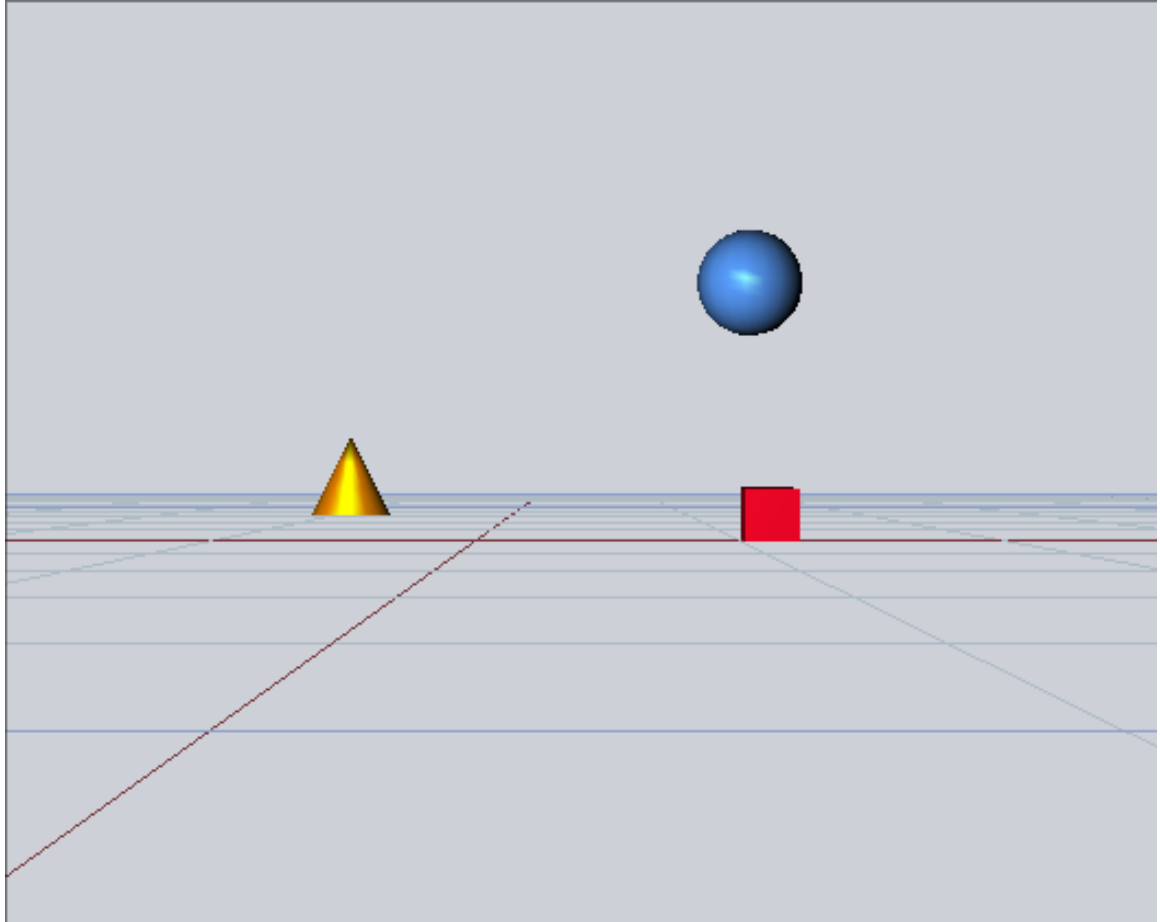


CONSTRAINT TUTORIAL 1

The purpose of this tutorial is to introduce you to constraints in Electric Image Universe.

