

Ecological Pyramids

Visualizing the Structure and Function of Ecosystems

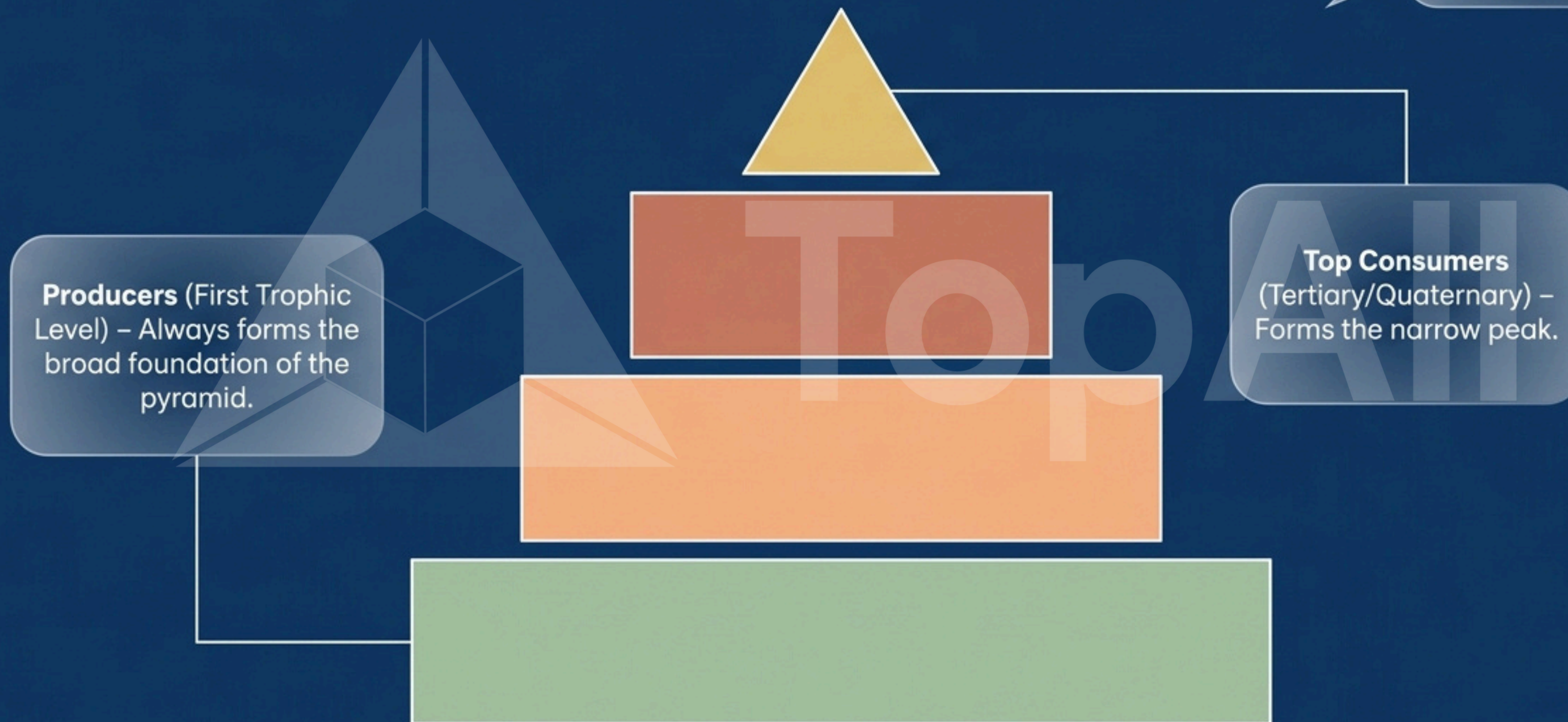
A Complete Revision Deck (Chapter 12.5)



