



Note: Radishes dispersed throughout this slide deck indicate an active link that will take you to recommended resources for further information...



Basics of Saving Seeds

Reviving the Ancient Art and Science as a
Template for Learning and Growth



For more information: [OSA Complete guide to Seed saving](#)

Intention

Note: Radishes dispersed throughout this slide deck indicate an active link that will take you to recommended resources for further information...



Why Save Seeds?



- Economical
- Self-sufficiency
- Develop and preserve strains
- Preserve our plant heritage, genetics & biodiversity
- Help save our pollinators
- Locally adapted to your unique environment
- Select for your desired traits
- Build community through seed sharing



Sections of the Seed Cycle



Seed production

- Preservation: Maintaining varietal purity**
 - Open-pollinated vegetable varieties
 - Rare native species

- Restoration: Encouraging genetic diversity**
 - Indigenous/endemic species
 - Stabilizing new OP vegetable varieties



Saving seed

- Seed collecting/harvesting
- Seed processing
- Seed storage + biomechanics



Seed Production

Important Vocabulary, Cycles,
and Processes





Growing Seed- Native and Vegetable



Image: U.S. Forest Service



Image: U.S. National Park Service



Image: Pixy



Image: Pikist



Vocabulary to navigate the seed world

Know the genetic state of the parent plant



- **Open-pollinated variety:** An open-pollinated seed variety is a variety that when allowed to cross-pollinate with other members of the same population produces offspring that are true to type.



Image: Seed Savers Exchange

Kentucky wonder bean

+



Image: Gardening Know How

Bountiful bush bean

=



Image: Hawai'i Seed Growers Network

Lualualei pole bean





Vocabulary to navigate the seed world

Know the genetic state of the parent plant



- **Heirloom variety:** An Heirloom seed is an open-pollinated cultivar or a seed variety that has been produced in cultivation by selective breeding. Heirloom varieties have been grown and shared from generation to generation within a family or community.

Face+Place+Story



Image: Hawai'i Magazine



Image: Images of Old Hawai'i



Image: Oh Snap Let's Eat





Vocabulary to navigate the seed world

Know the genetic state of the parent plant



- **Hybrid:** Hybrid seed is a product of crosses between two different varieties of the same species of plant. Seeds produced from F1 plants are unstable and will not be true to type.



Image: Tomato Fest

Komohana tomato

+

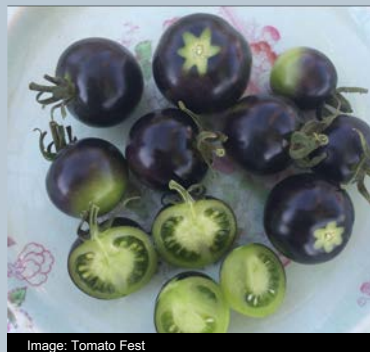


Image: Tomato Fest

Indigo Kiwi

=

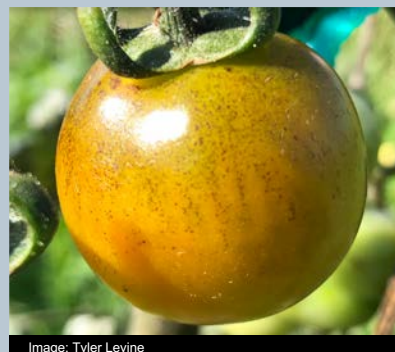


Image: Tyler Levine

Hybrid F1





Vocabulary to navigate the seed world

Know the genetic state of the parent plant



Images: Tyler Levine



Interested in the next Citizen Science Project? Register to receive updates here: <https://forms.gle/Hvb6CSPpmGcNAP5MZ>

Genus and Species (or Taxonomic Classification)

King Phillip Came Over For Great Seeds

1. Kingdom- Plantae
2. Phylum- Tracheobionta
3. Class- Magnoliophyta
4. Order- Solanales
5. Family- Solanaceae
6. Genus- *Solanum*
7. Species- *S. lycopersicum*



Know your plants Genus and Species



Image: Pixabay



Image: Nature & Garden



Image: Pixabay



Image: Pixabay



Image: Sarah Backmo



Image: The Spruce

A species can include several crop types...

Know your plants Genus and Species



Cucurbita pepo
Zucchini

Image: Project Purity Seeds



Cucurbita argyrosperma
Silver-seed Squash

Image: Alchetron



Cucurbita moschata
Acorn Squash

Image: Plantation by the Sea



Cucurbita maxima
Kabocha Squash

Image: JessSeeds4Bees

A single crop type can include several species...

Need to Know:

Life Cycle of a Plant for Seed Production

- **Annual plants:** Plants that sprout, flower, set seed, and die within one year.
- **Biennial plants:** A plant that requires 2 years to complete its life cycle, focusing on **stem, leaf, and root** growth in the 1st year, and **seed** production in the 2nd.
- **Perennial plant:** A long-living plant/tree that flowers and fruits for multiple growing seasons.



