الاستان	طب	فسم
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#### **Microb**iology

# Lab: 1 Laboratory Safety Measures and the use of light Microscope

Learning outcomes

- Be familiar with general safety measures in a microbiology laboratory.
- Be familiar with different parts of a compound light microscope and its use.
- Be familiar with different morphological types and arrangements of bacteria At the end of this lab you will be:

General safety measures in a microbiology laboratory.

- Light microscopy.
- Morphology and arrangements of different bacteria.

# Lab safety





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# Light Microscope

5.5



3rd Class 2020

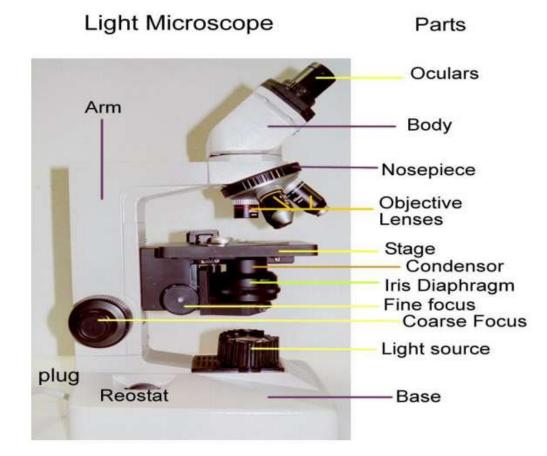
Eman Wahab

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#### **Microb**iology

\* To be familiar with the different parts of a compound light microscope used in microbiology.

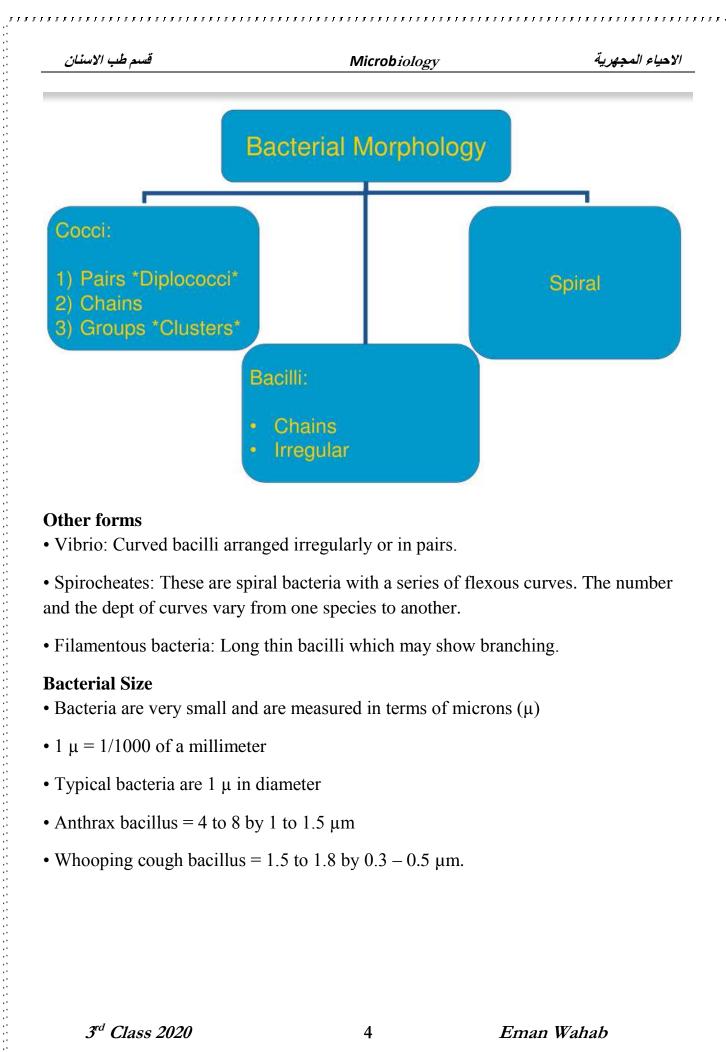
\* To learn to focus an object using objective lenses.



