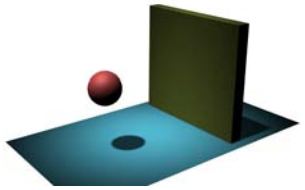
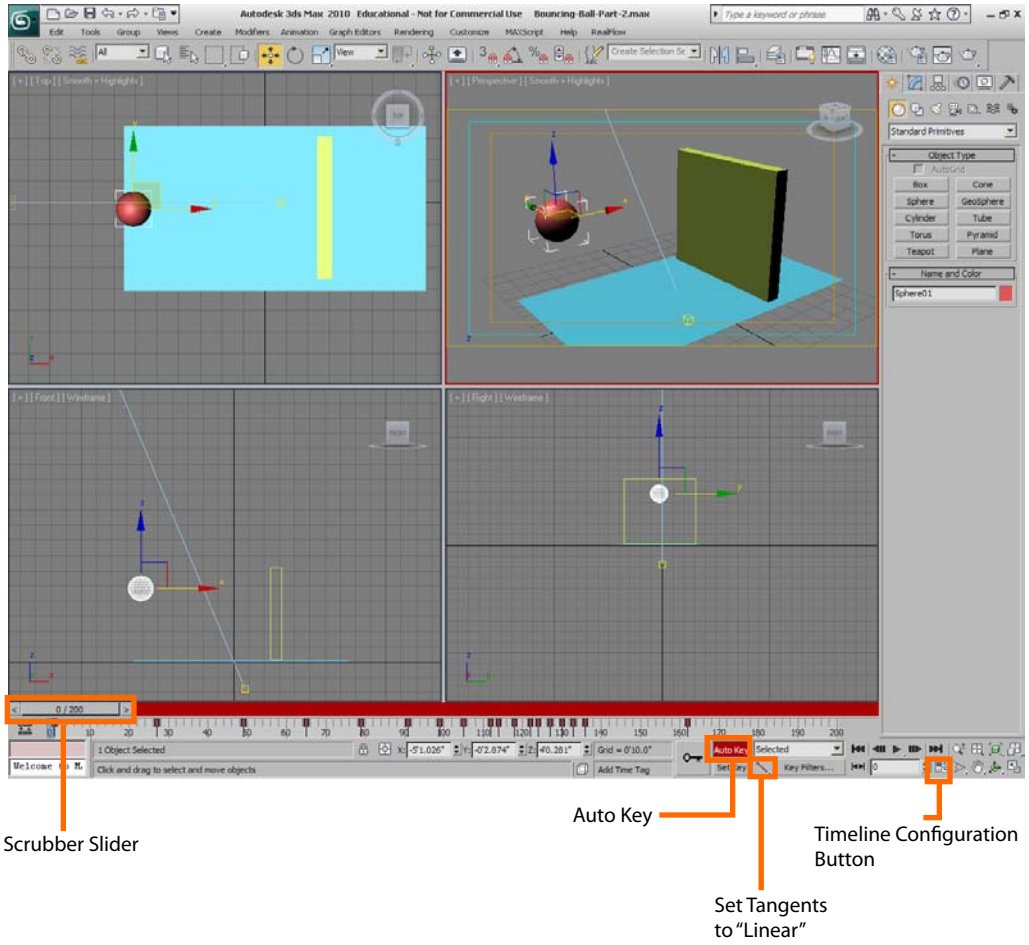
Career Technical Education
SoCal ROC
3D Modeling & Animation

Bouncing Ball Animation



This is a classic problem given to all animators, 2D and 3D. It will teach you basic 3DMax skills like using primitives, setting lights, keyframe animation and rendering as well as simple animation timing skills.



PROCEDURE

1. Create the 3 objects (Sphere, Box and Plane) and arrange as in the diagram below.

2. Turn on the "Auto Key". (the timeline should turn to red). Set the timeline to 200 using the "Timeline Configuration Button"

3. Set the tangents to "Linear".

4. Move the "Scrubber" to frame 20 on the time line, then move the sphere forward a bit and down to the plane.

5. Now move the "scrubber" to frame 35.

6. Move the sphere upwards (but not as high as it was before) and forward to create a bounce.

7. Continue moving the sphere up for 3 bounces, hit the wall, and then 3 bounces back. Each time, make sure the ball bounces less and less high. Just as it would in real life.

8. Roll the ball flat on the floor.

Next, you'll change the bounce from a spiked path to a more natural, smoother path.

