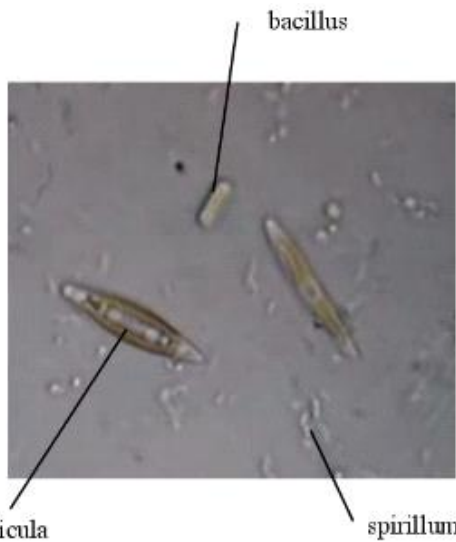
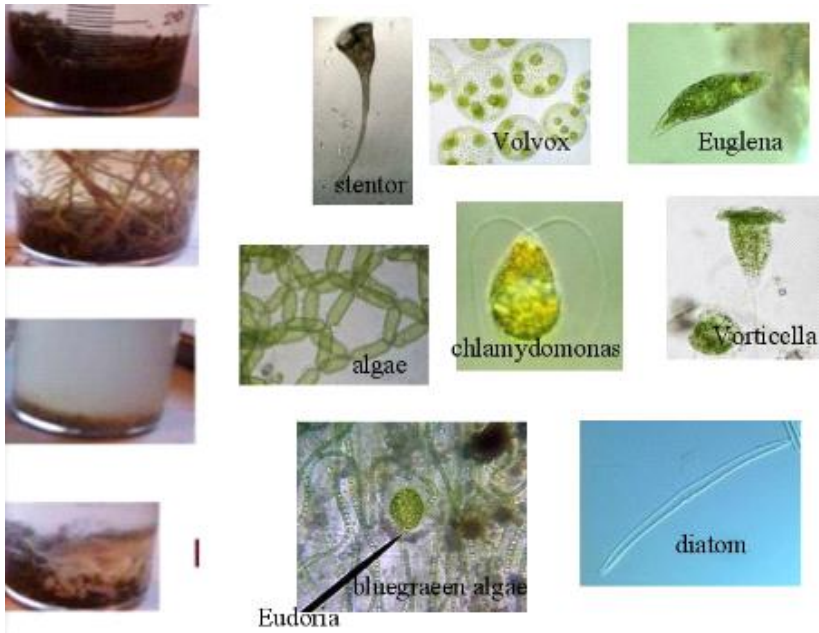


# M2 Labs

Friday, June 12, 2009  
9:14 PM

VoiceThread <http://voicethread.com/share/559015/>

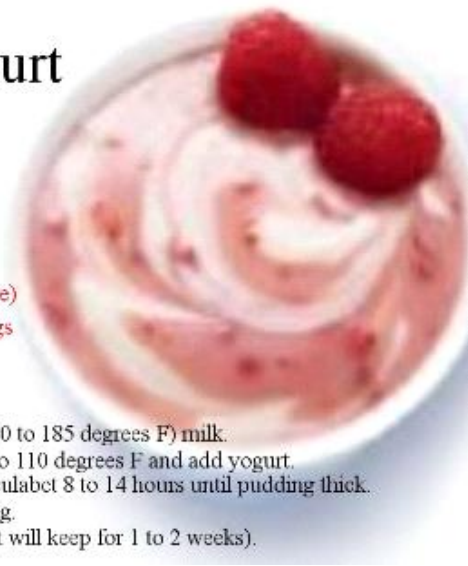
| Slides   | Notes |
|--|-------|
|  <p><b>Module 02:<br/>Kingdom Monera</b></p> <p>Lecture 1: The Colony<br/>Lecture 2: Metabolism and Reproduction<br/>Lecture 3: Classification</p> <p>👉 Lab Day</p> <p>Interactive Practice</p> |       |
| <p><b>The Colony</b></p>  <p><b>Good Guy Bad Guy</b></p> <p>👉 Cultures<br/>Extremophiles</p>  |       |