1. Open the project, Constraint1.prj

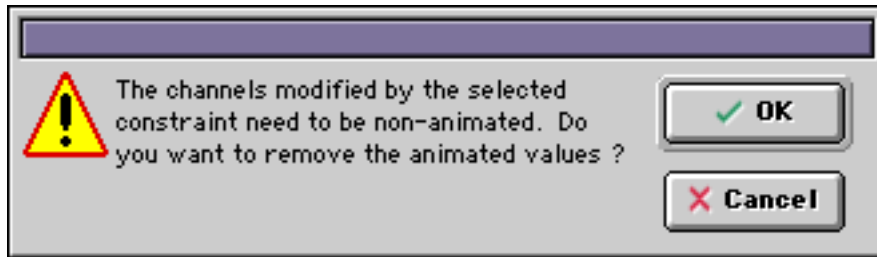


Camera View with Cone, Sphere, and Cube Turned On

For this first example, the Cone will be our constraint object and the Sphere and Cube will be the targets. Let's set up an Aim constraint so the cone looks at a point midway between the Sphere and Cube.

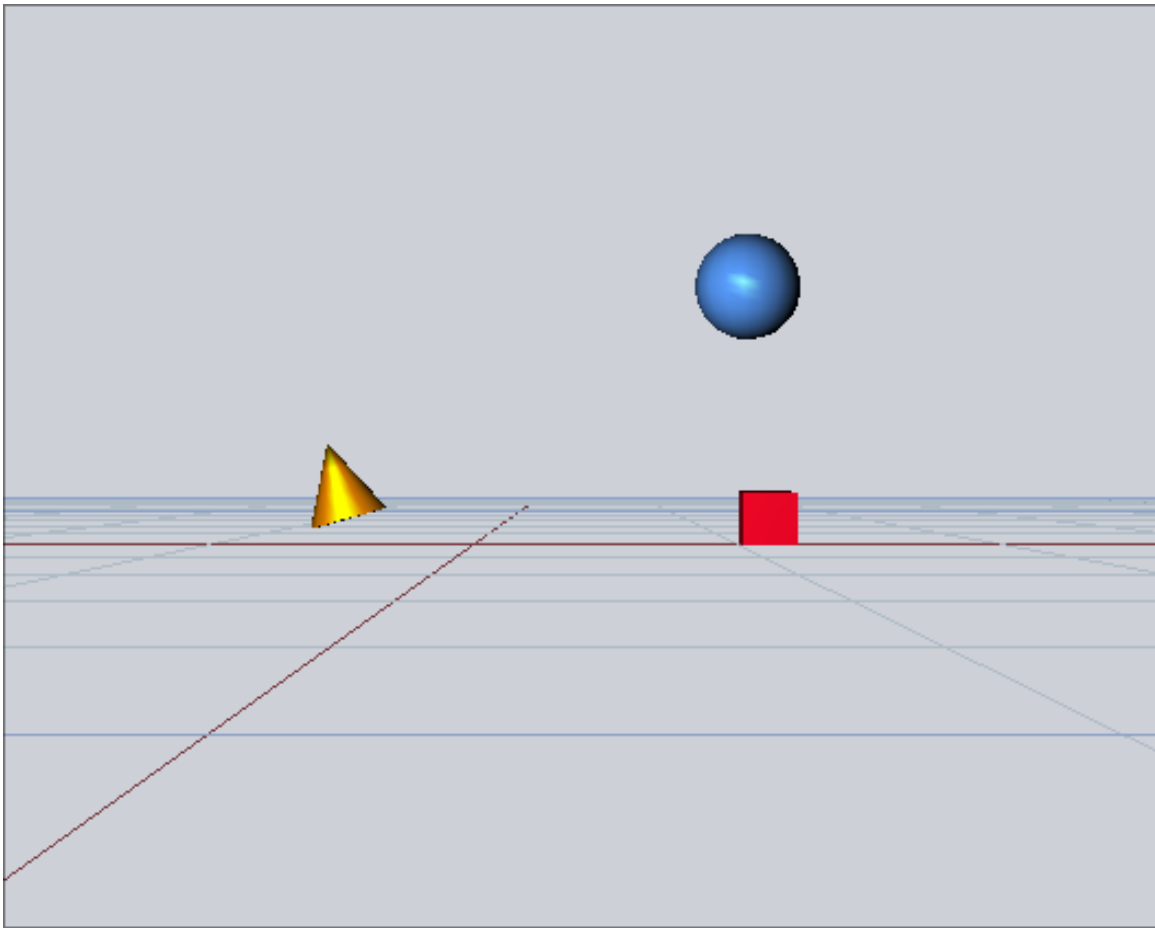
2. Select the Cone in the Project window or one of the View windows.
3. Under the Constraint menu, choose "Aim"

A warning dialog box now comes up stating that you are potentially going to overwrite the animation data for your constraint object (the Cone).