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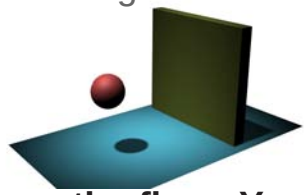
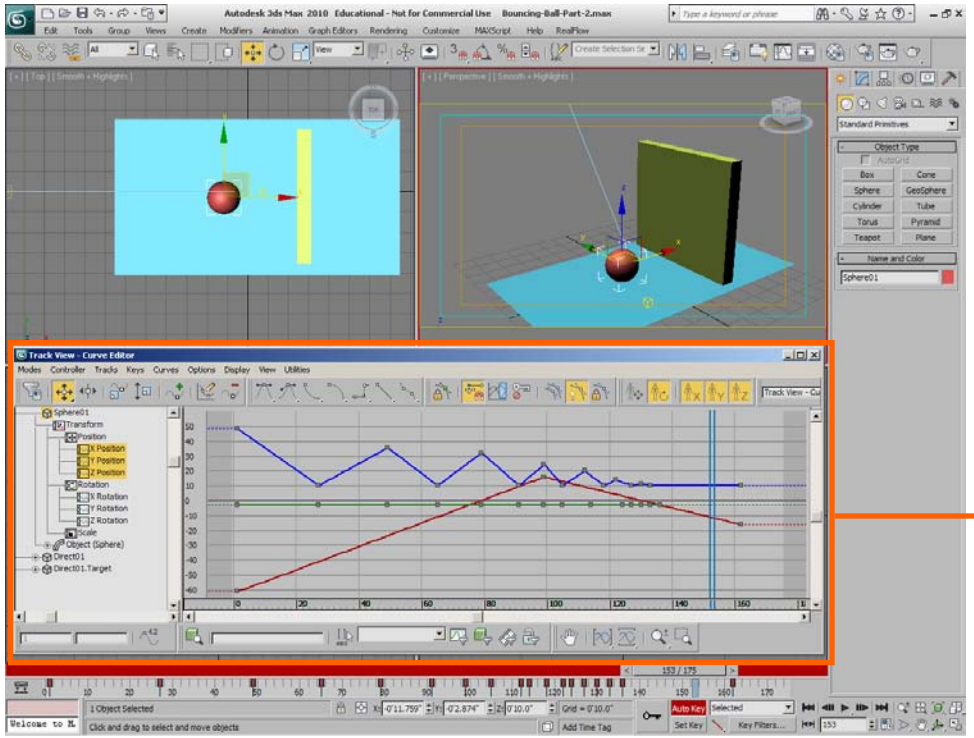


You'll notice that when you play the animation that the ball "Spikes" rather than bounces across the floor. You will fix this by going deeper into 3D Max and use the "Curve Editor".



1. Select the ball.

2. Right click anywhere in the viewport and select "Curve Editor".

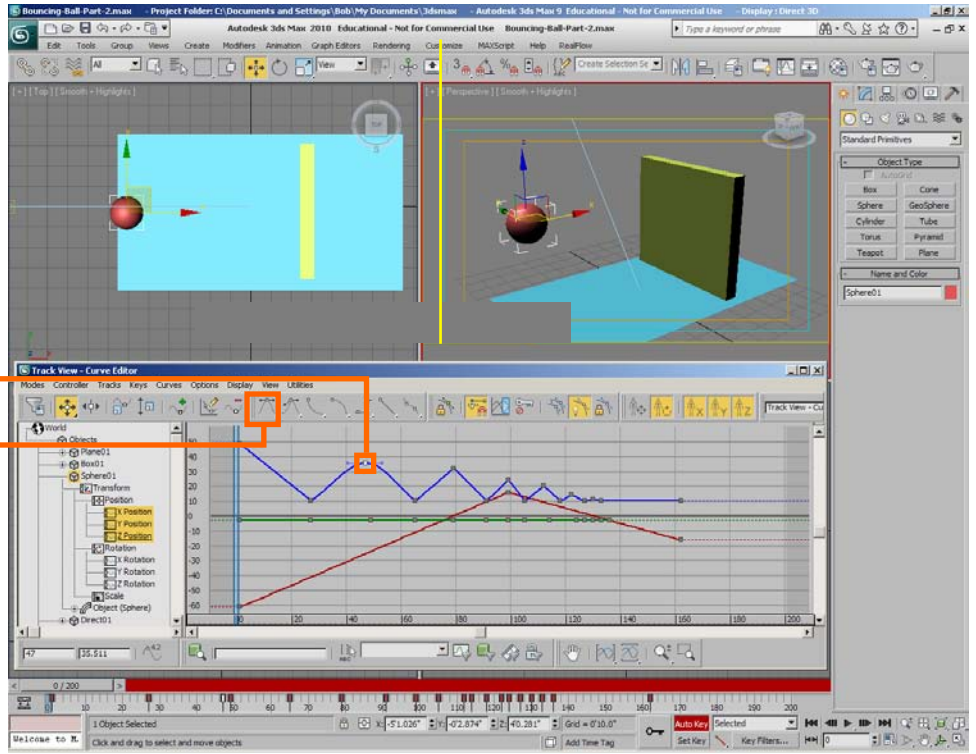
3. This panel will pop-up.

The lines represent the path of the ball

Red Line (X) = The movement of the ball in the back and forth direction.

Green Line (Y) = The movement of the ball in the side to side direction

Blue Line (Z)= The movement of the ball in the up and down direction.



4. Select the"Tangent" of the first blue key frame".

5. Click the "Set Tangents to Auto" button.

You'll see the blue line turn from a spike to a smooth curve.

6. Do the same for the rest of the tangent points.

Play the animation. Now the ball will bounce in a natural manner.