

# Making the best of the Scion Exchange: Part 1

## What to bring to the Exchange

To make the best of the Scion Exchange, it is good to bring:

- 1. Your shopping list** (see “Pt 2 - How to Choose Fruit Varieties”)
- 2. Labeling supplies** for the scions you collect: masking tape, permanent marker/pen, 1 gallon plastic bags you can seal (i.e., Ziploc)
- 3. Donations for the Raffle:** plants (please, only plants that have edible parts) and fruit-friendly items (tools, books, art, coupon for professional services)
- 4. Labeled cuttings and scions** from healthy plants known to fruit well, that have been cut at the right time, and stored properly. Please show your donations to someone at the door before you put them on the tables. See below for more details about bringing scions to share.
- 5. Some money to donate.** Entry is \$4 for everyone, though no one will be refused for lack of funds or membership. Beyond that, the following will be offered for a modest donation: rootstocks, grafting supplies, grafting service, raffle tickets, CRFG logo items, and more.  
Local Golden Gate Chapter newsletter subscriptions applications will be available. All local meetings are open to the public but newsletter subscribers are also invited to attend private tours at people’s gardens.

CRFG Inc. membership applications will be available. Those joining will receive a free copy of the ‘Fruit Gardener’ magazine. You can pay for both newsletter subscriptions and CRFG membership ahead of time see [Golden Gate CRFG link](#); [CRFG membership link](#)

### More About Bringing Scions

There are several things to consider when selecting scions to bring.

**a) Bring clean, disease and pest-free,** leafless cuttings. Clean your pruning shears with 90% rubbing alcohol between different trees you are cutting. We don’t want to spread any pests or disease.

**b) Please only bring scions or cuttings from trees you know have fruited “true to type”.** It is important to bring only scions that you are certain of the variety name, such as you have received them labeled from a reliable nursery or grower. Do not bring material from trees that have not yet born fruit, as they may have been mislabeled. It is frustrating to collect scion wood, graft, and care for a tree for years, just to find the original scion was a mislabeled donation to the exchange. However, if you have an unusually good fruit without a variety name, bring it and label it--(see label section.)

**c) Don’t bring patented scion wood.** We respect the work of fruit breeders and **will not allow cuttings of any fruit varieties that are protected by a current Plant Patent**, i.e., most Zaiger varieties. Many older patented varieties have expired patents, so those varieties will be accepted (see our website for a list). If you are uncertain if a plant is currently under patent, please ask a CRFG member.

**d) Cut the scions at the right time.** Do this when the tree is fully dormant (around the New Year). Take only from new growth of the current year found at the tips of branches, down to where the bark changes color or the twig has a wrinkle in the skin.

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**e) Take suitable-sized cuttings.** For most plants take 5-8" long cuttings, preferably about as thick as a pencil but smaller is okay. For figs, grapes, and mulberries take longer cuttings that contain at least 4 buds.

### f) Label what you bring

A good label really helps others to choose what will work for them. We will have pre-printed, form labels (that you can fill in) at the Exchange, or you can download a label template from our website and print them yourself.

At the very least, please write a basic label for each bag of scions you bring – one that says (for example) something like “red plum, very sweet, early, grown in Berkeley.”

You can copy this for a label template:

<b>Golden Gate Chapter CRFG 2011 Scion Exchange</b>
_____
<b>Kind of fruit</b>
_____
<b>Variety name</b>
_____
<b>Description (color, taste, season)</b>
_____
<b>Where Growing</b>
_____
<b>Original Source (exchange, nursery?)</b>

**g) Store your scions** with just a sprinkle of water, in sealed plastic bags in the fridge (35-37°F), but don't freeze them.

Some scion collection references are at our [GGCRFG website](#).

### **Unique varieties in your backyard or neighborhood?**

In addition to standard, well-known old and new varieties, we are especially interested in varieties from your backyard/neighborhood that are unique seedlings or otherwise worth saving. For example, a CRFG member in Berkeley has an unique old apple tree her father Andy planted from a seed (pippin) in the 1940's. She says the fruit is great tasting and bears in July-very early in the apple season. She has named the variety “Andy's July Pippin.”

