

Modelling Module

Duration: 3 hours

Features covered: approaches to modelling, setting units, setting grid spacing, using object snap, editable splines, precision drawing, using Extrude, Lathe, Bevel, Array and Mirror, Lofting, text, anatomy of an object, sub-object modelling, the Modifier stack, attaching objects, grouping objects.

Introduction

Modelling is at the heart of 3ds max. We have examined how primitives allow the easy creation of a range of simple, geometric objects. This module takes this further by examining several powerful techniques - spline modelling, lofting, and sub-object modelling.

Primitives are a great start to modelling, but they can only take us so far. What happens when we want something that doesn't look like a piece of geometry (or a teapot)? The answer is fourfold:

- Use other modelling techniques
- Combine simple objects together
- Use object modifiers
- Work at the sub-object level

3ds max provides us with a plentiful range of modelling tools:

- Primitives
- Splines
- Sub-objects
- Surface tools
- NURBS
- Compound objects

Only the first three, together with lofts, are suitable for an introductory course. Between them, though, they can supply most of our needs.

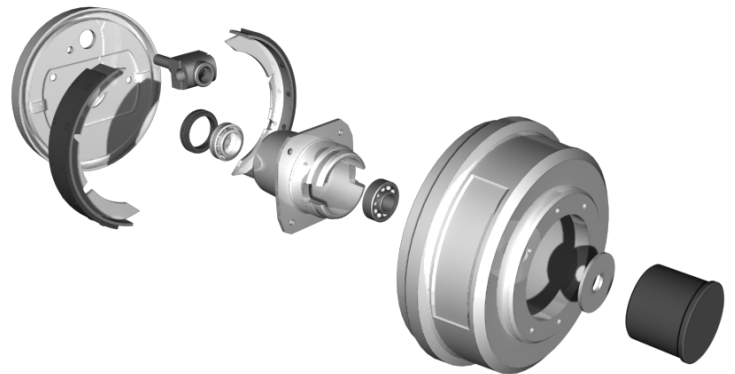


Fig 2.0 some mechanical models
(zabanda media 2005)

8. Sub-object modelling

So far, we have been applying transforms (move, rotate, scale) and modifiers (appearance-changers) to whole objects. What, though, if we want to move or scale part of an object? What if we want to bevel another part? To gain full creative control over object creation, we need to access the sub-object level.

Objects consist of a number of different components (sub-objects). All of these can be transformed or modified to some degree giving us great control of the appearance of models.

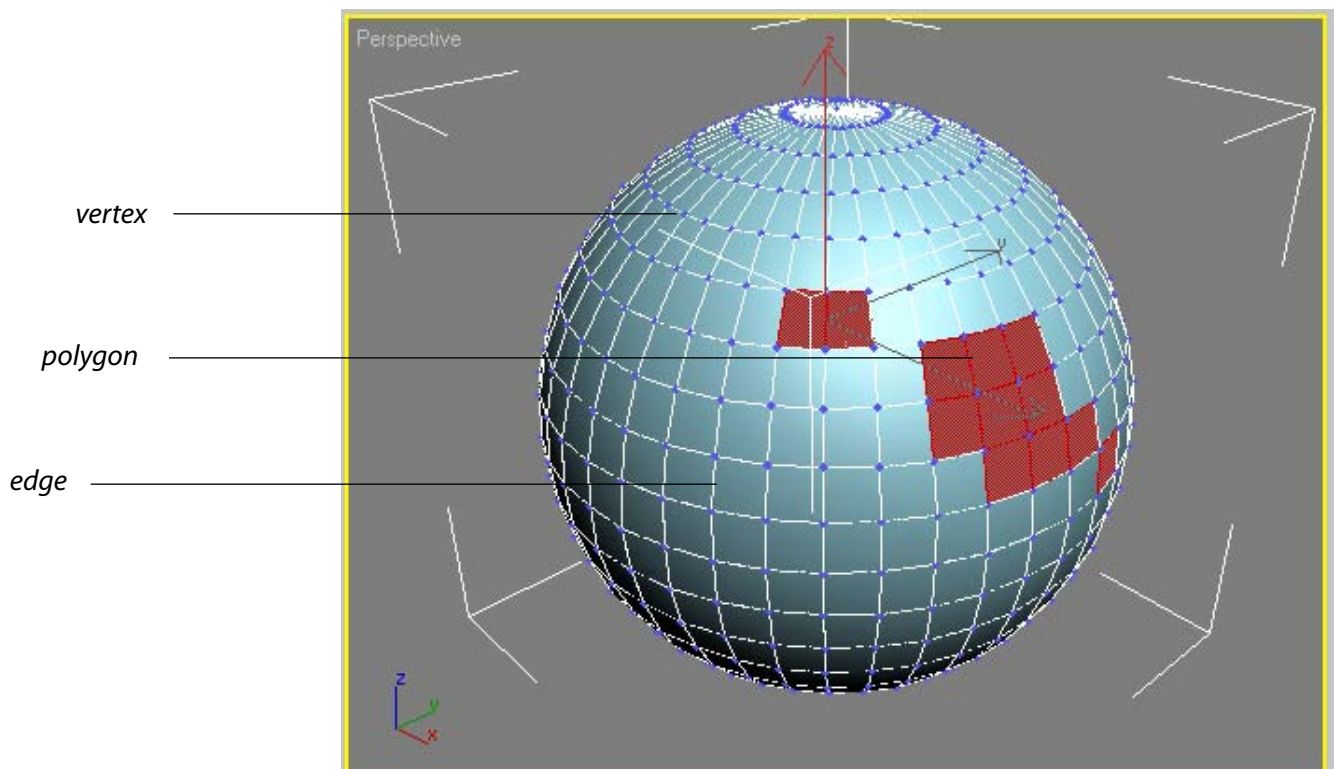


Fig 2.26 anatomy of an object

- **To do: convert a sphere into an editable mesh**

Convert a sphere into an editable mesh, as per tutor's instructions.

