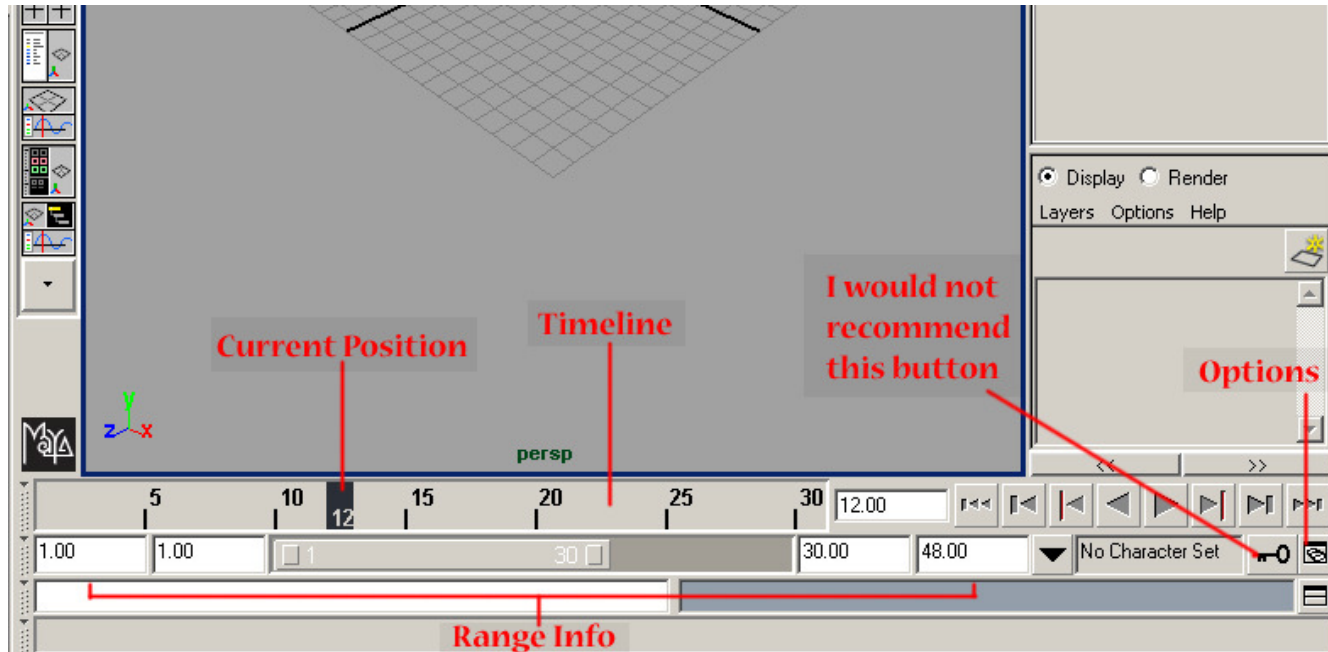


UCBUGG 2006

Introduction to some basic animation in Maya

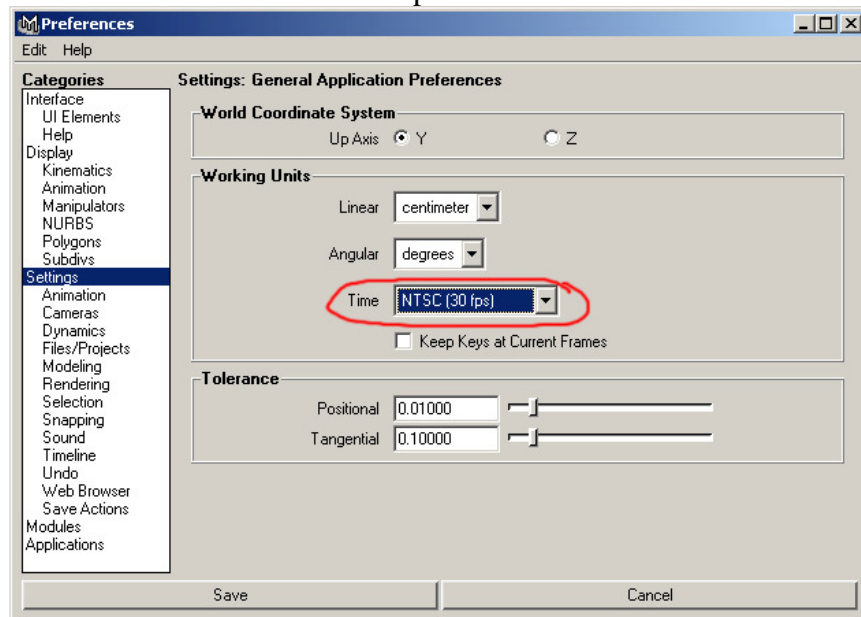
