- Bacteria are adapting to a new environment & not reproducing at maximum rate

2. LOG/EXPONENTIAL PHASE:
    - Rate of bacteria reproduction is close to/at theoretical maximum

3. STATIONARY PHASE:
    - Total growth = 0
    - Number of new cells = number of dying cells
        - Due to COMPETITION FOR NUTRIENTS; LACK ESSENTIAL NUTRIENTS; ACCUMULATION OF TOXIC WASTE; LACK OF OXYGEN

4. DEATH/DECLINE PHASE:
    - Reproduction nearly ceases & death rate increases
        - Population falls

6A: Counting Cells Using a Haemocytometer:

Haemocytometer: thick microscope slide with rectangular indentation & engraved grid lines used to count cells divided into 4 corner squares with 16 smaller grids within it

- Holds 0.1 mm^3 volume
- DON'T COUNT CELLS ON GRID LINES

1. Dilute sample of nutrient broth by HALF with equal parts TRYPAN BLUE
    - Trypan blue dyes dead cells BLUE; allows the identification of living cells so you can count them
2. Number of live cells counted within the 4 corner squares and a mean is calculated

6A: Counting Cells Using Optical Methods: Turbidity:

Turbidity: method to measure concentration of substance by measuring amount of light passing through it; a specialised form of COLOURIMETRY

- As number of bacterial cells in culture INCREASES, the sample becomes MORE TURBID/CLOUDY
    - The more turbid a solution, the more light it absorbs and less light passes through
        - Shows how many microorganisms are present