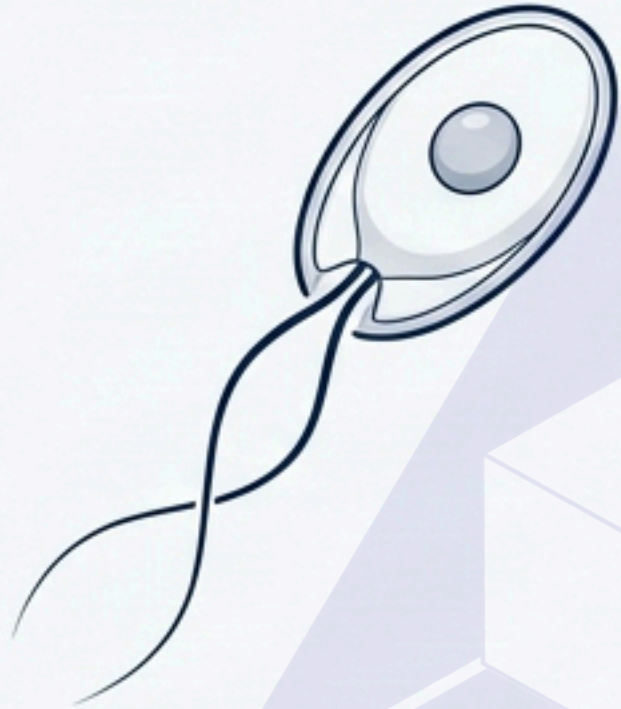


Why Green Algae Are Green

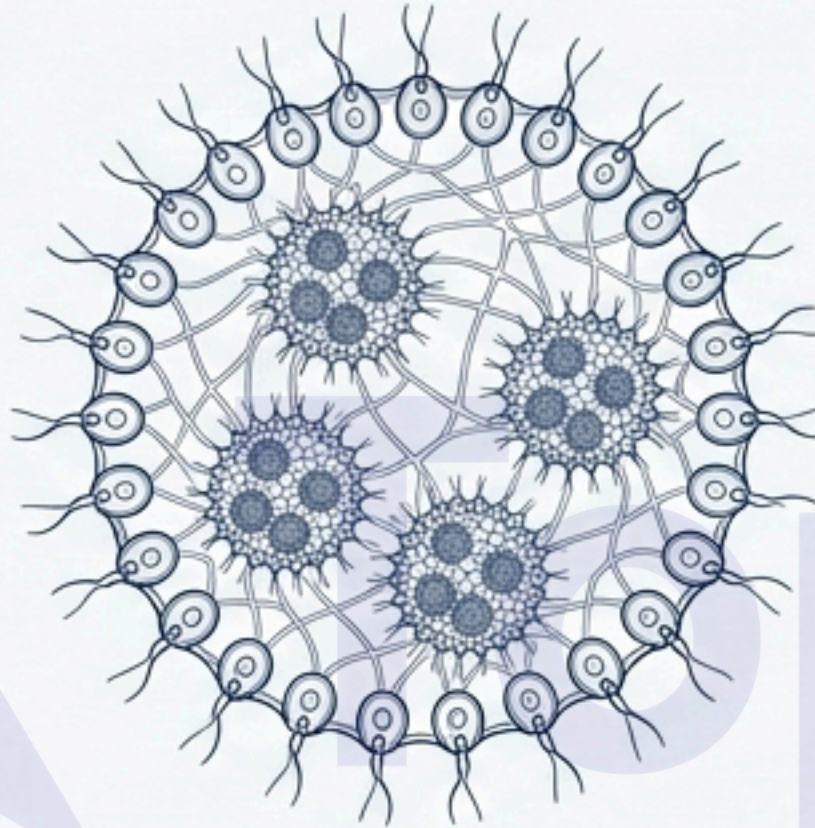
The distinct grass-green color of Chlorophyceae is not a coincidence—it is driven entirely by the overwhelming dominance of localized photosynthetic pigments: Chlorophyll a and Chlorophyll b.

