

**EXPOSING
The
INTIMATE STRANGERS©**

**Science Activities
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PURPOSE:

To demonstrate the microorganisms that we may be exposed to from our environmental/personal surroundings.

MATERIALS:

**Aerobic Count Petrifilm™ Plates (AC)
Yeast/Mold Petrifilm™ Plates (Y/M)
Plastic Dropper, beral type, with 1ml marking
Bottled water
Spreader
Scotch Tape
Zip-loc or sandwich bag**

PROCEDURE:

- 1. Activate (AC)Petrifilm plate with 1ml of bottled water. (Place Petrifilm on flat surface, peel back top layer and add 1ml of bottled water to center of plate and then permit top layer to role back.)**
- 2. Using Petrifilm spreader, with ridge side down, gently press down on Petrifilm plate to distribute water in an even circle, between Petrifim**
- 3. The plate should be permitted to remain this way for a few minutes, about 5**
- 4. Peel back top layer of Petrifilm and gently apply to any surface you might suspect the presence of microorganisms.**
- 5. Reseal Petrifilm Plate, place in Zip-loc bag and incubate at room temperature.**
- 6. Repeat 1-5 using Y/M Petrifilm plate**
 - *Do not incubate at body Temperature, this is to minimize growth of possible pathogens**
 - Seal Zip-loc sandwich bag to keep students from opening plates**
 - Place both Petrifilm Plates, back to back, in same bag. Thus results can be viewed without opening bag.**
 - Do not incubate for more then 72 hours. Molds may take a little longer to grow.**
 - STERILIZE Petrifilm plates before disposal, DO NOT ATTEMPT TO SUBCULTURE.**

RESULTS:

The growth on aerobic (AC) Petrifilm plates, demonstrated by red colonies, indicates the presence of microorganisms. Each visible colony, derived from a single microorganism, is composed of millions.

The growth on Yeast/Mold (Y/M) Petrifilm plates, demonstrated by blue-green mold and brown yeast colonies, indicates the presence of yeast or mold colonies. Bacteria will not grow on this plate. This Petrifilm plate, contain ERITHROMYOCIN, which inhibits the growth of bacteria. ERITHROMYOCIN irritates mucous membranes (for example: lips, mouth, eyes) so students should not expose this plate to them.

The number of red dots or blue-green dots (colonies) provides you with an indication of the microorganisms on the surface being tested. It also differentiates between bacteria and yeast/molds.

POSSIBLE EXTENSION ACTIVITIES:

- ❖ The number of Petrifilm plates used, can be minimized by sectioning the circle into quadrants using a magic marker, before activation.**
- ❖ Then scotch tape can be used to transfer “microorganisms” from surfaces being tested. The scotch tape will not adhere to a wet surface.**
- ❖ You can also use sterilized disks saturated with an antimicrobial agent, to test for their effectiveness. *minimize the amount of liquid on disks.**
- ❖ Bottle water may be distributed into sterile screw capped plastic tubes, to minimize water being contaminated by students.**
- ❖ Petrifilm plates are FDA approved for 18 months. However with proper storage I have found them effective beyond this date, when used in a non-research activity.**

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