Seed Starting

THE LIFECYCLE OF FARM TO SCHOOL TRAINING SERIES

ROUND ROBIN/ICE BREAKER

- Name
- Job Title
- Location
- Have you planted seeds before?

POLL

- Please rate your current level of knowledge about each of the following topics:

OBJECTIVES

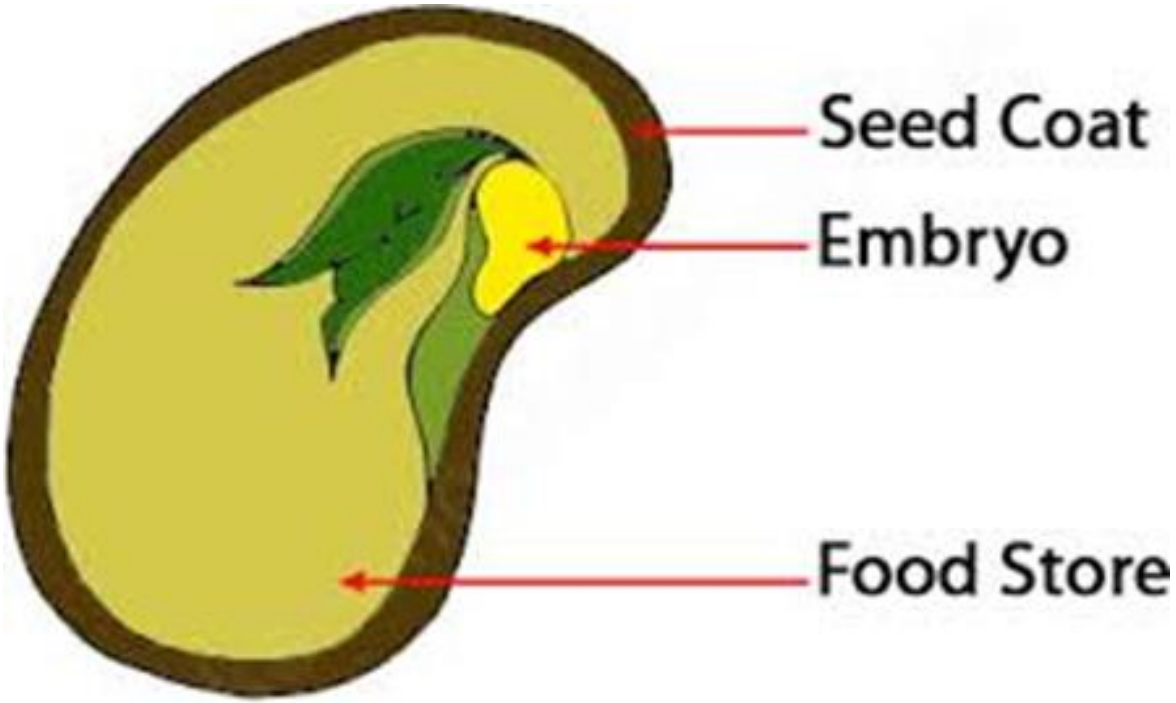
- Communicate the benefits of starting seeds for a school garden.
- Categorize plants that should be started indoors from seeds versus direct-sowing outdoors.
- Understand the process of seed starting to be able to successfully start seeds for a school garden.
- Identify a team to help with seed starting and tending to the seedlings throughout the germination process.
- Engage in the planning process; understand seed starting as a step in an annual cycle of a school garden.

BENEFITS TO SEED STARTING

- **Food Service Benefits:**
  - Relatively inexpensive
  - Provides access to locally-grown foods
  - Expands variety of menu offerings
  - Introduces students and school staff to food service operations

General Benefits:

- Enjoyed by all ages
- Promotes life-long healthy eating habits
- Provides hands-on learning opportunities for students
- Fits into science and math curricula



PARTS OF THE SEED

THE GROWTH PROCESS

- To **germinate** = the little seed comes to life
- Primary root, **radicle** emerges
- Once enough water has been absorbed the **shoot** appears
- **Seedling** (little plant) grows and develops a root system
- True leaves grow and photosynthesize light into energy
- Seedlings grow large enough to be transferred to an outdoor garden. These are called transplants.