Constraint Warning

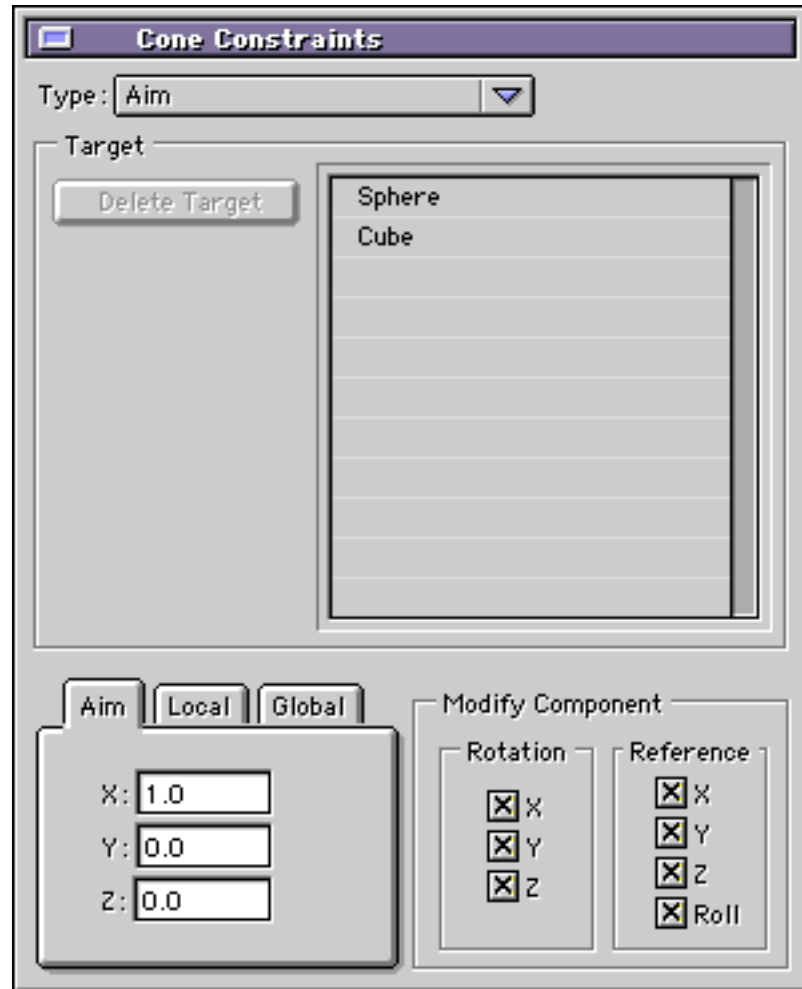
4. Click on OK.
5. Choose the Sphere and Cube from the project window or a View window.
6. Hit CMD-. Or esc to end the target selection process.



Camera View with Aim Constraint

Notice that the Cone doesn't yet aim at the Sphere or Cube. This is because the "Up Vector" for the Aim constraint isn't set yet. We'll set it now.

