

What is the difference between

# COCOA AND CACAO?



Storyboard Dr. Nicholas Hellmuth  
Illustrations Vivian Diaz



is

# CHOCOLATE

identical or different?



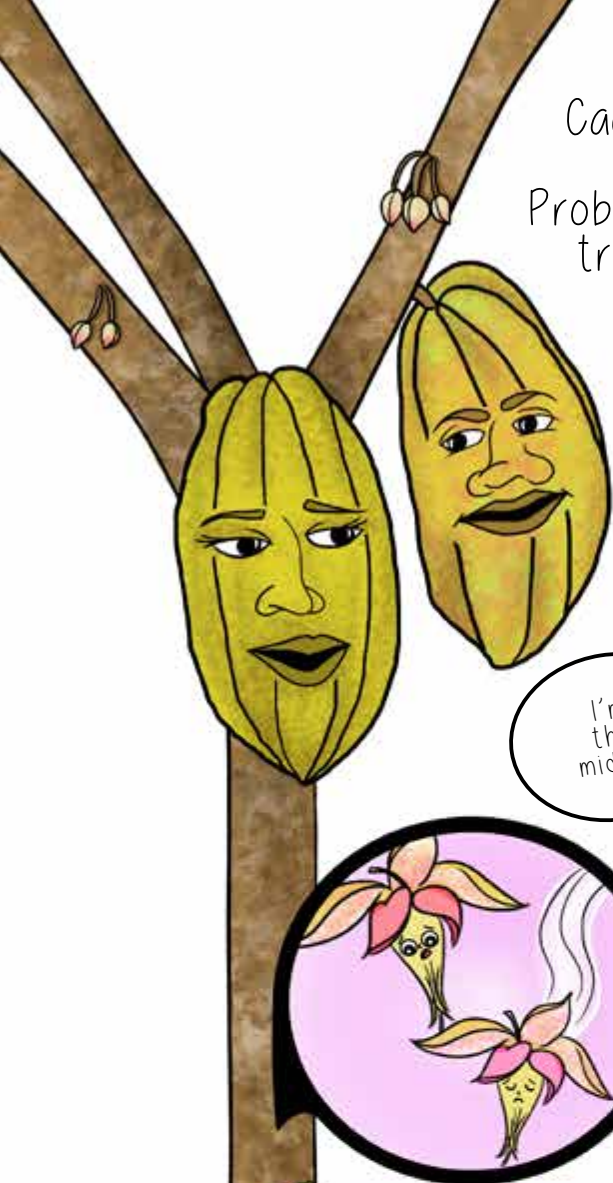
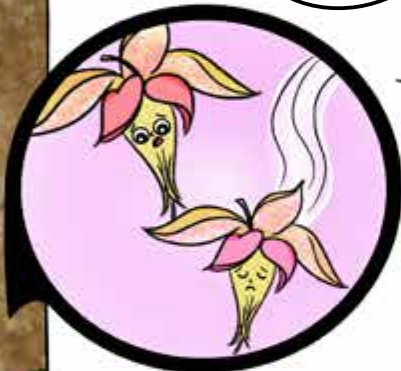
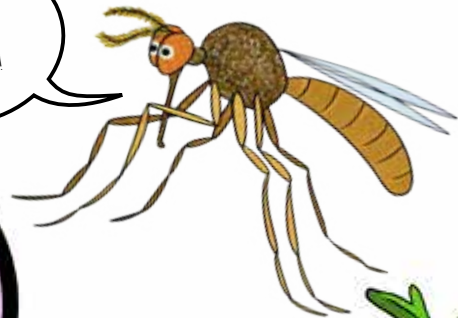
Cacao flowers are beautiful, but tiny.

Probably 90% fall off the tree or otherwise do not turn into mature fruits.