What rare varieties could you share?



# Making the best of the Scion Exchange: Part 2

## How to choose fruit varieties (your shopping list)

At the Exchange, there will be information sheets available describing many of the hundreds of varieties of fruit scions you will find there, but it will be much easier to decide on which varieties you want before you get there. If you do some homework, and bring a shopping list, you may find the exchange more enjoyable.

### Start local

Find out what fruit already thrives in your neighborhood. Look for wild berries. Talk to your neighbors. Trade favorite fruit stories. Support each other, and share backyard garden and fruit tree surpluses, learning to eat with the seasons. Perhaps you can grow a delicious piece of history by collecting and growing a scion of a productive, old local tree. Be a good neighbor and only collect fruit and scions with permission.

### Start with what you like

Make a wish list of your favorite fruit varieties. Will those familiar fruit varieties thrive in your current garden? Do some research on those varieties, as suggested below, or come to [chapter meetings](#) and consult the experts there.

### Critical factors to consider:

- Frost/Freeze
- Chill Hours
- Pollination
- Graft Compatibility

**These are critical to the success of your fruit tree.**

**Ignore these, and you may not get fruit.**

### Climate considerations

In order for your tree to produce fruit, it is important to consider these temperature affects.

- **Frost/Freeze damage**— any temperature below 32°F can damage many evergreen sub-tropicals; other subtropicals are OK down to 27-28°F or even 25°F. Deciduous fruit trees are unlikely to be damaged by any winter low temperatures we would ever experience in the Bay Area.
- **Chill hour needs**— approximately the total time between 45 and 32°F, accumulated in winter, which some trees need for rest, before they can flower. The number of chill hours will be reduced by the number of hours above 65°F during the winter

**You need to know the number of chill hours in your area to select appropriate varieties of fruit.** If you pick a variety that requires high chill hours, and your area does not have enough chill hours, you are likely to have poor fruit yield. Chill hour needs are complex, and the number of chill hours may vary considerably from year to year, so it is not an exact science. See more about Chill below.

### Pollination needs

Without pollination, fruit may not form. Each fruit variety has its pollination needs, such as:

- **Self-fertile** -does not need pollen from other varieties to bear, but may bear more if it gets cross-pollinated
- **Cross-pollination** - needs to have two different varieties pollinating each other for each to bear
- **Sterile pollen** - needs pollination from a different variety, but cannot pollinate the other

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- **Male and female plants** -needs one male to pollinate a female, up to several females (ex. kiwis)

Pollination is enhanced when the two sources are nearby each other, and when there are more pollinators (like bees).

### **Graft Compatibility**

If you have an established tree you want to graft your scion onto, the scion must be compatible with existing mature tree. If they are not compatible, the graft will fail and die. You may choose to start a new tree by grafting a scion onto a compatible bare root "rootstock" tree.

### **Location affects chill hours and frost**

Identify the type of area that you live in to determine how your plants may be impacted by frost and chill hours. Geographic location and site specific considerations are a few things that affect chill hours and frost. Look below to learn about the chill hours in your area and the factors on your property that may affect chill hours and frost.

### **Geographic location**

There are many microclimates in the Golden Gate Chapter area, but here we'll keep it to three:

#### **1. Ocean or Bayside influence- cool summer, mild winter** (Pacifica, SF Sunset, Berkeley)

*Chill hours:* 100-400 winter chill hours

*Things that work well:* low chill fruit varieties, many of the subtropicals: lemons, feijoa, ugni, pepino dulce, tamarillo. Low chill fruit variety list links: [Bay Laurel low chill list](#), [Andrew Mariani Stone Fruit Varieties](#),

*Things that don't work well:* most cherries, some varieties of apples and peaches (need more chill), most pomegranates and figs, and many peaches, and grapes (need more heat)

*Comments:* Since some fruit varieties may vary from the listed chill hours, cherry trees are a good indicator of chill hours. If you can produce cherries most years in this climate, you probably fit better into the Valleys facing the Bay climate.