Form & Architecture: The Three Body Plans



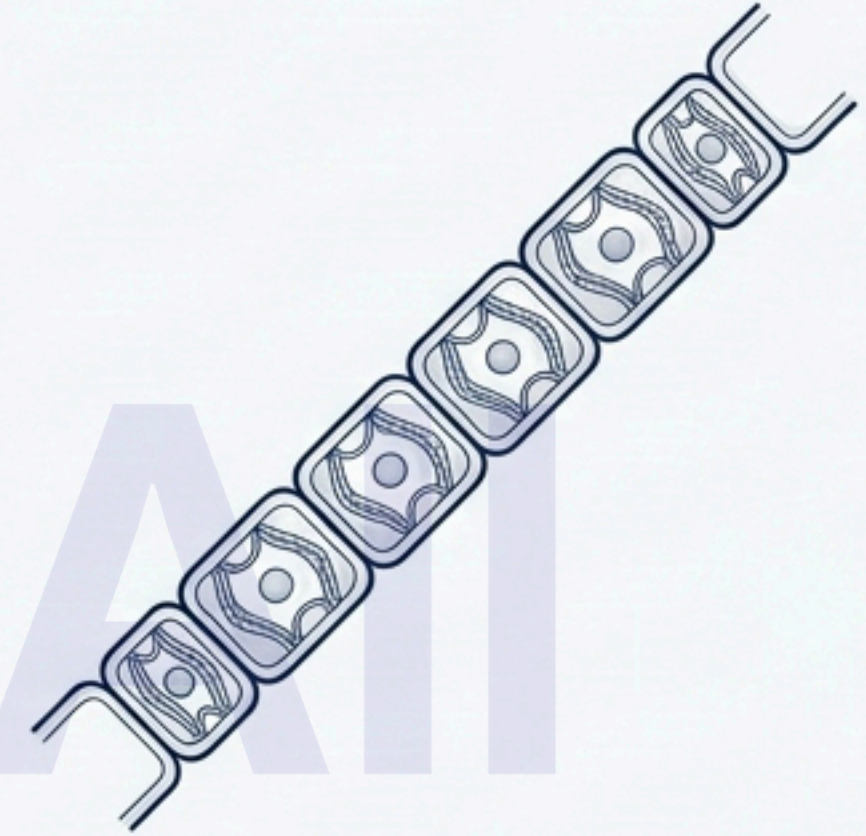
[TYPE_01: UNICELLULAR]

Single-celled, independent organisms operating entirely self-sufficiently.



[TYPE_02: COLONIAL]

Groups of individual cells living together in a highly organized, spherical lattice.



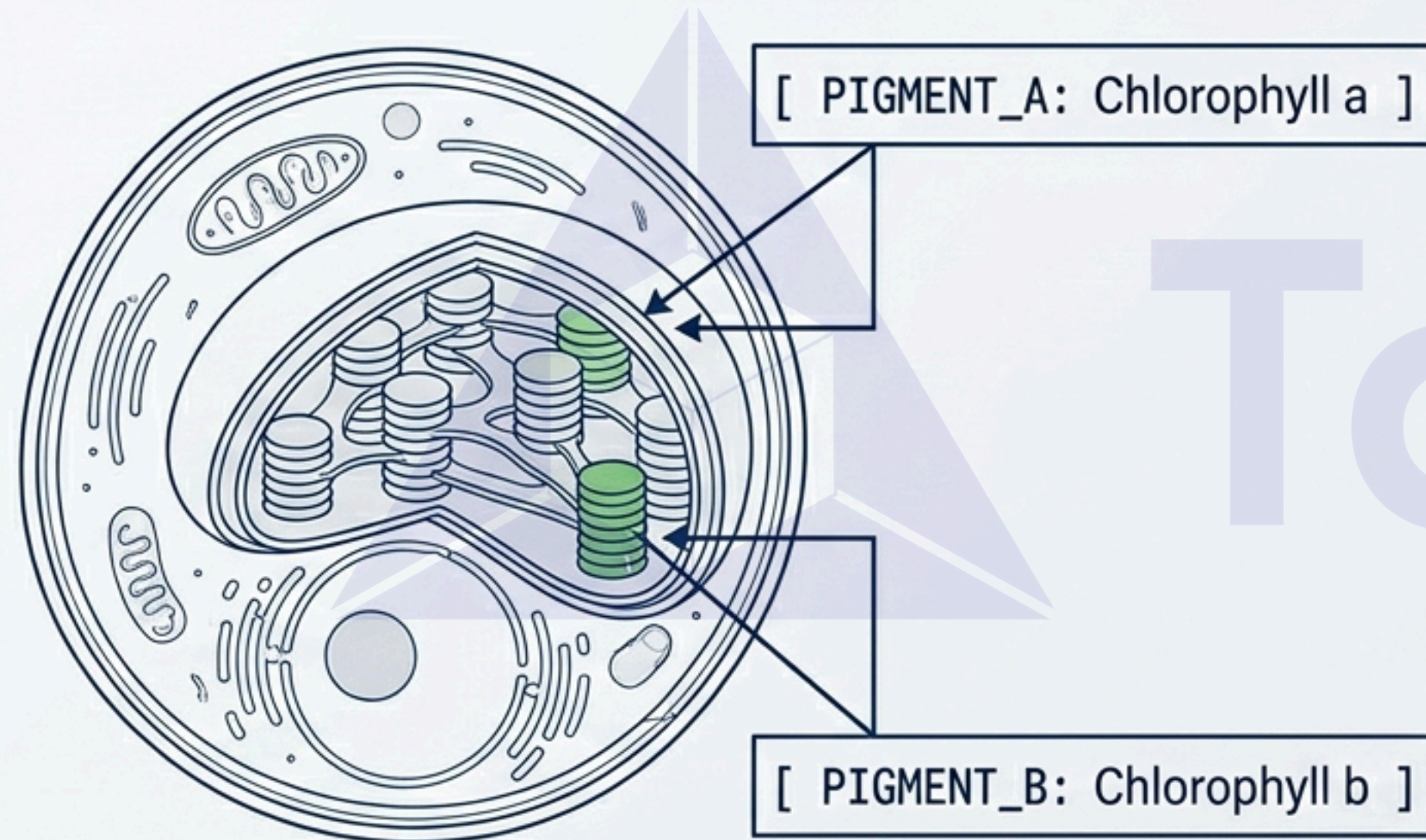
[TYPE_03: FILAMENTOUS]

