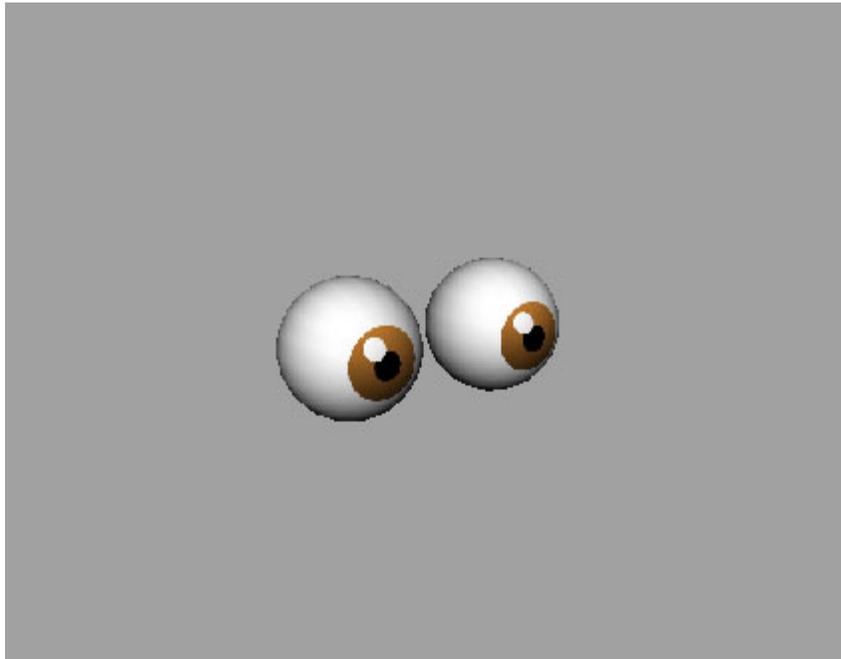


A tutorial on  
**Rigging Eyes** in  
Maya

Eyes are arguably one of the most important features of a character, providing a sense of direction, emotion, and sight. Thankfully for us, they also happen to be one of the easiest to rig. This tutorial will guide you through rigging eyes using what are called **aim constraints**.



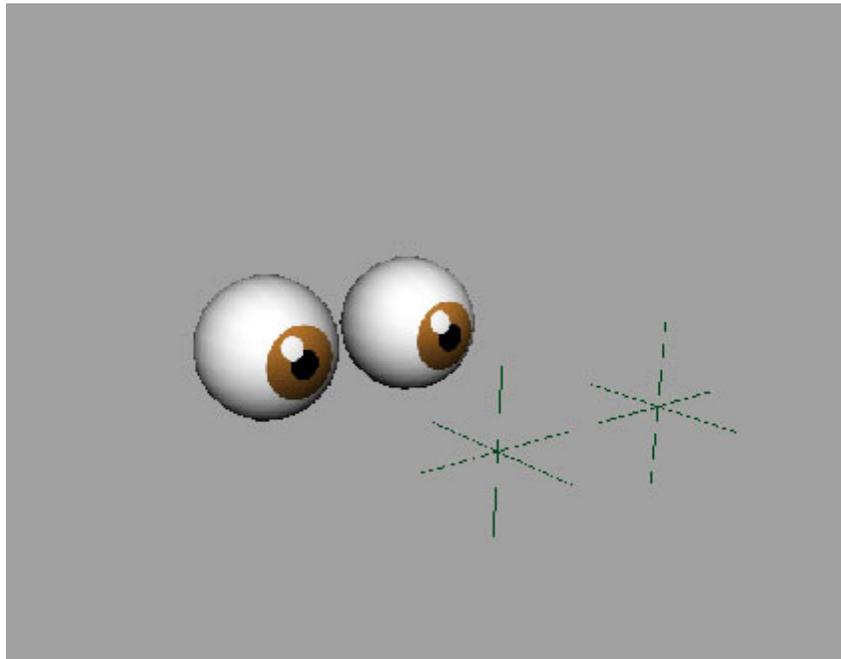
## Getting started

Before we begin, ensure the pivots of each eye are centered. If the pivots are not centered when the eyes are rigged, they will not rotate correctly. To center a pivot, select an eye and navigate to **Modify – Center Pivot**. Do this for both.

## Create locators

Aim constraining functions by making one object face another. Because of this, we can effectively use any object for the latter purpose. For this example however, I will be using **locators**; besides their suiting name, locators can be distinguished from the rest of the rig, making it easier to find them.

1. Locators can be created in a couple of ways: navigating to **Create – Locator** or by selecting the **Animation** tab on the **Shelf** and clicking the locator button. Because we have two eyes, we will need two locators.