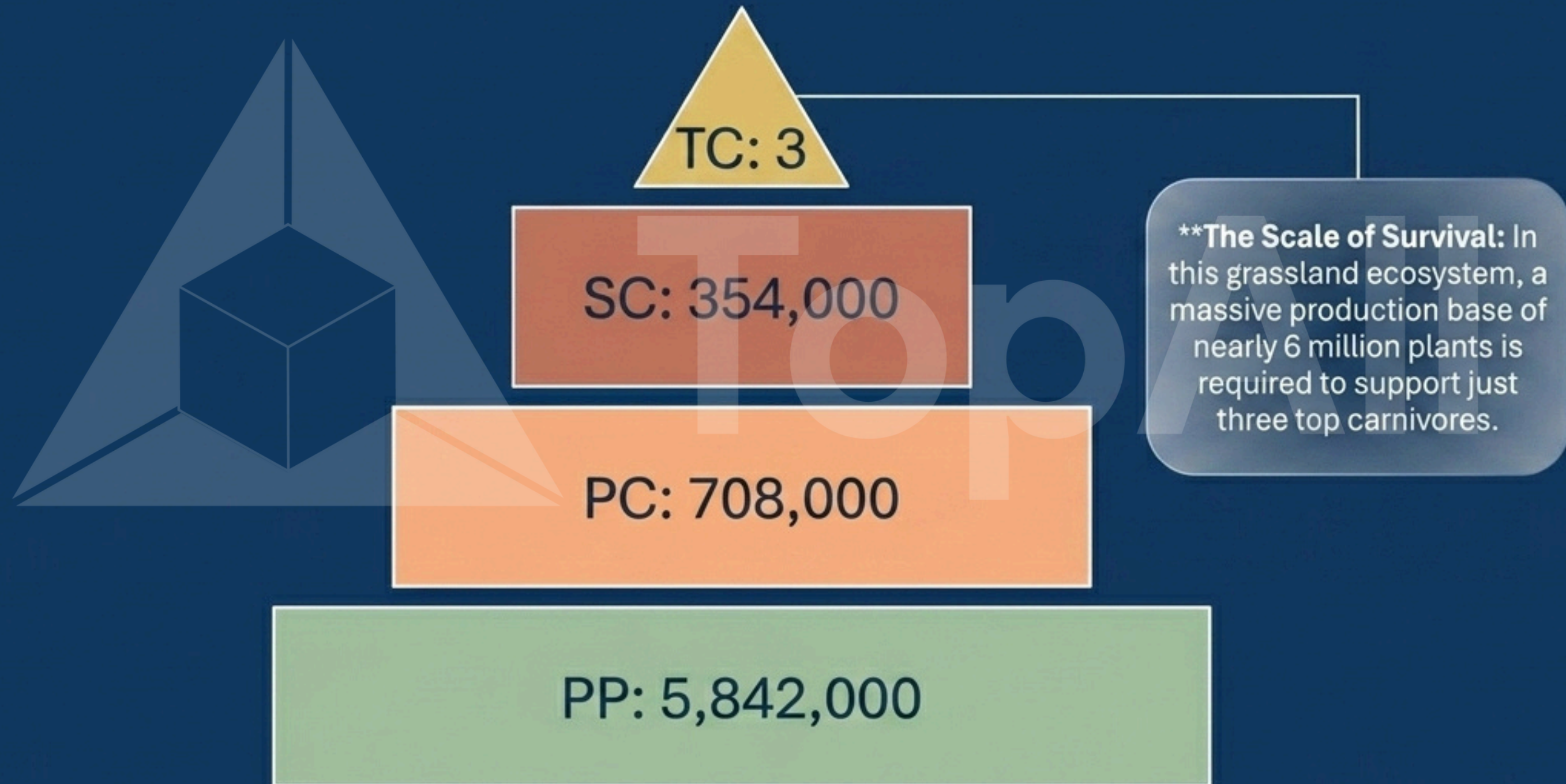
What is an Ecological Pyramid?

A graphical representation of the food or energy relationship between organisms at different trophic levels.

These relationships are strictly expressed in terms of **Number**, **Biomass**, or **Energy**.



