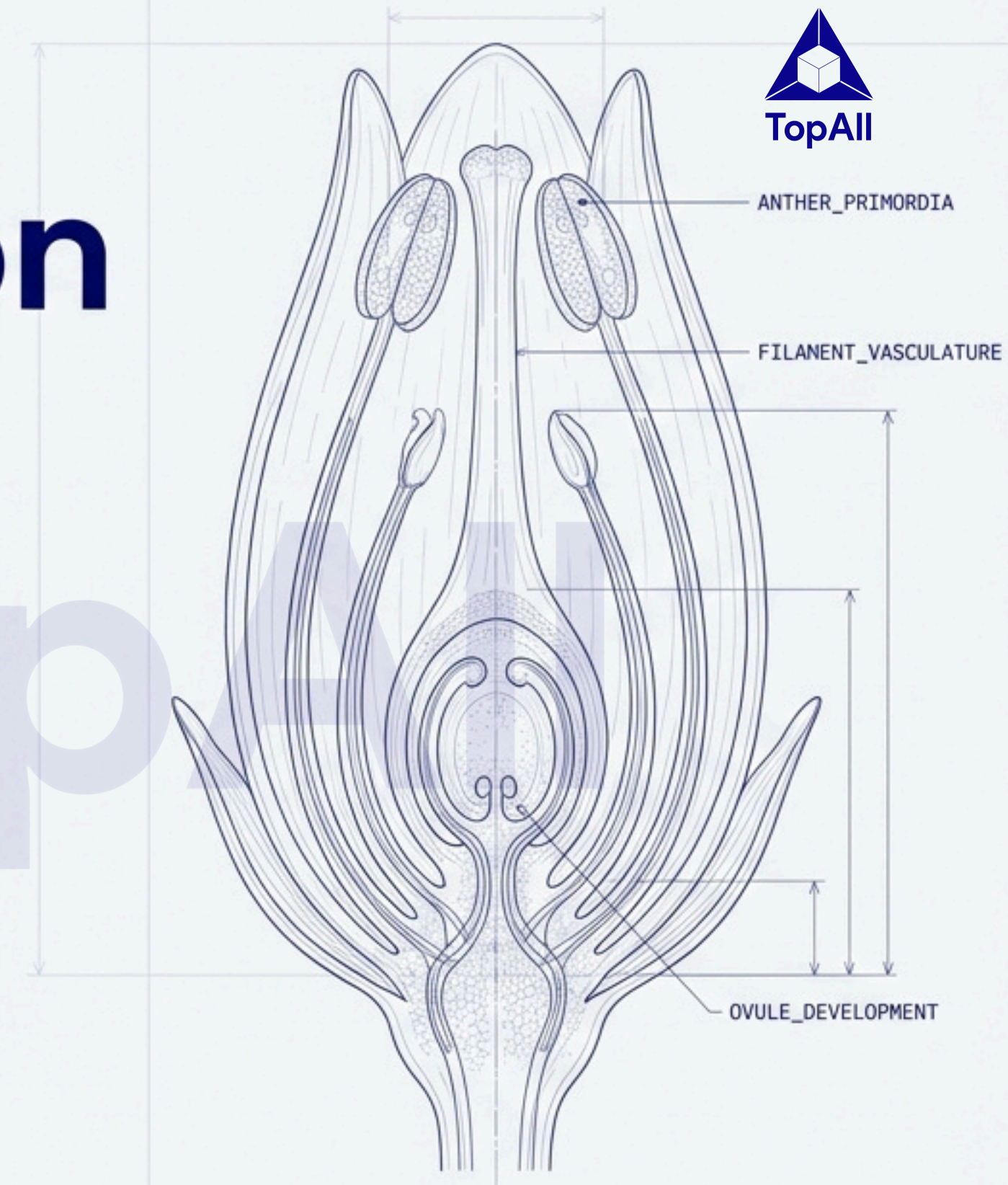
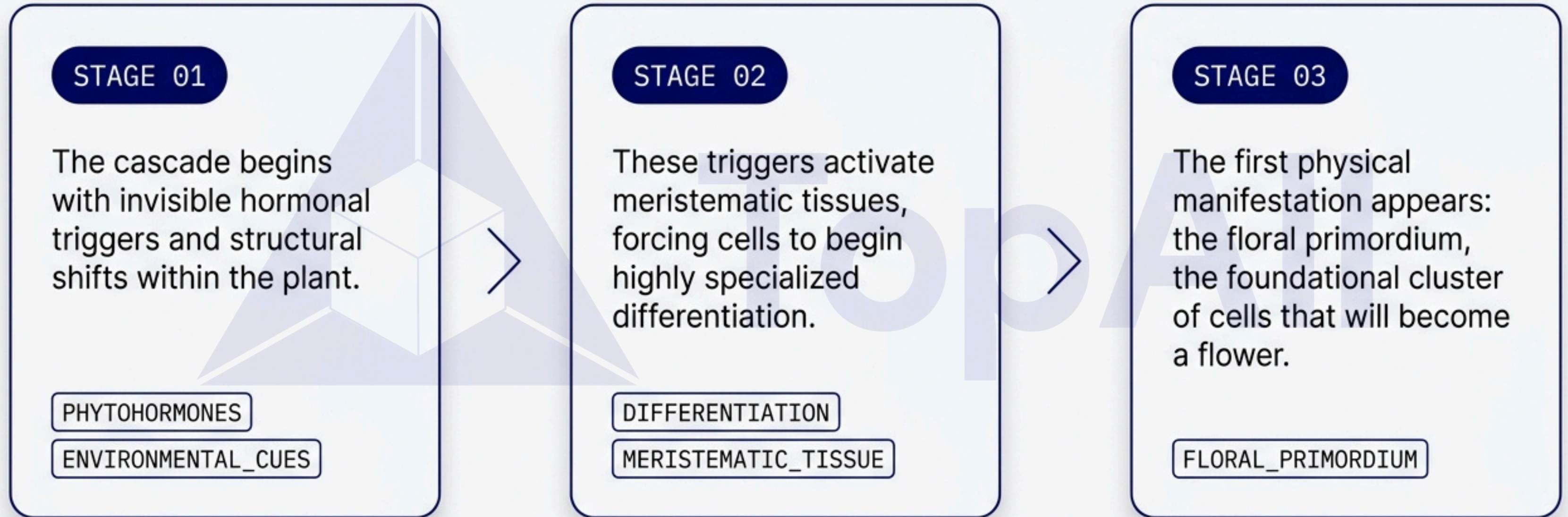


