

## Using Solid Primitives at Advanced Higher

We have observed, though our central verification events, that there is a degree of confusion with regards to what a solid primitive is and this has led to some centres being 'not accepted' at verification.

### **What is a solid primitive?**

Solid primitives are predefined blocks that can be accessed from a dedicated toolbar or dragged and dropped from a library or palette to create a model using Boolean operations (eg. addition, subtraction, intersection). When inserted into a drawing, the user can enter values for length, breadth, height, etc. Solid primitives are **not** created by drawing circles, rectangles, etc and then extruding - this is defined as an 'object created through extrusion'. The most common solid primitives are box, cylinder, cone, sphere and torus, although there are others subject to the software package being used.

### **Where to find solid primitives**

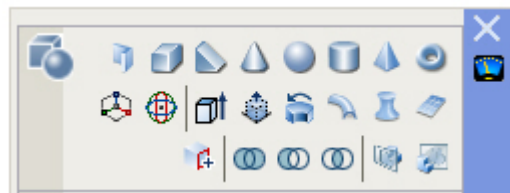
Each software package has its own way of using solid primitives and our verifiers have found that, although various packages are used in schools across the country, the most commonly used packages in NQ Graphic Communication are AutoCAD, Pro Desktop and Inventor.

### AutoCAD

The solid primitives can be accessed from the **Modelling** toolbar as shown.



Later versions of AutoCAD have a **Dashboard** from which the primitives can be dragged.



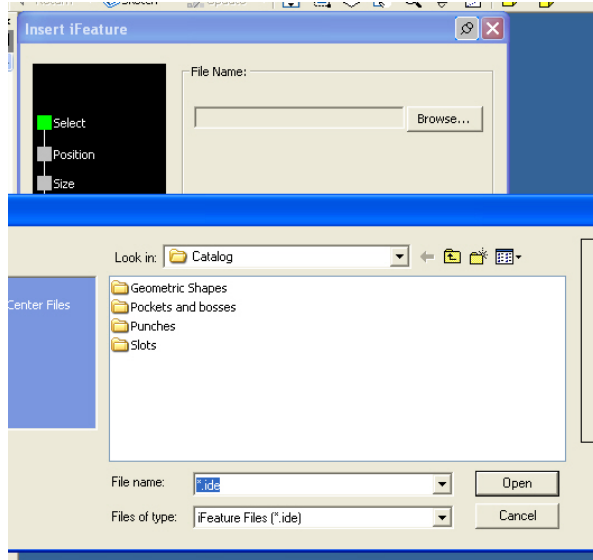
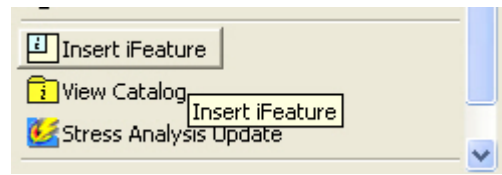
### Pro Desktop

The solid primitives can be accessed from a **Palette** of **Base Shapes** that can be dragged into a drawing and edited to create a model.

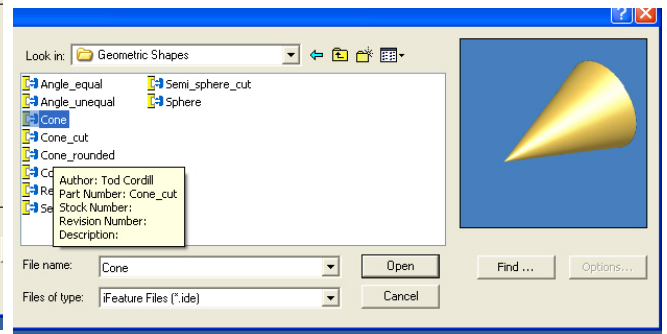


## Inventor

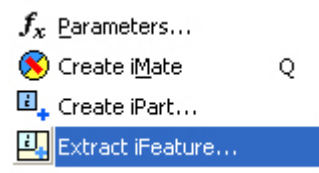
The solid primitives can be accessed from selecting **Insert iFeature** from the **Part Feature** menu.



When you click on **browse**, the following window appears. Open the folder called **Geometric Shapes** to access the solid primitives.



There are not many primitives in this folder to begin with, but you can build your own library of primitives using **Extract iFeature**.



This library can be put anywhere on a network where staff and pupils can access it.