by Steven Jian

The Timeline and Keys

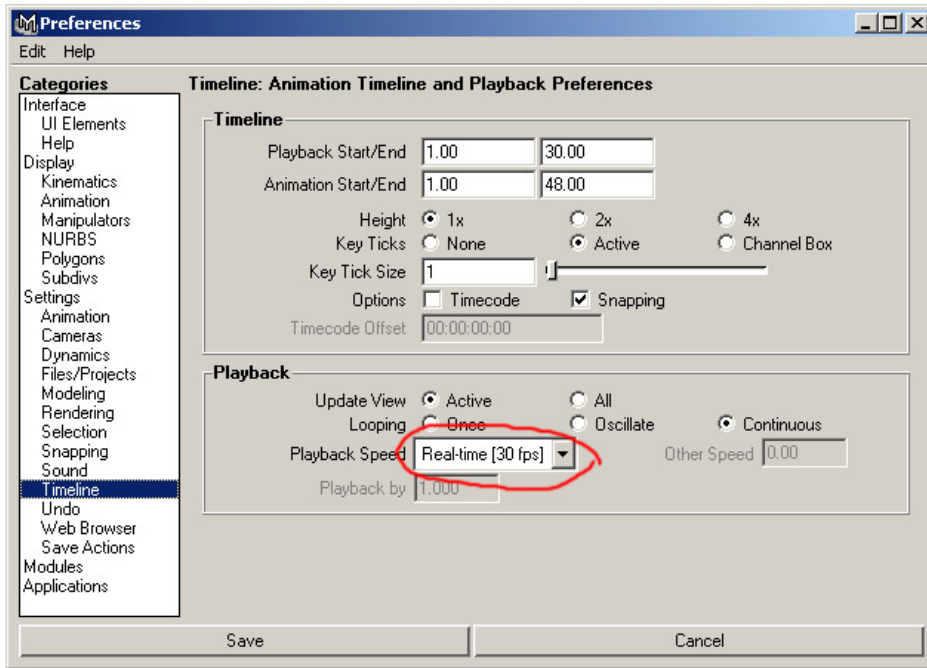


This is your timeline area.

