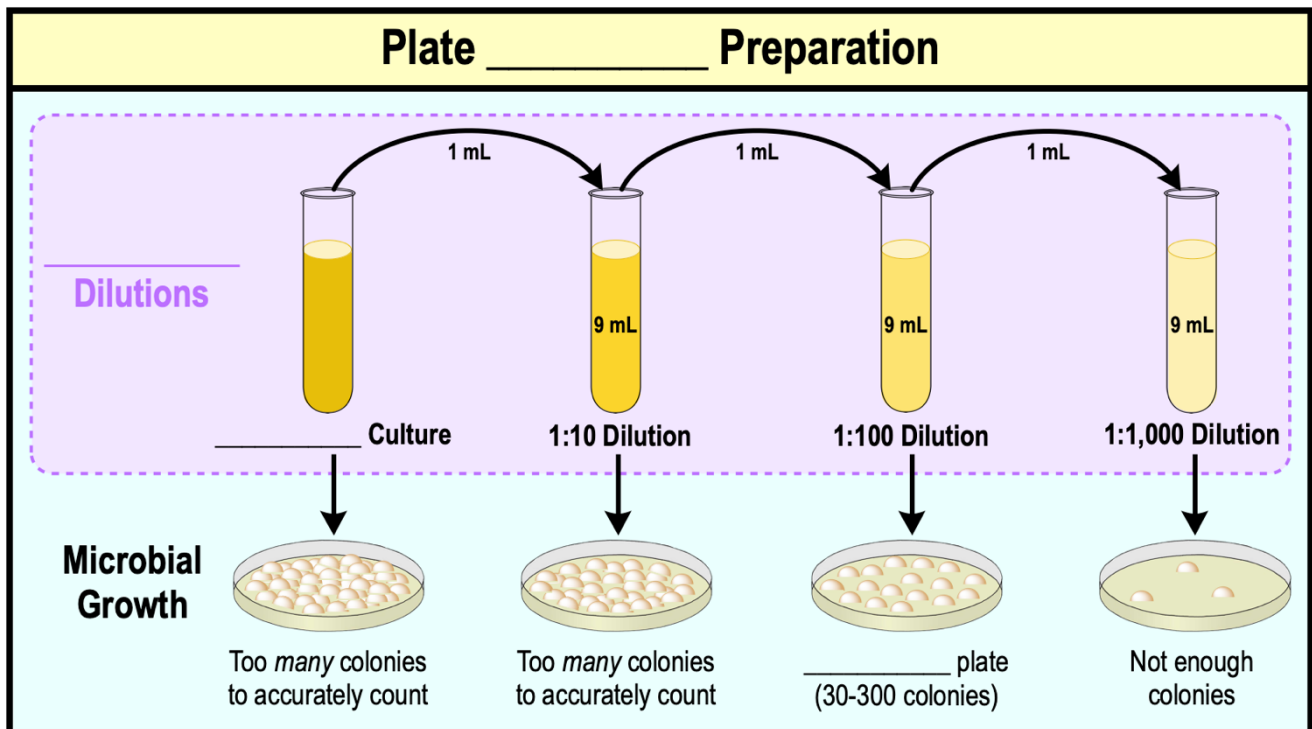


CONCEPT: MEASURING GROWTH BY PLATE COUNTS

- Recall: *Viable cells* are _____ cells that are capable of multiplying on growth media.
 - Counting *viable cells* has an advantage over direct cell counting which can include nonviable (_____) cells.
 - Requires the use of *solid* growth media in a *petri dish* (_____) that cells are grown & counted on.

Plate Counts

- **Plate counts:** process of counting the number of _____ *cells* in a culture after they are *plated*.
 - Assumes that each *colony* on the plate is formed from a _____ cell.
- Liquid culture is transferred to solid media & incubated to determine the *Colony Forming Units* (_____)s).
 - _____ **Forming Unit:** represents a *viable cell* capable of multiplying to form a colony.
 - *Number of* _____ s: represents number of viable cells initially added to the plate.
- Culture must be _____ to get an easy number of CFUs to count using *serial dilutions*.
 - Scientist must know which dilution they used to count to accurately calculate the number of CFUs.



PRACTICE: Viable cells have what characteristics?

- Viable cells are able to grow and multiply on growth media.
- Viable cells are able to multiply and form a colony.
- Viable cells are also known as CFU's.
- All of the above are characteristics of viable cells.

CONCEPT: MEASURING GROWTH BY PLATE COUNTS

PRACTICE: Why is a culture diluted during plate counts?

- a) Because it would be incredibly tedious to count all of the viable cells in an undiluted sample.
- b) To give the microbiologist an easy number of viable cells to count.
- c) To remove the dead or non-viable cells from the microbial culture.
- d) A and B.
- e) A and C.
- f) B and C.

PRACTICE: What must be assumed when using the plate counting method for measuring microbial growth?

- a) A single cell is formed from a colony on each plate.
- b) Each colony that you count on a plate is formed from a group of cells that you must average after.
- c) Each colony that you count on a plate is formed from a single cell.
- d) Each colony forming unit (CFU) you count is formed from multiple cells.