Annual



Biennial



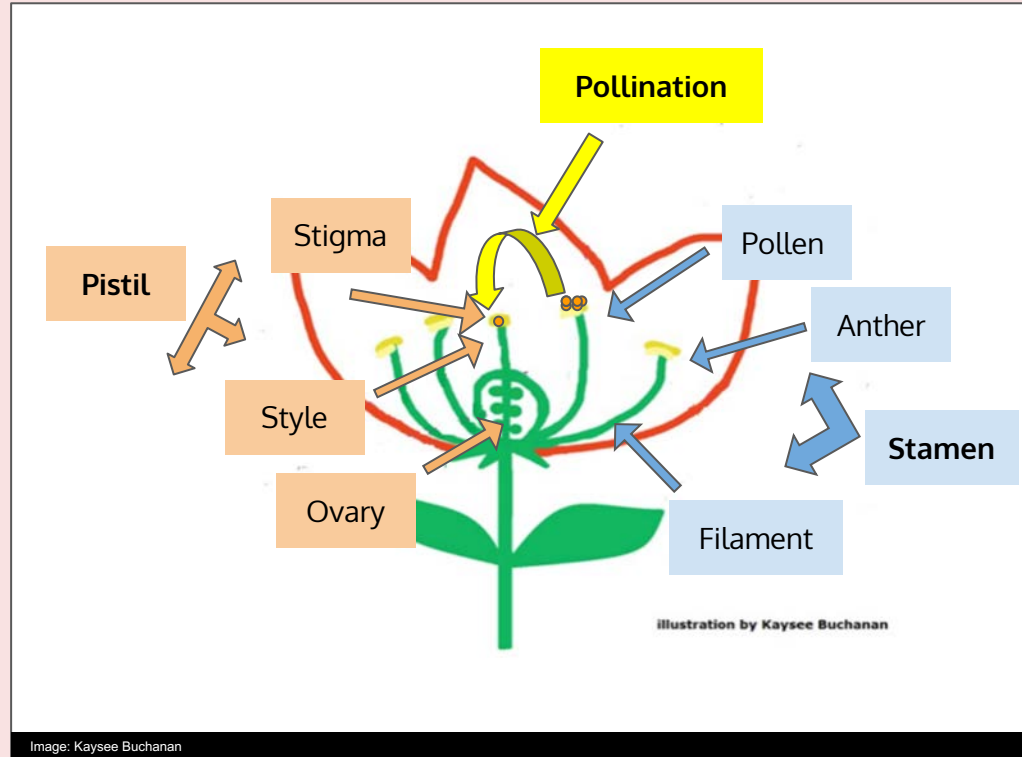
Perennial



Need to Know: Process of Pollination

Stamen □

- Anther
- Filament
- Pollen



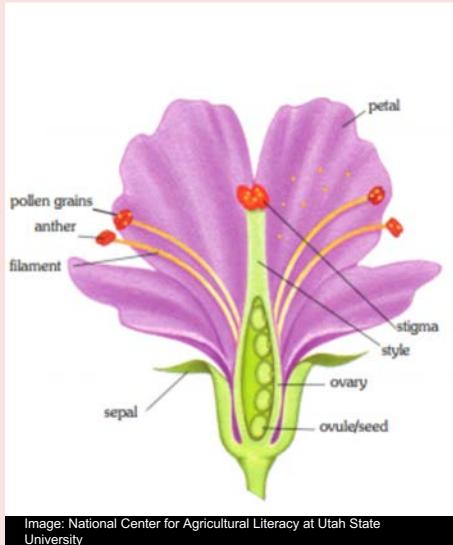
Pistil □

- Stigma
- Style
- Ovary

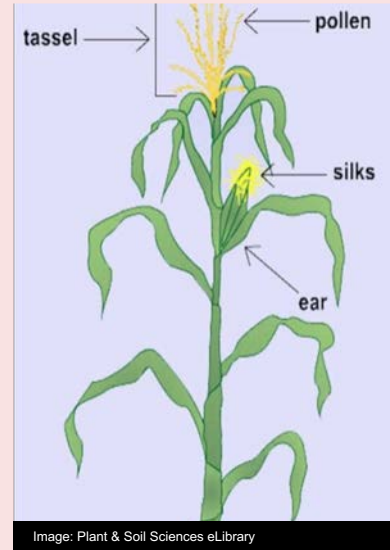
Image: Kaysee Buchanan

Need to Know: The Process of Pollination

Perfect Flowers



Imperfect Flowers



Observation - Do you see a difference?



Seed Production Considerations



Depending on the type of plant, seed production may take more time, space, and thought than vegetable production.

