

Optimal Soil Temperature For Flower Seed Germination

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Seeds are in a dormant state until the right conditions occur which triggers the end of dormancy. There are a number of critical factors that determine when a seed will germinate including moisture, oxygen and the right soil temperature. Some seeds also require a period of cold, known as *cold stratification*. This mimics the normal winter a seed would usually experience before germinating once temperatures warm up in spring.

We recommend gardeners purchase a soil temperature thermometer to check soil temperature before sowing seeds. These are available from most nurseries or online.

	Celsius	Fahrenheit	Stratification?
Alyssum	12 – 23	55 – 75	No
Aster	18 – 23	65 – 75	No
Balloon flower	16 – 20	60 – 68	No
Bellflower	21 – 23	70 – 75	Yes
Black-eyed Susan	18 – 21	65 – 70	Yes
Borage	18 – 29	65 – 85	No
Calendula	18 – 21	65 – 70	No
Californian poppy	12 – 21	55 – 70	No
Candytuft	23 – 29	75 – 85	No
Canterbury bells	18 – 21	65 – 70	Yes
Carnation	15 – 21	60 – 70	No
Chamomile	18 – 21	65 – 70	Yes
Chrysanthemum	18 – 23	65 – 75	No
Clematis	20 – 22	68 – 73	Yes
Columbine	10 – 12	50 – 55	Yes
Cornflower	15 – 21	60 – 70	No
Cosmos	21 – 25	70 – 73	No
Dahlia	21 – 23	70 – 75	No

Delphinium	15 – 20	59 – 68	Yes
Diascia	15 – 18	60 – 65	No
Echinacea	18 – 21	65 – 70	Yes
Flax	18 – 21	65 – 70	No
Forget-me-not	18 – 21	65 – 70	No
Foxglove	15 – 18	60 – 65	No
Gazania	15 – 18	60 – 65	No
Gerbera	21 – 23	70 – 75	No
Gypsophila	15 – 18	60 – 65	No
Hollyhock	15 – 21	60 – 70	Yes
Impatiens	21 – 23	70 – 75	No
Larkspur	10 – 12	50 – 55	Yes
Lavender	18 – 21	65 – 70	No
Linaria	12 – 18	55 – 65	Yes
Lobelia	18 – 23	65 – 75	No
Lupin	12 – 21	55 – 70	Yes
Marigold	21 – 23	70 – 75	No
Marshmallow plant	15 – 21	60 – 70	Yes
Nasturtium	15 – 18	60 – 65	No
Nemesia	12 – 18	55 – 65	No
Nemophila	12 – 15	55 – 60	No
Nigella	15 – 18	60 – 65	No
Pansy	15 – 23	60 – 75	No
Petunia	18 – 23	65 – 75	No
Phlox	15 – 18	60 – 65	No
Balloon flower	18 – 23	65 – 75	Yes
Poppy	15 – 20	60 – 68	Yes
Portulaca	21 – 26	70 – 80	No

Primrose	15 – 18	60 – 65	Yes
Queen Anne's lace	16 – 18	60 – 65	No
Salvia	21 – 23	70 – 75	No
Snapdragon	18 – 23	65 – 75	Yes
Statice	15 – 20	60 – 68	No
Stock	15 – 18	60 – 65	No
Sunflower	21 – 23	70 – 75	No
Sweet pea	12 – 18	55 – 65	No
Verbena	18 – 23	65 – 75	No
Viola	18 – 23	65 – 75	No
Virginian stock	18 – 23	65 – 75	No
Wallflower	15 – 18	60 – 65	No
Xeranthemum	24-35	75 – 95	No
Zinnia	21 – 23	70 – 75	No