

Science Cells

Using RapMan





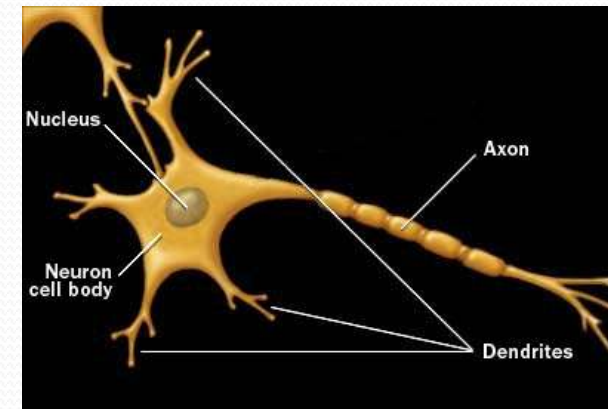
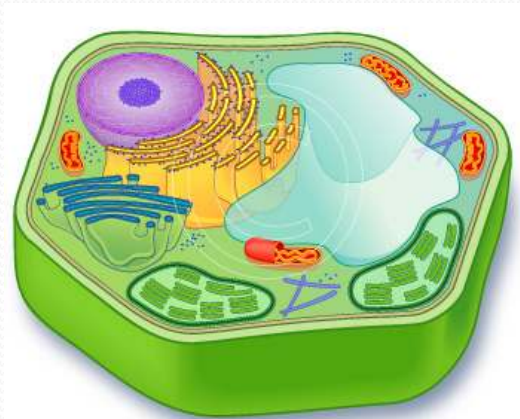
Cells

- Cells come in many different types.... plant, nerve, blood, sperm.... and more.
- “The **cell** is the functional basic unit of life. It was discovered by Robert Hooke and is the functional unit of all known living organisms. It is the smallest unit of life that is classified as a living thing, and is often called the building block of life. Some organisms, such as most bacteria, are unicellular (consist of a single cell). Other organisms, such as humans, are multicellular.”¹

¹ From Wikipedia

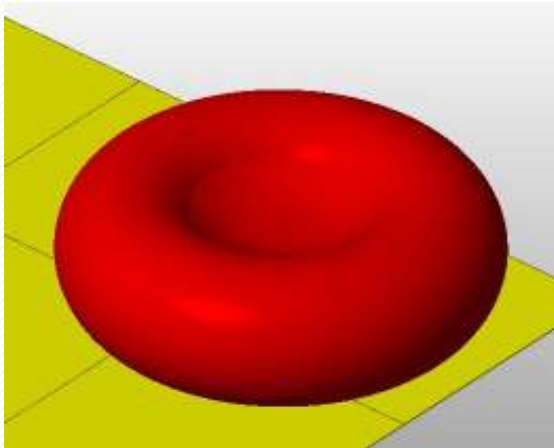
Cell shapes and structures

- Cells take many different forms, some a simple others very complex.
- It is possible to use RapMan to print models of some of the simpler cell structures.



Printing cells

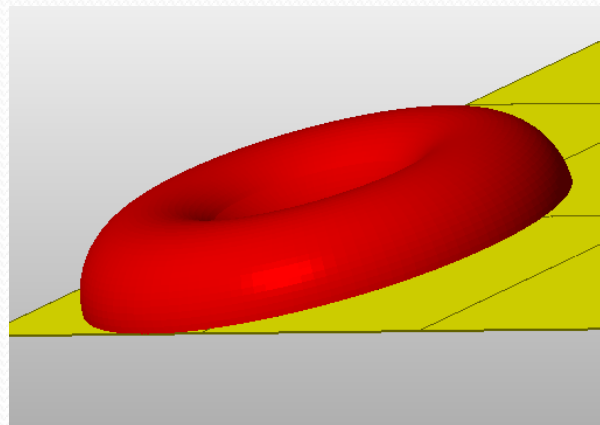
- It is probably best to start with simple cells such as red blood cells.
- 3D design software such as Pro/Engineer, Sketchup, Solidworks or Autodesk inventor can be used to make virtual models of the cells or their component parts.



For Red blood cells it might be fun to
Print it using translucent red PLA

Printing cells 2

- However, many cell shapes would involve overhangs that would require support material to be used... This brings a whole new level of difficulty.
- By splitting the cell model into parts it may be possible to print without overhangs and then glue the parts together. This can be achieved easily in the NetFabb software.



RapMan

- RapMan is a low cost 3D printer available from Bits from Bytes www.bitsfrombytes.com
- Further assistance can be found on the BfB forum and wiki.

Forum <http://www.bitsfrombytes.com/fora/user/index.php>

Wiki <http://www.bitsfrombytes.com/wiki>

Netfabb software <http://www.netfabb.com/>