



**PHILADELPHIA
ORCHARD PROJECT**



SEASONAL ORCHARD HARVEST LESSON & ACTIVITY GUIDE

A Pennsylvania-state standards-based set of of fruit-themed, cultural foodways, and food preservation lessons for students & small groups (grades 6-12) focused on common & native fruits of POP orchards and the city's local bioregion

Developed by POP Education Director Alyssa Schimmel with content support from Repair the World 2017-19 fellow Megan Brookens, POP Education Intern Bethany Bronkema, intern Chris Flounders, volunteer Nelly Saad, along with orchard info content created by POP Orchard Director Michael Muehlbauer.

SUMMER 2020

**For more lesson plans & educational materials
visit phillyorchards.org**

WELCOME!

Grab your harvest baskets, measuring cups, and mixing bowls for this **seasonal orchard lesson plan pack** for teachers, students, and families!

This learning resource was created over the course of 3 years of leading **POP's School Orchard Program**, supporting 800+ students from 14, K-12 schools in making use of their school's orchard & harvests with **fun, hands-on, multidisciplinary PA state-standards based lessons**.

Whether you're working in partnership with a school orchard site or garden, or leading these activities on your own, we hope that they serve you in well in **covering a broad base of food preservation methods & cultural foodways from around the world and through the seasons!**

- Alyssa Schimmel, POP Education Director 2017-20



HOW TO USE THIS GUIDE

The materials in this lesson pack are **well-suited as one-off, adaptable activities** (running 45 minutes - 1.5 hrs in length) or can be used as a **series of lessons supporting ongoing seasonal care, harvest, and learning at one of POP's community orchards**.

Consider having students **read the plant profile, visit the plant(s) for care/harvest/propagation through the seasons**, learning key terms from the **glossary**, and preparing the **recipe**.

The guide begins with PA state standards for grades 6-12th, followed by glossary, and POP checklist of orchard care tasks and resources on fruit harvest and weight conversions.



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HOW TO EXPAND THIS CURRICULUM

This guide provides a solid base for expansion into more specialized topics. Consider how you might expand the following lessons with tie-ins to the following areas:

- **Agricultural Science** (care of plant / pest ID and treatment, pollinators, soil testing)
- **Art** (botanical art, drawing, illustration)
- **Botany** (hands-on exploration)
- **Cultural Foodways / Ethnobotany** (research into how a plant is used cross-culturally)
- **Language Arts** (poetry, song)
- **Nutrition / Food Sciences** (chemical transformation of foods through different preservation methods, nutritional study)
- **Multimedia Art** (video, documentary work)
- **Plant Science / Phytochemistry** (propagation work, study of plant compounds)
- **World History** (tracing plant origins and their migration / cultivation by world cultures)

PA STATE STANDARDS / 6TH GRADE

- **6th Grade LANGUAGE ARTS:**

- **CC.1.2.6.A:** Determine the central idea of a text and how it is conveyed through particular details, provide a summary of the text distinct from personal opinions or judgments.
- **CC.1.2.6.F:** Determine the meaning of words and phrases as they are used in grade-level reading and content, including interpretation of figurative language in context.
- **CC.1.2.6.L:** Read and comprehend literary nonfiction and informational text on a grade level, reading independently and proficiently.
- **CC.1.5.6.C:** Engage effectively in a range of collaborative discussions, on grade-level topics, texts, and issues, building on others' ideas and expressing their own clearly.
- **CC.1.5.6.G:** Demonstrate command of the conventions of standard English when speaking based on Grade 6 level and content.

- **6th Grade MATH:**

- **CC.2.1.6.D.1:** Understand ratio concepts and use ratio reasoning to solve problems.
- **CC.2.1.6.E.1:** Apply and extend previous understandings of multiplication and division to divide fractions by fractions.
- **CC.2.3.6.A.1:** Apply appropriate tools to solve real-world and mathematical problems involving area, surface area, and volume.

- **6th Grade SCIENCE & TECHNICAL**

- **CC.3.5.6-8.C:** Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

- ***Environment & Ecology:***

- **4.4.6.A.:** Explain how different plants and animals in the United States have specific growing requirements related to climate and soil conditions.

- ***Health, Safety and Physical Education:***

- **10.1.6.C:** Analyze nutritional concepts that impact health: caloric content of foods, relationship of food intake and physical activity (energy output), nutrient requirements, label reading, healthful food selection

- ***Family & Consumer Sciences***

- **11.2.6.C:** Classify the components of effective teamwork and leadership
- **11.3.6.A:** Demonstrate knowledge of techniques used to evaluate food in various forms (e.g. canned, frozen, dried, irradiated)
- **11.3.6.B:** Describe safe food handling techniques (e.g. storage, temperature control, food preparation, conditions that create a safe working environment for food production)
- **11.3.6.F:** Analyze basic food preparation techniques and food handling procedures.
- **11.3.6.G:** Describe the physical, biological, and chemical changes that take place in food preparation.

