# SBI3C
# Bacteria

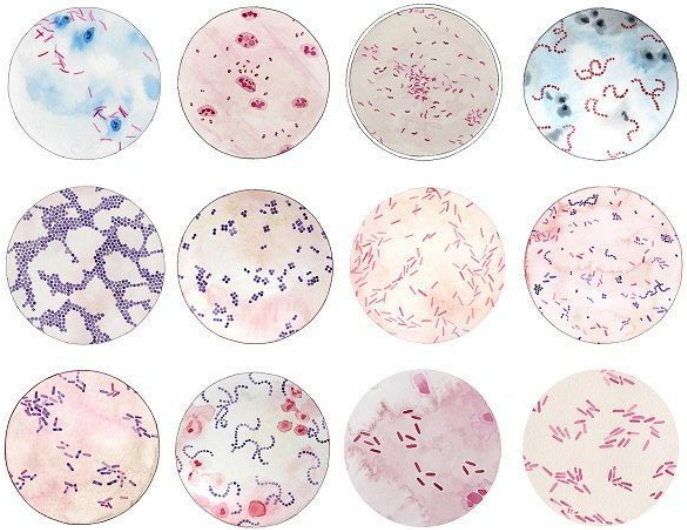
# Bacterium = 1

# Bacteria = many

**Let's try to remember this, 'kay?**

# What do we already know?

- Prokaryotic
- Unicellular
- Microbes



# Archaebacteria

**are very old species.**

They are **extremophiles:** they live in extreme conditions like deep oceans, salt or mineral deposits, glaciers, volcanoes.

# Eubacteria

**are more recent species.**

They are **mesophiles:** they prefer moderate conditions, like surface soil, freshwater, and the bodies of animals. Human body temperature, 37°C is ideal for them

# Compared to Eukaryotes:

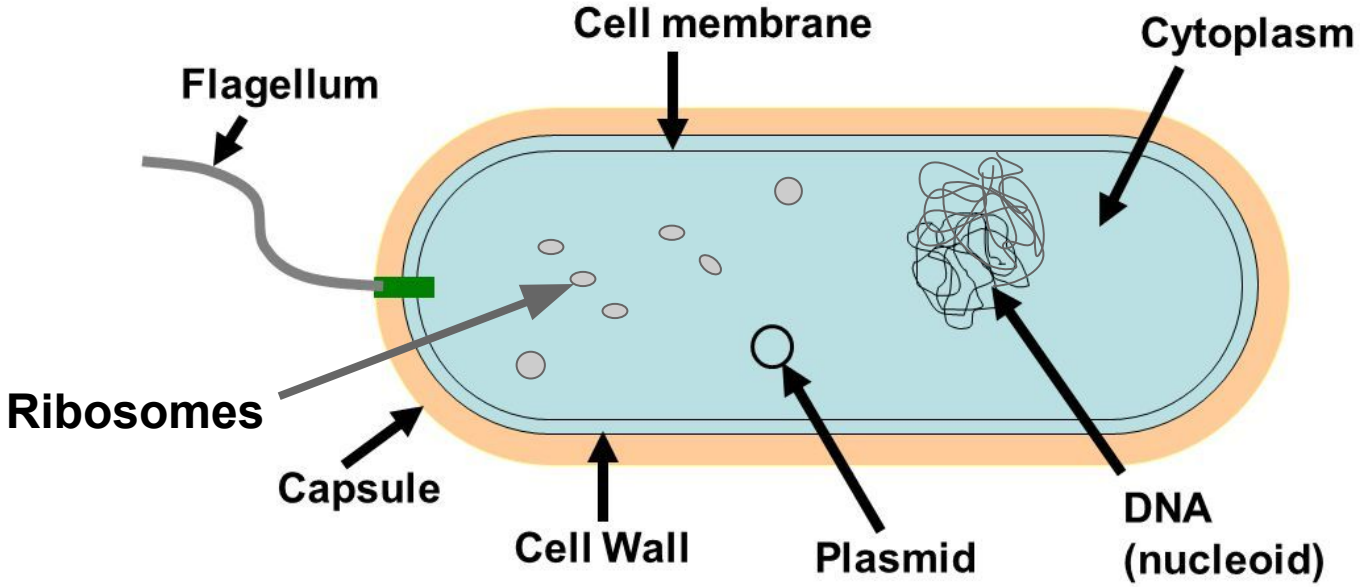
## Similar

- Cell membranes same
- Ribosomes similar
- Cell wall, but not made of **cellulose**
- Use DNA for information, stored in chromosomes.