Pyramid of Numbers (Grassland)





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

$$E=mc^2$$



Turn theory into marks with **unlimited MCQs, smart analysis, and focused revision.**

Practice Now



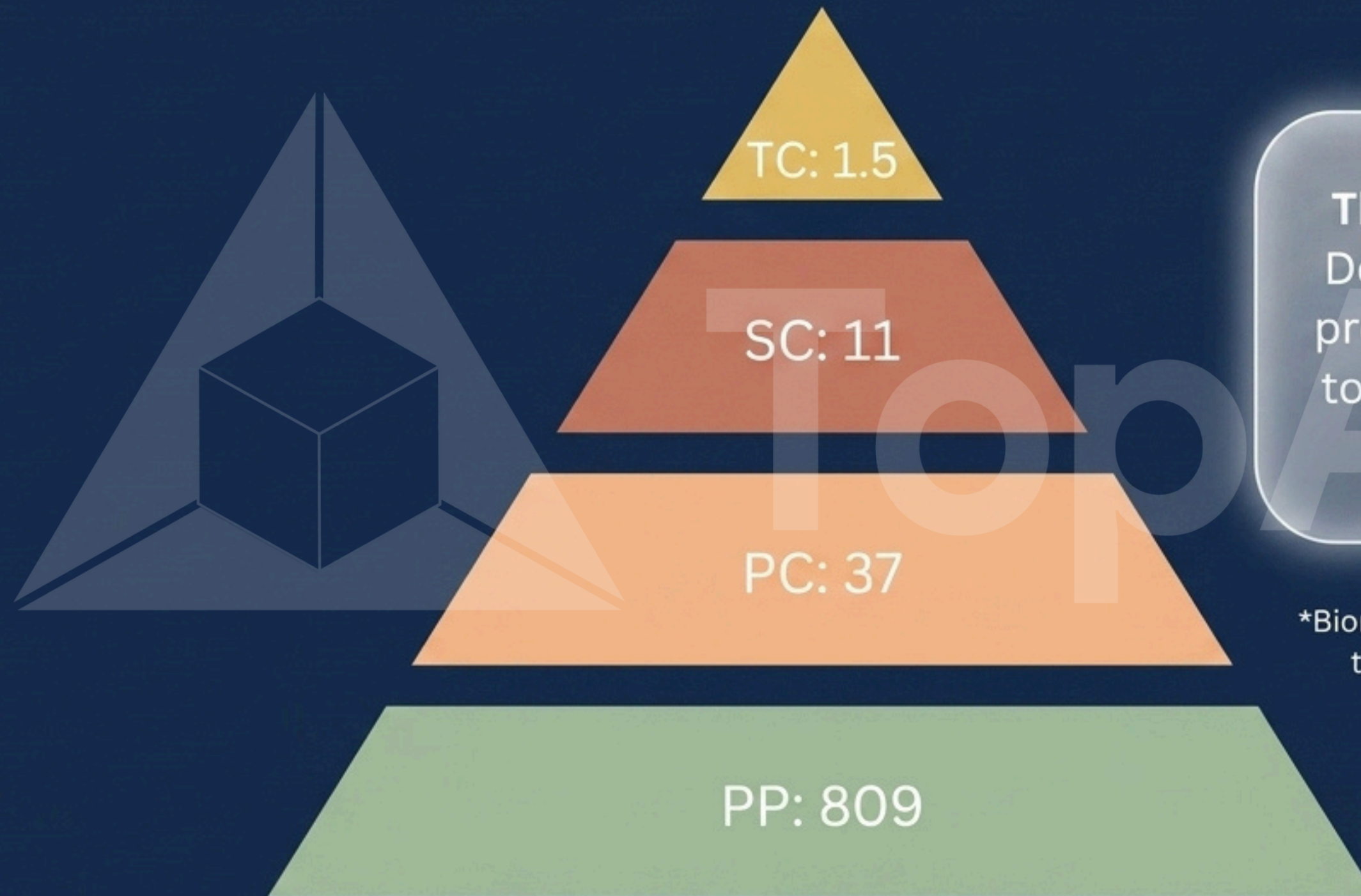
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Key Highlights