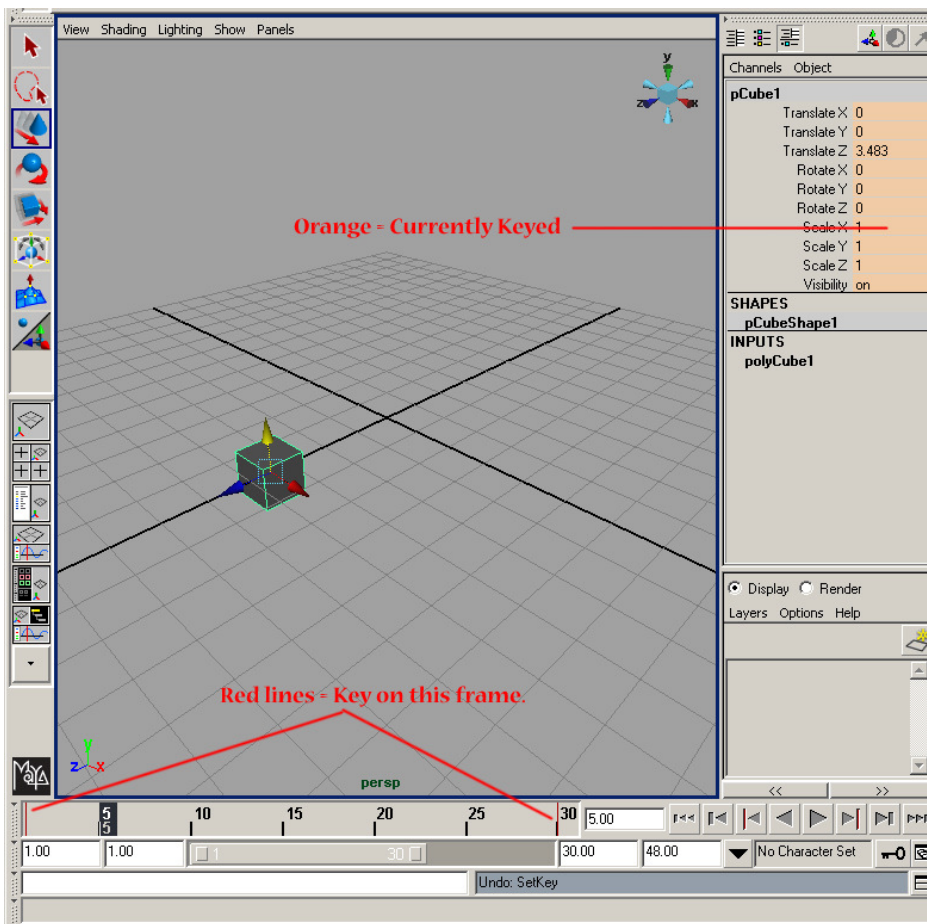
Scrubbing: Clicking and dragging the position bar on the timeline back and forth to get a general idea of the animation motion. Here is the options windows and some relevant stuff you should be aware of.



We will be working at around 30fps. Be sure this is set correctly before you begin animation.



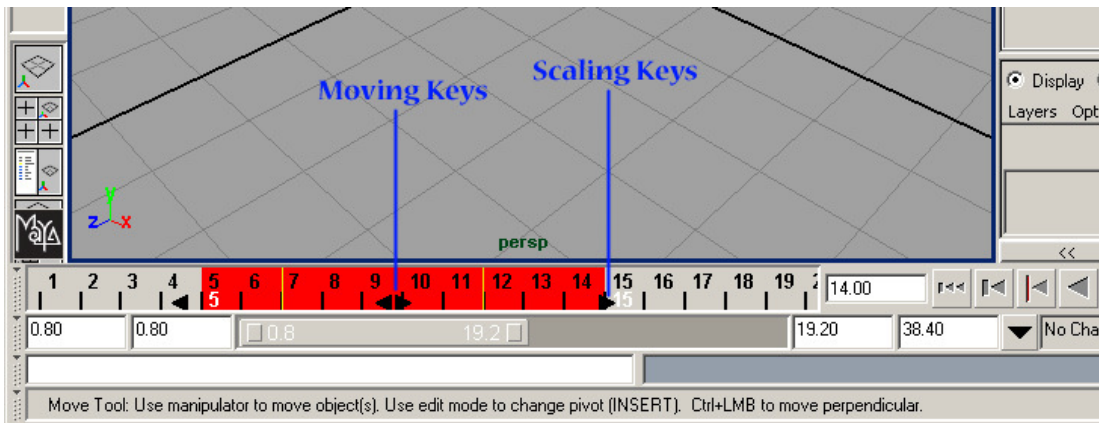
By keeping your playback speed "Real Time" you have a better sense of what the motion will look like in the end.