## Different

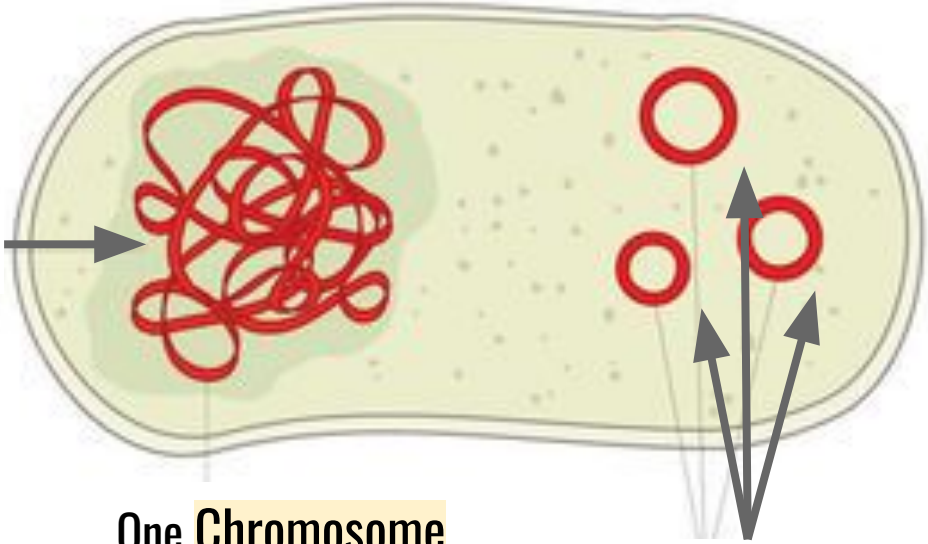
- No internal organelles
- *Cell wall composed of **peptidoglycan**
- Haploid, not diploid
- One chromosome loop
- Much smaller

# Structure


Cell membrane
Cytoplasm
Flagellum
Ribosomes
Capsule
Cell Wall
Plasmid
DNA
(nucleoid)

Nucleoid

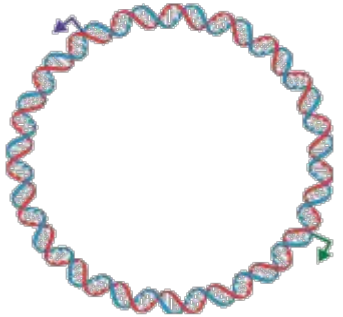
= DNA twisted around proteins



One Chromosome, in a single loop, that scrunches up to fit

Plasmids

= extra DNA that bacteria absorb or share.



The Chromosome, can easily copy itself.

# Classified by Shape

**Some terms you should remember:**

| **Bacillus** | **Coccus** | **Spirillum** | **Vibrio** |
| --- | --- | --- | --- |
| Rod shaped | Round, spherical | Spiral | Comma shaped |

| **Diplo** | **Strepto** | **Staphylo** | **Tetrad** | **Sarcina** | **Palisade** |
| --- | --- | --- | --- | --- | --- |
| pairs | chains | clusters | fours | eights | ‘walls’ |