#### **2. Valleys facing the Bay- warm summer, cold winter** - (San Rafael, El Sobrante, Castro Valley, Hayward, San Mateo); Midway between the Coastal and Inland areas.

*Chill hours:* 400-900 winter chill hours

*Things that work well:* Most deciduous fruit

*Things that don't work well:* some cherries

*Comment:* Idell in El Sobrante has around 400-500 chill hours in a typical year and some years has up to 800-900 chill hours (and then gets a bigger cherry crop). She is on a hillside overlooking the bay, out of the fog zone.

#### **3. Inland (Over the hills) - hot summer, coldest winter-** (Concord, Walnut Creek, Lafayette, Danville)

*Chill hours:* 600-1500 winter chill hours

*Things that work well:* Most fruit, especially heat loving figs, pomegranates, peaches, jujubes, high chill cherries, apples and peaches

*Things that don't work well:* Any of the more frost sensitive sub-tropicals, some heat sensitive apples

*Comment:* The best climate for fruit trees that like more extreme temperatures.

### **Site Specific Influences: Flats, Hills, Aspect and Sky Exposure**

*More chill hours and/or frost/freeze effects:* Land that is flat, at the bottom of a valley, North or North-East facing, and/or exposed to open sky.

*Less chill hours and/or frost/freeze effects:* Land that is on a hillside, South or South-West facing, and/or with overhead cover of evergreen trees or building eaves.

## Making the best of the Scion Exchange: Part 2

### How to choose fruit varieties (your shopping list)

**Pollination**- Some plants are *self-fertile* and do not require a second variety to pollinate them. However, fruit set is often improved with pollen from another variety, especially with many varieties of apricots, grapes, olives, pomegranates, figs, and peaches.

Other fruits absolutely need *cross pollination* from a second variety of the same fruit, such as most apples, pears, cherries, plums, pluots, paw paw, and akebia. For the cross pollination to be successful and produce fruit, the two varieties need to be compatible, that is flower at the same time, and need to be close to each other, or even grafted on the same tree.

You may find a few varieties have *sterile pollen* (like Gravenstein or Mutsu apples), which have no pollen to offer to others. These types still need pollen from another variety, so you may need a third compatible variety.

Kiwi plants have *separate male and female plants*, which need at least one male plant around to provide pollen for the female plants to produce fruit.

See pollination charts here:

[http://www.raintreenursery.com/pollin\\_home.cfm](http://www.raintreenursery.com/pollin_home.cfm)

Pollination is enhanced when the two pollen sources are close to each other, and when there are more insect pollinators (like bees). "Making the Best of the Scion Exchange Pt 3" has more on planting pollinator habitat flowers.

#### **Graft compatibility with existing tree-**

Scions must be compatible with the tree it will be grafted onto. If you already have an established fruit tree, you may be able to graft your new scions onto it and get fruit more quickly. This grafting technique is called "top working" (see Pt 3 What to do with your scions/cuttings). Not all fruit varieties will be compatible with your existing tree. A graft of a non-compatible variety will fail. This grafting compatibility chart will explain which varieties can be grafted onto your existing tree: [Grafting compatibility chart](#)

**Graft these only on the same kind (self):**  
Apples, autumn olives and goumi (both Elaeagnus), filbert, jujube, Nanking cherry, olive, pawpaw, quince, sea buckthorn (Hippophae ssp.), Juneberry (Amelanchier spp.)

**These fruit have more grafting options:**  
Asian pears--self, quince, but not European  
European pears--self, most quince, many Asian  
Che-self, Osage orange  
Cherry-most pie & sweet cherries on each other  
Kiwi and hardy kiwi--on each other  
Mulberries--black and white on white  
Persimmons--all three mostly compatible

#### **Grafting Compatibility Chart:**

Stone fruit table abbreviations for the table  
Almond=Almd; Apricot=Apric;  
Peach/nectarines=Pe/Ne;  
Plum-European=PI-Eur;  
Plum-Japanese=PI-Jap  
Y=yes, N=no, M=many, O=other

