



Microbiology Lab



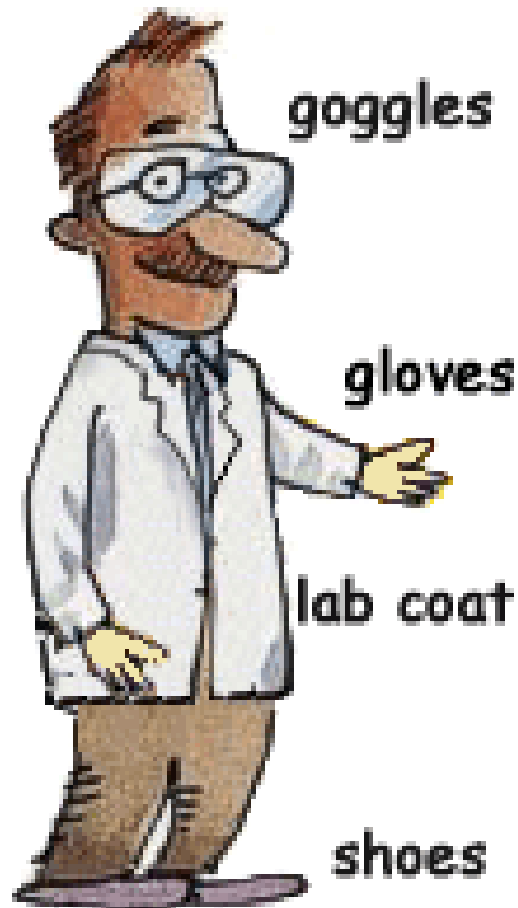
General Microbiology

140 MIC

Lab 1 :



The way a microbiologist look !



What should I wear in the lab?

- Lab coat.
- Do not wear the lab coat outside the lab.
- Gloves.**
- Proper Clothing and closed shoes.
- Hair should be tied back.
- Contact lenses should not to be worn in the laboratory.



For the safety of everyone working in the lab, it is important to follow lab rules :

- Cell phone is not allowed.
- No drink or food allowed inside the Lab.
- Do not place any personal items (bags, coats, extra books) on the lab bench.
- Chemicals take as much as the experiment need.
- Don't open the chemical near the fire.
- Never remove any of chemical substance.
- Follow the written experiment description



Clean, clean and clean !

- Clean your equipment and area before leaving or you will be marked down.
- Do the staining steps near the sink then open the water until the whole stain is removed.
- Never throw used matches, tissues, or cotton inside the sink!
- Washing hands.
- Disinfect the bench top with (alcohol 70% or Dettol 50%) before and after each lab.