Cells stacked end-to-end forming long, thread-like strands.

Morphological Variance: Despite sharing identical cellular chemistry, these body forms exhibit massive variation in physical size and complexity.

The Photosynthetic Engine

The Pigment Profile



The 1:1 Terrestrial Match

The specific dominance of Chlorophyll a and b gives Chlorophyceae a vivid grass-green appearance that is chemically identical to the pigmentation found in higher terrestrial plants.

Note: Pigments are not free-floating; they are strictly localized within definite chloroplast structures.



**You've Learned the Theory.
Let's Test Them Now.**

$$E=mc^2$$



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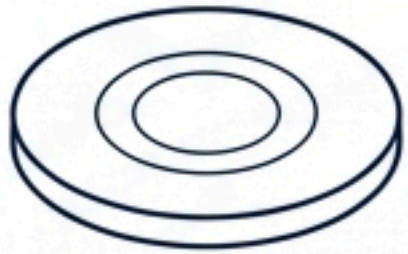
Key Highlights

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- » Push Your Limits with Level-Based Challenges
- » Climb the Leaderboard Among Fellow Aspirants
- » Practice Unlimited MCQs for NEET & JEE
- » Get Clear Explanations, Not Just Marks
- » Track Your Performance Smarter

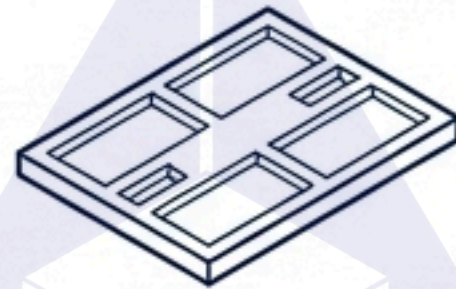


Energy Capture & Storage Systems

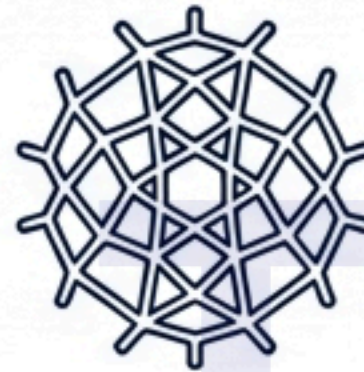
Chloroplast Configurations



[DISCOID]



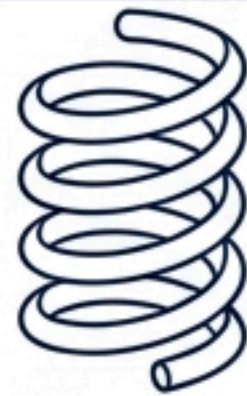
[PLATE-LIKE]



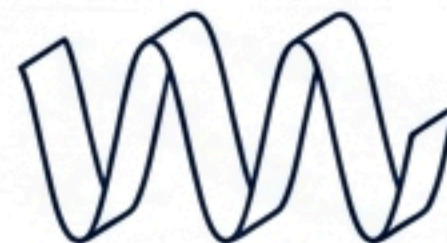
[RETICULATE]