Rootstock	Scion	Scion	Scion	Scion	Scion
	Almd	Apric	Pe/Ne	PI Eur	PI Jap
Almond	Yes	N	Ob	M	M
Apricot	N	Yes	Oc	Od	Of
Peach/Nect	Y	M	Yes	Oe	M
Plum-Euro	N	?	N	Yes	M
Plum-Japn	Oa	M	N	N	Of
Pluot	N	M	N?	N?	M

Oa - Ok on Marianna 26240

Ob - Peaches short lived and may be dwarfed

Oc - Many peaches do not do well, some are ok

Od - Most European plums not compatible

Oe - Not in interior California

Of - Some Japanese plums compatible



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## How to choose fruit varieties (your shopping list)

### Other selection considerations

*Choosing a fruit variety that works for you may depend on several other factors. Here are some of the common things to consider.*

**a) Taste-** This is very personal, and depends on your experience. There are published “Taste Test Results” some collected over many years of tastings. Links: [Dave Wilson Nursery top 23](#), [Dave Wilson Nursery taste report](#) Sugar (sweet), acid (tart), sugar/acid balance, aroma (think wine tasting descriptors), and texture all vary from one variety to another. There are places to experience fruit tastings, which feature dozens of varieties that are in season. Here are a few links: [Andy’s Orchard](#), [Fruit at Filoli](#), and [Wolfskill tasting results](#). The Golden Gate Chapter makes announcements to its members of these tastings, and has smaller fruit tastings at many meetings, as do other chapters. Link: [Monterey CRFG apple tasting](#)

**b) Harvest season-** Plan for a continuous harvest throughout the year. Instead of growing one variety of each kind of fruit (which will ripen all at once), grow “early”, “middle” and “late” season varieties of each type of fruit. Link: [Dave Wilson Nursery harvest calendar](#)

**c) Uses-** Do you want the fruit for fresh eating, cooking/processing, juicing, freezing, drying, or storing? Each variety has differing qualities in each of these areas.

**d) Visual beauty-** Flowers, fruit skin and flesh, and fall leaf colors should be considered.

**e) Cultural importance:** Do you want a fruit that has significance for a family, community or region or that has historical or ceremonial importance? Fruit varieties have been selected throughout our history from indigenous people to missionaries, pioneers, immigrants and California fruit breeders like Luther Burbank and

Albert Etter. Consider selecting varieties that reconnect us to our traditions.

### References for fruit variety selection:

#### Web Links:

[What you can grow in the Bay area by I. Weydemeyer](#), [The Arboreum Company- rare deciduous fruit](#), [Dave Wilson Nursery](#), [One Green World Nursery](#), [Raintree Nursery](#), [Rolling River Nursery fruit](#), [Greenmantle Nursery- Albert Etter apple history](#), [Burnt Ridge Nursery fruit](#), [Bay Laurel Nursery](#), [SlowFood Ark of taste- fruit history](#)

#### Books:

[Golden Gate Gardening](#), by Pam Pierce

[Fruit, Nut and Berry Inventory](#), by Seed Savers Exchange

[Cornucopia II: A Source Book of Edible Plants](#), by Stephen Facciola

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**Look for lists of favorite varieties for your climate at the Exchange.**



**Ask CRFG members from your area what their favorites are.**

# Making the Best of the Scion Exchange: Part 3

## What to do with your scions/cuttings

### Finding the scions

Once you have your “shopping list” (refer to “Making the Best of the Scion Exchange: Part 2”), look for the scions you want at the Exchange. The tables of scions are organized by fruit type (ex. apples, European plums, etc.) and are in alphabetical order. When you have found something you would like, take these steps:

1. Write a label with permanent pen/marker on some tape before you open the bag.
2. Take only what you can use, 1-3 sticks per variety are plenty.
3. Label them with the tape immediately! It is easy to get things mixed up. If an unlabeled scion happens to drop to the floor, just leave it rather than pick up the wrong one.
4. Keep them in a closed plastic bag with a sprinkle of water, away from heat, until you get home.

