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ACKNOWLEDGMENT

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CONTESTS AND GAMES

Contests and games can be very important to a project. They can stimulate your efforts so that you can actually accomplish more in a project as a result. Contests and games provide an extra challenge for members who are especially interested in the project. They are also good for older or more experienced members, as well as for members who have previously received top awards, such as county award winnners.

(Contests are not for every member, however. Some individuals are challenged by a contest while others are discouraged. Leaders should take time to talk with 4-H members individually before encouraging them to compete and learn their feelings about contests and competition.)

Many contests are available for horticulture project members. Some are run through the 4-H Youth Programs, and others are national contests sponsored by magazines, garden organizations, and related groups. Information on such contests is usually available through an organization's magazine or newsletter. Some contests are based on photographs and others on garden records, or a contest may require a combination of photographs and records.

Examples of contests and games that you can participate in at the local level include, but are not limited to, the following:

1. Who ordered their seeds and plants first
2. Who got their seeds and plants first
3. Who can identify the most kinds or varieties of flowers
4. Who planted their seeds or plants first
5. Whose seeds germinated first
6. Whose plants flowered first; whose flowered the latest in the year
7. Who has the healthiest plant (may need to bring a plant to a meeting)
8. Who can judge the best quality of flowers (members could bring their best flowers and line them up on a table for judging)
9. Who has the most unusual kind or variety of flowers
10. Who has the most fragrant flower
11. Who gave the best demonstration or talk on a flower garden topic such as planting seeds, transplanting seedlings, and fertilizing plants
12. Who attended the most meetings
13. Who visited the most horticultural places during the year
14. Who grew the most different kinds of flowers
15. Who learned the most from his/her project
16. Who had the best garden on a garden tour
17. Who had the least amount of outside help with his/her project
18. Who knows the most about growing flowers (could have a short quiz)
19. Who can write the best short story on why he/she wants to have a flower garden (or on a similar topic)
20. Who can tell about his/her favorite flower in the most convincing manner (there are many jobs dealing with selling horticulture items)
21. Who can tell most about the background of a flower
22. Who can tell the most about a particular garden topic (such as how to grow perfect zinnias)
23. Who had the most problems with his/her garden project
24. Whose garden was the best kept (had the fewest weeds)
25. Who kept the best records on his/her garden project
26. Who took the best picture of his/her garden project

These are just some of the simple and easy contests or games that can help you to learn more about gardening. Most can be conducted in a fun, friendly, and informal situation. In some cases, winners need not be chosen if the objective is to demonstrate that there are still a few more things to learn about certain topics. A variety of contests will let everybody be a winner.

The state contests in horticulture are held each summer on the campus of Michigan State University and include the Horticulture Contest, Demonstration Contest, and Speaking of Horticulture Contest. Some counties have county contests in which winners are selected to participate in the state contests. Members of any age are eligible to participate in these contests, but only participants who are 15 years of age or older are eligible for out-of-state awards trips partially sponsored by state funds. Top winners in the younger division (up to and including age 14 as of December 31st of the current year) receive gift certificates from a garden seed company. Additional information is given below on these three contests.

Horticulture Contest

The purpose of this contest is to encourage individual and group study that will lead to abilities in:

- Recognizing and identifying horticultural plants and plant parts
- Learning quality characteristics
- Being able to answer questions about the culture and use of horticultural plants.

The plants included in the identification portion of the

Horticulture Contest are listed here so that leaders can help members prepare for a contest at either the county or state level. Contestants need to know all plants included in each of the four groups of plants (Flowers and Indoor Plants, Fruits and Nuts, Ornamentals, and Vegetables) in the list on page 29. The State Contest will include 20 plants from each group for members who are aged 15 and up as of December 31 of the current year. Younger members will have fewer plants to identify.

Demonstration Contest

The Demonstration Contest is designed to stimulate the participant's knowledge and ability to plan and explain, both verbally and with actions, the how and why of various horticultural practices.

Eligibility

- Contestants may participate individually or in pairs.
- Contestants will be limited to 15 minutes for the actual demonstration. Demonstrations of 1 to 5 minutes are good for beginning members.

Selection and Judging

- Only judges will be allowed to question the demonstrators, and only questions pertaining to the demonstration will be in order.
- Demonstrations in this contest should be of the demonstration nature (i.e., the contestant is actually doing something). Illustrated talks should be entered in the Speaking of Horticulture Contest.