# Classified by Shape

Bacillus

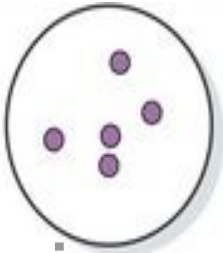
**Bacilli**

Vibrio **Vibrii**

Spirilli

Coccus **Cocci**

# Can you name these?



Cocci

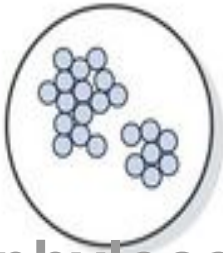
Bacilli

Vibrii

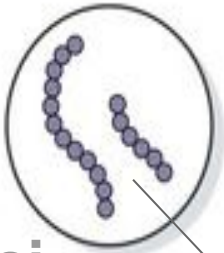
Spirilli

Spirilli

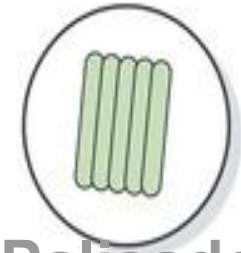
Diplococci



Staphylococci



Streptococci

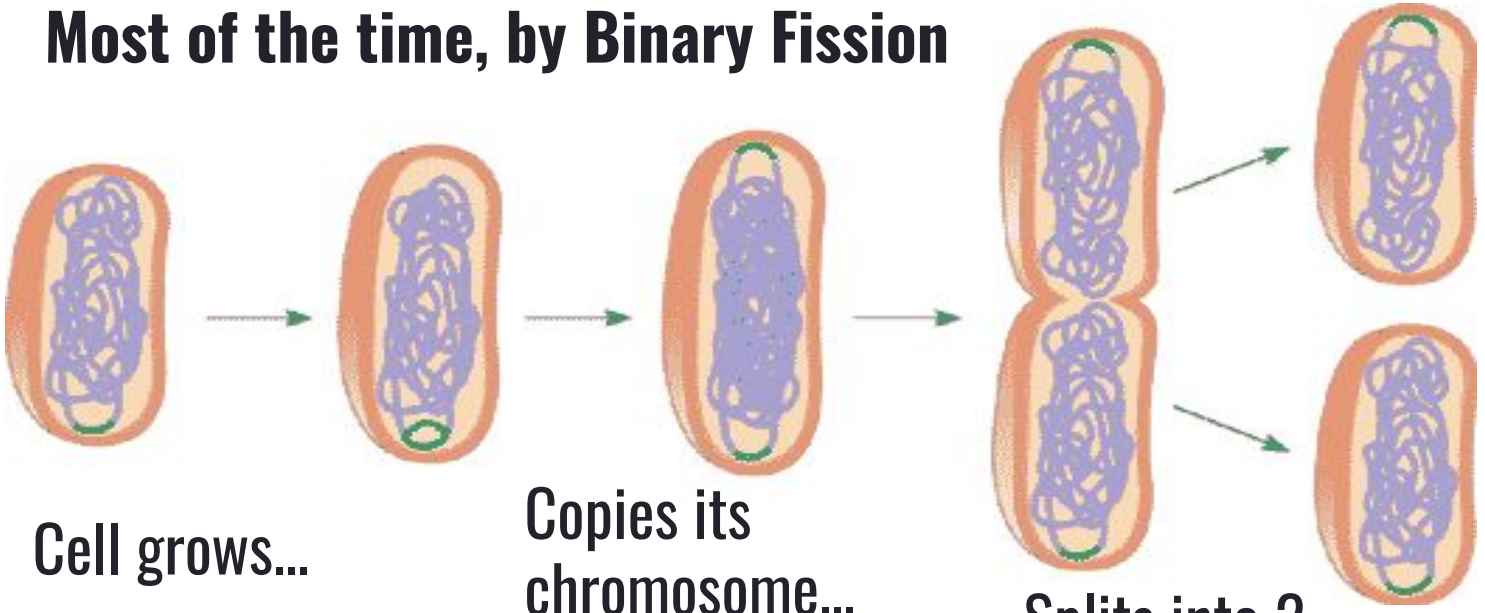


Palisade

Tetrad

# Reproduction

**Most of the time, by Binary Fission**



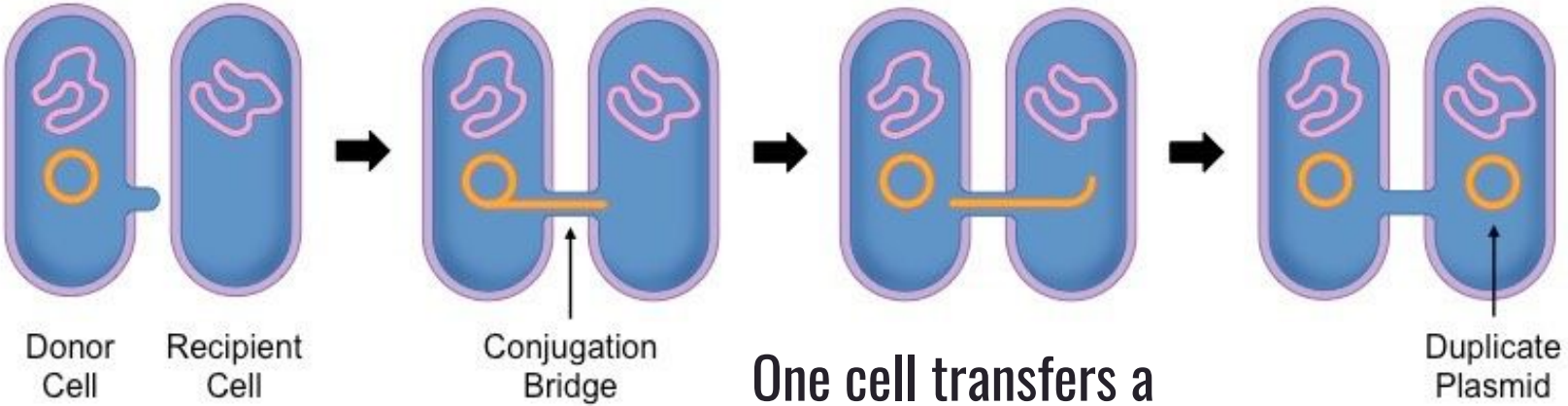
Cell grows...

Copies its chromosome...

Splits into 2.

# Reproduction

## Some of the time, by Conjugation




Two cells connect through a pilus

One cell transfers a piece of DNA to the other...

Plasmids help spread new traits