- » Free Study Material, Videos & Infographics
- » 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



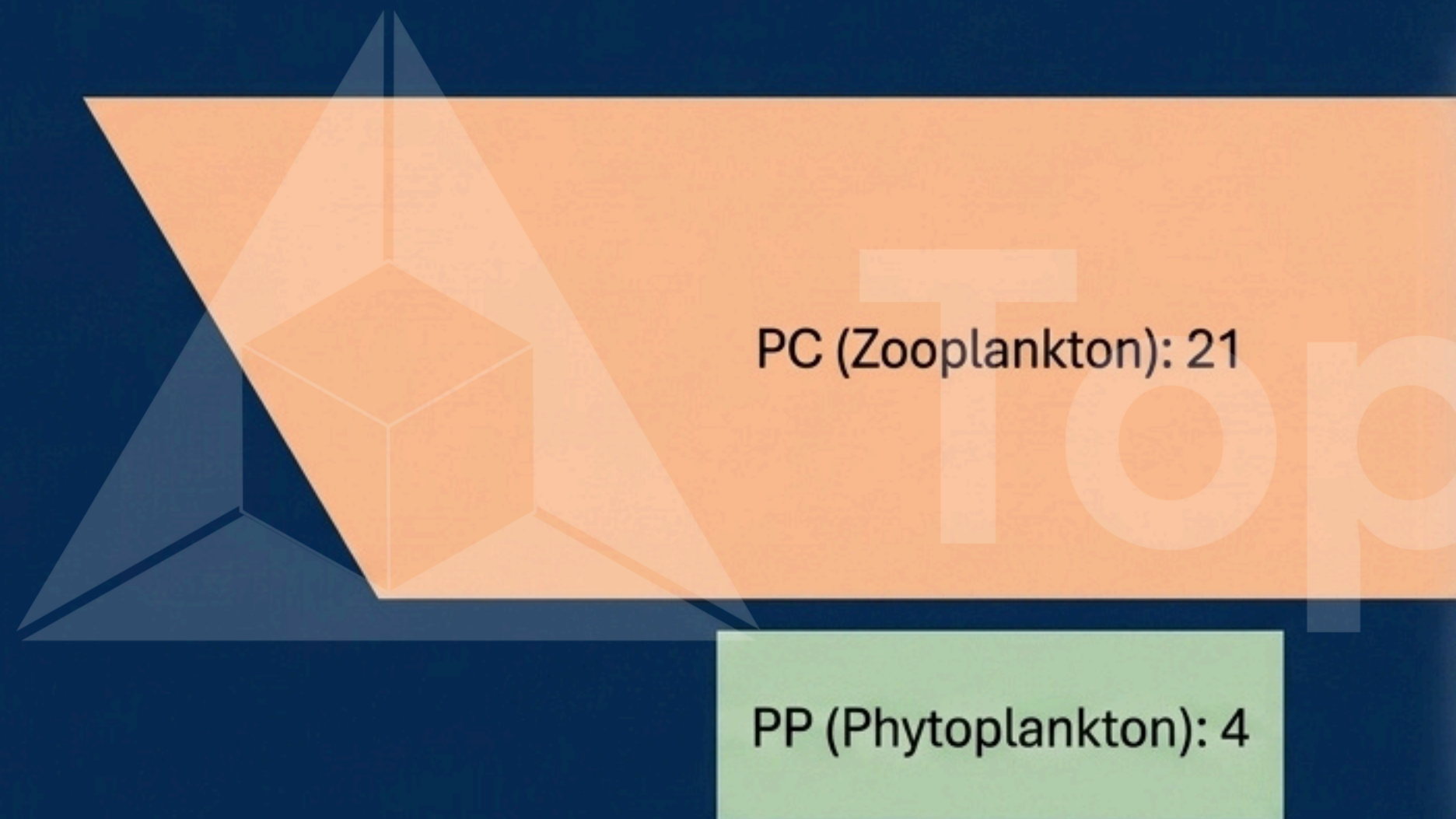
Pyramid of Biomass (Terrestrial)



The Attrition of Mass:
Demonstrates a sharp, predictable decrease in total biomass at higher trophic levels.

