



About Science Prof Online PowerPoint Resources

- Science Prof Online (SPO) is a free science education website that provides fully-developed Virtual Science Classrooms, science-related PowerPoints, articles and images. The site is designed to be a helpful resource for students, educators, and anyone interested in learning about science.
- The SPO Virtual Classrooms offer many educational resources, including practice test questions, review questions, lecture PowerPoints, video tutorials, sample assignments and course syllabi. New materials are continually being developed, so check back frequently, or follow us on Facebook (Science Prof Online) or Twitter (ScienceProfSPO) for updates.
- Many SPO PowerPoints are available in a variety of formats, such as fully editable PowerPoint files, as well as uneditable versions in smaller file sizes, such as PowerPoint Shows and Portable Document Format (.pdf), for ease of printing.
- Images used on this resource, and on the SPO website are, wherever possible, credited and linked to their source. Any words underlined and appearing in blue are links that can be clicked on for more information. PowerPoints must be viewed in *slide show mode* to use the hyperlinks directly.
- Several helpful links to fun and interactive learning tools are included throughout the PPT and on the Smart Links slide, near the end of each presentation. You must be in *slide show mode* to utilize hyperlinks and animations.
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Laboratory Exercise 3a

Identification of Unknown Bacteria (Part I):

How to Prepare an Isolation Streak Plate

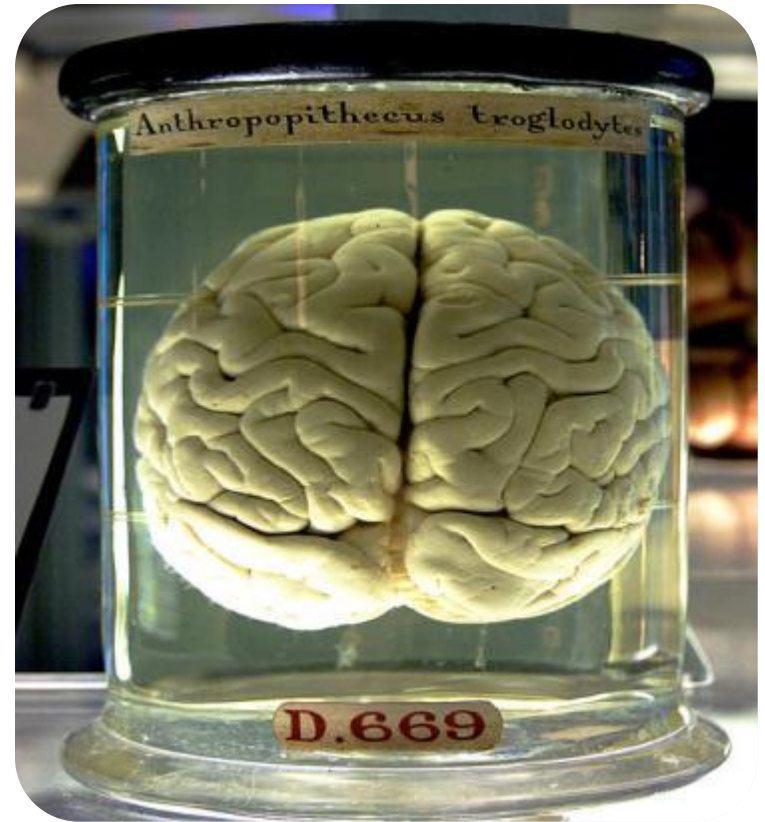


Plug in and turn on microincinerator now!

What am I going to learn from Lab Topic #3?

Identification of Unknown Bacteria

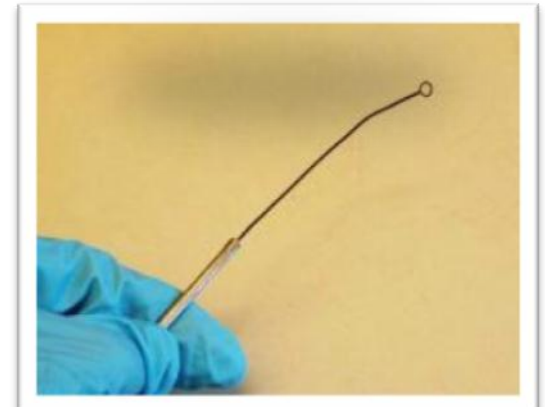
- You will practice performing isolation streak plates using aseptic technique.
- How to prepare bacterial smears which include controls and an unknown.
- You will be introduced to three differential staining techniques: Gram stain, Acid-fast stain & Endospore stain.



**Please plug in your
microincinerators.**

Isolation Streak Plates & Aseptic Technique

- You'll be using an **unknown bacteria** that you will be identifying in the next lab.
- To help identify our unknown we will culture it onto [MacConkey's](#) & [Mannitol Salt](#) using **streak plate method**.
- To do a [streak plate technique](#), we will use an [inoculation loop](#) (aka smear loop, inoculation wand or microstreaker).
- Simple tool used to retrieve an inoculum from a culture of microorganisms.
- Always sterilize in [microincinerator](#) until loop becomes red hot **before** and **after** each use.
- By doing this, the same tool can be reused in different experiments without fear of cross-contamination.
- Be sure that your inoculation loop has **cooled** before using it to retrieve inoculum or to streak a plate!
- If you hear medium **sizzle** when you touch it with loop, the loop is too hot!



When obtaining a bacterial sample from a tube or plate of media do so **gently!** The bacteria is growing as a thin film on top of the media! Don't scrape so hard that you have pieces of agar in your sample!