General Information

Demonstrations will be divided into five divisions in the contest. They are:

1. **Production**—any practice that has to do with growing vegetables, fruits, nuts, flowers, ornamental plants, and turf, as well as those practices concerned with maintaining, replenishing, or increasing the productive capacity of the soil.
2. **Marketing**—operations in preparing vegetables, edible tree nuts, fruits, flowers, and ornamental plants for market, offering for sale to a buyer, or for storage or exhibition.
3. **Use**—preparing vegetables or fruits for table use, canning, freezing, or dehydration.
4. **Artistic Arrangement**—the use of flowers and other horticultural crops in arrangements, corsages, and plaques. Materials used may be live or dried. Weeds and native materials may be used; artificial plants and flowers cannot be used.
5. **Landscaping**—any practice that has to do with arrangement, establishment, and maintenance of flowers, ornamental plants, and turf around or within the home, business, or public grounds. (Demonstrations on growing landscaping materials should be entered in the production division. Cut flower arrangements should be entered in the Artistic Arrangement Division.)

Speaking of Horticulture

The purposes of the Speaking of Horticulture contest include:

- To expand the knowledge of individuals in the horticultural area
- To promote horticulture as a career and as a hobby
- To stimulate others to improve their environment through horticulture
- To provide an opportunity for young people to improve their abilities in assembling information and sharing it effectively.

The Speaking of Horticulture contest is divided into two divisions: illustrated talk and speech. In the illustrated talk, visuals will be used to reinforce the idea being developed. Visual aids suggested for use include flannel board, overhead or slide projectors, posters, and reference articles. Participants must furnish all equipment except for a screen. An assistant may be used for handling mechanical visual aids, but the assistant would not be considered a participant. No visuals may be used in the speech presentation. A sample of the Speaking of Horticulture contest score sheet appears on page 32.

The following three contests, Production and Marketing, Environmental Beautification, and Experimental Horticulture, are open only to youths who are 15 to 21 years of age by December 31 of the current year. Younger members can participate in the Young America Horticulture Contests. Members who are good at filling out report forms might want to enter one or more of these contests and report on their project.

Production and Marketing

The purpose of this contest is to stimulate and encourage an interest in growing and processing horticultural crops, including flowers, for home use or commercial sale.

Any member who has a flower garden can enter this contest. The participant must keep records on the plants grown, all items that were purchased, and any monetary benefits that were received. The participant also needs to have up to 10 good pictures (taken during the project) to show what was accomplished.

Environmental Beautification

The purpose of this contest is to improve the environment using horticultural materials. Common projects are to clean up a yard, playground, or the grounds of some public building or property and to plant flowers and ornamental plants to make the property look better. Projects can be carried out by an individual, or by a group. A group is defined as a 4-H club, a school class or grade, or any other organized youth group. The age category to use for choosing the level of participation is the age of the oldest group member.

Projects may range from being simple, as in planting a flower bed or border, to very complex as in maintaining a public park or playground. For example, members could

design a planting for a specific location, then actually put in the planting. A good sequence of before and after pictures needs to be included in the report form. Club members could choose this activity in addition to their own gardens, but it could also be a project for individuals who plant flowers in beds or borders to beautify their yards. Members who grow flowers in an area that is not easily seen or that is designed as part of the landscape probably would not enter this contest, but would enter the Production and Marketing Contest.

Experimental Horticulture

The purpose of this contest is to provide an opportunity for participants to learn more about plants and horticultural practices through research and experimentation.

Inquisitive, interested members will enjoy participating in this contest. Projects may be based on a regular garden project or as a separate project. Some samples of experimental horticultural projects include:

- Comparing the germination rate of old seeds and fresh seeds

Horticulture Contest Plant Identification List

Flowers and Indoor Plants	Fruits and Nuts	Ornamentals	Vegetables
African violet	Almond	American plane tree	Artichoke
Ageratum	Apple	Arborvitae	Asparagus
Amaryllis	Apricot	Ash	Basil
Bachelor button	Avocado	Azalea or rhododendron	Bean
Begonia	Banana	Basswood	Beet
Boston fern	Black walnut	Beech	Broccoli
Cactus	Blackberry	Bermudagrass	Brussels sprouts
Canna	Blueberry	Birch	Cabbage
Chrysanthemum	Brazil nut	Bluegrass	Carrot
Cockscomb	Butternut	Boston ivy	Cauliflower
Coleus	Cashew	Boxwood	Celery
Columbine	Cherry	Camellia	Chinese cabbage
Crocus	Chestnut	Cotoneaster	Chives
Cyclamen	Coconut	Elm	Collards
Daffodil	Cranberry	English ivy	Corn
Dahlia	Currant	Euonymus	Cucumber
Daylily	Date	Fescue (tall or fine leaved)	Dill
Dracena	Elderberry	Fir	Eggplant
Dumbcane *(Dieffenbachia)*	Fig	Flowering dogwood	Endive (all types)
Easter lily	Filbert	Forsythia	Garlic
Geranium	Gooseberry	Hawthorn	Kale
Gladiolus	Grape	Hemlock	Kohlrabi
Gloxinia	Grapefruit	Holly	Leek
Hyacinth	Hickory nut	Honey locust	Lettuce
Iris	Kumquat	Hydrangea	Muskmelon (cantaloupe)
Jade plant *(Crassula)*	Lemon	Juniper	Mustard
Marigold	Lime	Lilac	Okra
Nasturtium	Macadamia nut	Magnolia	Onion
Orchid	Mango	Mahonia	Parsley
Pansy	Mulberry	Maple	Parsnip
Peony	Nectarine	Oak	Peas
Peperomia	Orange	Pachysandra (Japanese spurge)	Pepper
Petunia	Papaya	Periwinkle *(Vinca minor)*	Potato
Philodendron	Peach	Pine	Pumpkin
Poinsettia	Peanut	Pittosporum	Radish
Portulaca	Pear	Privet	Rhubarb
Rose	Pecan	Redbud	Rutabaga
Rubber plant *(Ficus)*	Persimmon	Spirea	Sage
Salvia	Pineapple	Spruce	Spinach
Schefflera	Plum	Sweetgum	Squash
Snakeplant	Pomegranate	Tulip tree (tulip poplar)	Sweet potato
Snapdragon	Raspberry	Viburnum	Swiss chard
Sweet alyssum	Strawberry	Willow	Tomato
Tulip	Tangerine	Yew	Turnip
Zinnia	Walnut (English)	Zoysiagrass	Watermelon

- Planting seeds at the recommended depth, but covering the seeds with various materials such as soil, vermiculite, peat moss or sawdust and comparing the results
- Using fertilizer or no fertilizer
- Using a starter (fertilizer) solution when transplanting compared to using only water
- Comparing several varieties of one kind of flower and evaluating their overall performance (height, flowering season, number and size of flowers, quality of plants and flowers)
- Growing plants in sun and shade
- Comparing plants that were started indoors with those that were sown directly in the garden
- Comparing various methods of insect, pest, and weed control

Members who are really inquisitive and who are good at keeping records and reporting are especially encouraged to experiment with plants. Some county fairs have classes in which experimental or educational exhibits can be entered. All members should do some experimenting with plants in order to improve observation skills.

Other Contests

In addition to the contests for youths ages 15 and over, the National Junior Horticultural Association (NJHA) sponsors four Young America Horticulture Contests for younger members. There are three age groups: age 8 and younger (must be able to print in order to fill out the report form); age 9- to 11-year-olds, and 12- to 14-year-olds. Age categories are based on December 31 of the project year. Both individuals and groups (as described earlier) can participate. The four Young America Horticulture Contests involve completing a project, keeping records on it, taking pictures throughout the project, and submitting a report with pictures by October 1. Report guidelines are available from NJHA.

Experimental Horticulture—This contest is similar to the one for older members described earlier. Young members are especially encouraged to conduct simple experiments in order to improve their observation skills. Younger members will learn to seek answers and gain knowledge in areas that interest them. In fact, you may learn as much (or more) from experimenting as from a regular project. Experimenting with plants may prove more challenging and rewarding to some members than just growing plants.