Biomass is measured in dry weight for the most accurate calculation.

The Aquatic Exception: Inverted Biomass

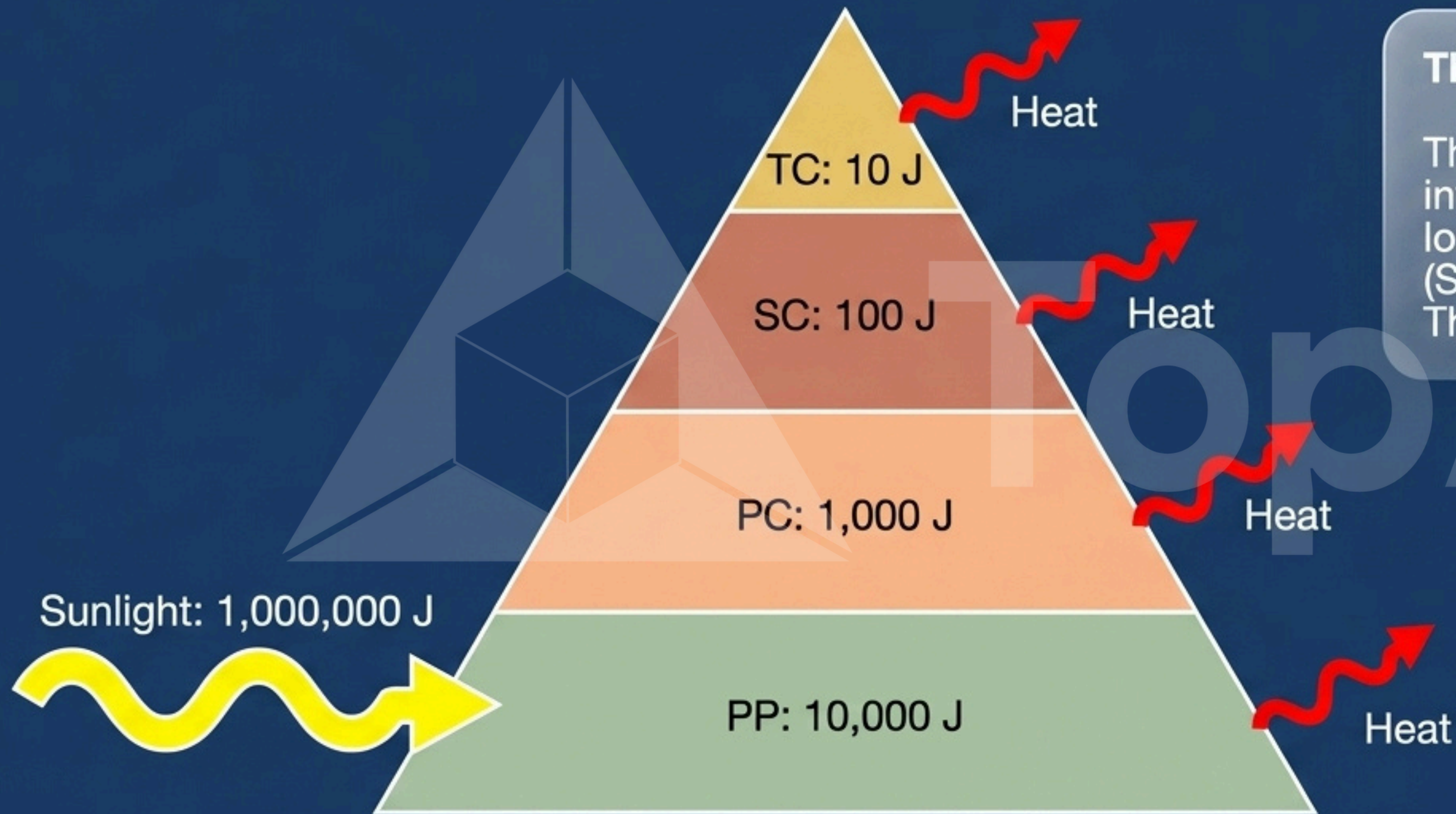


The Paradox

How does a small 4g base support a 21g canopy?

