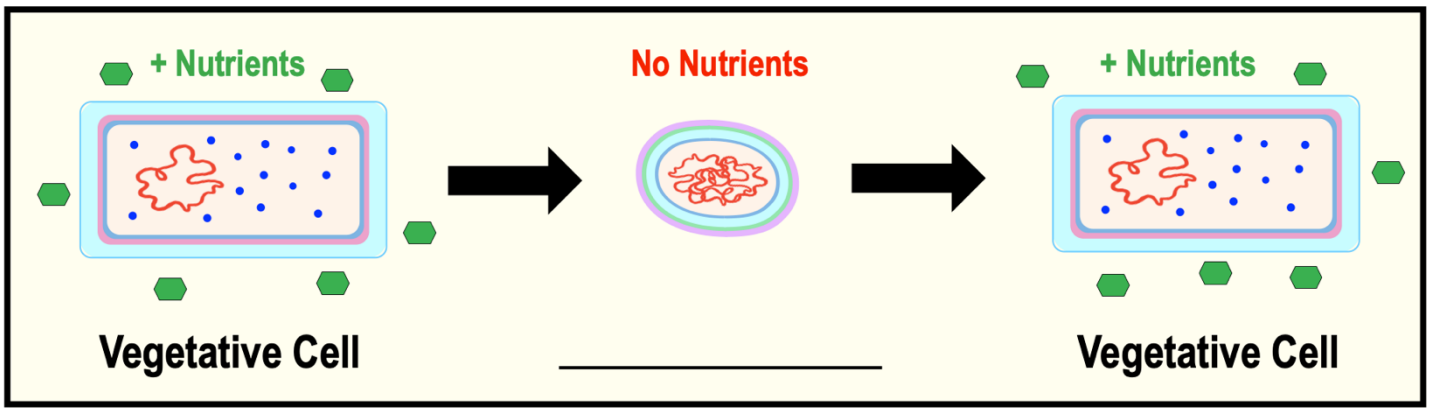
CONCEPT: ENDOSPORES

- *Recall:* John Tyndall discovered a heat-resistant form of bacterial cells which were later termed *endospores*.
- **Endospores:** a _____ cell produced by some bacteria that are resistant to damaging conditions.
  - □ Resistant to conditions like extreme _____, *toxic* chemicals & _____ depletion.
    - □ Endospores are _____ a form replication, they are a form of *survival,* it starts & ends with a *single* cell.
- _____ **Cell:** a normal, replicating cell that is not dormant.

EXAMPLE: Vegetative cell forms endospores when nutrients are depleted.



- *Endospores* are usually only produced by the gram-_____ bacteria *Bacillus* & *Clostridium.*
- Endospores are *dormant* like winter clothes in the summer in the **Back** of your **Closet** (when temp. is **positive** Celsius).

PRACTIC: Endospores are:

a) A dormant cell-type.
b) A type of vegetative cell.
c) A form of reproduction.
d) Sensitive to damaging environmental conditions.

PRACTICE: Formation of endospores _____.

a) Allows bacterial reproduction.
b) Occurs when the cell is in thriving environmental conditions.
c) Is called germination.
d) Can be triggered by adverse environmental conditions.
e) Occurs in all bacterial cells.

CONCEPT: ENDOSPORES

PRACTICE: What 2 bacterial genera produce endospores?

a) *Escherichia* and *Bacillus*.

b) *Staphylococcus* and *Streptococcus*.

c) *Clostridium* and *Bacillus*.

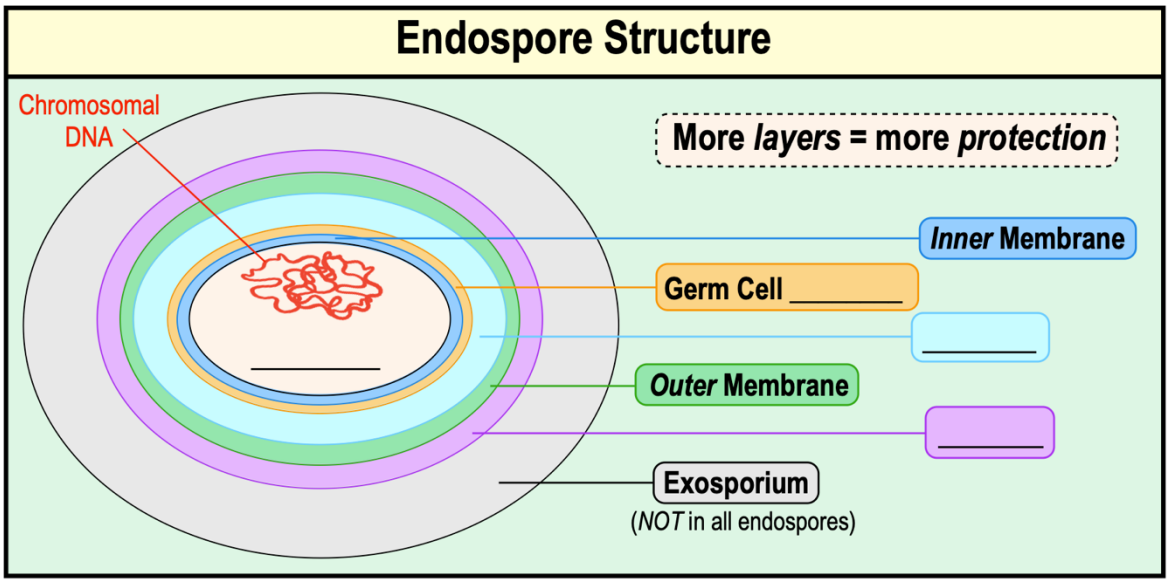
d) *Enterobactor* and *Clostridium*.

e) *Citrobacter* and *Staphylococcus*.

Endospore Structure

●An *endospore* consists of 5-6 layers surrounding the innermost region called the _____.

□ The more _____ an endospore has, the more *protected* it is from the environment.



●**Sporulation:** process of *endospore* _____ from a *vegetative cell* when the environment is unfavorable.

PRACTICE: An endospore contains all of the following except:

a) Exosporium.

b) S-layer.

c) Cortex.

d) Germ Cell Wall.

e) Spore Coat.