# Before Fertilisation Begins

The structural and hormonal cascade of sexual reproduction in angiosperms.

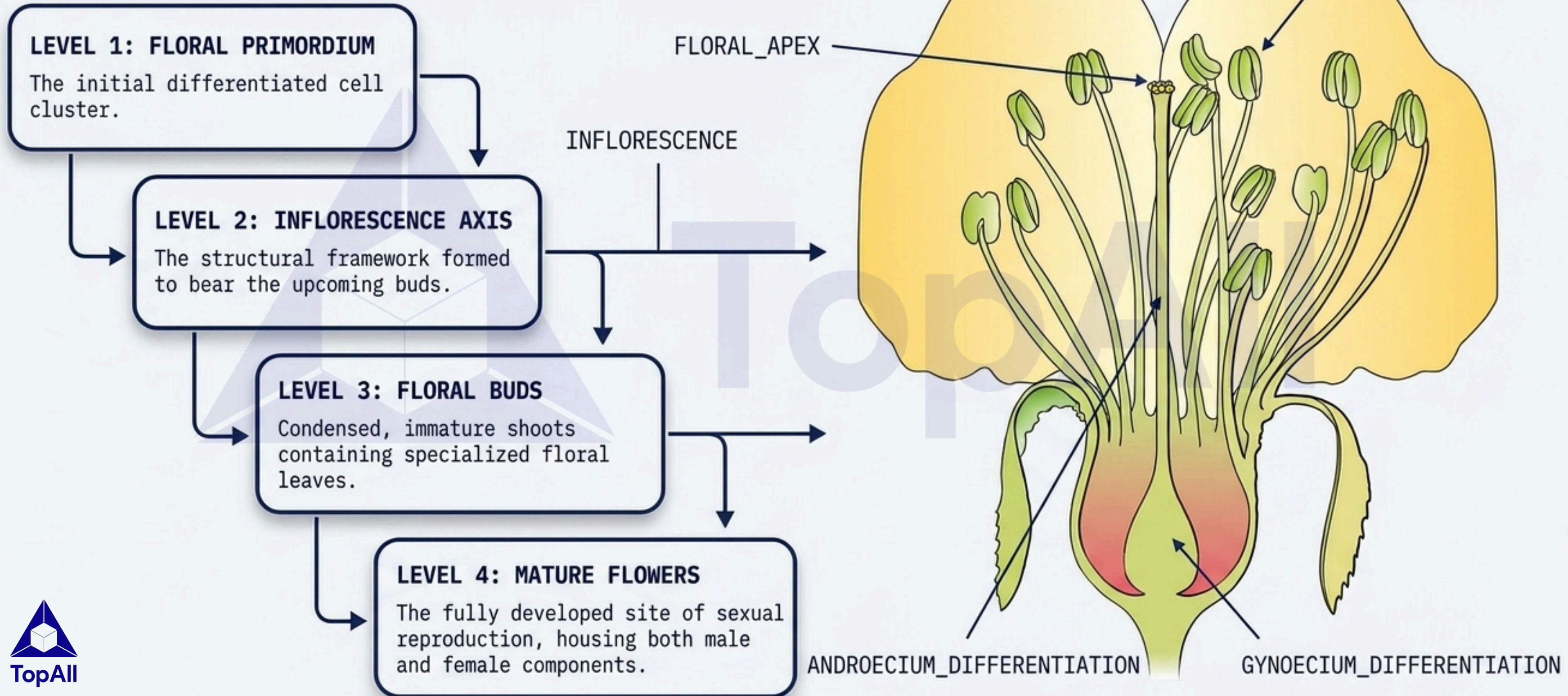


# The Decision to Flower



*Note: The biological “decision” to flower occurs at a chemical level much before any macroscopic reproductive structures are visible on the plant.*