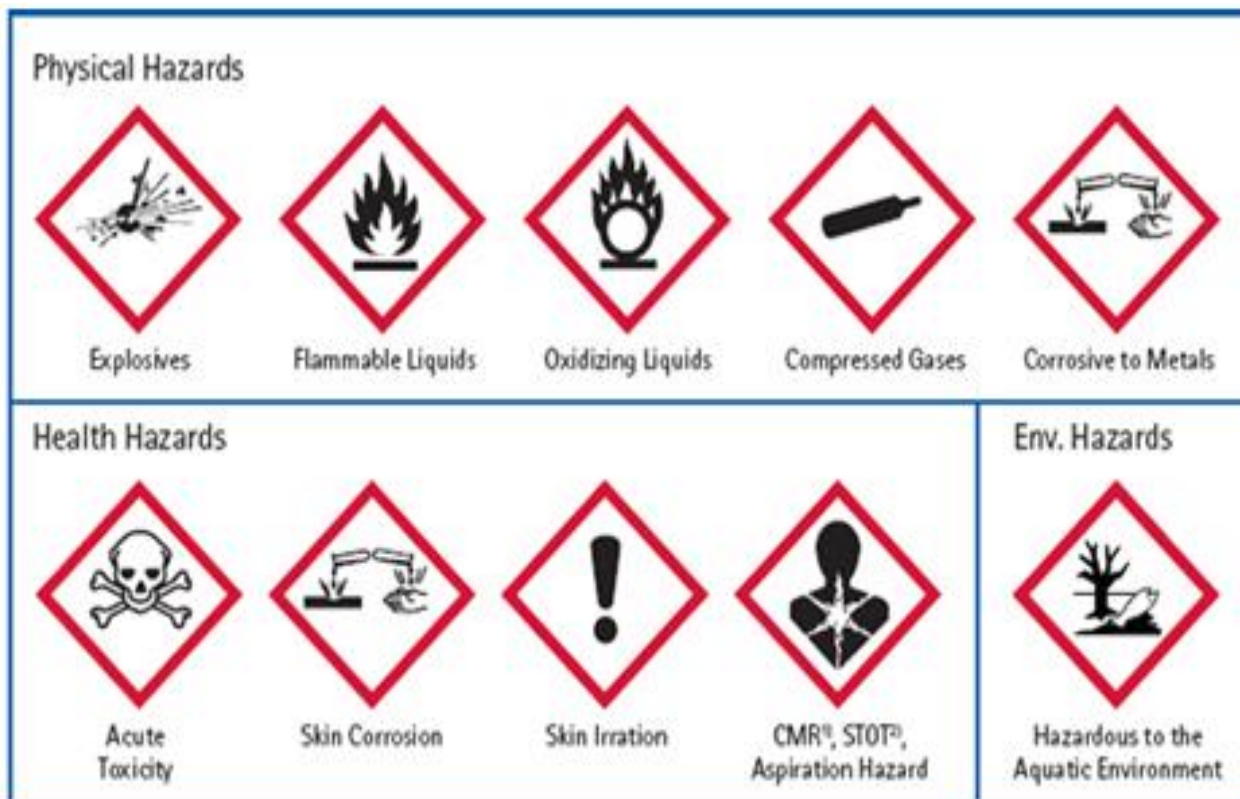
Laboratory safety common hazard symbols:

- Old hazard symbols:



Laboratory safety common hazard symbols (cont`)

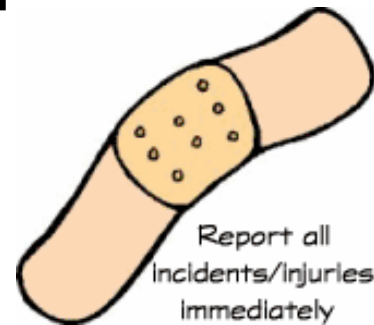
New hazard symbols:



First aid

Chemical burns rinsed with water

- Immediately rinse with a large amount of cool water.
- Flush the area for at least 20 minutes.
- Do not use a hard spray of water.
- Remove the chemical substance.
- Take off any clothing or jewellery that has the chemical on it.
- If the area still has a burning sensation after 20 minutes, flush the area again with flowing water for 10 to 15 minutes.



Microbiology

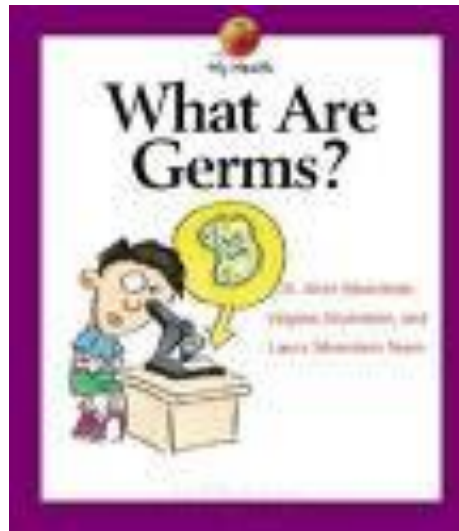
What is Microbiology?