- Time + Space
- Support
- Weeds, disease, and pest
- Isolation distance
- Population size



Image: Peacock Garden Supports



Image: Red-Booted Mom



Image: Gardener's Path



Images: Seed Savers Exchange



Image: Caribbean Garden Seeds



Image: Bruce Cook



“Eating Ripe” vs “Seed Ripe”



Image: Garden Tech



Image: John Andrews



Image: TrueLove Seeds



Image: Ask2 Extension

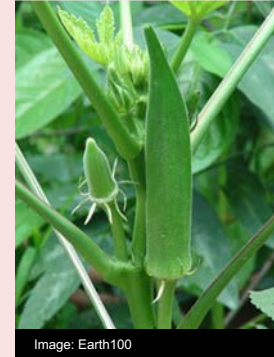
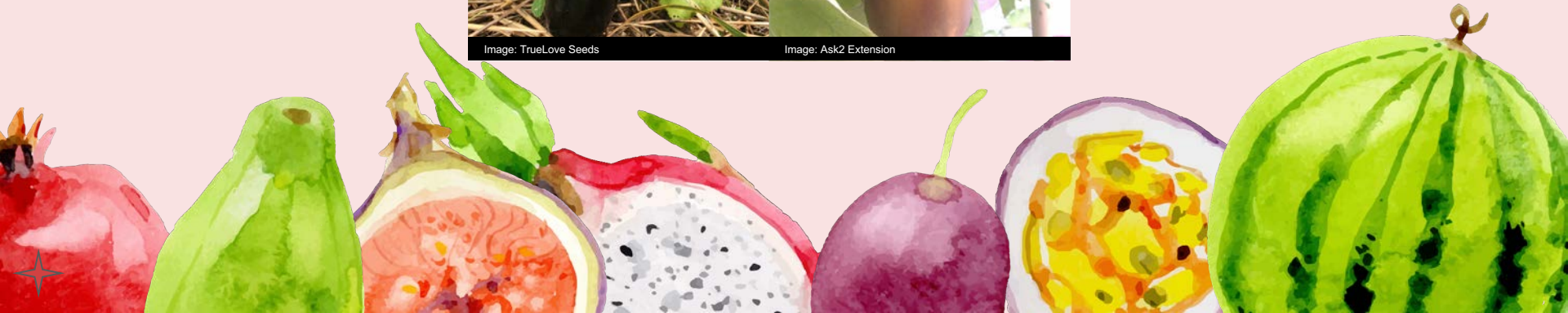


Image: Earth100



Image: Saving Seed



Reflection



Image: Pixy

<p>Basis of Saving Seeds</p> <p>Revisiting the Ancient Art and Science of a Template for Learning and Growth</p>	<p>Growing Food - National Vegetables</p>	<p>Vocabulary to navigate the seed world</p> <p>Know the genetic make of the parent plant</p>	<p>Seed to Know: Life Cycle of a Plant for Seed Production</p> <p>Know your plant's lifecycle from seed to seed and you'll know your way around the garden.</p>
<p>Why Have Needs?</p> <p>Remember: Seeds are designed for your unique environment. Identify your climate zone. Factor in soil and water needs. Do things you grow well at. Preserve your plant heritage, genetics & biodiversity. Help solve our problems. Build communities through seed sharing.</p>	<p>Vocabulary to navigate the seed world</p> <p>Know the genetic make of the parent plant</p> <ul style="list-style-type: none"> • Genotype refers to an organism's DNA code, which is passed on from its parents. It is the genetic blueprint that determines the organism's traits. 	<p>Grasses and Species for Taxonomic Classification</p> <p>King Philip Came Over for Green Tea</p> <ol style="list-style-type: none"> 1. Kingdom: Plantae 2. Phylum: Tracheophyta 3. Class: Magnoliopsida 4. Order: Fagales 5. Family: Gramineae 6. Genus: <i>Setaria</i> 7. Species: <i>S. spaldingii</i> 	<p>Seed to Know: Process of Pollination</p>
<p>Sections of the Seed Cycle</p> <p>Seed production</p> <ul style="list-style-type: none"> 1. Pollination 2. Fertilization 3. Embryonic development 4. Seed formation <p>Seed dispersal</p> <ul style="list-style-type: none"> 1. Wind 2. Water 3. Animals 	<p>Vocabulary to navigate the seed world</p> <p>Know the genetic make of the parent plant</p> <ul style="list-style-type: none"> • Phenotype refers to an organism's observable traits, which are determined by its genotype and the environment. It is the physical expression of the organism's DNA code. 	<p>Know your plants Grasses and Species</p>	<p>Seed to Know: The Process of Pollination</p>
<p>Seed Production</p> <p>Important vocabulary, cycles, and processes</p>	<p>Vocabulary to navigate the seed world</p> <p>Know the genetic make of the parent plant</p> <ul style="list-style-type: none"> • Allele refers to a variant form of a gene. It is a specific version of a gene that is passed on from one parent to another. Alleles can be dominant or recessive, and they determine the organism's traits. 	<p>Know your plants Grasses and Species</p>	<p>Observation - Do you see a difference?</p>

Images: Tyler Levine



Image: Vermont Bean Seed Company



Q & A



Break