# From Primordium to Bloom





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

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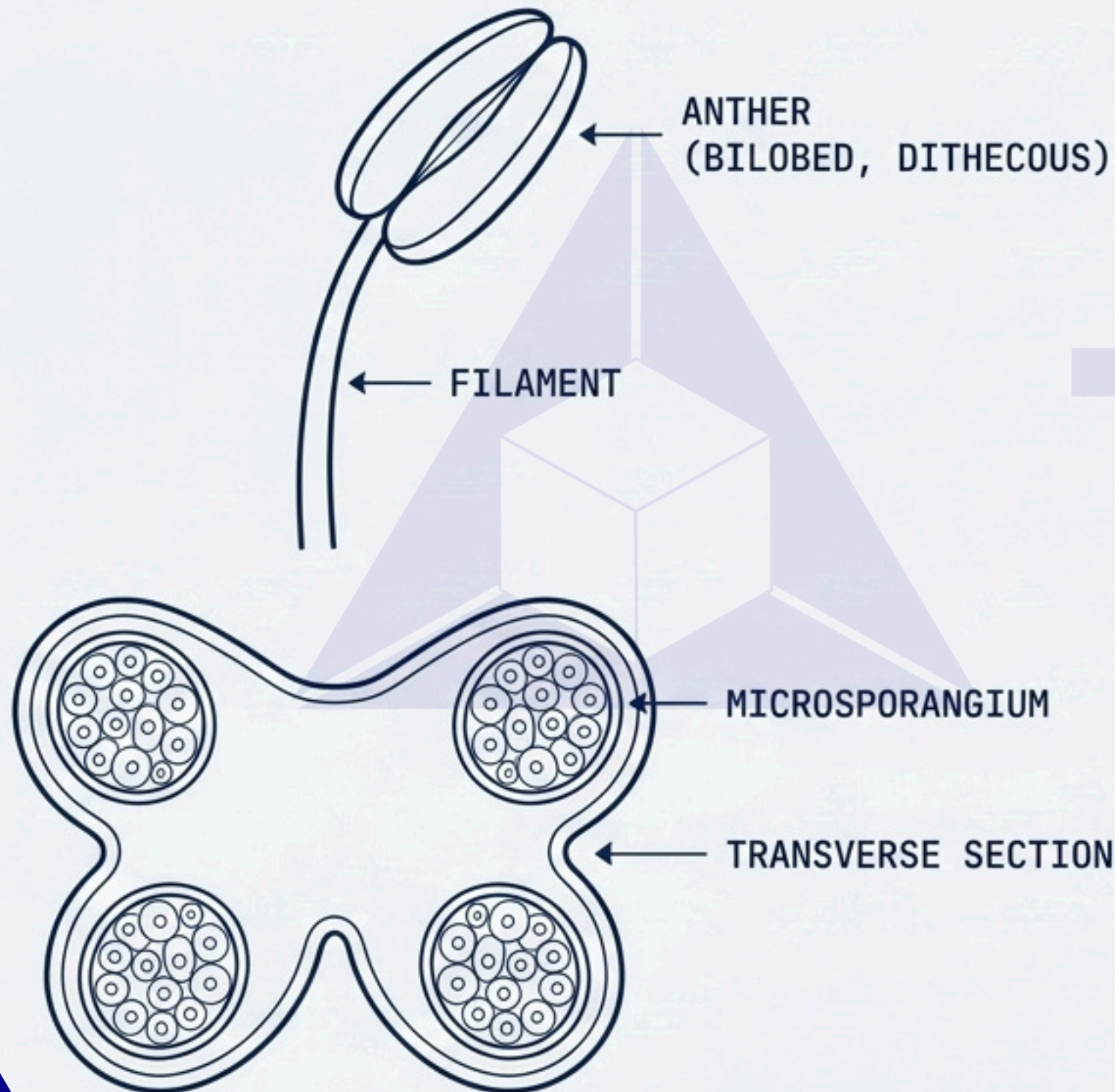
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# Androecium Differentiation