INDOOR SEED STARTING

- Indoor seed starting = planting seeds inside
- Supplies consistent water, temperature, and humidity
- Provides a jump-start on plants that take a longer time to produce a mature harvest
- Start seeds based on their germination (grow) time and your frost-free date

CONTAINERS

- Use recycled milk and juice containers (single serving or half gallon size), yogurt cups, egg cartons, old shoes, hats, or baskets!
- Minimum height: 2 ½ inches, minimum diameter: 2 inches
- Clean all containers well
- Add a drainage hole (about the size of a dime)

ACTIVITY- CONTAINER DEMO

POTTING MIX

PURCHASE A COMMERCIAL SEED STARTING MIX

DO NOT USE GARDEN SOIL

OTHER SUPPLIES

- Plastic bags or plastic wrap
- Labels and a waterproof marker
- Large, shallow pan (hotel pans)
- Spray bottle or watering can

Optional

- Plant lights (shop lights)
- Waterproof heat mats
- Fan

TIME LAPSE VIDEO OF SEED STARTING

HTTPS://WWW.YOUTUBE.COM/WATCH?V=IZMJBO6A7AE&T=1S

RESOURCES


Resources
Materials
Planting from Seed
Considerations in creating an environment for sprouting and thriving seedlings
Seeds: Fruits, Vegetables, Flowers
Earth & Streams: Soil, Containers, Blocks or Hydroponics
Sunlight and warmth: Greenhouses, Soil thermometer, heating tools, lighting, light timer
Water: Watering tools, mist, drainage, water trays
Wind: Air Circulation, Fans, Humidity gage, air thermometer
Johnny's Selected Seeds | Supporting Farms & Gardens Since 1973 (johnnyseeds.com)
High Mowing Organic Seeds at Highmowingseeds.com
Seed Savers Exchange at Seedsavers.org
Territorial Seed Company at Territorialseed.com
Hudson Seed Valley Co. at Hudsonvalleyseed.com
Baker Creek Heirloom Seeds at Rareseeds.com
Seed Starting Supplies (gardeners.com)
Jung Seed: Vegetable Seed, Flower Seed, and Garden Supplies
Purple Cow Organics
Farm and Fleet https://www.farmandfleet.com/
forkfarms.com
Wisconsin Retail Garden Centers – Connecting the gardening public and local garden centers
Cambro Manufacturing (upcycle)
https://www.webstaurantstore.com/ (upcycle)
The Lifecycle of Farm to School

ACTION PLAN DEVELOPMENT

- What supplies do you already have that you can use for seed starting?
- Do you have funds to purchase supplies that you do not already have, such as quality potting mix?
- Where can you secure donations of supplies or monetary donations to purchase necessary items?

QUESTION AND ANSWER

BREAK

STEPS TO INDOOR SEED STARTING

STEP 1: MOISTEN POTTING MIX

Place enough potting mix in a bucket(s) to fill all containers

Add water to the mix to moisten soil (soil should not be soggy)

Stir with your hands or a long-handled spoon

STEP 2: FILL CONTAINERS

- Ensure all containers have drainage holes
- Fill the containers with soil
- Tamp (pack) the soil mix down firmly to create a level surface to the container

STEP 3: PLANT YOUR SEEDS

- Plant one type of seed per container
- Use the seed packet to determine planting depth
- Make holes for the seeds with your finger or a pencil
- Cover seeds per instructions on seed packet
- Label with the plant type and planting date

STEP 4: COVER CONTAINERS

- Spritz surface of potting mix with a water bottle
- Cover containers loosely with plastic wrap or a partially-closed plastic bag
- Do NOT cover tightly
- Place in a warm spot (consistently 65° to 75°F)

STEP 5: WATCH FOR GERMINATION

- Moist soil is critical for germination
- Check potting mix daily and spray with water, if needed
- Remove plastic coverings after you see signs of germination
- Seedlings require cooler growing temperatures (ideally 60° to 65°F)

STEP 6: CARE FOR SEEDLINGS - WATERING

- Many factors influence watering frequency
- Continue to keep soil moist (not soggy)
- Water carefully