PA STATE STANDARDS / 7TH GRADE

- **7th Grade LANGUAGE ARTS:**

- **CC.1.2.7.A:** Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text.
- **CC.1.2.7.F:** Determine the meaning of words and phrases as they are used in grade-level reading and content including interpretation of figurative, connotative, and technical meanings.
- **CC.1.2.7.G:** Compare and contrasts a text to an audio, video or multimedia version of the text, analyzing each medium's portrayal of the subject.
- **CC.1.2.7.L:** Read and comprehend literary nonfiction and informational text on a grade level, reading independently and proficiently.
- **CC.1.5.7.A:** Engage effectively in a range of collaborative discussions, on grade-level topics, texts, and issues, building on others' ideas and expressing their own clearly.
- **CC.1.5.7.G:** Demonstrate command of the conventions of standard English when speaking based on Grade 7 level and content.

- **7th Grade MATH:**

- **CC.2.1.7.D.1:** Analyze proportional relationships and use them to model and solve real-world and mathematical problems.
- **CC.2.2.7.B.3:** Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and graphical representations.

- **7th Grade SCIENCE & TECHNICAL:**

- **CC.3.5.6-8.C:** Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

- **Environment & Ecology:**

- **4.5.7.D:** Explain how biological diversity relates to the viability of ecosystems. / Explain how biological diversity relates to the ability of an ecosystem to adapt to change.
- **4.3.7.A:** Explain how products are derived from natural resources. / Describe the process of converting raw materials to consumer goods.
- **4.4.7.A:** Describe how agricultural practices, the environment, and the availability of natural resources are related.
- **4.4.7.C:** Investigate resources, their relation to land use, and their impact on the food and fiber system.
- **4.5.7.B:** Describe the impact of pests in different geographic locations and techniques use to manage those pests.

PA STATE STANDARDS / 8TH - 12TH GRADES

- **8th Grade LANGUAGE ARTS:**

- **CC.1.2.8.A:** Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.
- **CC.1.2.8.F:** Analyze the influence of words and phrases in a text including figurative, connotative, and technical meanings and how they shape meaning and tone.
- **CC.1.2.8.L:** Read and comprehend literary nonfiction and informational text on a grade level, reading independently and proficiently.
- **CC.1.5.8.A:** Engage effectively in a range of collaborative discussions, on grade-level topics, texts, and issues, building on others' ideas and expressing their own clearly.
- **CC.1.5.8.G:** Demonstrate command of the conventions of standard English when speaking based on Grade 8 level and content.

- **8th Grade SCIENCE & TECHNICAL:**

- **CC.3.5.6-8.C:** Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

- **Environment & Ecology:**

- **4.4.8.A:** Identify and describe how food safety issues have impacted the food and fiber system.

- **9th-10th Grade: LANGUAGE ARTS**

- **CC.1.2.9-10.A:** Determine a central idea of a text and analyze its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.
- **CC.1.2.9-10.L:** Read and comprehend literary nonfiction and informational text on a grade level, reading independently and proficiently.
- **CC.1.5.9-10.A:** Initiate and participate effectively in a range of collaborative discussions, on grade-level topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
- **CC.1.5.9-10.G:** Demonstrate command of the conventions of standard English when speaking based on Grade 9-10 level and content.

- **9th-10th Grade SCIENCE & TECHNICAL:**

- **CC.3.5.9-10.C:** Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.

- **Environment & Ecology:**

- **4.4.10.A:** Explain the relationships between and among the components of the food and fiber system (ie. production, processing, research and development, marketing, distribution, and regulations)
- **4.4.10.D:** Evaluate the use of technologies to increase plant and animal productivity.
- **4.5.10.B:** Describe the impact of integrated pest management practices on the environment.

PA STATE STANDARDS / 8TH - 12TH GRADES CONTINUED...

- **Family & Consumer Sciences:**

- **11.2.9.H:** Justify the significance of interpersonal communication skills in the practical reasoning method of decision making.
- **11.3.9.A:** Explain how scientific and technological developments enhance our food supply (e.g. food preservation techniques, packaging, nutrient fortification)
- **11.3.9.G:** Analyze the application of physical and chemical changes that occur in food during preparation and preservation.

- **11th-12th Grade LANGUAGE ARTS:**

- **CC.1.2.11-12.A:** Determine and analyze the relationship between two or more central ideas of a text, including the development and interaction of the central ideas; provide an objective summary of the text.
- **CC.1.2.11-12.L:** Read and comprehend literary nonfiction and informational text on a grade level, reading independently and proficiently.
- **CC.1.5.11-12.A:** Initiate and participate effectively in a range of collaborative discussions, on grade-level topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
- **CC.1.5.11-12.G:** Demonstrate command of the conventions of standard English when speaking based on Grade 11-12 level and content.

- **Science and Technical:**

- **CC.3.5.11-12.C:** Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, analyzing the specific results, based on expectations in the text.

- **Family & Consumer Sciences:**

- **11.2.12.A:** Justify solutions developed by using practical reasoning skills.
- **11.2.12.C:** Analyze teamwork and leadership skills and their application in various family and work situations.
- **11.3.12.C:** Evaluate sources of food and nutrition information.
- **11.3.12.E:** Analyze the breakdown of foods, absorption of nutrients and their conversion to energy by the body.
- **11.3.12.G:** Analyze the relevance of scientific principles to food processing, preparation, and packaging.

GLOSSARY OF TERMS / HORTICULTURAL & POLLINATION

- **Botanical Family** - A grouping of plants that have many features in common. At this level of classification, similarities between plants can often be seen when observing the structure of seeds, stems, and leaves.
- **Cultivar** - A particular plant that has been cultivated, or helped to grow, either naturally or through hybridisation, and can be grown by seed or cuttings to produce more of the same plant. The name follows the Genus and species name either with single quotation marks or cv. written in front of the name.
- **Genus** - A genus is used in the biological classification of living and fossil organisms. Genus comes above species and below family and is written in Latin with a capital letter.
- **Species** - The basic level of classification for a group of living organisms capable of exchanging genes and producing offspring.