If you take only what you can use, and use what you take, you can avoid bags of neglected scions rotting in your refrigerator next summer. All scions that are “left overs” at the end of our Exchange are passed on to the next scion exchange. If you don't find what you were looking for at our exchange, perhaps you will find it at one of the other great scion exchanges in the Bay Area. See link to [list of Northern California CRFG Scion Exchanges](#)

### Initial scion care

**Keep them cool-** Once you find and label your scions, you must take care of them until you graft them. Keep them in a plastic bag with a sprinkle of water in the fridge, just above freezing (35-37°F is ideal), until the appropriate time to graft.

**Timing-** For bare root rootstocks of apple, pear or plums, you can graft immediately. For other types of fruit, it is best to graft

about the same time as the flowering/leafing-out of the tree in spring. This leafing out time is also good for the grafting of older trees (see “topworking” below).

Cuttings are stored in the fridge, then planted when the weather warms in the spring, or they can be started mid-winter in a greenhouse, and/or with bottom heat.

### How to get your scions to grow

To grow into a fruiting plant, your little 'scion' sticks need roots. Depending on which scions you select, you may have several options.

#### 1. Start with cuttings that can grow roots

Grapes, figs, pomegranates, olives, some mulberries, some kiwis, some cherry plums, and others can be grown from a cutting that is planted in the soil, and don't need to be grafted onto a tree. Pot up the cuttings in a well drained mix, and keep cuttings humid in a greenhouse or large plastic bag. Rooting hormones, and/or bottom heat can improve rooting.

#### 2. Buy a “rootstock” and have someone else graft it for you.

A “rootstock” is a tree that is grown specifically so that a selected scion can be grafted onto the top of it.

Sometimes rootstocks are chosen to dwarf the mature size of the grafted tree (especially apple). Others are chosen for soil, pest and disease adaptations. Here are some links to [rootstock descriptions](#)

We will have some rootstocks (bare root) available at the Scion Exchange for a small donation. Ask about grafting compatibility for a scion you want to grow. See link to ['Grafting Compatibility' chart](#). You can have your selected scion grafted onto a rootstock at the Exchange, also for a small donation. Or, perhaps you have a friend that could graft it for you.

## Making the Best of the Scion Exchange: Part 3

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**3. Learn to graft at a grafting demonstration, then graft your own scion.** The Scion Exchange will include grafting demos, with assistance for those who want to 'do it yourself' right there, or take it home and graft. Appropriate rootstocks for many fruits will be available for a donation. [Grafting link.](#)

### **4. Graft an already-established tree (called "top working")**

What can you grow on that old tree in your yard? With an established tree, you usually have plenty of places to add grafts, a single tree can accept many grafts. If you don't cut the tree back too much the first time you graft, then you can try again next year if this year's grafts fail. See the "[Grafting Compatibility](#)" chart in "Making the Best Pt 2" above, to determine the appropriate scions for your tree.

Once you find out what will grow on your old tree, you can learn to do "cleft" grafting (for dormant, winter grafting) or 'bark grafting' (for summer grafting) at the grafting class. These "topwork" grafts, can grow quickly, and may bear fruit within a couple of years. [Grafting link.](#) Reference book: Grafter's Handbook, J. Garner

### **Caring for your newly grafted tree**

#### **Do Not Let the Roots Dry Out**

##### **When you get home:**

1. Soak the roots of your bare root tree in water for 6-12 hours (no more).
2. Pot up your tree in a 1 gal pot if small, or a 5 gal pot if larger.
3. Water the potted tree well, then don't water again until the soil is dry down an inch deep. Most potted plant deaths are due to over-watering.
4. Within the next month or two, re-label your newly grafted tree with a permanent label, as even 'permanent' ink on plastic tape fades quickly. A piece of aluminum cut from a soda can, with the name written deeply (engraved)

with a ballpoint pen, and tied onto the tree with copper wire works well. Adjust the label tie every year to keep it loose around the stem.