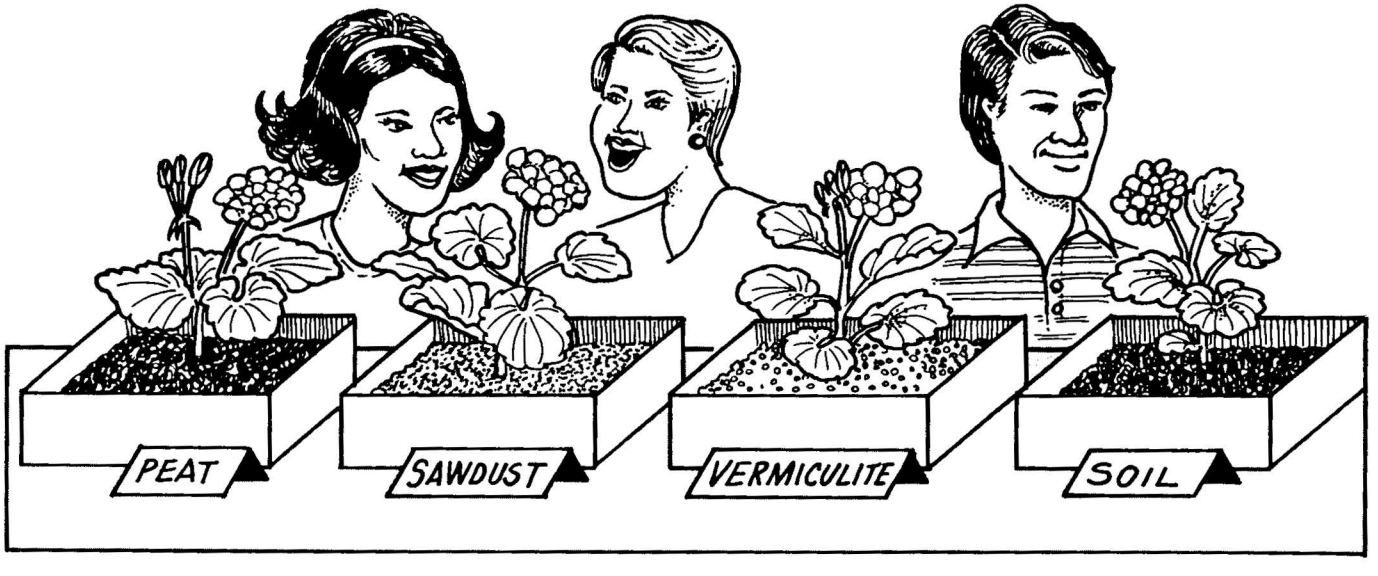
Gardening—Contestants grow or care for six to ten different kinds of plants.

Plant Propagation—Members will make new plants by two to six different methods, such as cuttings, seeds, grafting, and division.

Environmental Beautification—Contestants will improve the environment by cleaning up a yard, street, or vacant lot and then planting flowers. This is similar to Environmental Beautification Contest, but is adapted for younger members.

Further Information—Additional information on the NJHA contests can be obtained by writing to NJHA, 441 East Pine Street, Fremont, MI 49412, or to the Department of Horticulture, Michigan State University, East Lansing, MI 48824.

Top winners in these contests may be selected to represent Michigan at the national contests, which are held during the National Junior Horticultural Association Annual Convention. That convention is held during late October or early November each year, at different locations. Other convention activities include workshops, tours to horticultural areas, sight-seeing, career sessions, Halloween party, project interviews, and interviews for officer positions.



SCORECARD

This sample scorecard shows how demonstrations are evaluated.

	Possible Score	Actual Score	Excellent	Good	Fair
I. DEMONSTRATOR	15				
Voice—clear and words well chosen (5)					
Appearance—neat and proper for the job (5)					
Suitable posture and action (5)					
II. SUBJECT MATTER	30				
Brief introduction giving practical value of the topic (5)					
Accurate, up-to-date, and complete information (5)					
Accurate answers to any questions (12)					
Sources of information given (3)					
III. PRESENTATION	40				
Arrangement and use of equipment (10)					
Organization of subject matter (10)					
Charts and models (if used) neat and clear (5)					
Ability to work easily and efficiently (10)					
Summary statement (5)					
IV. RESULTS	15				
Audience interest (5)					
Product quality or accomplishment of demonstration purpose (5)					
"Show-How" demonstration (5)					
TOTAL 100					

SPEAKING OF HORTICULTURE CONTEST

General Information—Individuals may compete in either of two divisions: speech or illustrated talk.

