

Maya 2024 **Session#2**

Use the Graph Editor to make a ball bounce up and down realistically (i.e., with no squash & stretch). Do not try to animate any rotations (yet).

Make a new Scene

>File >New Scene

Create a default polygon sphere

It is located at 0,0,0

It has a radius of 1.0

Enlarge the **Front** window

Keyframe ball up and down

In Timeline drag cursor to frame 0

At frame 0,

Translate sphere to 10 in Y

You can use the Channel box on right of screen
to type in numbers

Hit **s** to keyframe the ball at frame 0

In Timeline drag cursor to frame 25

Translate sphere to just touching the ground

(Try to figure out the exact value)

Hit **s** to keyframe it

Drag Timeline cursor to frame 50

Translate the sphere back up to TY=10.0

Keyframe the sphere at f50

Play back the animation

In Timeline,

>Playback Speed >Real Time

Hit the triangle Play button

The sphere moves up and down,

but it is very floaty

Does *not* look like it is bouncing off floor

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>File >Save Scene As

TIP: Save your file often in increasing version numbers
e.g., Bounce.1.mb; Bounce.2.mb; etc.

Change timing as ball hits floor

Enlarge the Graph Editor window

If you don't see it, use

>Windows >Animation Editors >Graph Editor

In Graph Editor window

to the left of the graphs,
click on "Translate Y" to display only that curve

Select the yellow key at f 25

Select tiny "Break Tangent" icon at top of Graph Editor window

Drag the handles of the tangent to change shape of curve

as it goes into f25
and as it leaves f25

Play back the animation

Ball now bounces quickly off floor

Make more keyframes

Make more keyframes

Time between bounces decreases with each bounce

Height of ball decreases as it bounces

Adjust timing between keyframes in Timeline

You can fine-tune the timing between keys in the Timeline

Timeline window:

Select the sphere

Shift-select one or more keyframes

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Middle-mouse drag the keyframe(s) left or right

Adjust values of keyframes in Graph Editor

Graph Editor window

Click or drag cursor around a keyframe
Middle-mouse to drag it

You can also type numbers to be more precise

Still in Graph Editor,

Top left side "Stats" (underneath "Keys Tangents" menu words)
First number is frame #
Second number is value of parameter

TIP:

Frames do not need to be whole numbers
E.g., you may want a frame to be at frame 104.5
Type this into the Stats area

Save your scene for later revision

>File >Save Scene As

We will re-use this scene for other exercises.