STEP 6: CARE FOR SEEDLINGS - LIGHTING

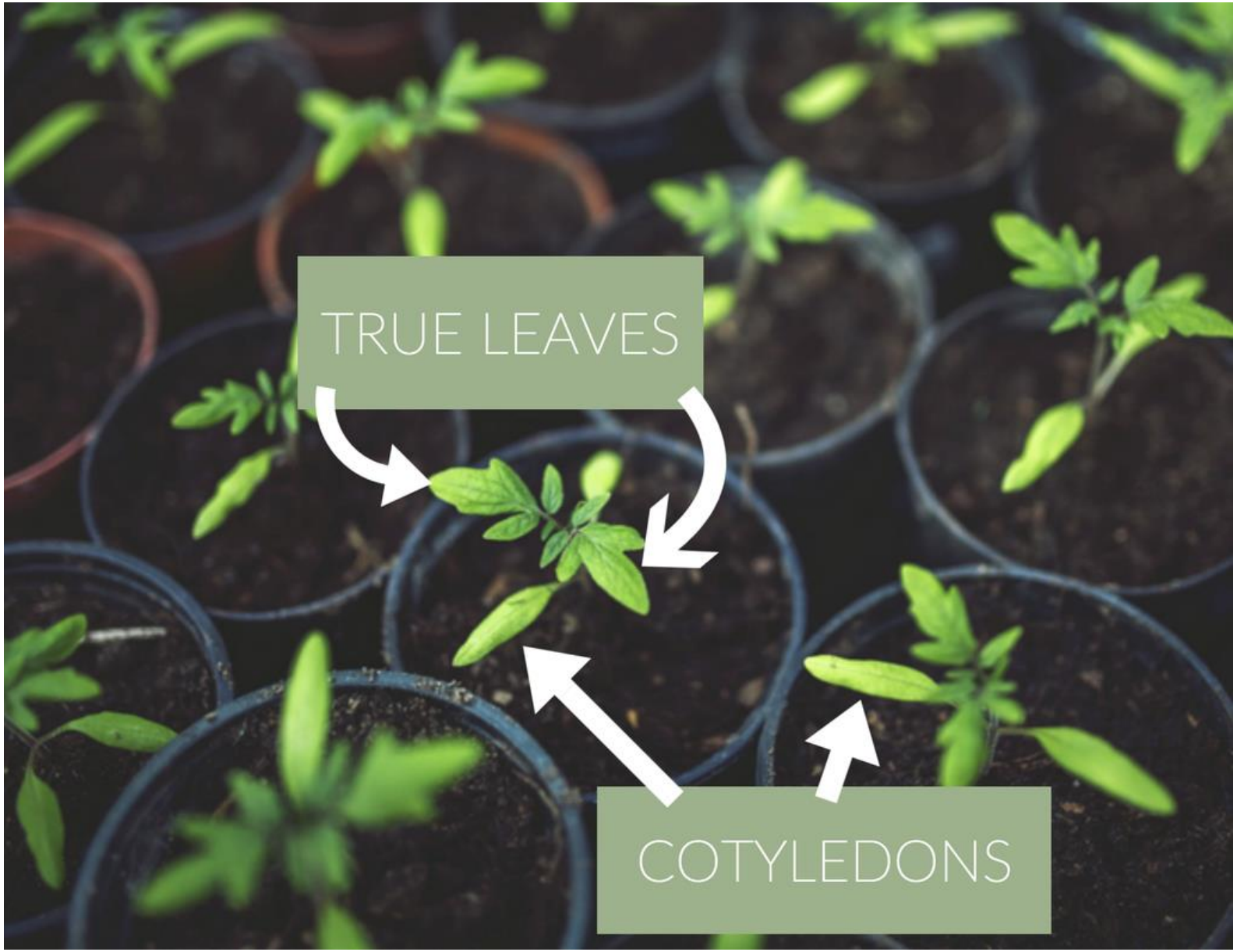
- Move containers to a spot with bright light once seedlings sprout
- In general, seedlings like 12-16 hours per day of light
- Eggplants, peppers, and tomatoes like constant light until they become "toddlers"
- Adjust lighting as needed

STEP 6: CARE FOR SEEDLINGS - THINNING PLANTS

- Snip out extra plants with scissors when plants are still small
- Do not pull-out the plants
- Check seed packet for thinning distance

STEP 7: TRANSPLANTING

- Transplant when there are two or more sets of true leaves
- Use a small spoon to lift seedlings out of soil
- Pull plants apart and untangle the roots
- Plant in a larger container at the same planting depth



STEP 8: FERTILIZING - *OPTIONAL*

- Fertilize when true leaves have developed
- Use a dilute solution (5-10-5) of a high phosphorus fertilizer every 7 days
- Apply fertilizer to the soil, not the leaves of your plants

STEP 9: HARDEN OFF SEEDLINGS

- Purpose: condition plants to the outdoor elements
- Start 7-10 days before planting outside
- Begin by putting seedlings in a partially shaded spot for a few hours
- Gradually move to more exposed locations for longer periods of time

WHO CAN HELP WITH SEED STARTING?