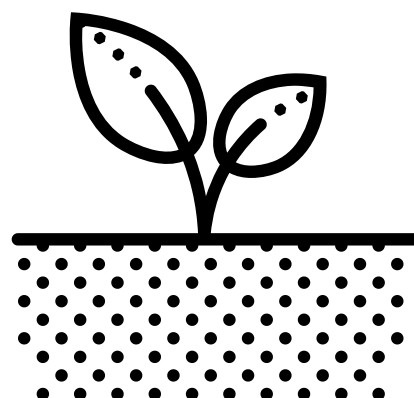
- **Annual** - A type of plant that dies after completing its life cycle within one growing season.
- **Biennial** - A type of plant that takes two years to complete its life cycle.
- **Deciduous** - A type of plant that sheds its leaves annually.
- **Dormant** - When a plant is in a state of temporary inactivity or minimal activity. The plant is still alive, but may slow down growth in response to changes in growing conditions. This happens often during the cold winter months, but can also happen during intense heat or drought.
- **Evergreen** - A type of plant that has green leaves all year.
- **Perennial** - A type of plant that grows back every year for more than two years. The plant is dormant throughout the winter.

- **Native** - A plant that originates in a particular region or ecosystem.
- **Non-Native** - A plant that is grown outside of its natural range, often introduced to a new place or habitat with human help.
- **Ornamental** - A plant grown for decorative purposes. Hardiness Zone - a geographically-defined zone in which a specific category of plant life is capable of growing.

- **Mycelium** - The mycelium is the vegetative body of a fungus, usually the part underground or inside another substance. When compared to a plant, mycelium is like the root system and the mushroom is like the flower. A mycelium may be tiny, forming a colony that is too small to see, or it may be extremely large and cover the floors of a large forest.
- **Pollination** - A very important part of the life cycle of plants. Insects, birds, bats and the wind take pollen between flowering plants to help the plant reproduce. Pollen grains from an anther, the male portion of a flower, are transferred to a female part of the flower, known as the stigma.
 - **Cross-Pollination** - When the pollen from one plant crosses with a plant of another variety to create a new variety. The seeds from that plant will have genetic material and characteristics from both of the different parent plants.
- **Self-Fertile** - A type of plant that does not require another plant to produce seeds and grow new plants.

GLOSSARY OF TERMS / SOIL, PLANT CARE, PROPAGATION

- **Compost Tea** - An organic supplement made by steeping aged compost in water. This mixture is sprayed on your plants to add nutrients into the soil.
- **Fertilizer** - A chemical or natural substance added to soil or land to increase its fertility.
- **pH** - a scale used to show how acidic or basic a water-based solution is. Acidic solutions have a lower pH, while basic solutions have a higher pH.
- **Perlite** - A type of volcanic glass that becomes porous when heated at a high temperature. This is used as an additive in soil to help improve soil structure and to help retain water.
- **Peat Moss** - Dead, fibrous material that forms when mosses and other living material decompose in peat bogs. This is used as an additive in soil to increase soil acidity for acid loving plants and to help hold onto nutrients and prevent them from rinsing out when you water the plant.
- **Cold Stratification** - Breaking a seed's dormancy causing the seed to be more ready to germinate. This would occur naturally in seeds in the wild.
- **Hedge** - a line of closely spaced shrubs and sometimes tree which are often planted and trained to form a boundary, barrier, or specific shape.
- **Propagation** - The process of growing new plants from seeds, cuttings, or other plant parts.
- **Pruning** - Trimming a plant by cutting away dead or overgrown branches or stems. This is done to increase growth and fruit production.
- **Rhizomes** - A plant stem that grows underground and sends out roots and shoots from its nodes. The roots grow horizontally and can crowd out other plants nearby.
- **Root Cuttings** - Pieces of the root taken to propagate new shoots. Cuttings are often taken in winter or early spring before plants begin growing.
- **Stem Cuttings** - Pieces of the stem with at least one leaf node that can be buried in the soil. The cutting is able to produce new roots.
- **Suckers** - Shoots that grow from the shoots that grow from the base or roots of the plant. These cause the plant's energy to be diverted to their growth rather than the growth of the main plant. It is a strategy of plant propagation. Removing the suckers is recommended to increase growth and fruit production of the main plant.



