FLOWERING PLANTS

Flowering plants make seeds in ***flowers***. Most flowers contain both a male part called a ***stamen*** and a female part called a ***carpel***. These are called ***perfect*** flowers. Plants with separate stamen flowers and carpel flowers are said to have ***imperfect*** flowers.

Pollination

Pollen is produced in the "male" stamen of a flower. The plant's ***ovules***, or "eggs," are produced in the ovary of the "female" carpel of a flower. To fertilize the ovules, the pollen travels from the stamen's ***anthers*** to the carpel's ***stigma***, the flower part that catches pollen.

Pollen can be blown by the wind or carried by animal pollinators, including hummingbirds, bees, butterflies, beetles, and other insects. Flowers often have special colors, shapes, or markings to attract pollinators.

Fertilization

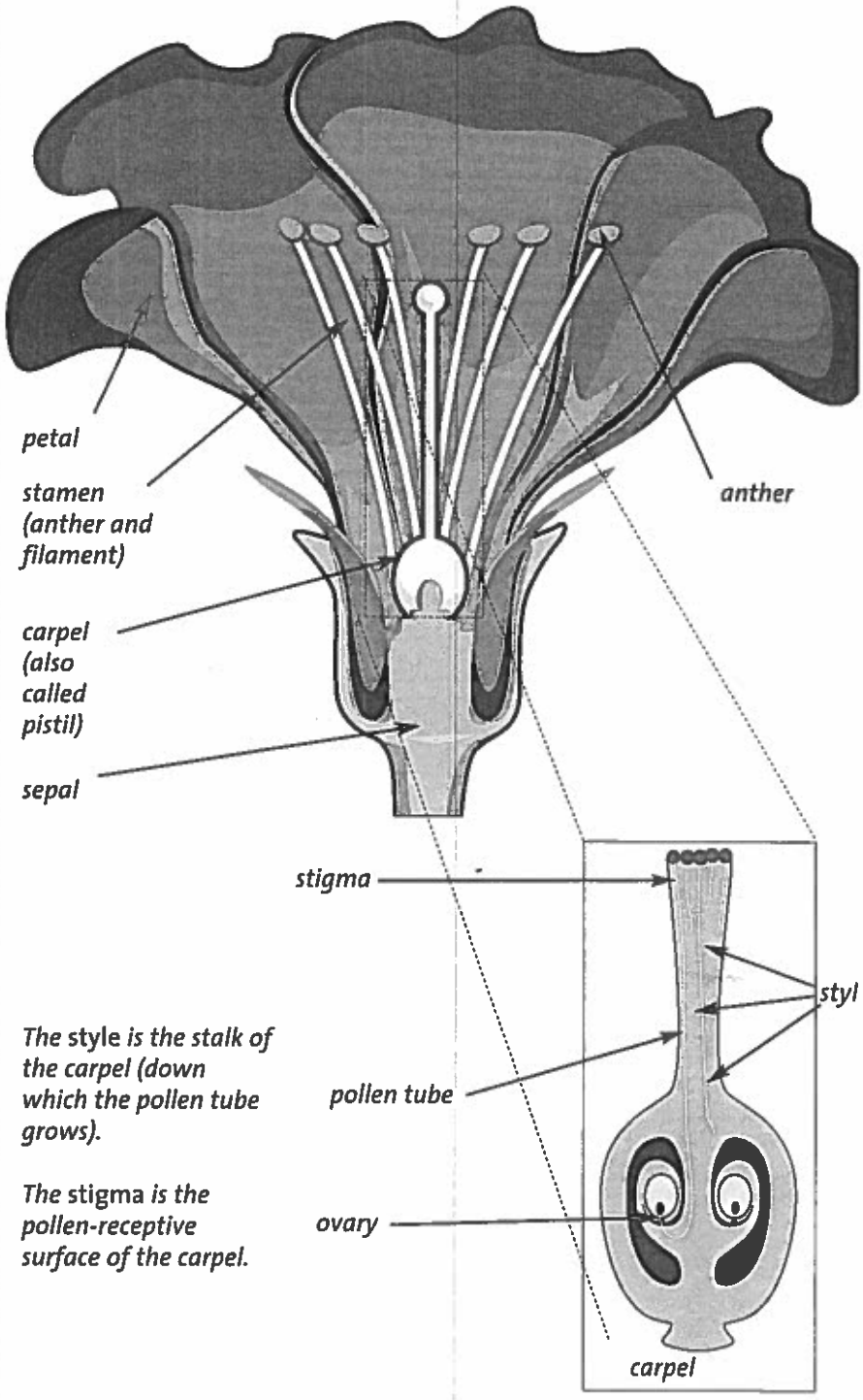
Fertilization occurs when pollen enters an ovule in the ovary. After a pollen grain lands on the stigma, it sprouts a tube. The tube grows down inside the ***style***, the slender neck that connects the stigma to the ovary. The pollen tube then enters the ovule, allowing the male plant cells to ***fertilize*** the female plant cells. The fertilized ovule develops into a ***seed*** containing a plant embryo.