<http://www.youtube.com/watch?v=UiHiq57P33I&NR=1>

Make a culture  
**Make Yogurt**

- 1 quart milk (any kind)
- 2 tblsp yogurt (live culture)
- Sweeteners and flavorings

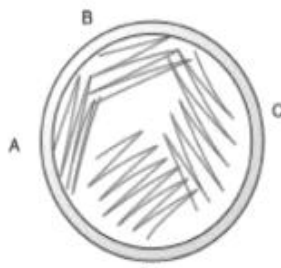


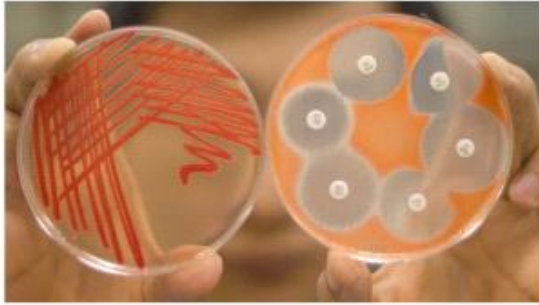
Stenlize (double boiler 180 to 185 degrees F) milk.  
 Get it to and hold at 105 to 110 degrees F and add yogurt.  
 Add to containers and incubate 8 to 14 hours until pudding thick.  
 Sweeten and add flavoring.  
 Place in the refrigerator (it will keep for 1 to 2 weeks).

# Plentiful Bacteria To Look At



Set up a stream studies tank - Tracking the 2-tier bacteria

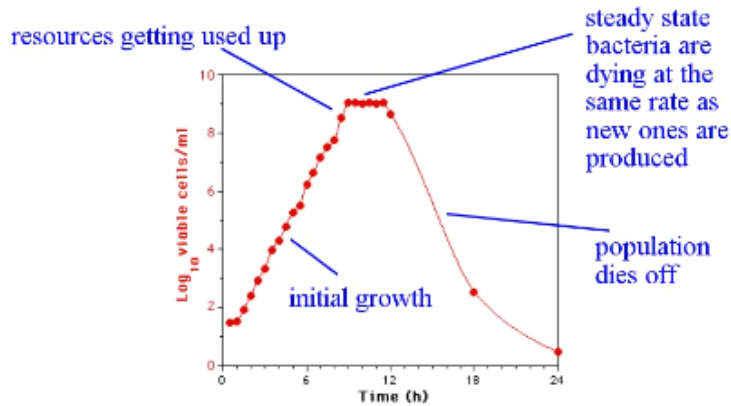




Conditions conducive to bacterial growth ...

- Moisture
- Moderate temperature
- Nutrition
- Darkness

# Population Growth

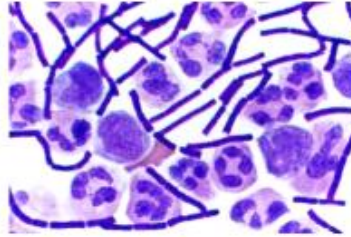


## Gram Positive

blue purple Simple cell wall

Phylum Firmicutes

pneumonia



## Gram Negative

red pink Complex cell wall

Phylum Gracilicutes

gum disease



### Gram's stain procedure

- Apply a thin film of the specimen to a clean glass slide and allow it to air dry.
- Fix the slide in methanol for 1 minute. Alternatively, fix by quickly passing the slide through a flame several times.
- Flood the slide with crystal violet stain for 30 seconds.
- Rinse gently with running water.
- Flood the slide with Gram's iodine for 30 seconds.
- Rinse gently under running water.
- Apply decolorizer so it runs over the stained area until no more color washes out.
- Rinse gently with running water.
- Flood the slide with safranin counterstain for 30 seconds.
- Rinse gently under running water and allow the slide to air dry.

