

Botany & Biology



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regenerations
botanical garden

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What is Seed?

**Plant material that can generate
more individual plants**



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Vegetative Seed/Asexual Reproduction

a genetic clone of the parent, unless somatic mutation has occurred



grafts



cuttings



corms, bulbs, tubers, offsets



air layers

“True” Seed

a genetically unique individual

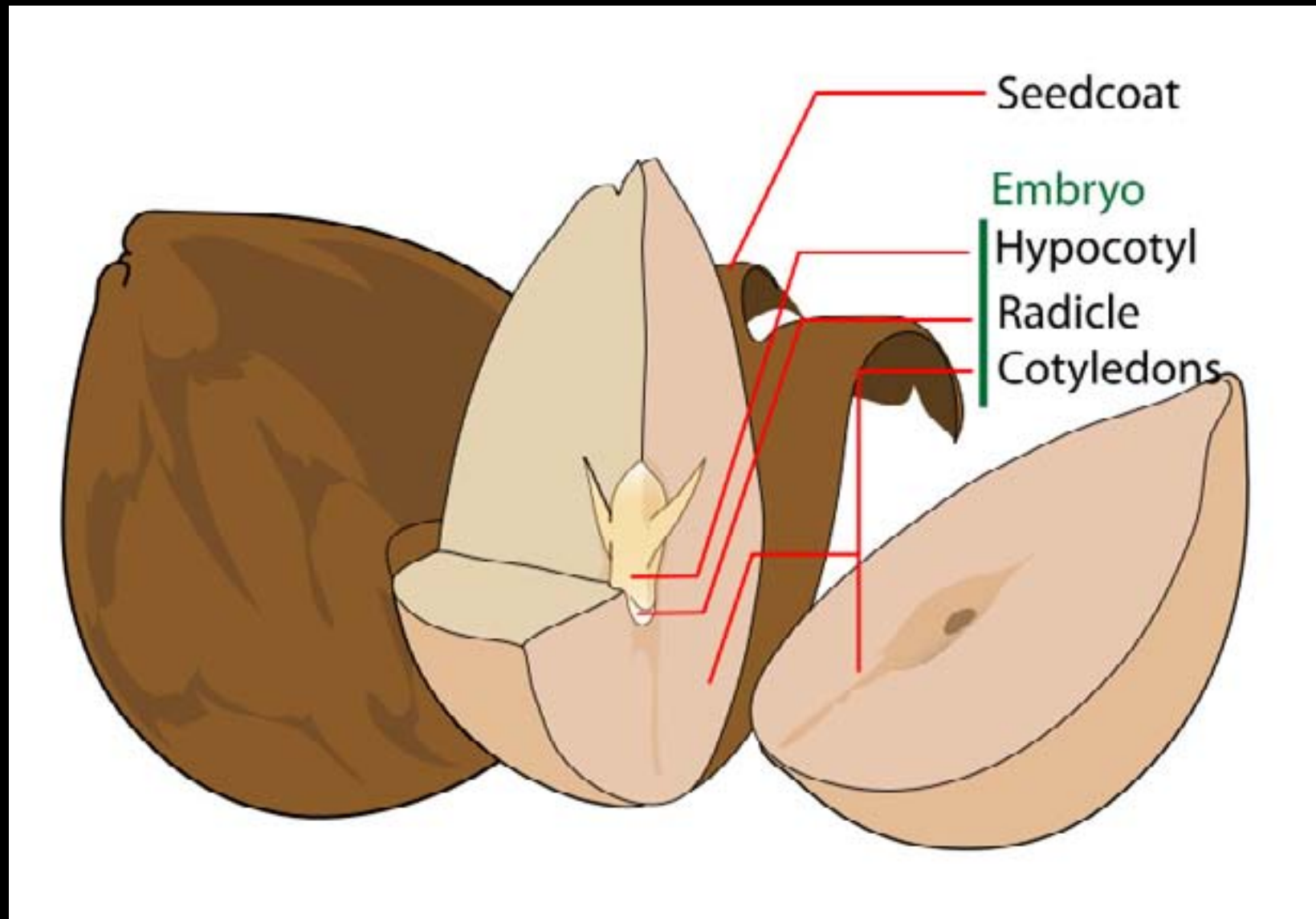


image by LadyofHats

Avocado Seed



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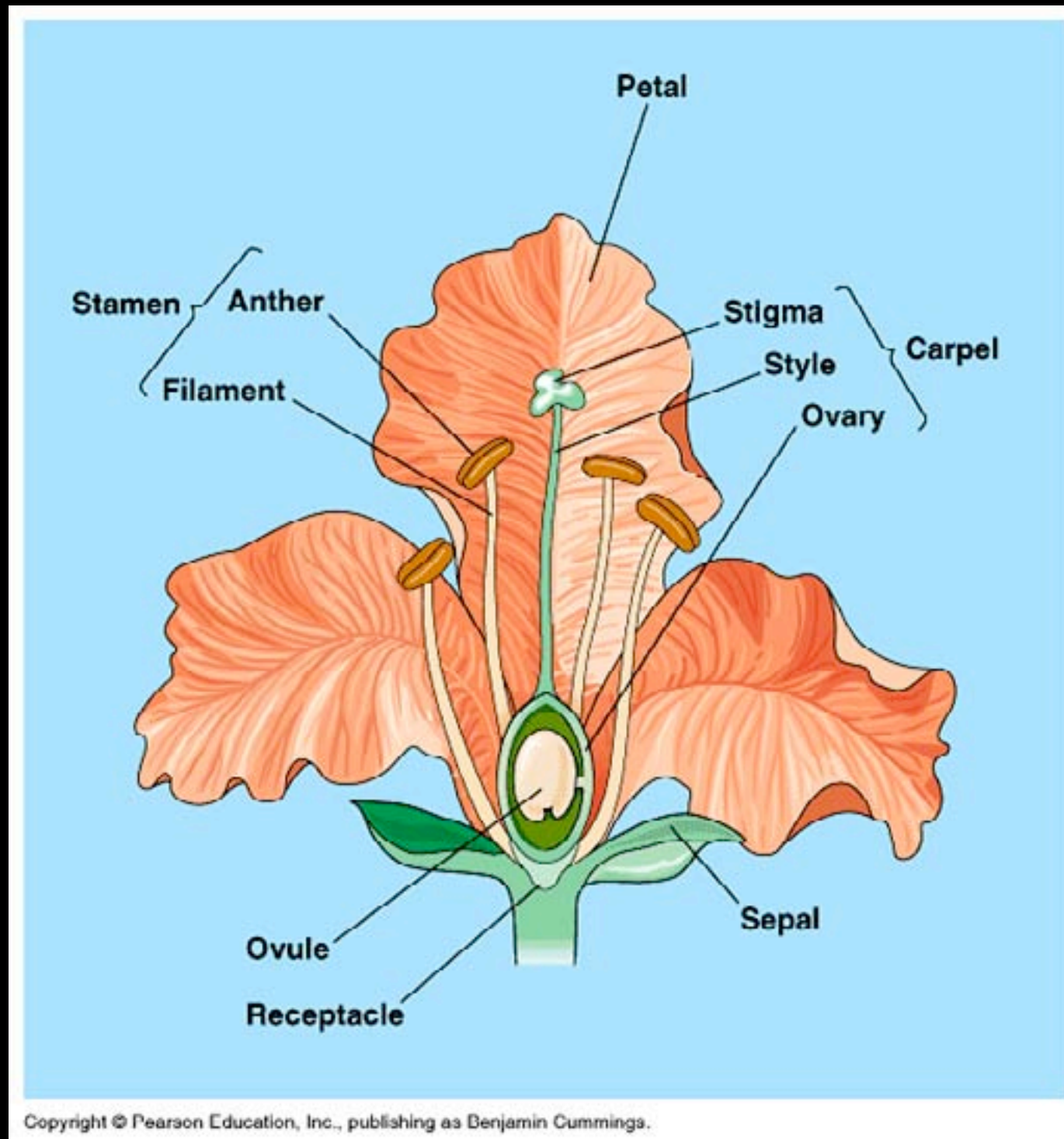
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Sexual reproduction of seed

Boy Parts



Girl Parts



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Monocots

- Flower parts in 4s or 5s or multiples of them
- Parallel venation, no petiole, blade base sheathing the stem
- fibrous root system (primary root dies & is replaced)
- Vascular bundles scattered in stem
- One seed leaf (cotyledon)
- Examples: corn, onions, rice, taro, banana, turmeric



Vanilla flower & fruit



Dicots

- Flower parts in 3s or multiples of 3
- Reticulate (netlike) venation
- Tap root
- Vascular bundles in a ring around stem
- Two cotyledons (seed leaves)
- Examples: tomato, lettuce, radish kale, carrot, squash, mango, orange



Lettuce flowers



Basic Types of Seed

- **Wild Seed** is seed both native and exotic that regenerates in the landscape without the need of human cultivation.
- **Open pollinated seed** is a stable variety that breeds “true to seed”. Seed of OPs are usually grown allowing plants to freely pollinate with others in the population.
- **Heirloom Seed** is a “cultivar” (cultivated variety) that has been handed down for decades or centuries.
- **Hybrid seed** varieties are bred from crossing 2 parents that are different in distinct characteristics; this can be a controlled or spontaneous crossing.
- **GMO seeds** are genetically modified organisms. They do not naturally occur. They are a manufactured, and often patented, product.





photo by freshelectrons on flickr.com

- Open pollinated varieties will breed “true-to-type”, while hybrids may produce random results for many generations.
- GMO seed is designed for the monocropping systems of industrial agriculture.
- Unintended crosses can happen among all different types of seed.



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