- Parents/Guardians and PTO
- Teachers - consider Ag or Environmental teachers
- Student groups - FFA, recess or afterschool gardening clubs
- Community members - retirement communities, church groups, Master Gardeners
- Local farmers
- AmeriCorps Farm to School members

SEED STARTING AT SHELL LAKE SCHOOL DISTRICT

HTTPS://WWW.YOUTUBE.COM/WATCH?V=UMIXXCLWBFQ

ACTIVITY – HOW TO READ A SEED PACKET

- It's your turn! Practice reading seed packets and locating when to start the seed indoors, proper planting depth, spacing, days to germination, and ideal germination temperature.

https://www.youtube.com/watch?v=mUC3F01gVKY

ACTION PLAN DEVELOPMENT

- Who can help with seed starting at your school?
- Who will check the plants daily to water, adjust lighting, and monitor temperature?

QUESTION AND ANSWER

ACTIVITY – STARTING SEEDS WITH SUPPLIES FROM HOME

DIRECT-SOWING

- Direct-sowing = planting seeds directly in the garden bed
- Plant in outdoor garden beds after your Frost-Free Date
- For hardier plants such as peas, beans, corn, and root crops (carrots, radishes, and beets)

STEPS FOR DIRECT-SOWING

- Consider the sun exposure, soil, and size of the plant
- Prepare the soil
- Refer to instructions on the seed packet
- Water regularly and gently
- Thin seedlings once they have at least a couple of sets of leaves

https://www.youtube.com/watch?v=ac_VNaEBWB0

BREAK

INDEPENDENT ACTIVITY

- Determine your Frost-Free Date
- Browse for plants you want to start from seed
- https://rise.articulate.com/share/HWI9bqUkodbJkC5WCSOxRgS13FD0Ir1P

RESOURCES

Resources
People

Planting from Seed

Key Partners within your school

Grounds keepers and maintenance crew

FFA and Food Science Teachers

Welcome to Wisconsin Ag Ed

Student Sustainability Councils

Community Partners

Local Farm and Garden Businesses

Wisconsin Local Foods Database - Find Farmers (google.com)

Wisconsin Retail Garden Centers – Connecting the gardening public and local garden centers

Master Gardeners

Master Gardener Program – University of Wisconsin-Extension

WI Garden Clubs

Wisconsin Garden Club Federation - Home

County Extension

Community Food Systems – Division of Extension (wisc.edu)

Local Chamber of Commerce

Community Farmers Market

ACTION PLAN DEVELOPMENT

- What will you grow?
- When will you start seeds?
- Who will you reach out to for support?

DISCUSSION

- What will you grow?
- What are you envisioning for your garden?
- Any final questions?

WRAP-UP

BUILDING AND PLANTING WORKSHOP: COMING SPRING 2022

CREDITS

- Image credit: https://www.greenwillowhomestead.com/blog/how-to-get-started-with-organic-gardening-step-4-planting
- The National Gardening Association. (2014). Indoor Seed Starting 101.
- DPI AmeriCorps Farm to School Program: https://dpi.wi.gov/school-nutrition/farm-to-school/americorps
- Purple Cow Organics in Waunakee, WI for the donation of the seed starting soil

PROJECT FUNDING

- *"This project has been funded at least in part with Federal funds from the U.S. Department of Agriculture. The contents of this publication do not necessarily reflect the view or policies of the U.S. Department of Agriculture, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government."*

USDA NONDISCRIMINATION STATEMENT

In accordance with federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, this institution is prohibited from discriminating on the basis of race, color, national origin, sex (including gender identity and sexual orientation), disability, age, or reprisal or retaliation for prior civil rights activity.

Program information may be made available in languages other than English. Persons with disabilities who require alternative means of communication to obtain program information (e.g., Braille, large print, audiotape, American Sign Language), should contact the responsible state or local agency that administers the program or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339.

To file a program discrimination complaint, a Complainant should complete a Form AD-3027, USDA Program Discrimination Complaint Form which can be obtained online at: https://www.usda.gov/sites/default/files/documents/USDA-OASCR%20P-Complaint-Form-0508-0002-508-11-28-17Fax2Mail.pdf, from any USDA office, by calling (866) 632-9992, or by writing a letter addressed to USDA. The letter must contain the complainant's name, address, telephone number, and a written description of the alleged discriminatory action in sufficient detail to inform the Assistant Secretary for Civil Rights (ASCR) about the nature and date of an alleged civil rights violation. The completed AD-3027 form or letter must be submitted to USDA by:

1. **mail:**
   U.S. Department of Agriculture
   Office of the Assistant Secretary for Civil Rights
   1400 Independence Avenue, SW
   Washington, D.C. 20250-9410; or
2. **fax:**
   (833) 256-1665 or (202) 690-7442; or
3. **email:**
   program.intake@usda.gov

This institution is an equal opportunity provider.