***Preparing Wet Mount Microscope Slides***

**Preparing a specimen**

Light microscopes function by allowing light to pass through the specimen to our eye. If the specimen is too thick, the object cannot be seen as clearly or may not be seen at all. Peeling, scraping, slicing and squashing are all techniques used to obtain thin specimens.

**Staining Specimens**

When looking at plant and animal cells under microscopes, we often need to stain the tissue we are looking at in order to see the different parts of the cell. Different stains react with different substances in the specimen. For example, iodine reacts with starch and turns it a blue-black colour. Take care when using stains because they can stain you as well.

**Using Cover Slips**

A cover slip is a very thin piece of glass that is placed over a specimen. It is used to protect both the specimen and the objective lenses of the microscope.

When you put a cover slip on a specimen, you need to lower it slowly to prevent air bubbles being trapped underneath. On a slide, air bubbles look like dark rings.

**Lowering a cover slip**

With one edge of the cover slip resting on the slide, support the opposite edge with a toothpick. Slowly lower the cover slip with the toothpick until it is just above the slide. Quickly remove the toothpick, allowing the cover slip to drop onto the slide. Remove any excess staining solution with a piece of paper towel.

**Activity 1: Looking at Pollen Grains**

Pollen grains are the male sex cells of a plant. They have a hard outer coating that protects the cells. Pollen grains are often bright yellow or orange.

**Equipment needed**: Microscope slide, cover slip, hibiscus stamen, water, eye dropper, toothpick, forceps

**Method:** 1. With the forceps, pull a stamen off the flower and put it on the slide.

2. Smear the yellow part of the stamen onto the slide with the toothpick.

3. Put one drop of water onto the slide and cover with a cover slip.

4. Examine your slide under low and medium magnification and draw what you see below.

Magnification =

Magnification =

**Pollen Grain Diagrams**

**Activity 2: Looking at Onion Cells**

An onion is made of layers, each separated by a thin skin or membrane. This membrane can be looked at by carefully peeling it off the onion and staining it. The membrane is on the rough surface of the onion layer.

**Equipment needed**: Microscope slide, cover slip, onion membrane, staining solution (Methylene blue), toothpick, forceps

**Method**: 1. Take a small piece of onion and using the forceps, carefully remove the membrane on the rough surface.

2. Place a small sample on the slide and add a drop of staining solution.

3. Carefully lower the cover slip using the toothpick.

4. Examine your slide under low and medium magnification. Draw and label what you can see.

Magnification =

Magnification =

**Onion Cell Diagrams**

**Activity 3: Looking at Succulent Cells**

Succulents are plants which have thick fleshy leaves. These thick leaves make it easy to peel a thin layer of cells from the outside.

**Equipment needed:** Microscope slide, cover slip, succulent leaf, toothpick, staining solution (Iodine)

**Method:** 1. Using your fingernail, make a small horizontal cut just under the surface of a leaf.

2. Using this small cut, peel a layer off the surface of the leaf.

3. Place the piece of succulent on a slide and cut off the thick part.

4. Add a drop of staining solution and cover with a cover slip.

5. Examine your slide under low and medium magnification. Draw and label what you can see.

Magnification =

Magnification =

**Succulent Cell Diagrams**

**Activity 4: Looking at Animal Cells**

Animal cells do not have a cell wall and are usually irregular in shape. Different types of animals cells have different structures.

**Equipment needed**: Microscope slide, cover slip, meat (chicken or beef), staining solution (Methylene blue), toothpick,

**Method**: 1. Using a toothpick, scrape the surface of the meat.

2. Smear the sample on the slide and add a drop of staining solution.

3. Carefully lower the cover slip using the toothpick.

4. Examine your slide under low power, medium power and high power. Draw and label what you can see.

Magnification =

Magnification =

**Animal Cell Diagrams**