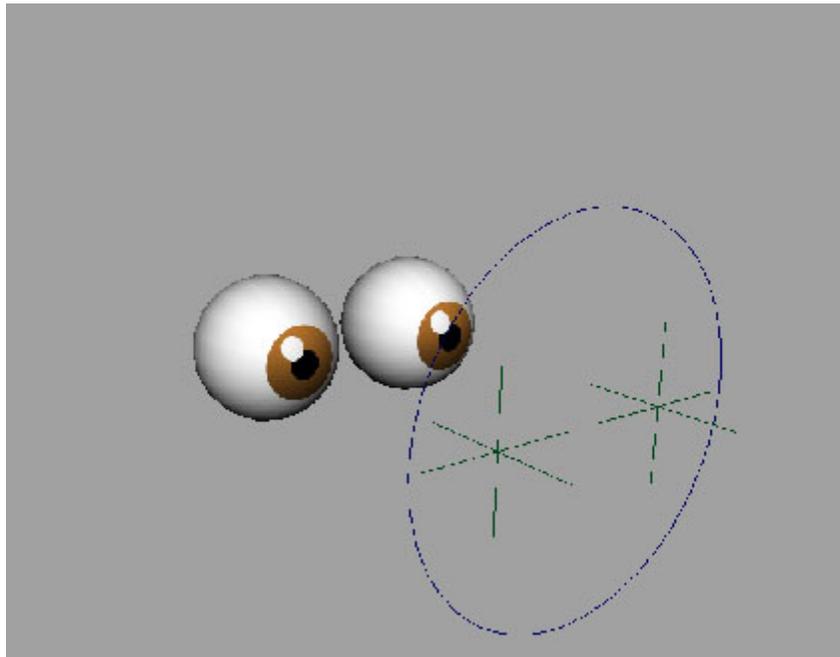
2. Position the locators away from the eyes while keeping them centered on each. With both locators selected, navigate to **Modify – Freeze Transformations**. Doing this will assign the coordinates of the locators a value of 0.

## Parent locators

Now that we have a locator for each eye to follow, it would make sense to create a secondary object to move both of them at once, since like in real-life, both eyes face the same direction. The system we will be using to achieve this is known as **parenting**, whereby one object, known as the **parent**, controls the movement of another, known as the **child**. While the children will always move when the parent does, they are otherwise free to move on their own.

The parenting object, like the locators, can be just about anything, even another locator. For this example, I will be using a NURBS circle.

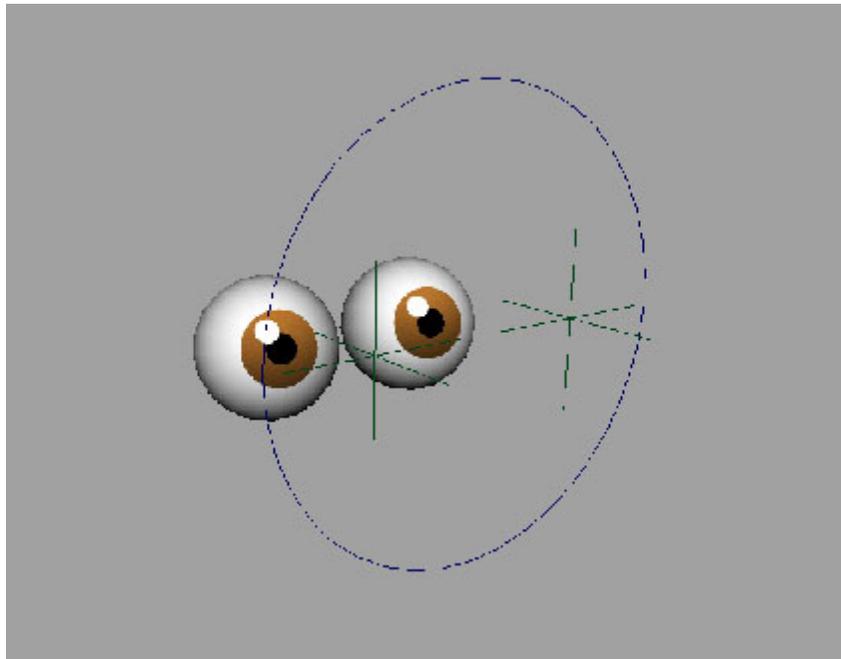
3. To create a NURBS circle, navigate to **Create – NURBS Primitives – Circle** or select the **Curves** tab on the **Shelf** and click the blue circle icon. Scale the circle around and in-line with the locators. Deselect the circle, select both locators, reselect the circle and navigate to **Edit – Parent** or press **P** when **Caps Lock**.



## Attach aim constraints

The final step is to attach aim constraints to the locators so the eyes will follow them.

4. Change the **Status Line** to **Animation** if it isn't already and then navigate to **Constrain** - **Aim** - . Determine which of the three world coordinates the eyes are facing and type this into the **Aim Vector** row of the **Aim Constraint Options** menu. For my example, the eyes are facing in X, represented as 1, 0, 0; Y would be represented as 0, 1, 0 and Z as 0, 0, 1.
5. Once you have calibrated the Aim Vector values, select a locator, its corresponding eye, and then click **Apply** on the Aim Constraint Options menu. Do this for both.



The eyes are now constrained to the locators. Select a locator or the NURBS circle and move it around to see the result. To reset the positions of the locators or the circle, simply select either or and change the values for **Translate X, Y, and Z** in the **Channel box** to 0.

## Conclusion

Eyes can come as one of the more forgivable parts of a character to rig since their set-up is relatively straightforward. All things considered, this tutorial provides a simplified approach and does not go into the full details of constraints.

Thanks for reading!

Matt