5. Keep the graft wrapped up until new growth occurs in spring, then take off the wrapping tape. Hot summer sun can damage young tree bark. Protect young bark with cardboard, white paint, Kaolin clay, or "[bio-dynamic tree paste](#)"

#### **When you plant the tree in the ground:**

6. Planting the tree too low, especially in heavy soil, is a common cause of tree death. Dig the hole wide and shallow, plant with the roots touching the mineral soil. Plant the tree 6-12 inches higher than the surrounding soil level in heavy soil, 3-6 inches in lighter soil. Mound up with soil, compost and mulch, keeping the crown (where the first roots emerge from the stem) high and dry. Make a small basin at the top of the mound to accept watering by hand. [Link for tree planting](#)

7. Feed the soil with compost and mulch. Apply compost 1-3 inches deep. Then add 3-6 inches of woodchips or other mulch, starting a few inches from the trunk (don't create crown rot). Apply mulch out to at least the drip line of the farthest branches. This mulch will last the tree for years, but as the tree grows, keep adding to the outer edge every year. Get your soil tested if plants don't grow well.

#### **From the first summer onward:**

8. Keep the tree well watered to encourage good growth for the first years. Keep the tree moist but don't over water. A newly planted bare root tree does not need as much water as it will when it grows a larger root system in a year or two. If you use drip irrigation to conserve water, you may start with one dripper close to the stem, but within the first year, it is best to water out where the roots are, not only at the stem. Over watering at the stem can cause crown rot. Make a loop of emitters along the drip line,

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## Making the Best of the Scion Exchange: Part 3

# What to do with your scions/cuttings

expanding every year or two as the tree grows (along with the expanding mulch). Depending on your soil, you may be able to reduce the watering as it gets to the desired size. Micro-spray irrigation may give better coverage of the root zone. [Irrigation link](#)

9. Always keep any shoots trimmed off that you see sprouting from below the graft. If you don't, these rootstock shoots will take over your tree and you will have no/poor fruit.

10. Pinch out or prune branches, and spread branches if needed, to shape tree as it grows. Consider from the beginning whether you want a taller or shorter tree, spreading or upright branching, etc.

[Fruit tree training link](#)

### Once you see flowers, and fruit on your tree:

11. Remove all fruits as they form until the tree is big and strong enough to support the load, about 1-3 years. (OK you can let only one fruit mature to taste it, but support the fruit with a stake, and keep no more than that!) Leaving fruit on for the first 1 or 2 years will also tend to stunt the tree, which can be good- if you want a dwarfing effect. Once you begin letting fruits mature, thin the fruits to lighten the load on branches and to get larger but fewer fruits. Without thinning, many varieties of fruit can severely overbear, causing excessive weight to break branches. Thinning also reduces 'alternate year bearing' of fruit trees. [Fruit thinning link](#)

12. Make notes about the variety. In addition to the increasing fruit quantity as trees mature, often the fruit quality gets better and better. Take note of the dates of flowering and fruiting, in addition to the color and taste of the fruit, to confirm the variety's true name. At this point you can share scions of a true to type fruit variety

with others. See the "How to choose fruit varieties" references for varietal descriptions.

13. Include pollinator and pest predator habitat in your plantings. Having pollen bearing flowers available year round, the pollinators will also be there when your fruit trees need their service. Flowers are also important sources of food for pest predators that keep things in balance. Native plants and flowers in the daisy, mustard, and dill families are some of the best providers of pollen and nectar. To provide additional pest predator habitat, have piles of rocks for hiding and sunning places needed by lizards and snakes You can make a small pond for frogs and dragonflies, and build boxes for owls and bats. [UC Integrated Pest Management link](#), [Pest predator flower mix link](#), [California Pollinator Conservation Resources link](#).

### More on Grafting, Planting and Fruit tree care:

#### Links:

[UC Home Orchard website](#), [West Coast Food Forestry](#)

#### Books:

[The Grafter's Handbook](#), J. Garner

[How to grow and Maintain Your Edible Landscape Naturally](#), Robert Kourik

[Golden Gate Gardener](#), Pam Pierce

[Gaia's Garden](#), Toby Hemmenway