GLOSSARY OF TERMS / PROCESSING METHODS & NUTRITIONAL QUALITIES

- **Anti-inflammatory** - A property that reduces inflammation in the body. Inflammation is when a part of the body becomes reddened, swollen, hot, and often painful.
- **Antioxidant** - A compound found in certain plants that inhibits oxidation.
- **Neuroprotective** - Plants can have neuroprotective properties which means they protect nerve cells against damage, degeneration, or impairment of function.
- **Oxidation** - a chemical reaction that happens in our bodies which can cause other reactions that may damage our cells.
- **Boil** - to cook by raising the temperature up to the point at which liquid starts to boil and change from a liquid to a steam or gaseous state.
- **Brine** - a solution that is a mix of salt and water used to preserve vegetables, fruits, and in pickling.
- **Extract** - a preparation containing the active ingredient of a substance in concentrated form.
- **Food Mill** - a food preparation utensil for mashing and straining soft foods
- **Fruit Butter** - a thick, sweet spread made of fruit cooked into a paste or a soft puree then sweetened.
- **Herb Drying** - the process by which a fresh plant is dried through exposure to warm, dry air that allows moisture to evaporate from the plant matter. Can be achieved by stripping leaves from the stem and then allowing them to dry in a paper bag and or with a food & herb dryer that uses warm air and a fan to speed the evaporation process.
- **Infuse / Steep** - to soak (tea, herbs, etc.) in liquid to extract the flavor or healing properties.
- **Inoculate** (mushrooms) - introduce cells or organism as with fungal mycelium into a culture medium.
- **Jam / Fruit Preserves** - a product made of whole fruit, cut into pieces or crushed, then heated with water and sugar to activate its pectin before putting into containers.
- **Jelly** - a soft, clear, somewhat elastic fruit product made by boiling sugar and the juice of fruit with pectin, a gelling agent.
- **Lactic fermentation** - the chemical breakdown of a substance by bacteria, yeasts, or fungi in which the sugars are converted into lactic acid that produces the sour flavor in fermented foods like sauerkraut, yogurt, and sourdough bread.
- **Natural Dyeing** - dye or colorants derived from plants, invertebrates, or minerals including from roots, berries, barks, leaves, and wood, insect shells, fungi, or lichens.
 - **Colorant** - a dye, pigment, or other substance that colors something.
 - **Mordant** - a substance, typically an inorganic oxide that combines with a dye or stain and thereby fixes it to a material.
- **Oxymel** - a mixture of honey and vinegar, used as an expectorant or substance that helps to clear the lungs from cough.
- **Pickle** - a vegetable, fruit, or mushroom preserved in a vinegar, brine, or similar solution.
- **Salve** - an ointment used to promote the healing of the skin or as protection.
- **Sauté** - to fry quickly in a little bit of hot fat or oil.
- **Seed Ball** - a seed or seeds that have been wrapped in soil materials including clay, soil, and compost that are then dried. Provides a sustainable way to cultivate plants providing a larger window of when sowing can occur.
- **Simmer** - to heat water or food, staying just below the boiling pot.
- **Syrup** - a thick, sweet liquid made by dissolving sugar in boiling water, often used for preserving fruit.



PHILADELPHIA ORCHARD PROJECT

Monthly Orchard Task List: January

The following Task List has been compiled as a reference and starting point that applies broadly to orchards and the plants included in POP orchards. Specific timing and relevant plants will change according to each site and growing season. We've included spaces for notes and a place to check tasks off as they are completed - as applicable to your site.

Please feel free to provide feedback on this form and to also send us a scan or picture at the end of the year, so we can continue to improve it!

Your Name: _____ Email or phone: _____

Name of Orchard: _____ Year: _____

Month	Task	Date(s)	Notes
January	Prune Fruit Trees (starting with pome fruits and ending with stone fruits) <i>(all winter pruning can be completed anytime between January and early March)</i> Establish and renew permanent scaffold branches Open fruit trees to air and sunlight Remove dead, damaged, and diseased wood Remove crossing, competing, and crowding branches Remove most vertical growth and retain horizontal fruiting branches Follow tool sanitation guidelines and dispose of diseased prunings See POP Pruning Guide for more info		
	Remove mummified fruit Fruit left hanging on the tree is a source for disease spores. Pluck and remove any mummified fruit during pruning Trash, burn or use in hot compost system		
	Prune Woody Berry Bushes (blueberries, currants, gooseberries, elderberries, etc) Remove dead, damaged, and diseased wood Remove approximately 25% of growth by cutting oldest branches to just above the ground Remove additional growth if overly crowded See POP Pruning Guide for more info		
	Prune Brambles (raspberries, blackberries, etc) Remove dead, damaged, and diseased wood Remove all 2nd year canes by cutting to ground Remove smaller first year canes if overly crowded Shorten first year canes (and side laterals on blackberries) See POP Pruning Guide for more info		
	Prune Fruiting Vines (grapes, hardy kiwis, etc) Remove dead, damaged, and diseased wood Remove up to 90% of woody growth, leaving some younger canes and buds to fruit Remove any growth that wraps around itself or other other object See POP Pruning Guide for more info		
	Orchard tool maintenance Clean, sharpen, and repair		
Sources: https://extension.psu.edu/home-orchard-calendar "The Holistic Orchard" Michael Phillips		POP Resources: Search POP urban orchard blog for specific articles on pest and disease management and other topics: https://www.phillyorchards.org/blog/ Download POP resources on pruning, pest and disease identification etc: https://www.phillyorchards.org/resources/	



PHILADELPHIA ORCHARD PROJECT

Monthly Orchard Task List: Feb/March

The following Task List has been compiled as a reference and starting point that applies broadly to orchards and the plants included in POP orchards. Specific timing and relevant plants will change according to each site and growing season. We've included space for notes and a place to mark the dates they are completed - as applicable to your site.

Please feel free to provide feedback on this form and to also send us a scan or picture at the end of the year, so we can continue to improve it!