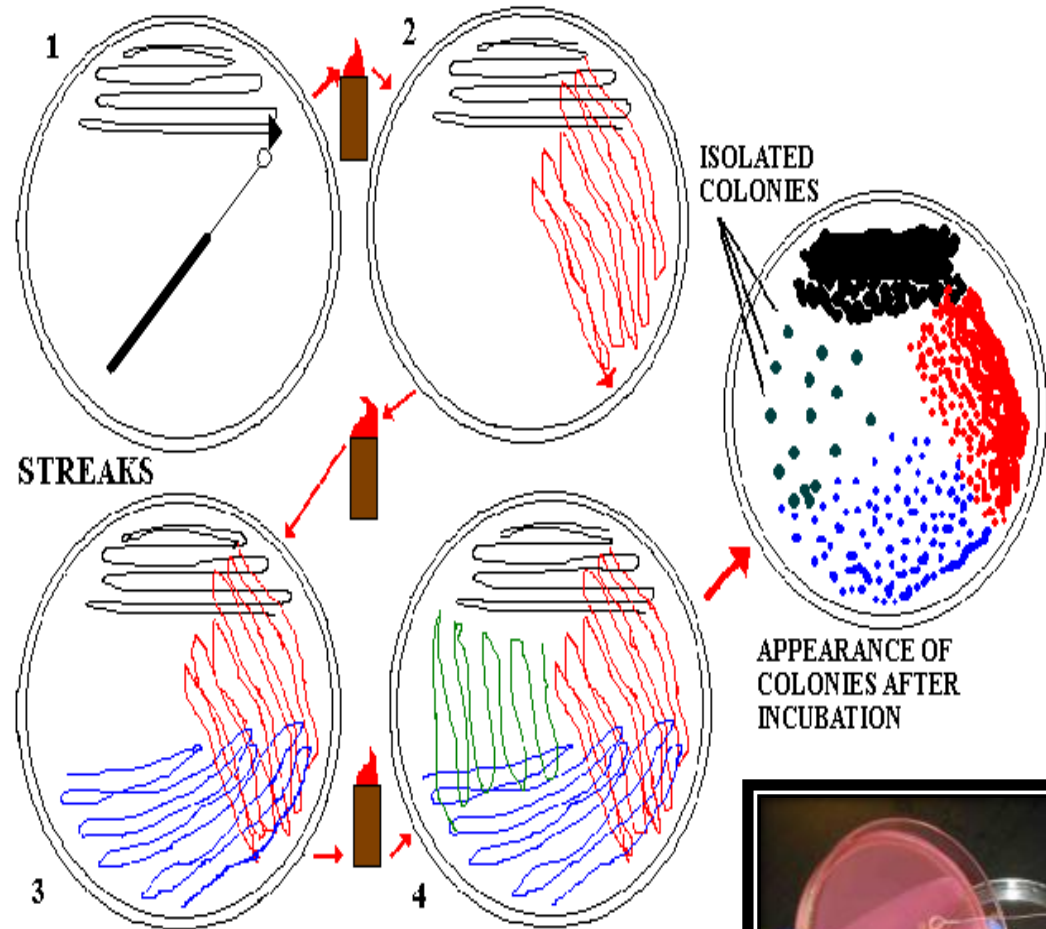


If obtaining bacterial sample from slant tubes:

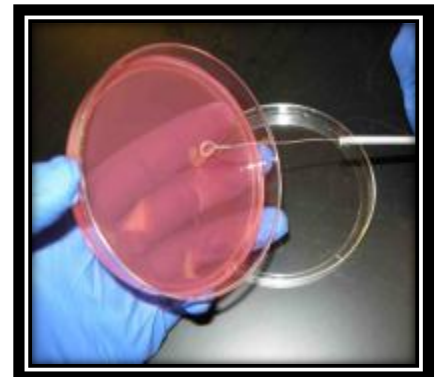
- never pick up test tube by the cap.
- do NOT set cap down on lab bench
- flame neck of the test tube before & after obtaining sample.

Isolation Streak Plates & Aseptic Technique

- Streak plating is used to isolate a single type of bacteria.
- This technique spreads out original "parent bacteria" in a sparse pattern that, after growth, results in individual colonies.
- After incubation, the 4th quadrant of your plate should have dots.
- These small "dots" are individual colonies, and represent millions of bacteria of the same type.



* **IMPORTANT!!!**: Be very gentle when streaking the sample onto the plate. Try not to gouge the surface of the medium with your inoculation loop.



Confused?

Here are links to fun resources that further explain streak plate technique and differential staining:

- [Bacterial Identification Laboratory](#) Main Page on the Virtual Microbiology Classroom of [Science Prof Online](#).
- [Streak Plate Procedure](#) Animation with narration from Sinauer Associates.
- [Streak Plate](#) Interactive Animation from MSU. Test your skill to see if you can do a virtual streak plate procedure that produces isolated colonies.

Smart Links



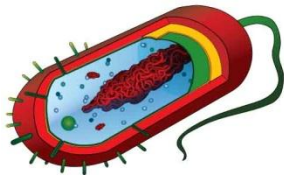


Are microbes intimidating you?

Do yourself a favor. Use the...

Virtual Microbiology Classroom (VMC) !

The VMC is full of resources to help you succeed,
including:



- practice test questions
- review questions
- study guides and learning objectives

You can access the VMC by going to the Science Prof Online website

www.ScienceProfOnline.com