Keyframes define "start" and "end" positions for an object. The computer fills in the rest.
A quick way to key an object is to select it and Press S

To key an individual property, right click the property in the channel box and choose "Key Selected".

When an object is selected, every frame that contains Key information for that object will have a red bar in it.



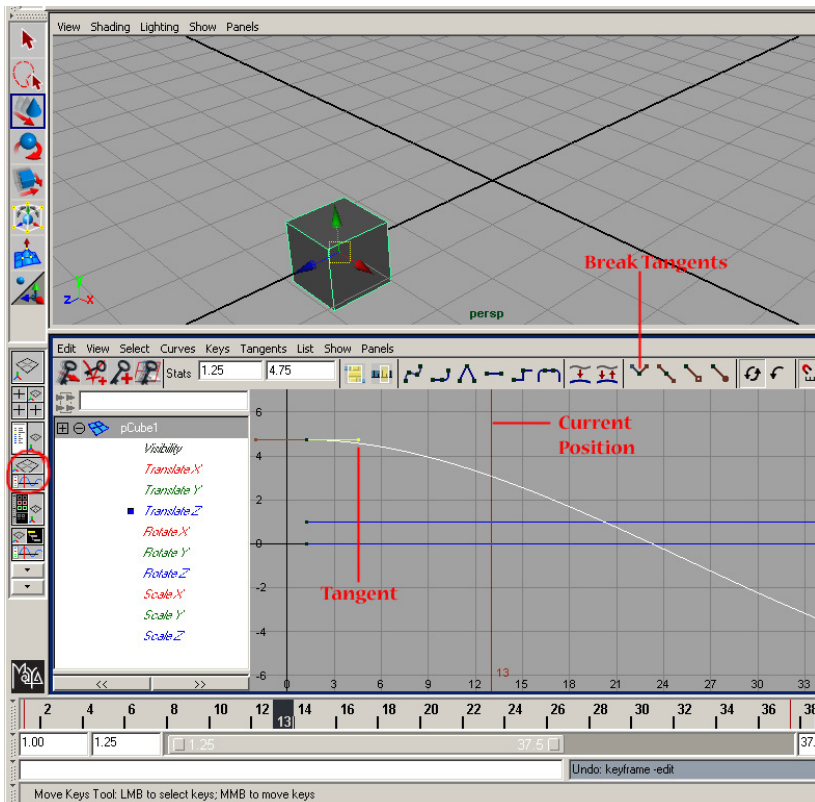
For some quick and dirty editing of keyframes, **you can select them in the timeline by holding shift and click-dragging the mouse across your desired area.** It will be highlighted in red.

At this point, you can move and scale the keys with the arrows. There are also options such as Delete Key in your right-click menu. (right click on the red area).

Beware of scaling keys this way. If a key is scaled and lands between frames, your animation will not be very precise (it will round your keys to integer values)

A much better way to edit keys is through the graph editor.