Your Name: _____ Email or phone: _____

Name of Orchard: _____ Year: _____

Month	Tasks	Date(s)	Notes
February	Continue winter pruning of fruit trees, berry bushes, brambles, and vines <i>(winter pruning can be completed anytime between January and early March)</i> See detailed descriptions in January task list See POP Pruning Guide for more info		
	Remove mummified fruit To reduce spread of disease, remove any mummified fruit during pruning		
	Dormant Oil Spray For control of aphids, scale, and other overwintering insects Read and follow labels carefully (4% dilution)		
	Remove Spotted Lanternfly Egg Masses Scrape off of trunks, branches, surrounding surfaces		
	Order orchard care supplies Tools, gloves, sprays & other pest management supplies, harvest equipment		
March	Finish winter pruning of fruit trees, berry bushes, brambles, and vines <i>(winter pruning can be completed anytime between January and early March)</i> See detailed descriptions in January list above See POP Pruning Guide for more info		
	Safe to plant new orchard plants as soon as soil thaws		
	Cut back dead herbaceous material Disperse or compost seed heads and stalks if desired		
	Begin monitoring for bud swell		
	Pest and disease management (as needed) Apply dormant oil spray before bud break for aphids, scale, etc (see Feb above) Good timing to run chickens or ducks through orchard for pest control Cultivate soil under fruit trees to kill overwintering larvae Remove spotted lanternfly egg masses		
	Sulfur/Copper Spray (as needed) Apply prior to bud swell for control of diseases including brown rot, fireblight, scab, peach leaf curl, etc Use only as last resort in case of severe crop losses or plant damage! Wear protective clothing and eyewear and follow safety instructions		
	Apply compost, fertilizer, or compost tea to feed root system Just before bloom Read and follow labels carefully		
Sources: https://extension.psu.edu/home-orchard-calendar "The Holistic Orchard" Michael Phillips		POP Resources: Search POP urban orchard blog for specific articles on pest and disease management and other topics: https://www.phillyorchards.org/blog/ Download POP resources on pruning, pest and disease identification etc: https://www.phillyorchards.org/resources/	



PHILADELPHIA ORCHARD PROJECT

Monthly Orchard Task List: April

The following Task List has been compiled as a reference and starting point that applies broadly to orchards and the plants included in POP orchards. Specific timing and relevant plants will change according to each site and growing season. We've included space for notes and a place to mark the dates they are completed - as applicable to your site.

Please feel free to provide feedback on this form and to also send us a scan or picture at the end of the year, so we can continue to improve it!

Your Name: _____ Email or phone: _____

Name of Orchard: _____ Year: _____

Month	Tasks	Date(s)	Notes
April	Unwrap figs and pomegranates Figs that were wrapped in Fall can now be uncovered		
	Thorough Spring weeding and mulch Reduce weed pressure over time via thorough weeding of undesired volunteer plants Apply thick layer of wood chips to reduce weed pressure and feed the forest floor Be sure not to build up mulch around tree bases Consider sheet mulching with a base layer of cardboard for added weed control		
	Plant new trees, shrubs, vines, and herbaceous companion plants Water new plants twice per week for the first month		
	Holistic Orchard Sprays for general plant health and resilience Compost tea, neem oil, and/or herbal sprays Often applied every 2 weeks or at 1/4" green, pink, and petal fall stages		
	Pest and Disease Monitoring (weekly walk though)		
	Begin pest and disease control on Stone Fruit (as needed) Copper/Sulfur fungicides for severe bacterial & fungal issues BT and Spinosad for rampant moth and larva infestations Kaolin clay for curculio and some moths Do not spray in heat of day, during bloom or close to harvest Read and follow labels carefully Only spray in response to specific issue Hang pheromone and sticky traps timed to specific pest egg hatch		
	Begin pest and disease control on Pome Fruit (as needed) Copper/Sulfur fungicides for severe bacterial & fungal issues BT and Spinosad for rampant moth and larva infestations Kaolin clay for curculio and some moths Do not spray in heat of day, during bloom or close to harvest Read and follow labels carefully Only spray in response to specific issue Hang pheromone and sticky traps timed to specific pest egg hatch		
	Install sticky bands on trunks for Spotted Lanternfly control		
	Hang pheromone traps if monitoring moth populations Oriental fruit moth, codling moth, etc		

Sources:

<https://extension.psu.edu/home-orchard-calendar>

"The Holistic Orchard" Michael Phillips

POP Resources:

[Search POP urban orchard blog for specific articles on pest and disease management and other topics: https://www.phillyorchards.org/blog/](https://www.phillyorchards.org/blog/)

[Download POP resources on pruning, pest and disease identification, etc: https://www.phillyorchards.org/resources/](https://www.phillyorchards.org/resources/)



PHILADELPHIA ORCHARD PROJECT

Monthly Orchard Task List: May/June

The following Task List has been compiled as a reference and starting point that applies broadly to orchards and the plants included in POP orchards. Specific timing and relevant plants will change according to each site and growing season. We've included space for notes and a place to mark the dates they are completed - as applicable to your site.

Please feel free to provide feedback on this form and to also send us a scan or picture at the end of the year, so we can continue to improve it!