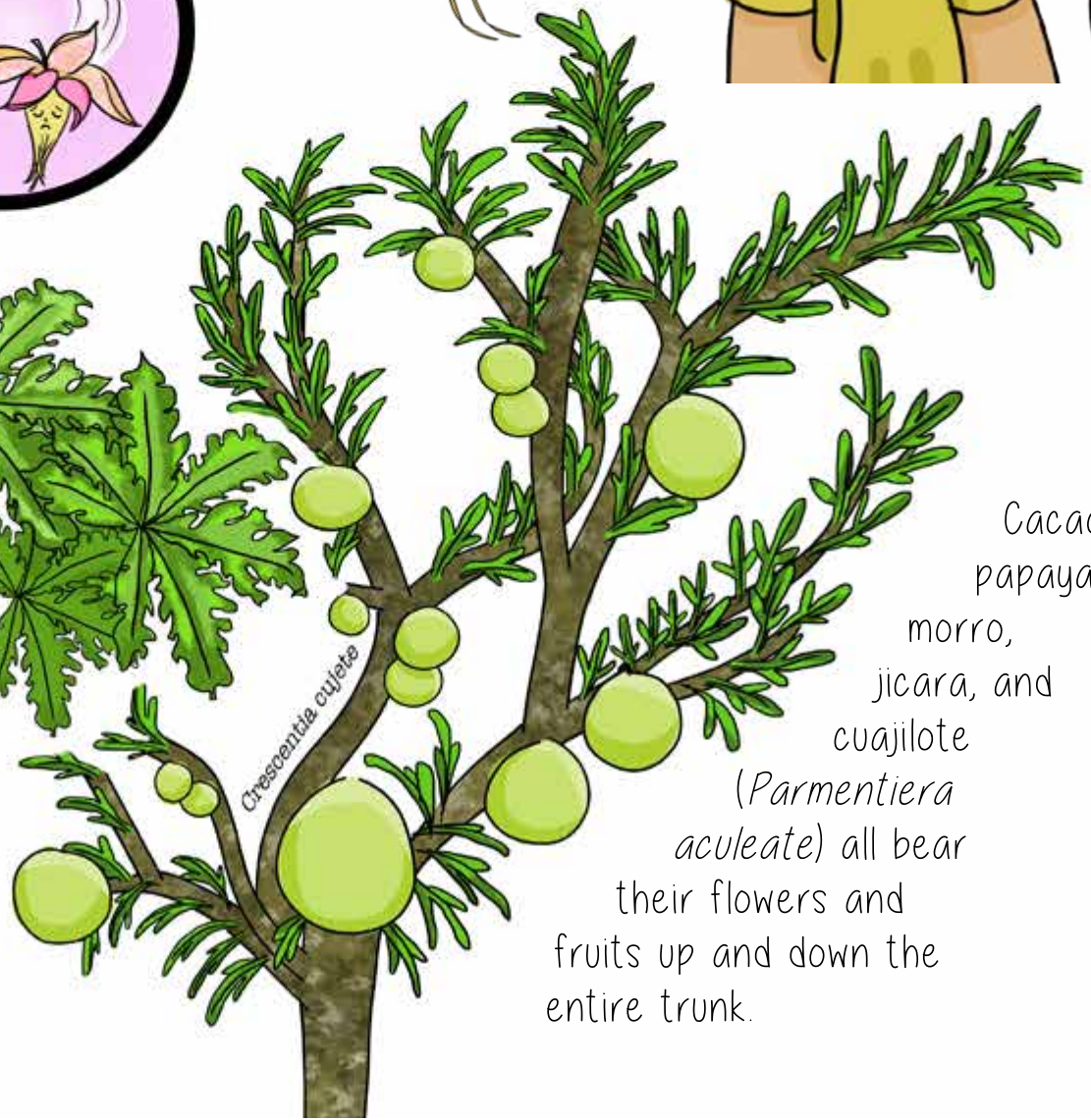
Although it is well known that an insect named midge pollinates the tiny flowers, it is also estimated that some trees can self-pollinate.



I'm the midge!



*Carica papaya*



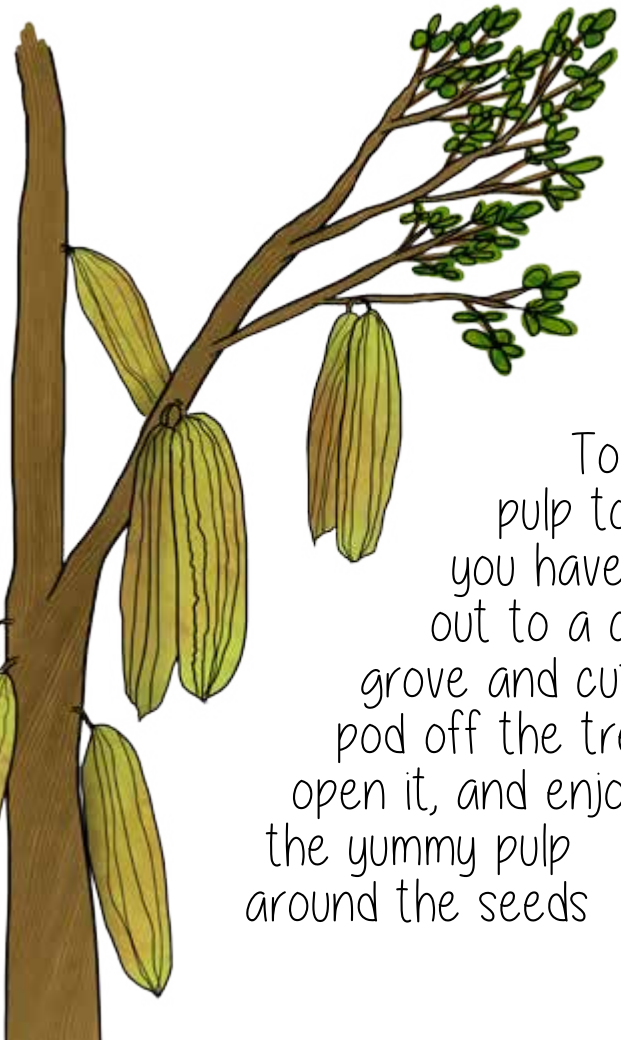
*Crescentia cujete*

Cacao, papaya, morro, jicara, and cuajilote (*Parmentiera aculeate*) all bear their flowers and fruits up and down the entire trunk.