The Graph Editor



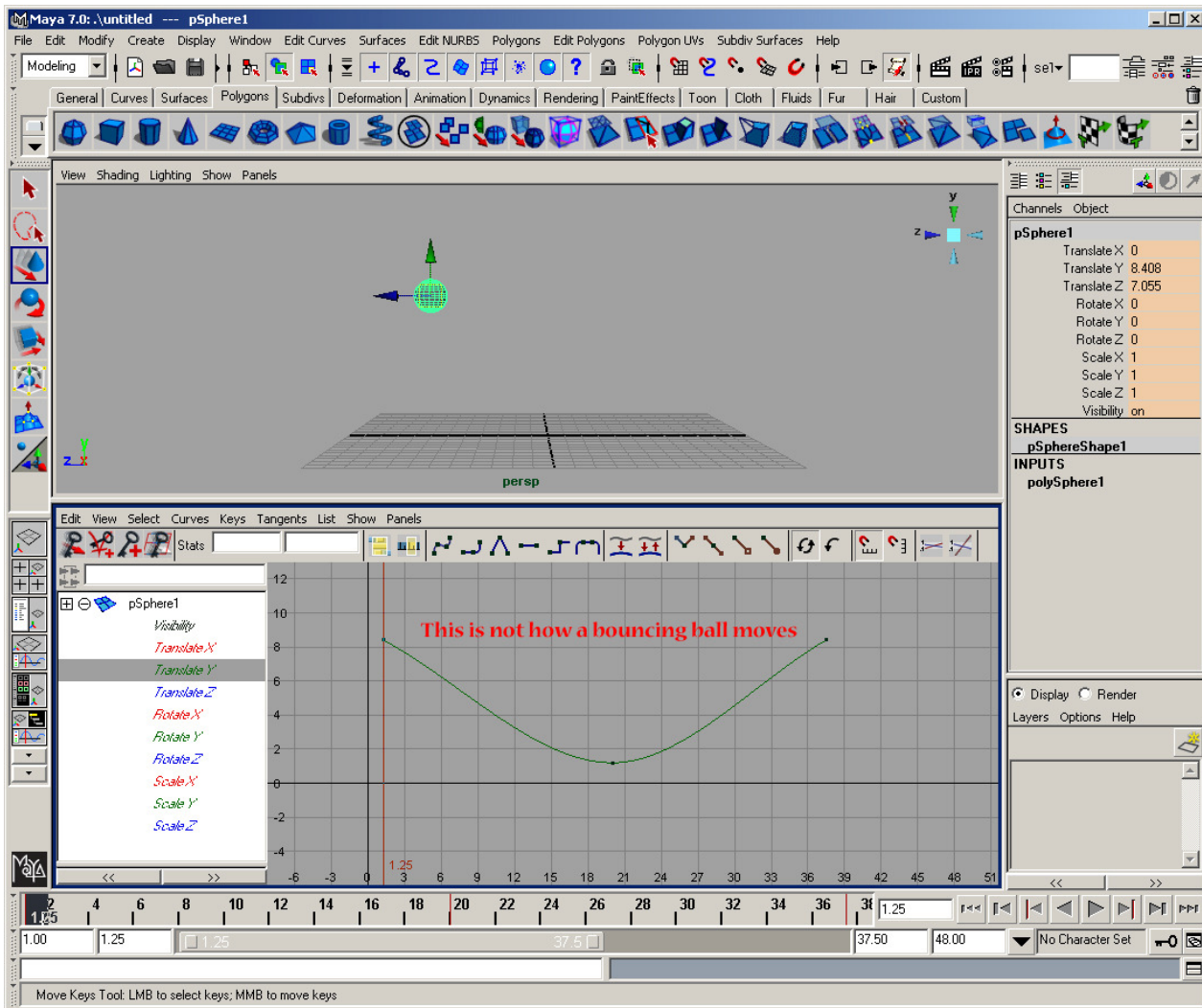
This is your graph editor. It displays all information about the selected object in graph format.

You define the "End Points" of the movement, but how does the computer fill in the blanks? Answer: Curves. Because there are curves, you can edit their curving behavior.

Here you can move keys, scale them, edit the curve tangents, etc.

