# Microbiology Equipment for Week 1

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| petri dish | solid media w/ agar |
| glass test tubes | broth or agar put in test tube rack |
| media used | nutrient broth, nutrient agar (basic growth media) |
| transfer instruments | disposable loop, Nichrome loop, needle for inoculating |
| stain tray | for placing slides to stain |
| stain | simple stain |
| heat source | Bunsen burner (not @ CPC), candle, incinerator |

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Clean tables and wash hands !!
ALL tubes, plates, slides should be labeled. Use tape with tubes, sharpies on plates, slides
Have all equipment and specimens at your work station ready to go !

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Transfer technique for Staining from test tube broth :

1. Sterilize loop by "flaming" until wire is red. Use incinerator @ CPC.
   Always hold the handle and keep fingers and handle away from heat source.
2. Allow transfer instrument to cool. DO NOT wave it around !!
3. Remove cap or other cover of tube. Flame neck of tube by passing it through the flame 1x back and forth.
4. Obtain drop of broth in sterilized loop portion of instrument
5. Re-flame neck of tube and recap
6. Transfer organism to the properly labeled slide. Gently mix to create a thin emulsion.
7. Re-flame loop and place in test tube rack. Do not set it on the counter top.
8. Repeat above steps to make other slides with other organisms.
9. Finally, follow the proper procedure for that particular stain technique.

Transfer technique for staining from an agar plate

1. Remove petri dish lid.
2. Select the isolated colony of interest and label back of petri dish with sharpie.
3. Sterilize loop or needle by "flaming" until wire is red. Allow to cool
4. Touch transfer instrument to side of agar if needed to make sure loop or needle is cool.
5. Use sterilized transfer instrument to obtain sample from selected colony.
6. Close petri dish cover.
7. Transfer to properly labeled slide (with water drop) and mix gently, spread it out.
8. Re-flame loop or needle and place back in test tube rack.
9. Follow the proper procedure for that particular stain technique.

# Microbiology Laboratory Equipment

A. Inoculating Tools

inoculating loop
inoculating needle
cotton swab
serological pipet : completely delivers its volume
Mohr pipet : fluid must be stopped at a calibrated line
Pasteur pipet
glass spreading rod

B. Heat Source

Bunsen burner
Candle
Incinerator

C. Media : can be classified based on physical, chemical, functional properties

1. Physical Classification of Media
   * liquid => broth, milk, infusions
   * semisolid => motility and other tests
   * solid => liquefiable agar (can be melted)
     Non-liquefiable (rice grain, egg, meat) : can not be melted

2. Chemical Classification of Media
   * General Purpose => to support broad spectrum
     Maintain cultures for laboratory use
     Nutrient agar, nutrient broth, brain-heart infusion (BHI), Trypticase soy agar (TSA)

* Enriched Media => special growth factors (vitamins, blood, AA, Serum, hemoglobin)
  Blood agar, chocolate agar

3. Functional Classification of Media

* Selective => only one microbe grows
  MSA (mannitol salt agar) for *Staph*
  MacConkey agar (lactose fermentation vs. non-fermentation)
  EMB (eosin-methylene blue)
  Tellurite
  Sabrouraud's Agar for isolation of fungi

* Differential => all microbes grow, look different (size, shape, gas)
  TSIA (triple sugar iron w/ phenol red agar)
  MacConkey
  MSA

* Misc. Media
  O2 reducing
  CH2O fermentation
  Assay for drugs
  Enumeration for food, H20, milk bacterial counts