

Living Things • *Enrich*

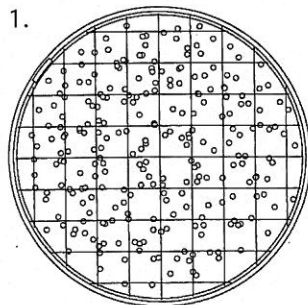
Bacteria Counts

Many scientists use bacteria in the course of their research. They must provide the bacteria with the proper conditions for growth.

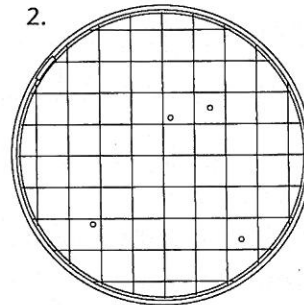
This is how one laboratory grows bacteria. A certain amount of bacteria are placed into a solution of water and nutrients the bacteria need as an energy source. After a period of a few days, a small amount of this solution is poured onto a *petri dish*, a shallow, round container with a cover, made from transparent plastic. Inside the petri dish is a layer of *agar*, usually a gelatin-like material that also contains nutrients and on which bacteria can grow. The petri dishes are then put in a warm, moist place for a week. After a week, the bacteria on each dish are counted. To do this, the scientist places each dish under a large magnifying glass that has a grid similar to graph paper drawn on it. She then counts the number of spots of bacteria growing on the agar in each of the squares on the grid. The individual bacterium is not counted; rather, each spot is actually a colony of bacteria. The scientist knows approximately how many bacteria are in a colony, so once she knows the number of colonies growing on a petri dish, she can calculate the number of bacteria present.

Here are the drawings one of the scientists made in her laboratory notebook of the petri dishes she examined. She has also noted the conditions the bacteria were grown in next to each drawing.

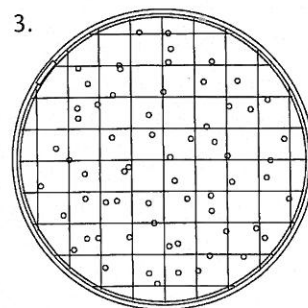
Study the drawings and the information next to each dish. On a separate sheet of paper, write a brief description of the conditions of each dish and explain why the bacteria appeared as they did.



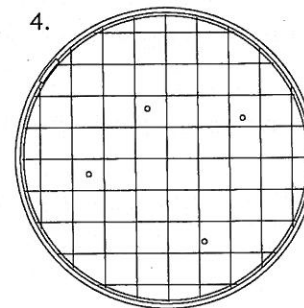
Growing conditions:
Fresh agar
37°C
moist environment
checked after 1 week



Growing conditions:
Fresh agar
0°C
moist environment
checked after 1 week



Growing conditions:
Old agar, past
expiration date
37°C
moist environment
checked after 1 week



Growing conditions:
Fresh agar
37°C
moist environment
checked after 1 month