Seed Protection

Seeds are protected by ***fruit***. Fruit is formed from the ovary surrounding the seed. Moist, fleshy fruits include peaches, grapes, tomatoes, and melons. Dry, hard fruits include coconuts, walnuts, and pea pods.

Parts of a Flower

Flowers come in many shapes, sizes, textures, and colors. But all flowers are reproductive structures, and all flowers are made up of the same basic parts that allow the plant to produce a seed.



Who Needs Seeds? Reproduction from Plant Parts

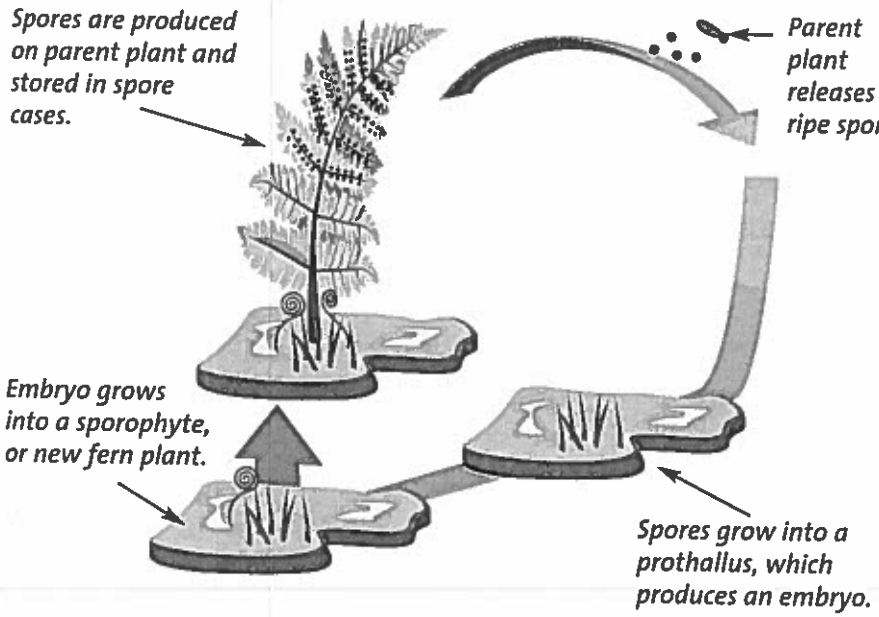
Many plants can grow from plant parts, not just from seeds. Plants that have been hurt or cut can sprout new growth from damaged stems, roots, or even leaves. The process of growing new plants from existing plant parts is called ***vegetative reproduction***. Plants use a variety of parts to produce new plants:

- **Tubers, bulbs, and corms.** All are types of underground stems. The "eyes" or buds of tubers, such as white potatoes, grow into roots and shoots to produce a new plant. Bulbs, such as onions, are big buds made up of a stem and special types of leaves—the onion layers. Corms, used to grow such flowers as gladiolus, are fleshy stems.
- **Runners and rhizomes.** These stems run along the ground (runners) or spread underground (rhizomes). New strawberry plants grow from the tips of runners. Many grasses and weeds are spread by rhizomes.
- **Roots.** Some fruit trees and bushes, such as apples and raspberries, send up "suckers," or new shoots from the roots. Roots of some plants, such as dandelions, can produce new plants from small, broken-off root pieces.
- **Leaves.** Some plants, such as the houseplant kalanchoe, produce little plantlets right on their leaves. African violets and some other plants produce plants from leaves placed on top of soil.

Reproduction Without Seeds

SPORES

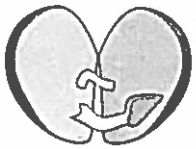
Ferns, mosses, horsetails, and other seedless plants reproduce by ***spores***. Spores are reproductive cells—tiny bits of plant life. Ferns, for example, produce spores on a parent plant, where they are stored in spore cases until they are ripe. Then the parent plant releases them. In most living ferns, the spores grow into a tiny, heart-shaped ***prothallus***, which produces sperm cells and eggs. Water must be present so that the sperm can swim to an egg and fertilize it. The embryo grows into a ***sporophyte***, or new fern plant.

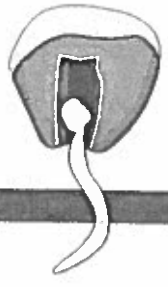


Seedy Stuff: The Inside of a Seed

Inside every seed is:

1. **A tiny new plant. The new plant is called an embryo.**
2. **Food to nourish the plant. Each seed has either one or two cotyledons, or food storage areas (monocots have one, dicots have two).**





Name:_____ Date _____

Flower Part	Function
Petals	
Anther	
Filament	
Stamen	
Stigma	
Style	
Ovary	
Ovules	
Pistil	
Sepals	