MALE REPRODUCTIVE ORGAN



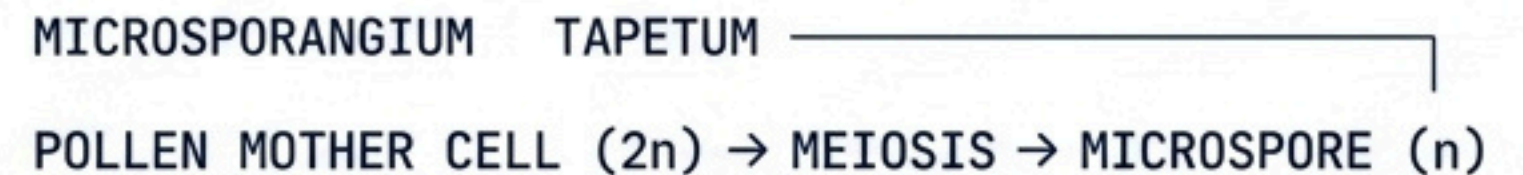
## The Whorl Structure

The stamen consists of a slender stalk and a terminal bilobed structure.



## The Pollen Factory

A four-sided structure containing four microsporangia. Specialized wall layers (epidermis, endothecium, middle layers) protect the sac, while the innermost tapetum nourishes it. Sporogenous tissue undergoes meiosis to form microspore tetrads, which mature into pollen grains.