coccus



diplo



tetra



sarcina



strepto



staphylo

bacillus



diplo



strepto

spirillum



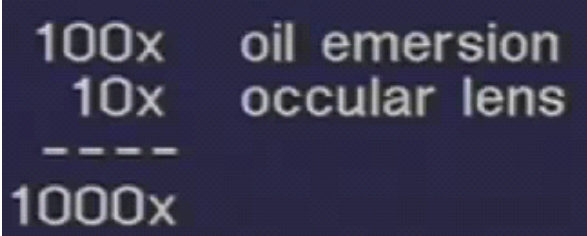


Additional Resources for later study:

[http://www.disknet.com/indiana\\_biotech/b.htm](http://www.disknet.com/indiana_biotech/b.htm)

Heat treating a bacteria culture:  
<http://www.youtube.com/watch?v=WrNckI6E3GA>  
 After heat treating, you can do the gram stain ...  
<http://www.youtube.com/watch?v=YC55fjEtOLQ>

Progression of gum disease seen via microscopy:  
<http://www.youtube.com/watch?v=byNdMddOksc>

If the Biomystery is not done in this module for any reason, then use the images below to extend the lab. No time to do the one below and the biomystery.

| Screenshot  | Progression notes  |
|---|--|
|    | <p>Power of magnification needed to see dental plaque</p>  |
|   | <p>Sample taken from normal, healthy gums healthy gingiva and a minor amount of plaque)</p>                            |
|  | <p>You will see non-motile streptococci that may exhibit brownian motion. You may see stray squamous (skin) cells.</p> |



Gingival inflammation becoming evident with bleeding tendency



More mature plaque: red and white blood cells plus strep., spiro, rods, and cocci. You will see true motile bacteria. White blood cells will have amoeba type movement.

Arrow is pointing to a white blood cell.



Calculus has formed



Calculus nodule

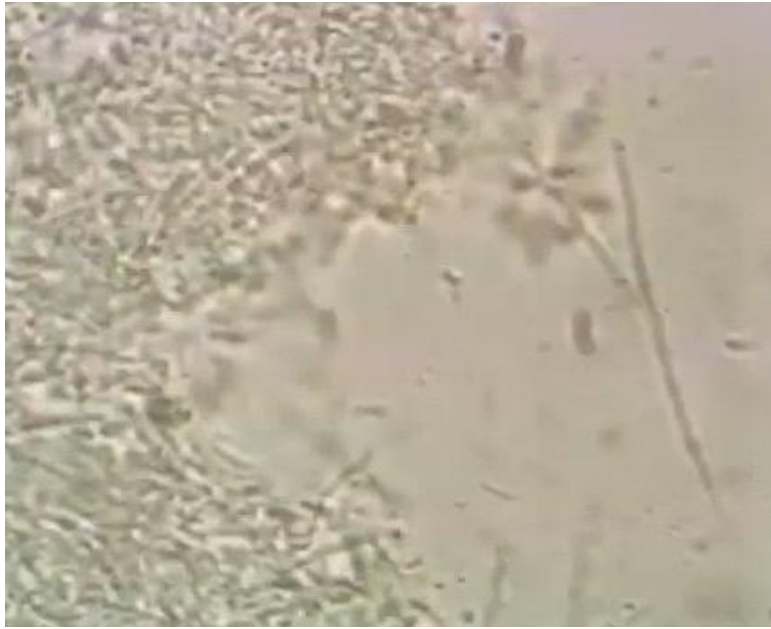


Advanced colony of bacteria in the gums.



Severe gingivitis





Your Hygenist will measure the space

Hydrogen peroxide mouth rinse can help because it has a disinfecting capability just like it works to clean and disinfect cuts.

Brushing

Flossing

Going to the dentist

Listerine mouthwash (prescription mouth rinse is next to the Listerine in the picture)

Hydrogen peroxide (also has whitening properties - chemically de-bonds stains from teeth)

Chewing gum - Stimulates saliva glands which naturally cleanse teeth. Xyletol has been found to fight and treat bacteria causing cavities.

|  |  |
|--|--|
|  | Minerals from saliva and toothpaste can fill the porous material below the tooth from receding gums          |
|  | Repairing receding gums: Do not use hard bristled toothbrush. Use a soft one. Brush up with your toothbrush. |