

Swabbing Cheek Cells

This activity takes about 15-20 mins plus an introduction

Intro:

This activity introduces a younger audience to basic cell structure and how to work a microscope.

The Science:

This experiment demonstrates the simple structure of squamous epithelial cells from the outer epithelial layer of the mouth. Bacteria from our teeth and mouth are viewed as small blue dots.

The cell is the basic structural, functional and biological unit of all known organisms; it is the smallest unit of life. Some organisms (e.g. bacteria) are single-celled, whilst others (e.g. humans) are extremely complex, being comprised of many trillions of cells. There is a massive variety of different types of cells, but they all share common characteristics, genetic material (nucleus) within a gel-like substance (cytoplasm) contained within a membrane (cell wall).

What you will need:

Microscope

Glass microscope slides

NB Sharps

Plastic coverslips

Sterile, individually packed cotton swabs

Methylene Blue Solution (0.5%-1% - mix 1 part stock solution with 4 parts water)

NB Toxic if ingested and - Irritant - wear gloves and use under supervision at all times. Also stains clothing/skin

Plastic pipette/dropper

Tissue

A human cheek

Optional: Paper/pens

Instructions:

Remove a cotton swab from the packet and wipe it across the inside of the cheek. Wipe the cotton swab across the centre of the slide for 2-3 seconds. Optional – create a “smear” of the material by lining the cover slip with the slide and wiping the edge over your specimen. This spreads out the cheek scrapings into a thin layer, making the cells more visible (NB blood samples). If the sample is still wet, allow it to dry for a few minutes before adding a drop of the stain. Gently place a cover slip over the slide and view under the microscope (excess stain can be removed by allowing a tissue to touch one side of the cover slip). View under the microscope - begin with the lowest power objective and work up. Ask the participant what they can see. Optional – ask the participant to draw and label what they can see down the microscope.