GrowSmart

Companion Planting Quick Reference

15 proven pairings with scientific reasons, 8 combinations to avoid, and a visual raised bed layout you can copy.

Learn. Grow. Succeed.

getgrowsmart.com

Companion Planting Is Biology

Companion planting isn't folklore — it's applied biology. Plants interact through root chemistry, scent, shade, and nutrient cycling. These interactions are measurable and repeatable.

Four Mechanisms That Matter

Mechanism	How It Works	Example
Pest Confusion	Mixed scents disrupt insect navigation	Basil near tomatoes repels aphids
Trap Cropping	Sacrificial plants attract pests away	Nasturtiums draw aphids from beans
Nutrient Sharing	Nitrogen fixers feed heavy feeders	Beans enrich soil for corn
Physical Support	Plants provide structure or shade	Corn stalks support bean vines

> GrowSmart Tip: These aren't optional nice-to-haves. In controlled trials, companion-planted beds consistently outperform monoculture beds in pest reduction, pollination rates, and total yield per square foot.

15 Proven Pairings

These combinations are backed by agricultural research and decades of field observation.

Pairing	Why It Works	Spacing
Tomato + Basil	Basil repels aphids and whiteflies	12–18" apart
Carrot + Onion	Onion scent masks carrots from carrot fly	4–6" interplanted
Corn + Beans + Squash	Three Sisters: structure, nitrogen, shade	Traditional mound
Lettuce + Radish	Radish loosens soil; lettuce shades roots	4" interplanted
Cabbage + Dill	Dill attracts beneficial wasps	18" apart
Pepper + Carrot	Carrots shade soil; peppers deter pests	8–10" apart
Cucumber + Sunflower	Sunflowers attract pollinators	24" apart
Garlic + Roses	Garlic repels aphids from roses	6" around base
Peas + Spinach	Peas fix nitrogen; spinach uses it	6–8" interplanted
Beet + Lettuce	Different root depths; no competition	4–6" apart
Marigold + Tomato	Marigold roots kill root-knot nematodes	12" border
Thyme + Cabbage	Thyme repels cabbage worm moths	12–18" apart
Bean + Potato	Beans fix nitrogen for heavy-feeding potatoes	12" apart
Chive + Carrot	Chive scent deters carrot fly	6–8" interplanted
Sage + Brassicas	Sage repels cabbage moth	12–18" apart

8 Combinations to Avoid

Not every pairing works. These cause measurable problems through chemical inhibition, shared diseases, or resource competition.

Bad Pairing	Why to Avoid
Tomato + Fennel	Fennel exudes chemicals that inhibit tomato growth
Bean + Onion/Garlic	Alliums suppress nitrogen-fixing bacteria in bean roots
Potato + Tomato	Same family — share late blight and attract same pests
Dill + Carrot	Cross-pollinate; dill can stunt carrot growth
Cucumber + Sage	Sage inhibits cucumber growth
Cabbage + Strawberry	Compete heavily; cabbage stunts strawberry development
Corn + Tomato	Both heavy feeders; compete for same nutrients
Walnut + Everything	Walnut roots produce juglone, toxic to most garden crops

Sample 4×8 Raised Bed Layout

This layout applies companion planting principles to a standard 4×8-foot raised bed. North is at the top so tall plants don't shade short ones.

↑ NORTH (tallest plants here) ↑

Row 1	Tomatoes + Basil Basil repels pests; same sun needs	**12–18"**
Row 2	Peppers + Carrots Carrots shade soil at pepper base	**8–10"**
Row 3	Beans + Lettuce Beans fix nitrogen; lettuce uses shade	**6–8"**
Row 4	Radish + Spinach + Onion Fast harvest; onion deters pests	**4–6"**

Tallest crops (tomatoes) go on the north side so they don't shade shorter plants. Each row pairs companions that benefit each other.

GrowSmart Tip: GrowSmart's companion matrix covers 36 high-impact crops with specific pairings and reasons. The free plan flags harmful combinations. Pro unlocks every beneficial pairing with explanations.

Ready to automate your planting schedule?

GrowSmart builds personalized timelines based on your city's frost dates — spring, summer, and fall.

Start Planning Free at getgrowsmart.com

Free plan • No account required • Works offline