In this experiment we are going to prepare an onion cell slide and examine it under the microscope.

To do this we will need the following:

A piece of onion layer.

A mounted needle.

A glass slide and cover slip.

Iodine solution to stain cell.

Safety glasses and a microscope.

Let's start the experiment.

Stage 1 is to prepare the onion cell slide.

First, separate the transparent layer of epidermis (skin) from the underside of the onion layer.

Carefully place the onion epidermis on to the glass slide. Make sure the epidermis is flat, not folded or creased.

Add a couple of drops of iodine to the onion epidermis. This will stain the cells allowing them to be seen more easily.

Now cover the cells using the cover slip. Cover slips are made of very thin glass so be careful.

Hold it by the edges to prevent it getting dirty.

Trap the stained epidermis between the cover slip and the slide.

Using the mounted needle, carefully lower the cover slip onto the slide without getting lots of bubbles between the slide and the cover slip.

Stage 2 is to examine the slide under the microscope.

Place the slide on the stage of the microscope.

Use the lowest magnification first and focus the microscope carefully.

Have a look for an area of the slide where you can see the cells clearly and move this to the centre or to the pointer.

Increase the magnification until you can see a few cells clearly and can identify the nucleus and cell wall.

At this stage you could do a simple line drawing of the structures you see and label them.

At National 5 you should be able to identify the following cell structures and also describe their functions.

Cytoplasm, nucleus, ribosome, mitochondria, cell membrane, chloroplasts, vacuole, cell wall and also plasmids, found in bacterial cells.

You should also be able to identify in which type of cell you will find each structure. Animal, plant,

fungal or bacteria.