- **To do: modelling an orange**

We need some fruit. We will start by creating an orange. In modelling something that is close to, but not quite, a sphere, we will gain insight into the advantages of using sub-object modelling.

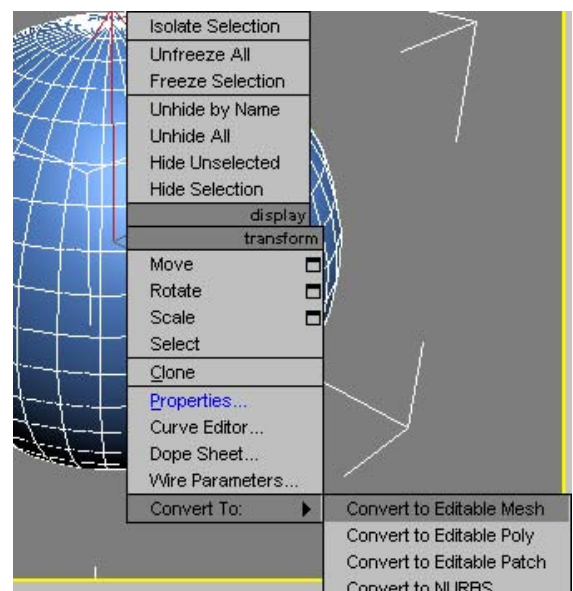


Fig 2.27 Quad menu: convert to Editable Mesh

Model the orange, as per the tutor's instructions.

Save the file as [myOrange01.max](#) under the MyWork folder on the CD

● **To do: convert the orange into an editable mesh**

We have seen that in order to access sub-object components, the model needs to be in an editable form, such as an editable mesh.

Either, continue with your file above, or load [Orange01.max](#) from the Scenes/Modelling_Module directory on the CD.

When you are satisfied that you have something that you like, save the file as [myOrange02.max](#) under the MyWork folder on the CD

● **To do: create several other oranges using the same techniques**

You can either start them from scratch, or you can clone the first orange and annotate at the sub-object level. Use the Scale and Rotate commands to give a little variety to the fruits.

Save the results as [myOrange03.max](#) under the MyWork folder on the CD

Find a completed example as [Orange02.max](#) in the Scenes/Modelling_Module directory on the CD.

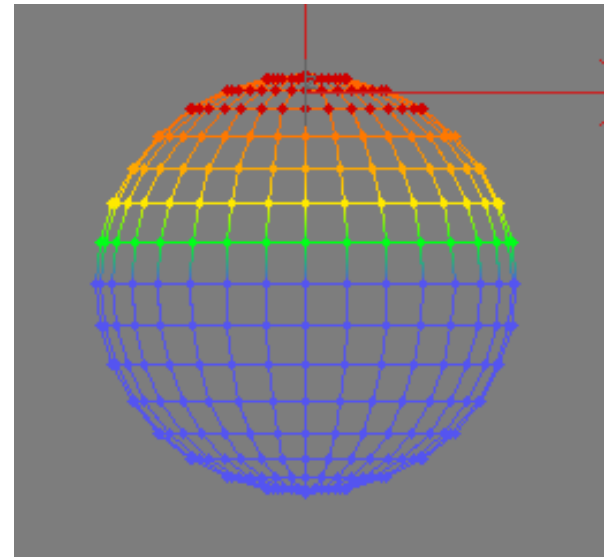


Fig 2.06 soft selection of vetices.

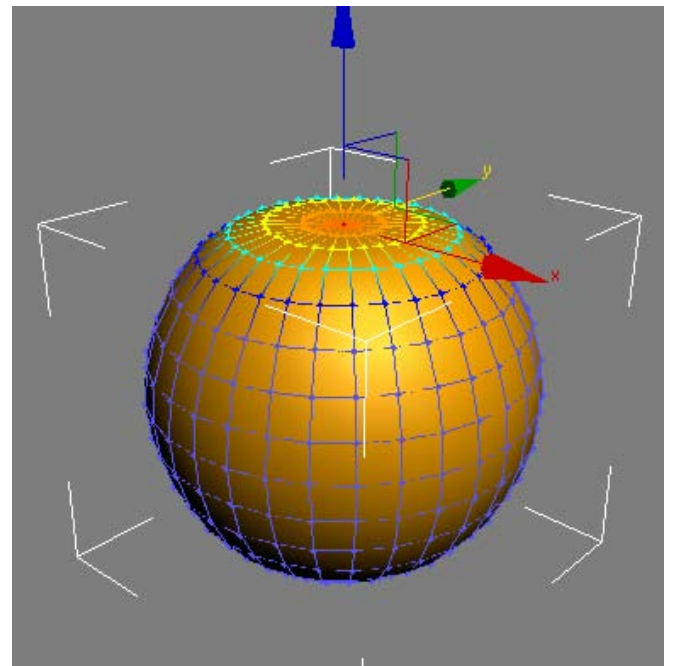


Fig 2.06 use soft selection to pull down the topmost vertex.

Fig 2.06 the Quick Render button.