[CUP-SHAPED]

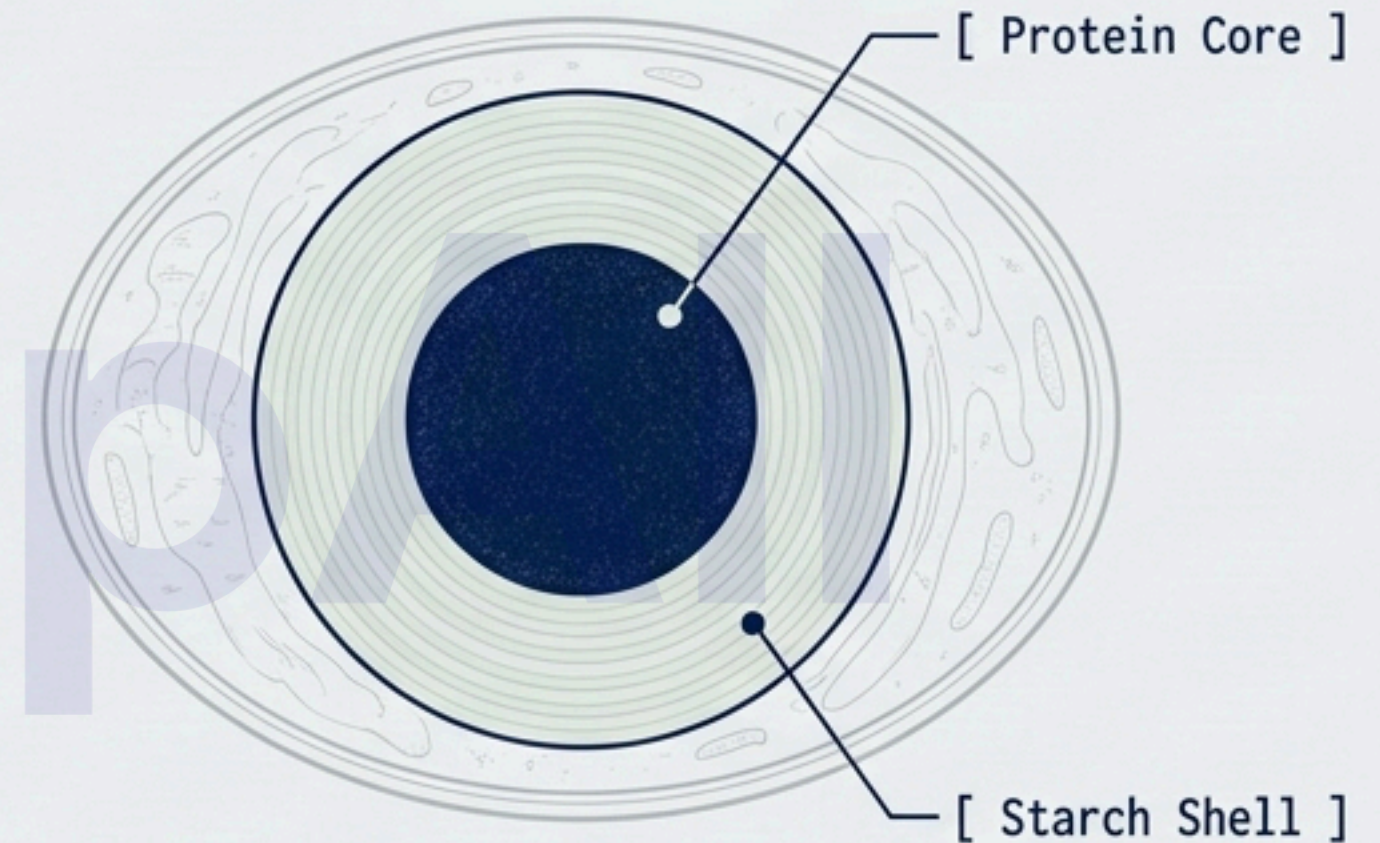


[SPIRAL]



[RIBBON-SHAPED]