- **Micro** - too small to be seen with the naked eye
- **Bio** - life
- **logy** - study of

(The science that studies micro-organisms)

Organisms included in the study of Microbiology

- Bacteria
- Algae
- Fungi
- Viruses
- Protozoa



Microorganisms - Microbes - Germs

The Compound light Microscope

▪A device for magnifying objects that are too small to be seen with the naked eye.

Used to observe very small organisms.





Part name	Function
<u>Ocular or eye piece</u>	To increase sample size



Part name	Function
<u>Body tube</u>	Holding ocular

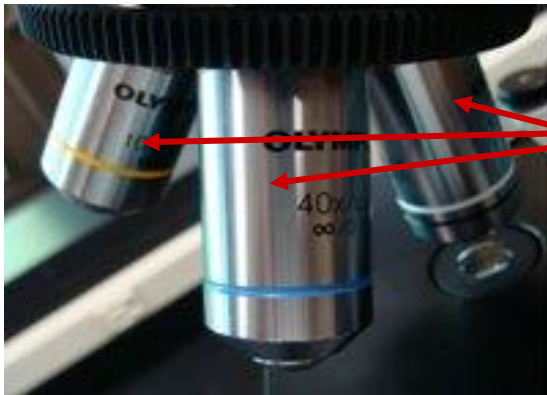


Part name

Nose Piece

Function

Holds objectives

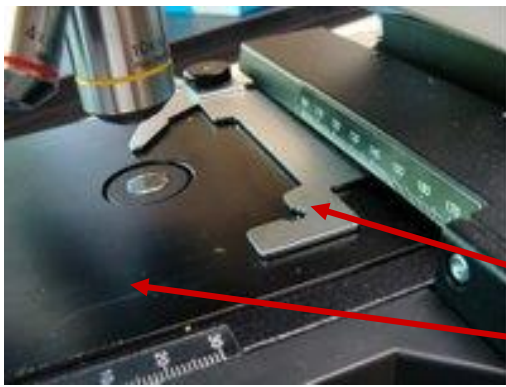


Part name

Power objectives 4X-10X-40X-100X

Function

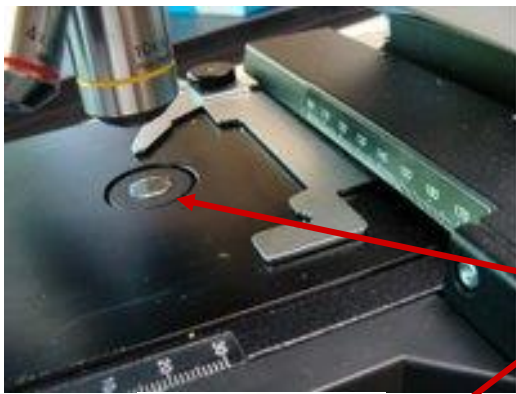
, increase size X times



Part name	Function
Stage clips	To hold the slide
Stage	flat platform where the slide is placed.



Part name	Function
<u>Iris diaphragm</u>	Adjusts the amount of light that reaches the specimen
<u>Light source</u>	The light source for a microscope



Part name

Condenser lens

Function

Directs light through specimen
(Gathers and focuses light from the
onto the specimen)



Part name

Coarse adjustment

Function

Brings the specimen into general
focus

Fine adjustment

Fine tunes the focus and increases the
detail of the specimen



Part name	Function
Stage Control	To move the stage left and right.



Part name	Function
<u>Base</u>	To support the microscope

Calculation of magnification

Total magnification =

(Objective magnification)(Ocular magnification; which is typically 10x).
i.e. (4X objective) (10X ocular) = 40X total magnification.

Immersion oil, which has the ability to bend light equivalent to that of glass, allows more light to be gathered and allows a greater amount of resolution.

If the stage is a great distance away from the objective when the higher powers are used, the microscope has been adjusted incorrectly.



- adjust oculars for **both eyes!**

Don't shut one eye while observing under the microscope!



Examining the specimen

- <https://www.youtube.com/watch?v=-b3Eejf4rDQ>
- <https://www.youtube.com/watch?v=RJe577AQqvA>