RATING SHEET

	EXCELLENT	GOOD	FAIR	POOR
INTRODUCTION				
Did the introduction get attention and introduce the subject?				
Did the title tie in with the subject?				
CONTENT AND ORGANIZATION				
Were the main points arranged in a logical order?				
Were the main points easy for the audience to follow?				
Was each main point supported with information?				
Was accurate information presented?				
Was basic information limited to the subject?				
Were the sentences short and easy to understand?				
Was the conclusion short, interesting, and final?				
Was the entire speech interesting?				
DELIVERY				
Was the speaker friendly?				
Was good eye contact held with the audience?				
Was delivery at an understandable, interest-holding rate?				
Did speaker have good posture?				
Was the speaker at ease in the presentation?				
Did the speaker have adequate volume for all to hear?				
Did the speaker pronounce words correctly?				
Did the speaker seem to deliver the speech to the audience or just say words that had been memorized?				
GENERAL				
Did the speaker stay within the 5 to 10 minute time limit?				
Did the speaker use humor, wit, or interesting reference to gain attention and reinforce certain points?				
Did the speaker seem natural, conversational, sincere (avoiding abnormal gestures, etc.)?				
Did the presentation create audience interest?				
Did the visual aids reinforce the presentation of the subject matter?*				
Were the visual aids neat, clear, and attractive?*				
Were the visuals used smoothly?*				
*Include for illustrated talks only **TOTAL**				

SCORE SUMMARY

Excellent _____ × **4** = _____

Good _____ × **3** = _____

Fair _____ × **2** = _____

Poor _____ × **1** = _____

GRAND TOTAL _____

IDEAS FOR MEETINGS

The following are suggestions for meetings, activities, demonstrations, and talks. Encourage members to become involved in planning meetings. Try to have several members give brief demonstrations or talks (1-5 minutes) at each meeting.

	Meetings	Activities	Topics for Demonstrations or Talks
January, February—	Review goals and select projects.	Visit a greenhouse to see how seeds are started.	Planning a Flower Garden Forcing Branches
March—	Discuss garden location and size. Discuss annuals and perennials. Plan the garden on paper. Select varieties from catalogs. Order seeds. Sow seeds for early plants.	Visit a greenhouse to see Easter potted plants and cut flowers. Force some flowering branches. Attend a flower show. Take a soil sample.	Taking a Soil Sample Making a Coldframe Information on a Seed Packet Advantage of Using Pelleted Seeds Meaning of a Fertilizer Label New Flower Varieties Seed Catalog Specials
April—	Discuss soil preparation and garden tools. Discuss uses of flowers in borders, beds, and window boxes.	Visit a garden center or hardware store to see tools and equipment. Visit a flower garden that features bulbs. Have a game on seed identification. Learn the spring-flowering bulbs. Plant hardy perennial seeds outdoors.	Sowing Seeds Dividing Perennials Testing Soil Using a Coldframe Making a Raised Bed Using a Starter Solution Setting Out Perennials Using Annuals in Your Garden
May—	Discuss transplanting. Discuss fertilizers and the use of starter solutions.	Visit a flower garden that features perennials and bulbs. Begin identification instructions with colored slides and seedlings. Take a nature walk through the woods and identify wildflowers. Learn the common perennials.	Color in the Garden Propagating Chrysanthemums by Cuttings Fertilizing Your Flower Garden Using Bulbs in Your Garden Growing Plants in Containers How to Grow Herbs

	Meetings	Activities	Topics for Demonstrations or Talks
June—	Discuss summer care of the garden (weeding, watering, spraying, pinching and disbudding)	Visit a local flower show. Have a parent and member picnic. Visit a commercial garden. Have a flower identification contest/game.	Pinching Plants Mulching Plants Controlling Diseases Watering Plants
July—	Discuss selecting for exhibiting. Discuss pest control. Discuss conditioning flowers.	Visit members' flower gardens and evaluate each member's progress. Collect and identify common insects and diseases. Have a field trip to identify common flowers. Learn the common annuals.	Conditioning Flowers Using Perennials in Your Garden What the Judge Looks For Pressing Flowers Exhibiting Flowers Making a Flower Arrangement
August—	Discuss members' garden problems. Discuss bulbs. Order bulbs for planting outdoors or forcing indoors.	Visit a garden featuring annual flowers. Collect and identify common weeds. Visit the Botanic Gardens at the University of Michigan. Visit a trial garden or commercial planting. Visit the Beal-Garfield Botanic Garden at Michigan State University.	Using Silica Gel to Dry Flowers Collecting Seeds from Garden or Native Flowers Storing Seeds
September—	Compare original garden plans with results and discuss. Discuss varieties and make notes for next year. Order bulbs.	Visit a local flower show. Visit a garden store to see bulbs. Learn the fall-flowering bulbs.	Mulching Perennials Propagating Bulbs Propagating Perennials Selecting Bulbs Digging Dahlias
October—	Plant bulbs.	Visit a florist to see Christmas plants and cut flowers.	Planting Bulbs
November—	Discuss mulching.		Putting the Garden to Bed
December—	Clean up the garden.		