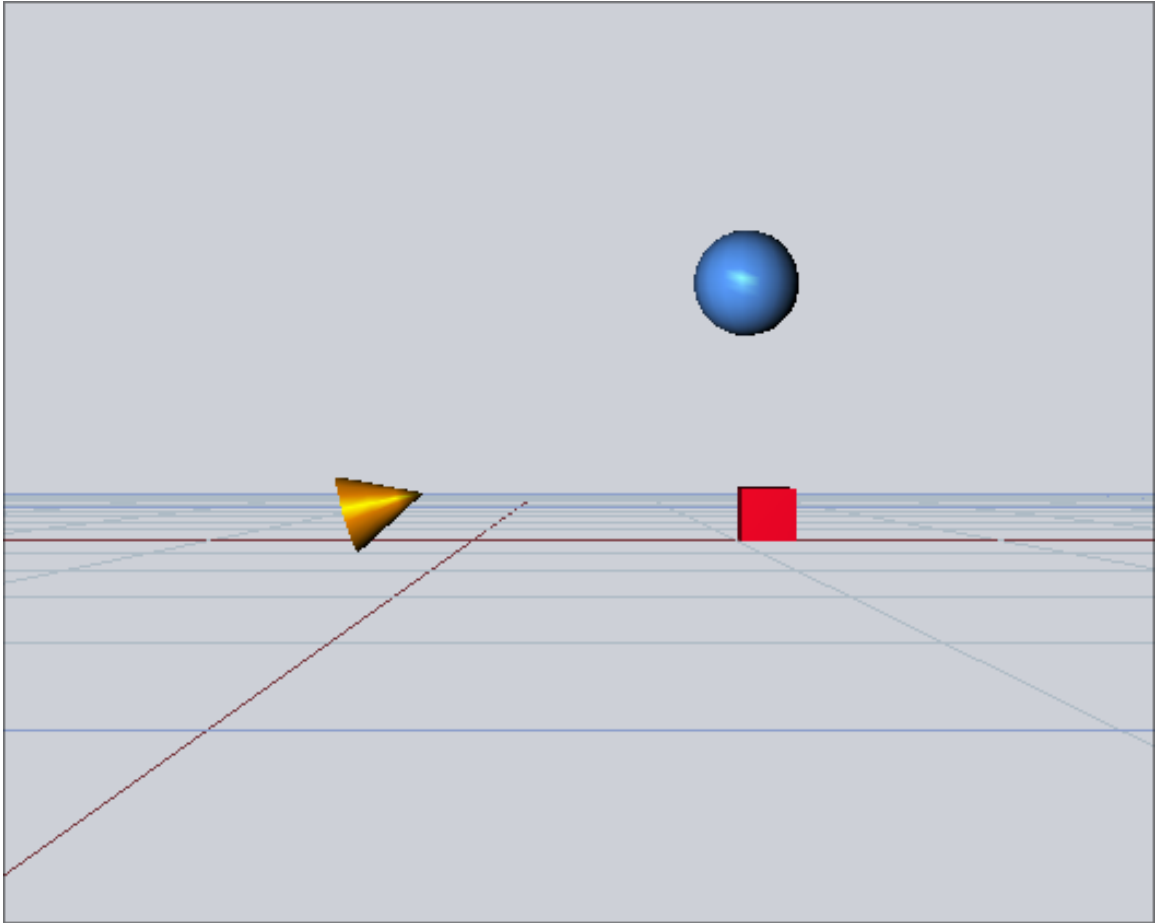
7. Select the Cone and bring up the Constraint Editor by selecting it under the Constraint Menu.



Constraint Editor: Aim Constraint

The Constraint Editor shows that the Cone has two targets in its Aim constraint, the Sphere and Cube. The Aim vector is (1,0,0). This means that the X-axis of the Cone is set to point midway between the Sphere and Cube. What we want is the top of the Cone to point between the targets. From our top view, we can see the axis running top to bottom through the Cone is the Y-axis.

8. Set the Aim to (0,1,0)



Camera View with Y Aim vector

Now the Cone “points” to a point midway between the targets.

9. Drag the Cube, Sphere and Cone around in the scene

Notice that the Cone always points midway between the Cube and Sphere.

If you attempt to rotate the Cone with the rotate widget or the edit boxes in the Cone’s Group Info window, you will find that nothing happens. Since the Cone’s rotation is now coming from the Aim constraint, you can no longer manually control it.

10. Select the Cone and bring up the Constraint Editor by selecting it under the Constraint Menu.

11...Select the Sphere and change it’s weight to 0.2

Notice that now the cone points almost exactly toward the Cube. The weighting of the constraints between the targets is now vastly in favor of the Cube. Weights can be animated either directly from the Constraint Editor or from the Project window.