### **Morphology of Bacteria**

- To differentiate between Cocci, Bacilli and Spirochetes.
- Morphology:

- Morphology means the study of form and structure.
- Bacteria have a variety of sizes and shapes
- Bacteria that posses cell wall exist in three
- Distinct morphologic forms.



### **Other forms**

• Vibrio: Curved bacilli arranged irregularly or in pairs.

• Spirocheates: These are spiral bacteria with a series of flexous curves. The number and the dept of curves vary from one species to another.

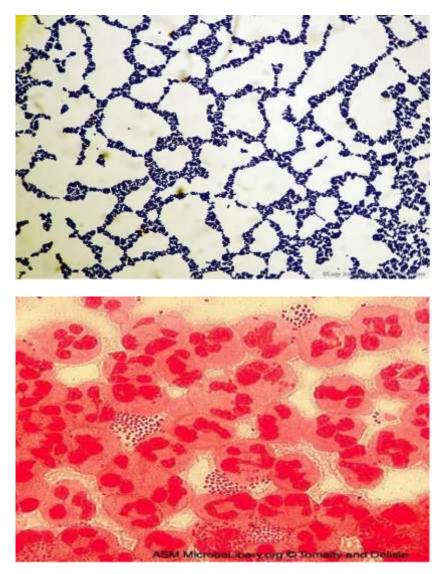
• Filamentous bacteria: Long thin bacilli which may show branching.

### **Bacterial Size**

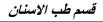
- Bacteria are very small and are measured in terms of microns  $(\mu)$
- 1  $\mu = 1/1000$  of a millimeter
- Typical bacteria are 1 μ in diameter
- Anthrax bacillus = 4 to 8 by 1 to  $1.5 \,\mu m$
- Whooping cough bacillus = 1.5 to 1.8 by 0.3 0.5 µm.

# Examples

- Cocci in pairs = *Neisseria*
- Cocci in chains = *streptococci*
- Cocci in clusters = *staphylococci*
- Bacilli in pairs = *Proteus*, *Kleb*
- Bacilli in chains = *Bacillus species*
- Spirocheates = *Trepenoma Pallidum*



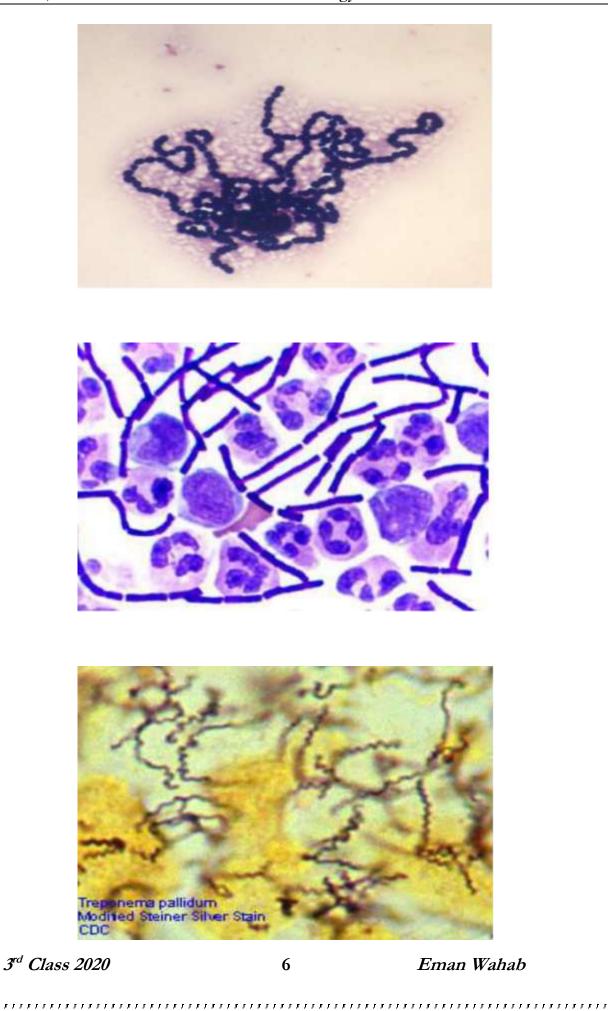
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# Forms of bacteria