REFERENCES

Seed and nursery catalogs make good references and are free or quite inexpensive. Extension bulletins from both the state and federal Cooperative Extension Service are also available free or for a minimal charge. Check with your county Cooperative Extension Service office to see what is available. There are many excellent books available at libraries and bookstores that would be helpful in leading a project, and many books are sold through seed catalogs.

SOURCES OF SEEDS, PLANTS, SUPPLIES

1. W. Atlee Burpee & Co., Warminster, Pennsylvania 18974
2. P. deJager & Sons, Inc., P.O. Box 100, Brewster, New York 10509
3. Farmer Seed & Nursery Co., Faribault, Minnesota 55021
4. The Fragrant Path, P.O. Box 328, Fort Calhoun, Nebraska 68023
5. Gurney Seed & Nursery Co., Yankton, South Dakota 57079
6. Harris Seeds, 60 Saginaw Dr., Rochester, New York 14692-2960
7. Letherman's Inc., 1221 E. Tuscarawas St., Canton, Ohio 44707
8. Mellinger's, 2310 South Range Road, North Lima, Ohio 44452
9. Park Seed Company, Cokesbury Road, Greenwood, South Carolina 29647
10. Select Seeds, 180 Stickney Hill Road, Union, Connecticut 06076
11. Shepherd's Garden Seeds, 30 Irene Street, Torrington, Connecticut 06790
12. R.H. Shumway's, P.O. Box 1, Graniteville, South Carolina 29829
13. Stokes Seeds, Inc., Box 548, Buffalo, New York 14240
14. Thompson & Morgan, Inc., P.O. Box 1308, Jackson, New Jersey 08527
15. Otis S. Twilley Seed Co, Box 65, Trevose, Pennsylvania 19047
16. Wayside Gardens, Hodges, South Carolina 29695
17. White Flower Farm, Rte. G3, Litchfield, Connecticut 06759

For additional information on native plants:

Ferns of Michigan, By Cecil Billington, Bloomfield Hills, Michigan, Cranbrook Institute of Science, 1952

Michigan Wildflowers, by Helen M. Smith, Bloomfield Hills, Michigan, Cranbrook Institute of Science, 1966.

GLOSSARY

Annual—A plant which completes its life cycle (from seed to seed) in one year (zinnia, marigold).

Bedding plants—Plants used in masses or beds for showing and striking effects (petunias, wax begonias, impatiens, geraniums, snapdragons, zinnias, marigold).

Biennial—A plant that requires parts of two growing seasons to complete its life cycle. Most biennials are treated as annuals; the seeds are sown during the summer or fall of one year and the plants are sold as bedding plants the following spring (hollyhock, pansy).

Bulb—A short, usually globose underground stem bearing many fleshy, food-storing scale leaves (daffodil, lily, onion, tulip).

Bulbs—A general term applied to plants that have fleshy, underground storage structures including true bulbs, corms, rhizomes, and tubers.

Coldframe—A bottomless, box-like structure with a removable transparent top used for protecting, propagating, or growing plants. One end is usually higher than the other end, and the structure is not heated. It usually faces south to capture more sunlight.

Conditioning—Refers to the filling of stems, leaves, and flowers with water until all parts are firm and crisp. Flowers should be conditioned (also called hardening) as soon as they are cut.

Cool Season—Refers to plants that will grow best in cool weather—spring or fall. Most cool season plants can withstand some frost and can be planted in the spring before the last chance of frost.

Corm—A short, often globose, upright underground stem which stores food. A corm differs from a bulb in that a bulb consists chiefly of fleshy storage leaves growing from a small stem, whereas a corm is chiefly stem tissue (crocus, gladiolus).

