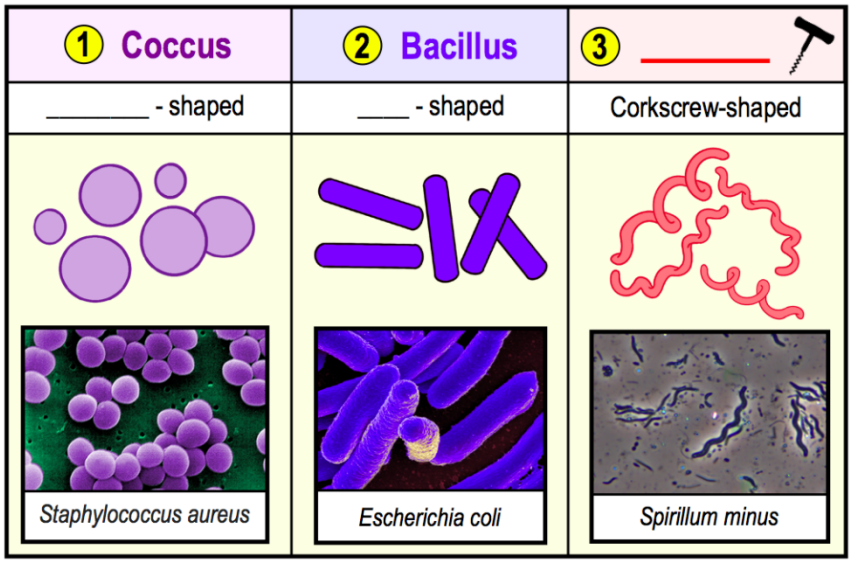
CONCEPT: BACTERIAL CELL MORPHOLOGY & ARRANGEMENTS

- **Cell Morphology:** refers to the overall _____ of *individual* cells.
- **Cell Arrangement:** refers to the _____ or alignment of groups of multiple cells.

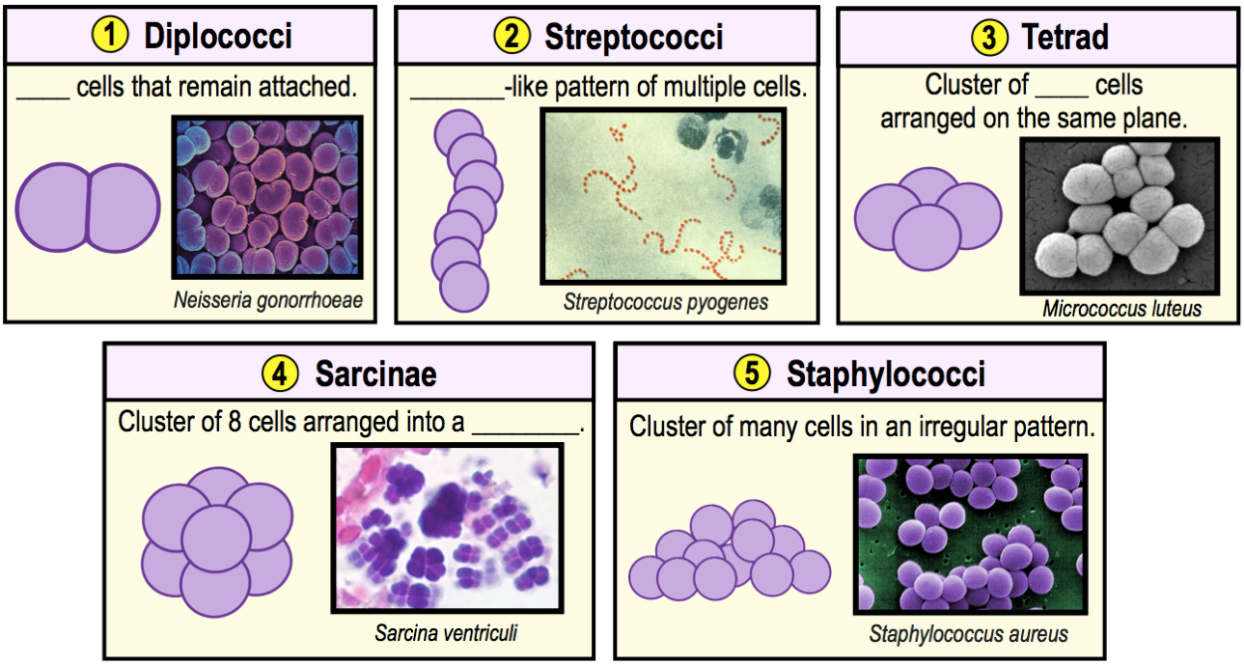
Types of Bacterial Cell Morphology

- Bacterial cells typically range between 0.2–2.0 _____ in diameter & 2–8 µm in _____.
- There are _____ main bacterial cell morphologies:



Cocci Bacterial Cell Arrangements

- **Cocci:**_____-shaped bacterial cells that can be round or flattened (like a hockey puck).
- *Cocci* cells can be _____ (or organized) in many different ways after cell division:



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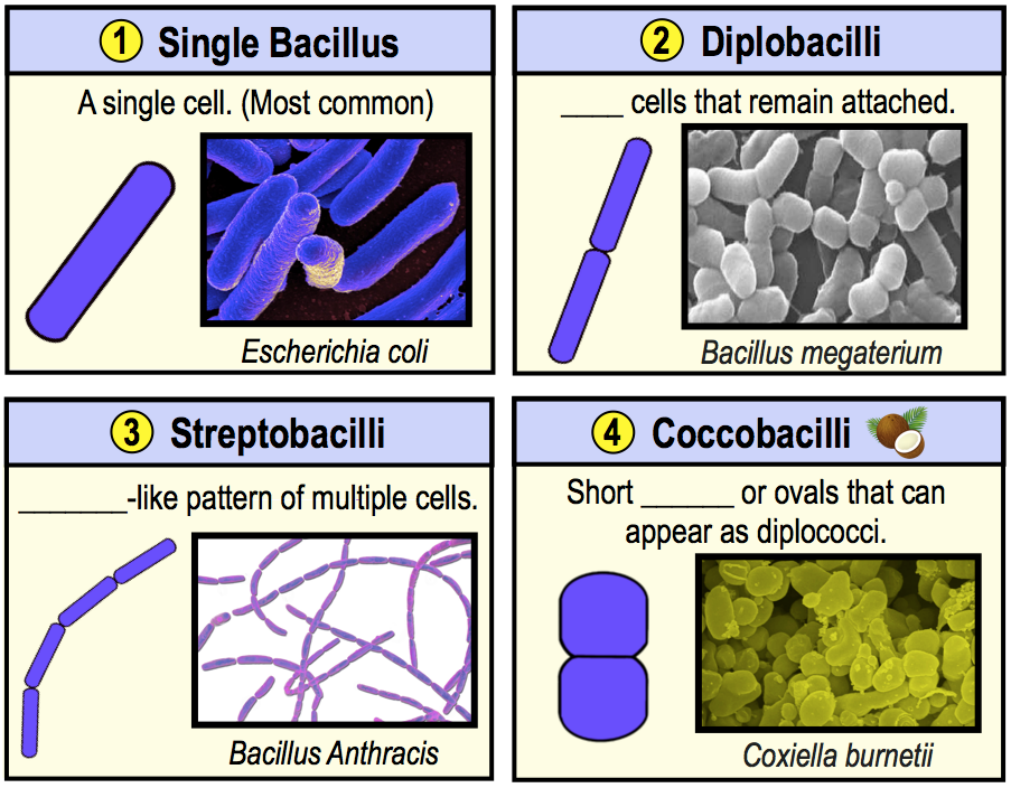
PRACTICE: Streptococcus bacteria have what shape?

a) Single thin cells that are bulbous at one end.
b) Chain of spiral cells.
c) Cluster of rod-shaped cells.
d) Cluster of spherical cells.
e) Chain of spherical cells.

Bacilli Bacterial Cell Arrangements

●**Bacilli:** _____-shaped bacterial cells that can only divide across their *short* axis.

●Since bacilli can only divide in ___ plane, they have *fewer* possible arrangements than *cocci*:



PRACTICE: What is the morphology of the cells in the image below?

a) Diplobacilli.
b) Streptobacilli.
c) Cocobacilli.
d) Streptococci.