The Pyrenoid Anatomy

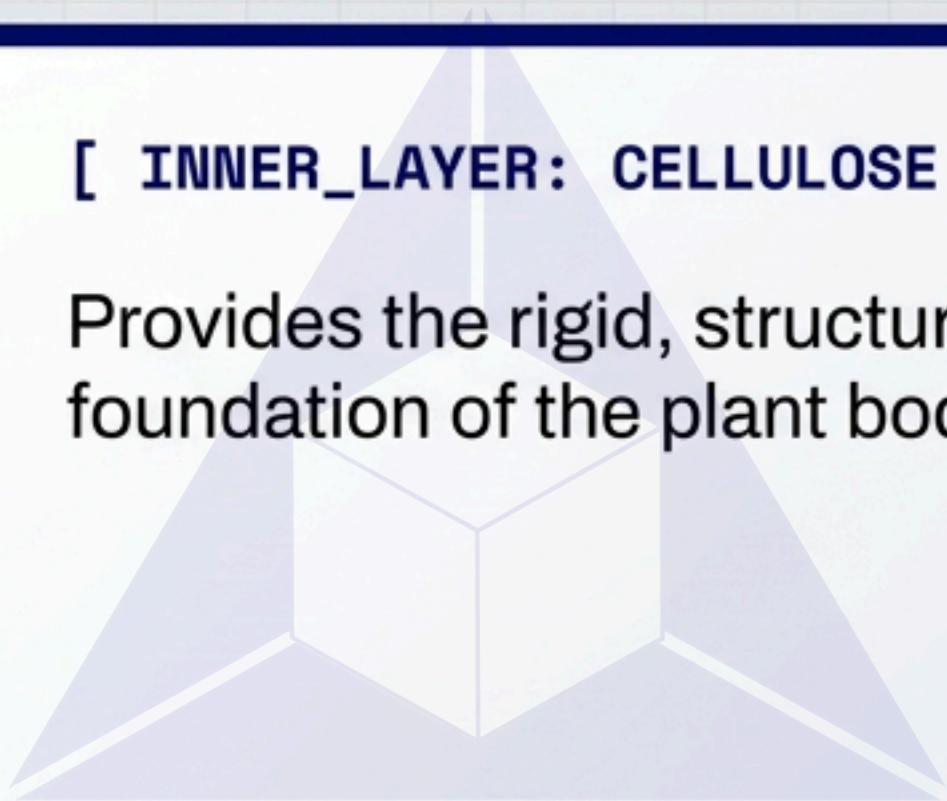


Alternative Storage: While pyrenoids (protein + starch) are standard, some species exclusively store food as localized oil droplets.

The Armor: Cell Wall Composition

[INNER_LAYER: CELLULOSE]

Provides the rigid, structural foundation of the plant body.



[OUTER_LAYER: PECTOSE]

Forms a protective, potentially gelatinous outer coating interfacing with the aquatic environment.

This rigid, dual-layer construction is a defining characteristic of Green Algae, ensuring physical integrity across all varied body forms.

Multiplication Strategies

Reproductive Matrix

[VEGETATIVE]

- **Method:** Fragmentation.
- **Mechanism:** Physical separation.
- **Result:** Each fragment develops into a complete, independent thallus.

[ASEXUAL]

- **Method:** Spore Formation.
- **Mechanism:** Produced inside zoosporangia.
- **Result:** Release of flagellated zoospores.

Zoospores are flagellated, enabling active motility in aquatic environments.

[SEXUAL]

- **Method:** Gamete Fusion.
- **Mechanism:** Considerable variation in sex cell formation.
- **Result Variants:**
 - └ [ISOGAMOUS] (similar size)
 - └ [ANISOGAMOUS] (dissimilar size)
 - └ [OOGAMOUS] (large static female + small motile male)

The Green Algae Gallery

Chlamydomonas

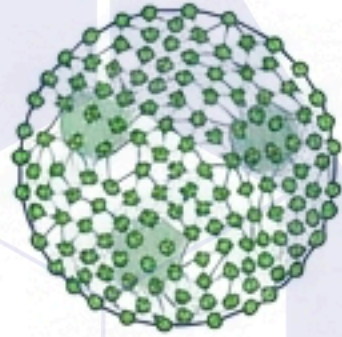
[UNICELLULAR]



[UNICELLULAR]

Volvox

[COLONIAL]



[COLONIAL]

Ulothrix

[FILAMENTOUS]



[FILAMENTOUS]

Spirogyra

[FILAMENTOUS]



[FILAMENTOUS]

Chara

[MACROSCOPIC]



[MACROSCOPIC]

From microscopic single cells to highly organized filaments and colonies, all these genera are united by their identical chlorophyll a & b pigment profile and rigid cellulose-pectose armor.



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