

Winter Blooms

Overview: Many deciduous trees and shrubs form their flower buds the previous summer or fall and then enter a period of leafless winter dormancy. Because actively growing plants can't withstand freezing temperatures for an extended period, they have adapted by "resting" during the coldest months. After six to eight weeks of outdoor temperatures between about 32 and 40 degrees F, (by January in many areas), most trees and shrubs have met their dormancy requirements. When the weather warms, sap begins to flow, buds swell, and leaves and flowers emerge. By providing the same late winter/early spring conditions indoors that entice flowers and leaves to emerge outdoors, young gardeners can force branches to reveal their spring finery.



Materials:

- Pruners
- Exacto knife or hammer (optional)
- deep container (e.g., bucket or tall vase)
- trees and shrubs (see list, below)

Approximate Time to Complete: 3 to 6 weeks

Location: Indoor

Ages: All ages

Season: Winter

Instructions:

1. Collect shrub and tree branches with visible flower buds. Flower buds tend to be present on younger branches and tend to be a bit more plump than leaf buds. Hard to tell? You can help your kids dissect some with an Exacto knife or simply make predictions and mark buds, and then keenly observe them over time.

Here are a few suggestions of shrubs and branches to try:

Early-flowering trees and shrubs (cut in late January/February)

Ash
Azalea
Birch
Elm

Forsythia
Hazelnut
Maple
Mulberry

Redbud
Plum
Pussy willow
Sumac

Later-flowering trees and shrubs (cut in late February/March)

Apple
Cherry
Crabapple
Dogwood

Elderberry
Honey locust
Honeysuckle
Magnolia

Mountain ash

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2. Use sharp pruners to cut 1- to 2-foot sections of branches about six weeks before they'd naturally flower in your area. If you're not sure of local flowering or leafing-out times, research what blooms when. Have kids interview community members, check with the local Cooperative Extension Service, or consult Internet sites. Public gardens and arboreta in your region may keep an annual "What's in Bloom" calendar; prior years' calendars could inform your choices. Or your young scientists might experiment by trying to force branches cut at different times. Since swelling buds are also indicators of readiness to bloom, you might want to check a few branches weekly beginning in January.

3. Make sure the branches quickly absorb water. First, use one of the following methods: 1) Scrape off a 3-inch strip of bark with a knife or scissors along the side of the stem near the bottom, 2) Use an Exacto knife to cut an X into the base of the branch, or 3) Use a hammer to gently crush the end of the branches. (Try experimenting with each of these techniques.) Next, place the branches in lukewarm water for a day or, if possible, submerge the whole stems in water overnight.

4. Put the cuttings into a container of cool water and place it away from heaters and direct sun. Mist the branches daily to simulate spring rains and keep the buds moist and full. Change the water and cut an inch off stems each week.

5. Move the cuttings to a bright location when the buds open in three to six weeks. (The timing will depend on the types of branches you use and when you cut them.)

Extension:

Here are some suggestions for extending the learning opportunities with this activity:

- Predict, then measure and compare the rates at which different branches burst into bloom.
- Challenge kids to find the "ideal" conditions for forcing specific types of branches. This might involve testing a number of variables (water temperatures or light conditions, for instance). Have them consider how they'll set up "fair tests."
- Experiment with ways to coax flowers to bloom more quickly or to last longer once they've emerged.

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