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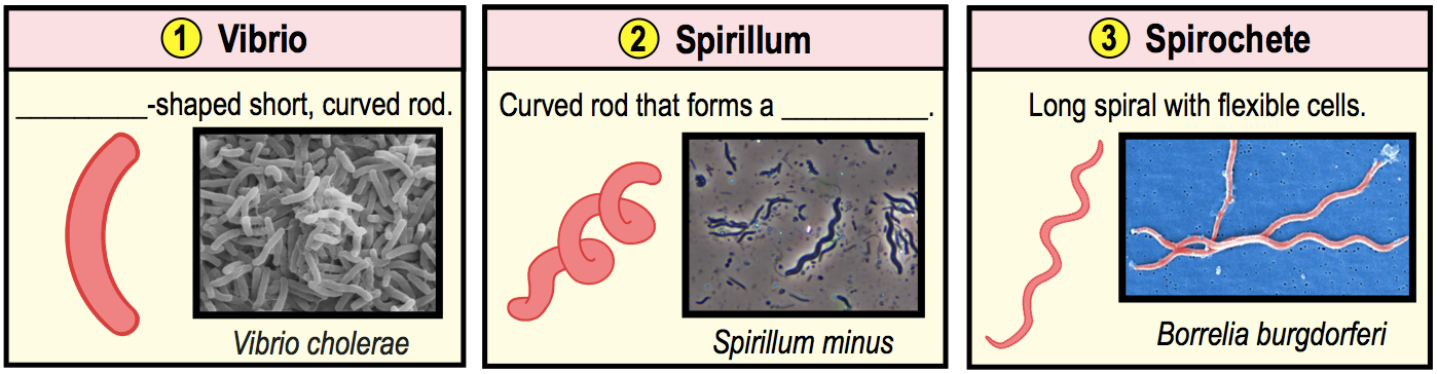
Spiral-shaped Bacterial Cells

●**Spiral-shaped** cells can have a few varied morphologies are never *completely* straight.

EXAMPLE: The different morphologies of spiral-shaped cells



PRACTICE: *Vibrio cholerae* causes the disease cholera. Based on the name of the bacterium, what is its shape?

a) Spherical.
b) Straight cylinder.
c) Curved rod.
d) Chains of cocci.
e) Chains of rods.

PRACTICE: Which of the following is mismatched:

a) Vibrio - comma-shape.
b) Coccobacilli - intermediate between round and rod.
c) Coccus – round.
d) Bacillus - flexible and wavy.
e) Spirillum - corkscrew-shape.

PRACTICE: A chain of rods is referred to as _____, whereas a curve shaped rod is termed _____.

a) Coccobacilli; bacilli.
b) Streptobacilli; vibrio.
c) Streptococcus; comma .
d) Bacilli; spirochete.
e) Diplobacilli; vibrio.

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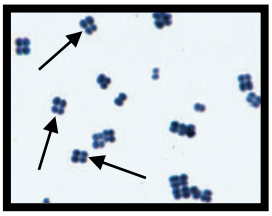
PRACTICE: What type of cell is shown in the image below?

a) Staphylobacilli.
b) Streptococci.
c) Staphylococci.
d) Streptobacilli.

PRACTICE: What type of cell arrangement is shown in the image below?

a) Streptococci.
b) Vibrio.
c) Sacrinae.
d) Tetrad.
e) Single bacillus.



PRACTICE: Match the following cell morphologies with the correct description:

1) _____: Diplobacilli	A. Long spiral with flexible cells.
2) _____: Streptococci	B. Single rod-shaped cell.
3) _____: Vibrio	C. 2 rod-shaped cells that remain attached.
4) _____: Diplococci	D. Cluster of 4 spherical cells arranged on one plane.
5) _____: Spirochete	E. 2 spherical cells that remain attached.
6) _____: Tetrad	F. Comma-shaped, short & bent cells.
7) _____: Single Bacillus	G. 2 short rod-shaped (or oval) cells that remain attached.
8) _____: Coccobacilli	H. Chain-like pattern of spherical cells.
9) _____: Staphylococci	I. Cluster of 8 spherical cells arranged like a cube.
10) _____:Spirillium	J. Curved rod that forms a spiral.
11) _____:Sarcinae	K. Chain-like pattern of rod-shaped cells.
12) _____:Streptobacilli	L. Cluster of many spherical cells in a randomized pattern.