Your Name: _____ Email or phone: _____

Name of Orchard: _____ Year: _____

Month	Tasks	Date(s)	Notes
May	Prune Figs after new growth starts Cut out winter die back after new growth initiates Prune for shape and light penetration as desired		
	Continue weeding and mulching Reduce weed pressure over time via thorough weeding Subsequently apply a thick layer of wood chips to disturbed areas		
	Water Spring planted trees, shrubs and perennials once per week first year		
	Pest and Disease Monitoring & Management (as needed) Continue Kaolin clay when needed for plum curculio and codling moth Prune out and dispose of flagging tips on peach and stone fruits from oriental fruit moth Remove leaves infected with Peach Leaf Curl Potential application of holistic and organic sprays as needed for specific pest and disease challenges		
	Prune signs of Fire Blight out of Apple, Pear, Asian Pear & Quince To prevent further spread, prune at least 12" below signs and further if discoloration noted in out stems Burn or trash all fire blight prunings		
June	Harvest: Rhubarb, greens, sometimes gomis!		
	Continue weeding and mulching see above		
	Water Spring planted trees, shrubs and perennials once per week first year		
	Thin fruit sets of Peaches, Pears, Apples and sometimes Plums & Apricots Remove all fruitlets from first year trees Apples, pears, and Asian pears should be hand-thinned to 5" apart, max one per cluster Peaches should be hand thinned to 6-8" apart Plums and Apricots can benefit from thinning to 3" apart Start by removing fruit with obvious disease and pest damage, leaving larger, healthy fruit		
	Emergency pruning: Remove dead, diseased, damaged & root suckers		
June	Pest and Disease Monitoring & Management (as needed) Prune out and dispose of flagging tips on peach and stone fruits from oriental fruit moth Gather and trash dropped and aborted fruit "June drops" Potential application of holistic and organic sprays as needed for specific pest and disease challenges Place bird netting over blueberries and cherries if desired Bag fruit for codling moth and apple maggot protection Beneficial insect releases: lacewings, trichogramma wasps Hang traps for apple maggot fly		
	Harvest: Rhubarb, strawberries, cherries, raspberries, blueberries, juneberries, honeyberries, gomis, currants, greens, some herbs		
Sources: https://extension.psu.edu/home-orchard-calendar "The Holistic Orchard" Michael Phillips		POP Resources: Search POP urban orchard blog for specific articles on pest and disease management and other topics: https://www.phillyorchards.org/blog/ Download POP resources on pruning, pest and disease identification, etc: https://www.phillyorchards.org/resources/	



PHILADELPHIA ORCHARD PROJECT

Monthly Orchard Task List: July/Aug

The following Task List has been compiled as a reference and starting point that applies broadly to orchards and the plants included in POP orchards. Specific timing and relevant plants will change according to each site and growing season. We've included space for notes and a place to mark the dates they are completed - as applicable to your site.

Please feel free to provide feedback on this form and to also send us a scan or picture at the end of the year, so we can continue to improve it!

Your Name: _____ Email or phone: _____

Name of Orchard: _____ Year: _____

Month	Tasks	Date(s)	Notes
July	Continue weeding Reduce weed pressure over time with thorough weeding Subsequently apply a thick layer of wood chips to disturbed areas Make sure area around tree trunks are clear of both weeds and mulch		
	Water Spring planted trees, shrubs and perennials once per week first year		
	Emergency pruning: Dead, diseased, damaged & root suckers		
	Pest and Disease Monitoring via weekly walk though		
	Pest and Disease Management (as needed) Apply thick kaolin clay or neem to trunk for borers if needed Spray Bt, Spinosad, neem, and/or holistic sprays timed to significant problem species as needed Remove dropped and diseased fruit		
	Remove branch spreaders from winter/spring		
	Harvest: Raspberries, blueberries, cherries, blackberries, apricots, peaches, mulberries, currants, gooseberries, herbs		
August	Continue weeding see above		
	Water Spring planted trees, shrubs and perennials once per week first year		
	Emergency pruning: Dead, diseased, damaged & root suckers		
	Summer bramble pruning Remove dead second year canes anytime between now and following spring Cut back new blackberry canes at 3'-4' height to induce side branching		
	Pest and Disease Monitoring via weekly walk though		
	Pest and Disease Management (as needed) Apply thick kaolin clay or neem to trunk for borers if needed Spray Bt, Spinosad, neem, and/or holistic sprays timed to significant problem species as needed Remove dropped and diseased fruit		
	Soil testing if desired		
Sources:	Harvest: Blackberries, peaches, plums, figs, Asian pears, apples, grapes, cornelian cherries, jujubes, elderberries, rose hips, chokeberries, maypops, herbs		
	POP Resources: https://extension.psu.edu/home-orchard-calendar "The Holistic Orchard" Michael Phillips Search POP urban orchard blog for specific articles on pest and disease management and other topics: https://www.phillyorchards.org/blog/ Download POP resources on pruning, pest and disease identification etc: https://www.phillyorchards.org/resources/		



PHILADELPHIA ORCHARD PROJECT

Monthly Orchard Task List: Sept/Oct

The following Task List has been compiled as a reference and starting point that applies broadly to orchards and the plants included in POP orchards. Specific timing and relevant plants will change according to each site and growing season. We've included space for notes and a place to mark the dates they are completed - as applicable to your site.

Please feel free to provide feedback on this form and to also send us a scan or picture at the end of the year, so we can continue to improve it!