Phytoplankton have extremely rapid turnover rates. Their small *standing crop* multiplies rapidly enough to constantly feed a larger mass of zooplankton.

Pyramid of Energy (Always Upright)

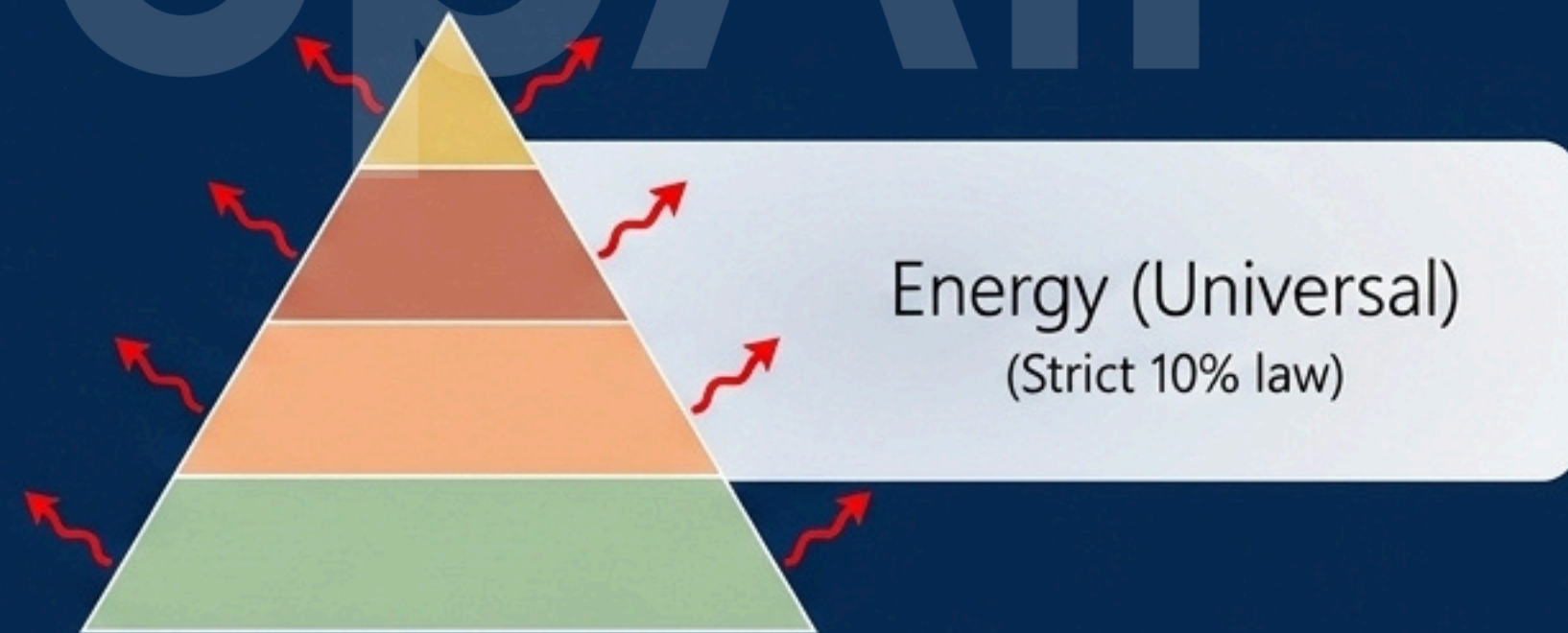
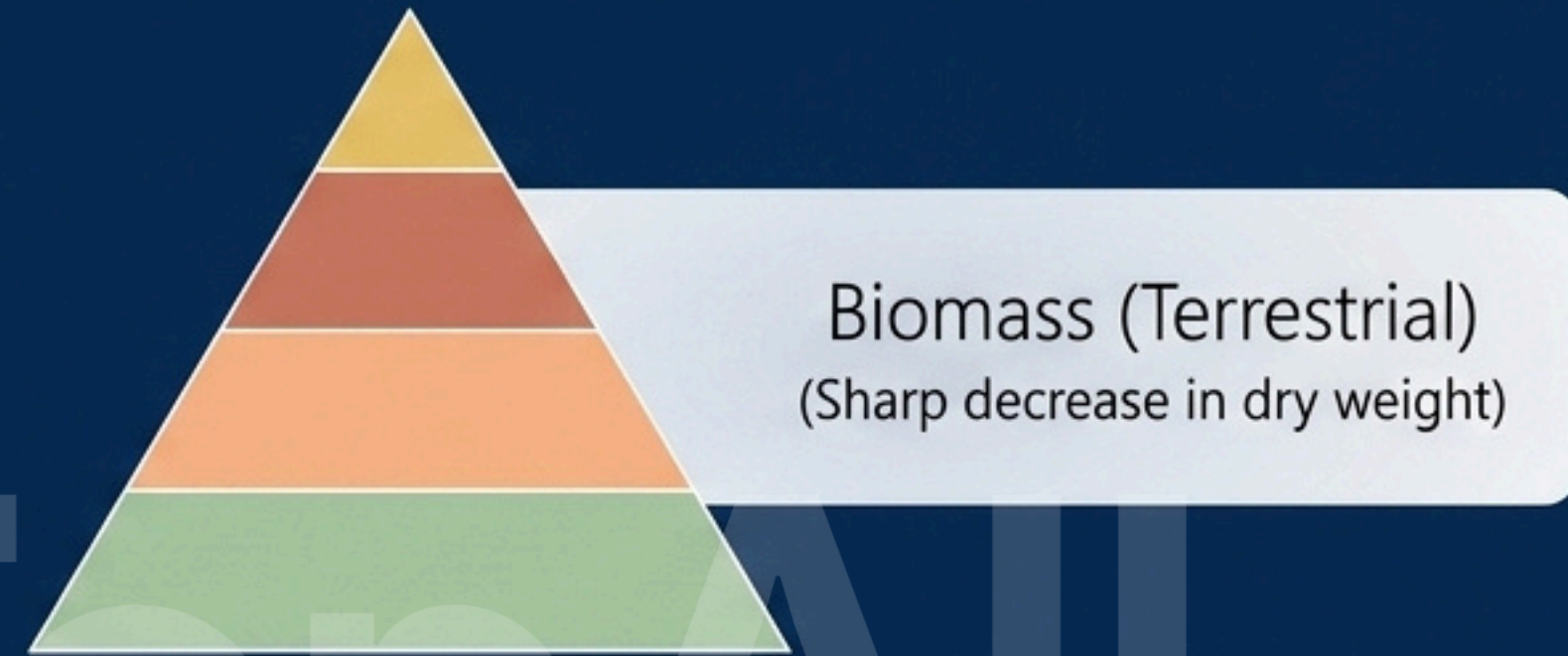


