# Bee Ancestry

*The Fibonacci Sequence as seen through tracing a bee's family tree*

A simple fact about bee reproduction hides mathematical connections: Female bees can reproduce with or without a male!

-Unfertilized, female bees bear male bees as offspring.
-Fertilized by a male bee they give birth to a female!

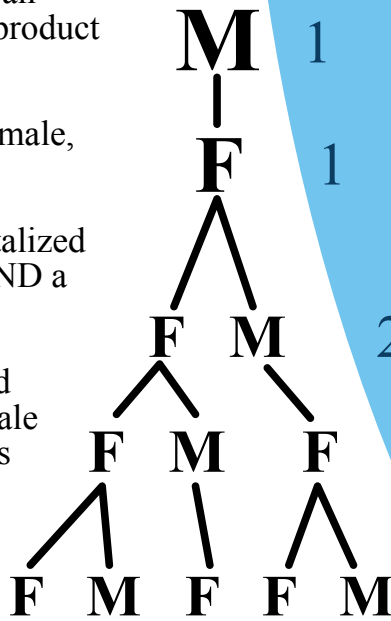To see the hidden math behind this bee trait, consider a male bee. *Where did it come from?*

Following the rules above, we can see that a male bee, M was the product of an unfertilized female, F!

Now, trace the origins of this female, his mother.

Females need to come from fertalized females, so she had a mother AND a father, two parents.

Tracing their roots, the male had a single female mother, the female had a mother and a father. That's three bees.

The previous generation has five bees!

## Count the bees in each generation!

M   1

F   1

F M   2 (1F + 1M)

F M F   3 (2F + 1M)

F M F F M   5 (3F + 2M)

Following the progression, how many bees will be in the previous generation? If you said eight, you either found the five females and three males that make up this group, or you noticed that each unfolding level represents the next step of the Fibonacci Sequence!

Bonus: can you find the sequence within the sequence?