Your Name: _____ Email or phone: _____

Name of Orchard: _____ Year: _____

Month	Tasks	Date(s)	Notes
September	Continue weeding Reduce weed pressure over time through thorough weeding Subsequently apply a thick layer of wood chips to disturbed areas		
	Water Spring planted trees, shrubs and perennials once per week first year		
	Pest and Disease Monitoring via weekly walk though		
	Pest and Disease Management (as needed) Cardboard band trees for codling moth Spray Bt, Spinosad, neem, and/or holistic sprays timed to significant problem species as needed Remove dropped fruit		
	Harvest: Apples, figs, pears, Asian pears, grapes, pawpaws, jujubes, everbearing raspberries, everbearing strawberries, quince, rose hips, pomegranates, kiwiberries, maypops, akebias, lingonberries, herbs		
October	Continue weeding Reduce weed pressure over time through thorough weeding Subsequently apply a thick layer of wood chips to disturbed areas		
	Water Spring planted trees, shrubs and perennials once per week first year		
	Pest and Disease Monitoring via weekly walk though		
	Pest and Disease Management (as needed) Remove decaying dropped fruit Gather and dispose of traps properly		
	Plant & transplant trees, shrubs and perennials as desired Fall planting has a slightly higher success rate and lesser watering needs Water new plants twice per week through November in dry conditions		
	Harvest: Apples, pears, figs, persimmons, chestnuts, everbearing raspberries, quince, kiwiberries, che fruit, goji berries, lingonberries, wintergreen		
Sources: https://extension.psu.edu/home-orchard-calendar "The Holistic Orchard" Michael Phillips POP Resources: Search POP urban orchard blog for specific articles on pest and disease management and other topics: https://www.phillyorchards.org/blog/ Download POP resources on pruning, pest and disease identification etc: https://www.phillyorchards.org/resources/			



PHILADELPHIA ORCHARD PROJECT

Monthly Orchard Task List: Nov/Dec

The following Task List has been compiled as a reference and starting point that applies broadly to orchards and the plants included in POP orchards. Specific timing and relevant plants will change according to each site and growing season. We've included space for notes and a place to mark the dates they are completed - as applicable to your site.

Please feel free to provide feedback on this form and to also send us a scan or picture at the end of the year, so we can continue to improve it!

Your Name: _____ Email or phone: _____

Name of Orchard: _____ Year: _____

Month	Tasks	Date(s)	Notes
November	Protect and wrap figs and pomegranates after leaf drop Most figs need winter protection in our climate Use burlap, row cover, or wire cages packed with leaves		
	Leaf management Leaves of common fruits harbor disease After leaf fall, apply compost or compost tea to aid decomposition Otherwise, rake and discard diseased leaves and fallen fruit		
	Pest and Disease Monitoring via weekly walk though		
	Pest and Disease Management Remove decaying dropped fruit Potential holistic spray		
	Water Fall planted trees, shrubs and perennials twice per week through Nov		
	Harvest: persimmons, medlars, hawthorns, ginkgos		
	Protect and wrap figs and pomegranates after leaf drop <i>If not completed in November, see above</i>		
	Update records Record nutrient and pesticide applications, pest pressure, yields, distribution, changes to plant list, and any other relevant data		
	Celebrate and review the season's successes & challenges		
	Complete Annual POP Partner Survey		
December	Pest and Disease Management Remove and trash or burn trunk bands, traps, etc		
	Harvest: persimmons, medlars, hawthorns, ginkgos		
	Whip up some herbal tea and enjoy the Holiday season!		
Sources:		POP Resources:	
https://extension.psu.edu/home-orchard-calendar		Search POP urban orchard blog for specific articles on pest and disease management and other topics: https://www.phillyorchards.org/blog/	
"The Holistic Orchard" Michael Phillips		Download POP resources on pruning, pest and disease identification etc: https://www.phillyorchards.org/resources/	



**PHILADELPHIA
ORCHARD PROJECT**

THANK YOU for participating in POP's Orchard Harvest Tracking program. Here are a few pointers to get you started:

1. For each crop, count and record the number of trees/plants for each crop in your orchard/garden.
2. Indicate whether you will weigh or count produce by circling your tracking method of choice below. Weighing is preferred!
3. Determine appropriate units of measurement for each crop: lbs, ounces, or a volume to use with the POP Fruit Volume to Weight Conversion Chart.
4. As you harvest produce, record the date at the top of the sheet, and the harvest amount (pounds, ounces, or number of units) for each crop in the column below the date and in the row corresponding to that crop.
5. When you fill this sheet, add up the total amount harvested for each crop and put this number in the 'total' column. Start a new sheet and continue recording your harvests.

Please report all harvests to Philadelphia Orchard Project in the Annual POP Orchard Partner Survey at the beginning of December.