Cultivate—To loosen or break up the soil around growing plants in order to kill weeds and let air and water enter the soil more easily.

Cultivator—A small powered or pushtype tiller used to loosen soil.

Damping-off—A disease of seedlings started indoors and caused by certain fungi which enter a plant near ground level producing a rot. To avoid this problem, pasteurize growing medium and containers before sowing seeds.

Drift—An informal or naturalized planting where the spacing between plants is not uniform and the plants are not in rows. For example, if you wanted to plant a bed of tulips that would appear to be a "natural" planting, you could toss the bulbs in the general area where you want to have the bed and in the direction that you want the planting to take and then plant the bulbs where they landed. This planting would be a drift, (resembling a snowdrift).

Ferns—Plants that belong to one of the more primitive groups of plants. They commonly reproduce by spores or by division.

Fertilizer—A substance which provides nutrients for plant growth. Fertilizers may be organic (rotted animal wastes or plant materials) or inorganic (processed substance such as commercial fertilizer).

Germinate—To begin to grow or sprout (as a seed or spore).

Hardening Off—To get plants grown indoors gradually accustomed to the more severe conditions outside (sun, wind, and cooler temperature). This is done by watering less, placing them outdoors on warm spring days, and bringing them in at night. Transplants grown indoors should be hardened off before they are planted in the garden.

Hardy Plants—Plants that are able to survive winter conditions in the north outdoors (pine, peony, lilac, asparagus).

Herbaceous Perennial—A permanent or hardy plant that dies back to the ground each winter and resumes growth the following spring. These plants usually have a well-developed underground food storage system.

Mulch—A substance spread on the ground to protect the roots of plants from heat, cold, or drought; to keep fruit clean; to prevent weeds from growing; and to conserve moisture. Straw, sawdust, old carpets, newspapers, cardboard, and other materials are commonly used.

Nutrients—The mineral elements necessary for plant growth. The three nutrients that need to be added to soils in large quantities are nitrogen, phosphorus, and potassium.

Pasteurize—The soil or growing medium used for starting seeds indoors is often pasteurized (often referred to as sterilized) by heating in an oven, by steam, or by chemicals. Small amounts of soil can be treated in an oven by placing it in an oven at between 300° and 350°F to kill most of the fungi that cause damping-off diseases. The temperature of the soil will have to be 180°F for 30 minutes to kill these fungi.

Peat Moss—A propagating and growing medium ingre-

dient made up of partially decomposed plants.

Perennial—A plant that lives several years producing both leaves and flowers each growing season after it reaches maturity (iris, Oriental poppy). Most perennials are herbaceous, dying back to the ground each winter.

Perlite—An ingredient of propagating and growing media made from volcanic rock (lava). It is white, very light, and porous, and doesn't hold much water.

Rhizome—A horizontal stem that grows at or below the surface of the soil (iris, calla).

Scientific Name—A name consisting of two parts, the first being the name of the genus and the second the name of the species. All plants and animals have only one scientific name. *Tagetes patula* is the scientific name of the common French marigold.

Starter Solution—A fertilizer solution applied to the soil around transplants when they are placed in the garden. Solutions high in phosphorus are especially good early in the spring when the soil is cool and phosphorus is not readily available. A typical starter solution good for cool soils would be 10-52-8.

Tender Bulbs—Bulbs that will not survive the usual winter weather experienced in the north. These bulbs must not be allowed to freeze (dahlia, canna, gladiolus).

Thin—To reduce the number of plants in a row by removing extras. Thinnings may be transplanted. Most gardeners sow seeds too close together and seedlings won't get to develop fully if they have to compete with plants around them for moisture, nutrients, and light.

Transplanting—Moving plants from one location to another where they will have more room to grow and develop.

Transplants—Young plants which are started from seed in a seedbed or flat and moved to a location where they have more room.

Vermiculite—A material derived from the mineral mica and used in propagating and growing media. It is very light in weight and can hold a lot of water.

Warm Season—Refers to plants that grow best in warm weather and that are injured by frost. Most warm season flowers cannot be planted in southern lower Michigan until late May.

Wildflowers—Those flowers that are native plants and that are commonly used in gardens or landscapes. There is growing interest in native plants due partially to the energy situation. As lawns and roadsides are mowed less, native plants are moving in and many individuals are finding that they can be quite attractive.