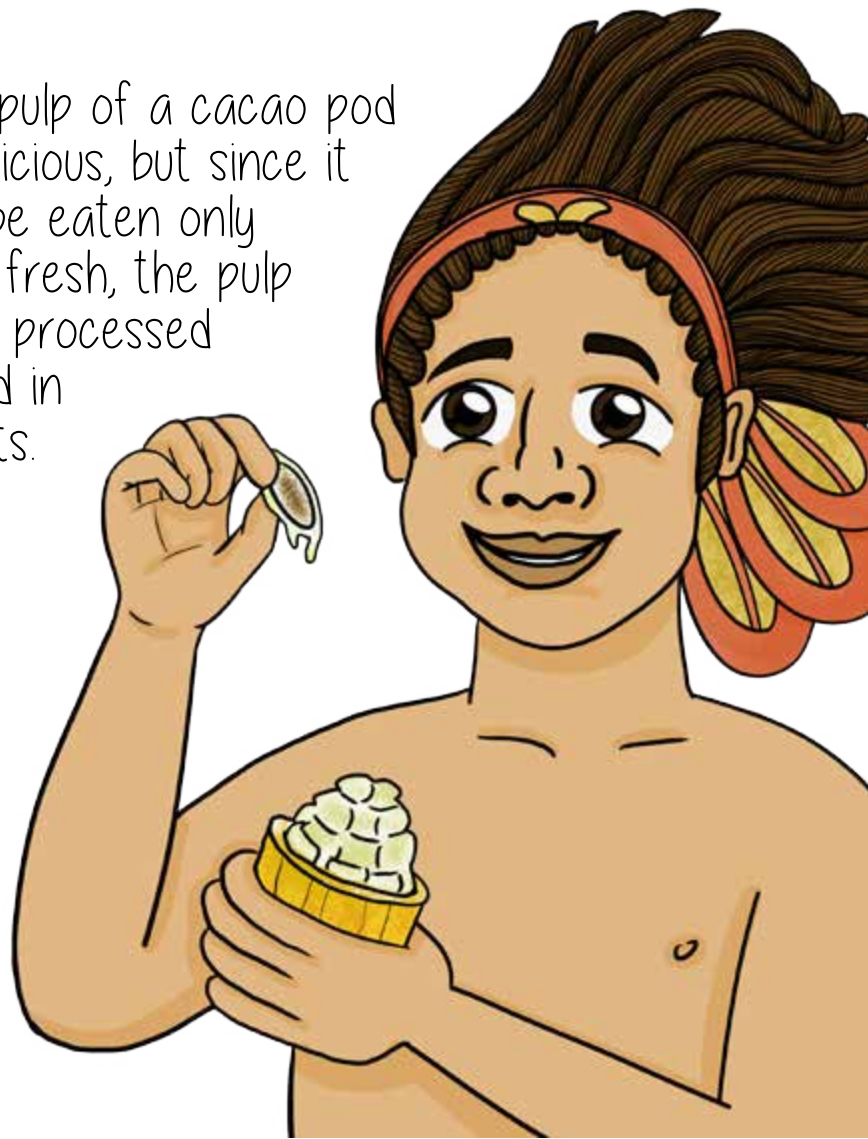


This tasty cacao seed, processed into cocoa and chocolate, mixed into a single cup of milk is what gives Dr. Hellmuth the energy to move forward.



The pulp of a cacao pod is delicious, but since it can be eaten only when fresh, the pulp is not processed or sold in markets.

To get pulp to eat, you have to go out to a cacao grove and cut a pod off the tree, open it, and enjoy the yummy pulp around the seeds

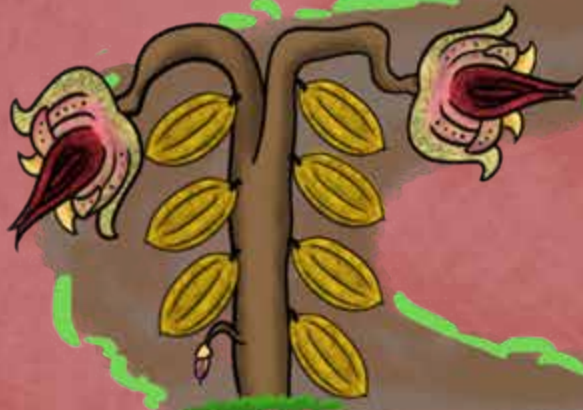


Where did cacao,  
cocoa, and chocolate  
originate?

**AZTEC?**

**MAYA?**

or **3,000 YEARS AGO**  
(pre-Maya)?



Nicholas Hellmuth discovered a royal Mayan tomb with cacao beans in a 9th century ceramic offering (while a student at Harvard working as an archaeology intern in the rain forests of Tikal, Peten, Guatemala).

Today (over 54 years later), Dr Nicholas raises *Theobroma cacao* plus several of the Aztec and Maya herbs used to flavor chocolate a thousand years ago.