Your Name: _____

Email or phone: _____

Name of Community Orchard:

Tracking Method (circle one):	weighing in pounds (preferred)	weighing in ounces	counting number of fruit	other:

[illegible]

Crop	Number of Plants	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Vol to Wt Conversion	Total	Harvested By	Destination
Currants																
Gooseberries																
Goumis																
Grapes																
Kiwiberries																
Strawberries																
Asparagus																
Rhubarb																
Other:																
Other:																
Other:																
Other:																
Other:																
Other:																
Other:																
Other:																
Other:																
Other:																
Other:																

FRUIT VOLUME TO WEIGHT CHART

fruit type	ind. fruit	pint	quart	gallon	bushel
Apples	5 oz	.7 lbs	1.4 lbs	5.6 lbs	45 lbs
Pears	6.4 oz	.8 lbs	1.6 lbs	6.2 lbs	50 lbs
Asian Pears	5 oz	.8 lbs	1.6 lbs	6.2 lbs	50 lbs
Peaches/Nectarines	8 oz	.8 lbs	1.6 lbs	6.2 lbs	50 lbs
Plums	8 oz	.8 lbs	1.7 lbs	6.6 lbs	53 lbs
Sweet Cherries	0.33 oz	.9 lbs	1.7 lbs	6.8 lbs	54 lbs
Pie Cherries	0.33 oz	.9 lbs	1.7 lbs	6.8 lbs	54 lbs
Apicots	2.4 oz	.8 lbs	1.6 lbs	6.2 lbs	50 lbs
Figs	2.4 oz	.8 lbs	1.6 lbs	6.2 lbs	50 lbs
Asian Persimmons	4oz	.8 lbs	1.6 lbs	6.2 lbs	50 lbs
Pawpaws	12 oz	.9 lbs	1.9 lbs	7.5 lbs	60 lbs
Juneberries	0.05 oz	.6 lbs	1.2 lbs	4.8 lbs	38 lbs

fruit type	ind. fruit	pint	quart	gallon	bushel
Mulberries		.8 lbs	1.5 lbs	6 lbs	48 lbs
Blueberries	0.05 oz	1 lbs	2 lbs	8 lbs	64 lbs
Raspberries	0.07 oz	.8 lbs	1.5 lbs	6 lbs	48 lbs
Blackberries		.7 lbs	1.4 lbs	5.5 lbs	44 lbs
Currants		.6 lbs	1.2 lbs	5 lbs	40 lbs
Gooseberries		.8 lbs	1.5 lbs	6 lbs	48 lbs
Goumis		.8 lbs	1.5 lbs	6 lbs	48 lbs
Grapes	0.02 oz	.8 lbs	1.5 lbs	5.9 lbs	47 lbs
Kiwiberries		.8 lbs	1.5 lbs	5.9 lbs	47 lbs
Strawberries	0.4 oz	.8 lbs	1.5 lbs	6 lbs	48 lbs
Asparagus	5 oz	.4 lbs	.8 lbs	3 lbs	24 lbs
Rhubarb		.8 lbs	1.6 lbs	6.2 lbs	50 lbs



PHILADELPHIA ORCHARD PROJECT

FRUIT VOLUME TO WEIGHT CHART

If you don't have a scale to measure your harvests, this chart will help you more accurately estimate how much is being harvested.

fruit type	ind. fruit	pint	quart	gallon	bushel
Apples	5 oz	.7 lbs	1.4 lbs	5.6 lbs	45 lbs
Pears	6.4 oz	.8 lbs	1.6 lbs	6.2 lbs	50 lbs
Asian Pears	5 oz	.8 lbs	1.6 lbs	6.2 lbs	50 lbs
Peaches/Nectarines	8 oz	.8 lbs	1.6 lbs	6.2 lbs	50 lbs
Plums	8 oz	.8 lbs	1.7 lbs	6.6 lbs	53 lbs
Sweet Cherries	0.33 oz	.9 lbs	1.7 lbs	6.8 lbs	54 lbs
Pie Cherries	0.33 oz	.9 lbs	1.7 lbs	6.8 lbs	54 lbs
Apricots	2.4 oz	.8 lbs	1.6 lbs	6.2 lbs	50 lbs
Figs	2.4 oz	.8 lbs	1.6 lbs	6.2 lbs	50 lbs
Asian Persimmons	4oz	.8 lbs	1.6 lbs	6.2 lbs	50 lbs
Pawpaws	12 oz	.9 lbs	1.9 lbs	7.5 lbs	60 lbs
Juneberries	0.05 oz	.6 lbs	1.2 lbs	4.8 lbs	38 lbs
Mulberries		.8 lbs	1.5 lbs	6 lbs	48 lbs
Blueberries	0.05 oz	1 lbs	2 lbs	8 lbs	64 lbs
Raspberries	0.07 oz	.8 lbs	1.5 lbs	6 lbs	48 lbs
Blackberries		.7 lbs	1.4 lbs	5.5 lbs	44 lbs
Currants		.6 lbs	1.2 lbs	5 lbs	40 lbs
Gooseberries		.8 lbs	1.5 lbs	6 lbs	48 lbs
Goumis		.8 lbs	1.5 lbs	6 lbs	48 lbs
Grapes	0.02 oz	.8 lbs	1.5 lbs	5.9 lbs	47 lbs
Kiwiberries		.8 lbs	1.5 lbs	5.9 lbs	47 lbs
Strawberries	0.4 oz	.8 lbs	1.5 lbs	6 lbs	48 lbs
Asparagus	5 oz	.4 lbs	.8 lbs	3 lbs	24 lbs
Rhubarb		.8 lbs	1.6 lbs	6.2 lbs	50 lbs

These numbers are culled from a variety of sources- please let us know if you find them to be inaccurate so we can make adjustments to the chart.

POP will be collecting orchard harvest data in November and December as part of POP's annual orchard partner survey. The better you track what you harvest, the better our data will be on what plants are producing well in the city each year. These numbers help us in designing and planting the most productive orchards possible, as well as providing more targeted training and support!