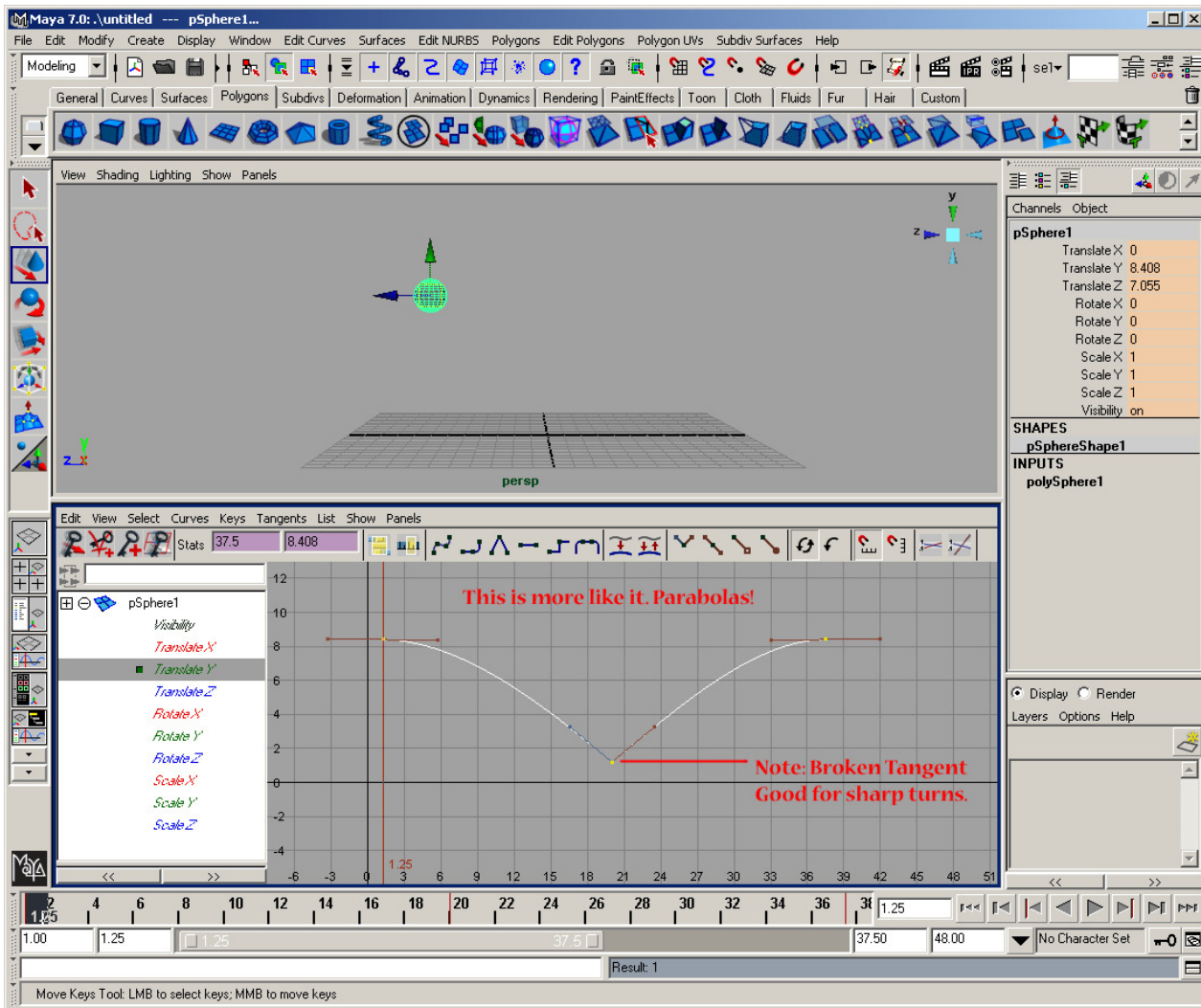
Break tangents to make sharp changes in direction (i.e. ball hitting the ground)

Bouncing a Ball



Basic bounce - can be done in 3 keyframes. High, low, high.

But, the curves that the computer makes is incorrect! This is not how a ball bounces! it does not SLOW as it approaches the table.



This is better.

Squash and stretch is a common cartoony technique. Simulates motion blur and adds more impact to the animation.

- Most ball-like shape at top of parabolas (least movement)
- Most stretched right before impact (fastest movement)
- Squash upon impact
- Stretched again after impact
- Then move to unsquashed state



(Image found at <http://www.evl.uic.edu/ralph/508S99/squash.html>)