The Universal Rule:

This pyramid can *never* be inverted. Energy is always lost as heat at each step (Second Law of Thermodynamics).

Crucial Metric: Primary producers convert only **1%** of available sunlight into Net Primary Productivity (NPP). Subsequent transfers follow the **10% Law**.

Visual Anchors for Rapid Recall



Limitations of the Pyramid Model



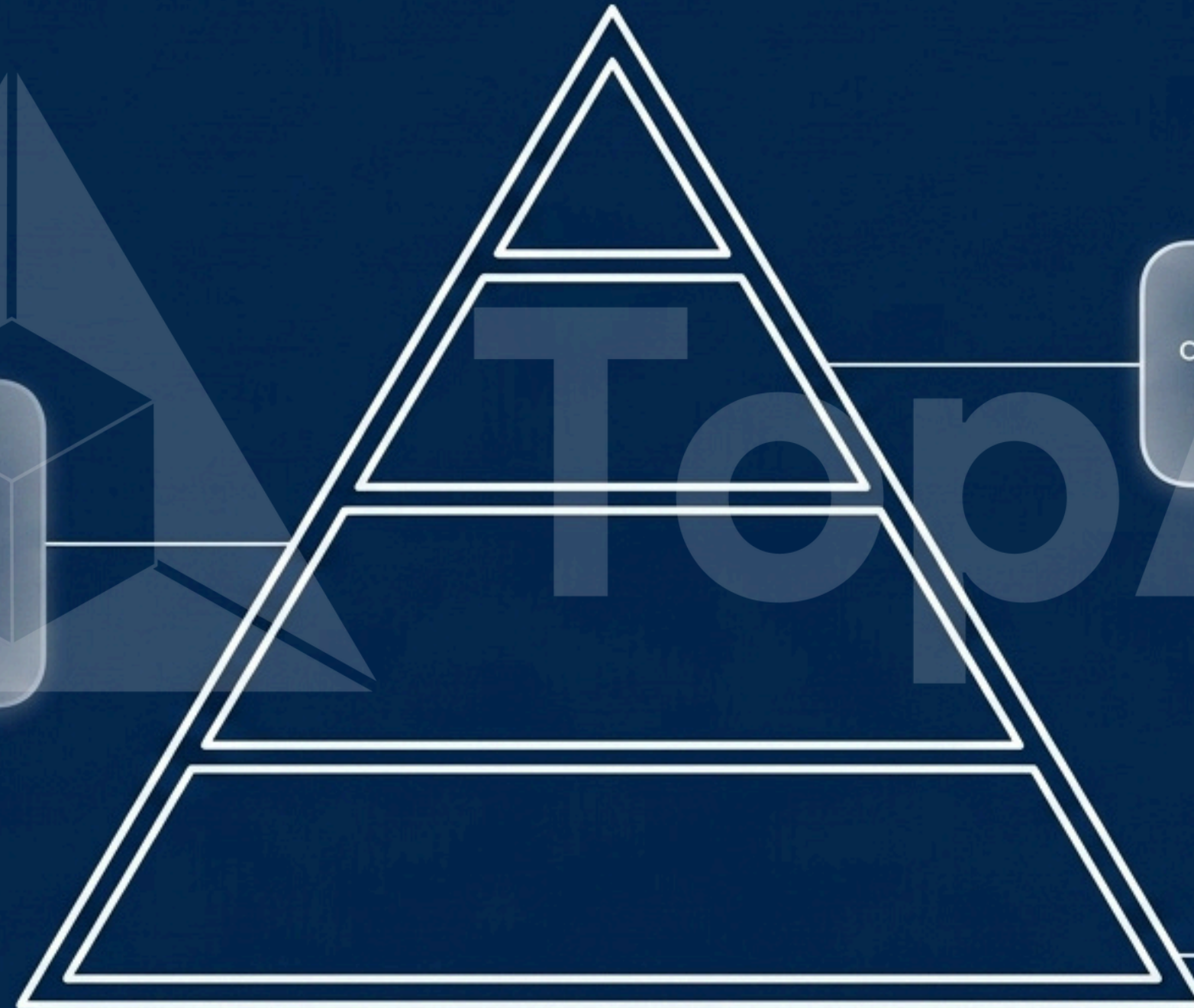
Ignores Multi-Role Organisms. Assumes an organism belongs to only one level. (e.g., A sparrow is a primary consumer when eating seeds, but a secondary consumer when eating insects).



Assumes Simple Chains. It cannot accommodate the complex interconnections of natural, real-world food webs.



Excludes Saprophytes. Despite playing a vital decomposing role in the ecosystem, saprophytes are given zero space in these models.





You've Learned the Theory.

Now Let's Test It.

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Practicing MCQs gets you marks.

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Practice the moment you finish studying
Jump in while the concept is still fresh in your head

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