# Gynoecium Differentiation

## FEMALE REPRODUCTIVE ORGAN

### The Pistil

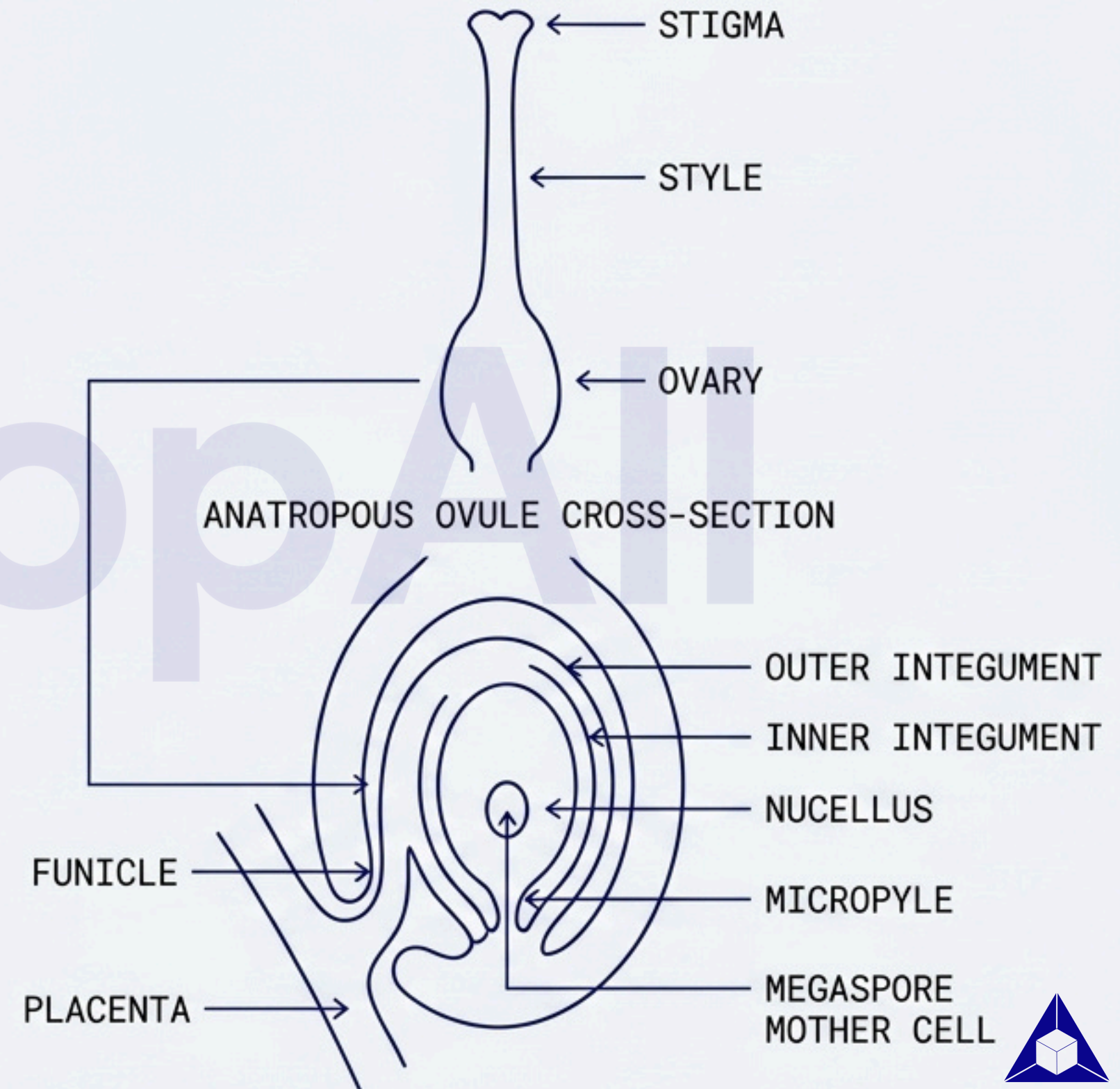
The central female unit. Can be single (monocarpellary) or multiple (multicarpellary - syncarpous/apocarpous). It consists of a landing platform, an elongated stalk, and a basal bulge.

STIGMA      STYLE      OVARY

### The Ovule Base

Arising from the ovarian placenta is the ovule, a small structure attached by a funicle stalk. It contains the protective integuments and the nucellus. It differentiates a single mother cell in the micropylar region to eventually form the female gametophyte.

MEGASPORANGIUM (OVULE)      PLACENTA      MEGASPORE MOTHER CELL (2n)



# Key Takeaway



Pre-fertilisation is not a single event, but a highly orchestrated biological cascade. It begins with invisible hormonal triggers that form the floral primordium, which scales into visible inflorescences and buds. Inside these buds, the androecium and gynoecium differentiate independently, assembling the specialized MICROSPORANGIA and MEGASPORANGIA required to produce and protect the gametes before fusion can ever occur.

END\_PHASE: PRE-FERTILISATION // NEXT: DOUBLE\_FERTILISATION



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