

# IB 102 Lecture Outline

## Flowering Plant Reproduction

### Lecture Objectives

By the end of the lecture, you should be able to:

1. explain the advantages and disadvantages of asexual reproduction.
2. list some examples of asexual reproduction through root, stem and leaf modifications.
3. explain how vegetative propagation is used in a commercial setting.
4. explain the advantages and disadvantages of sexual reproduction to a plant population.
5. indicate the sequence of events of the general sexual life cycle.
6. identify the location of meiotic divisions in your body and the body of a flowering plant.
7. summarize the changes in chromosome (genetic) number and genetic recombinations that occur during meiosis and fertilization in a flowering plant.
8. draw a diagram of a simple flower. Label each of the flower parts listed below and describe its function.
9. explain the role of chromosomes as genetic material.
10. diagram, name and explain the sequence of the phases of meiosis.
11. describe the development of male and female gametophytes.

**Reading:** Leventin, Ch. 5.

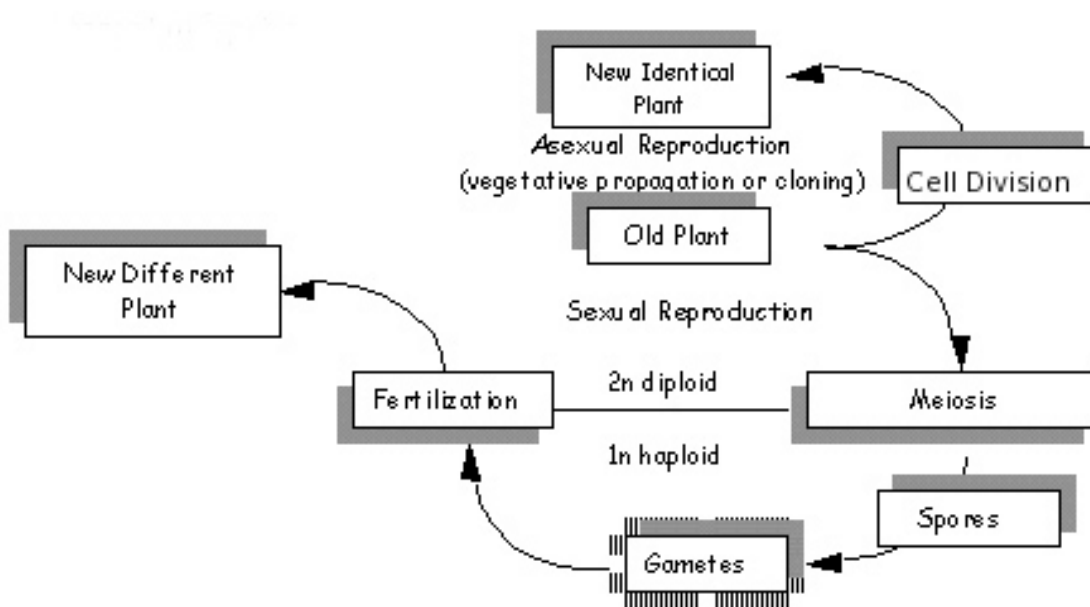
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#### TERMS

* nucleus	* petals	* anther	* style
* chromatids	* sepals	* filament	* ovary
* spindle fibers	* receptacle	* carpel(s)	* ovules
* haploid	* stamens	(pistils)	* peduncle
* diploid		* stigma	

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## 1. The general reproductive cycle in flowering plants



## 2. Asexual reproduction (vegetative propagation, cloning)

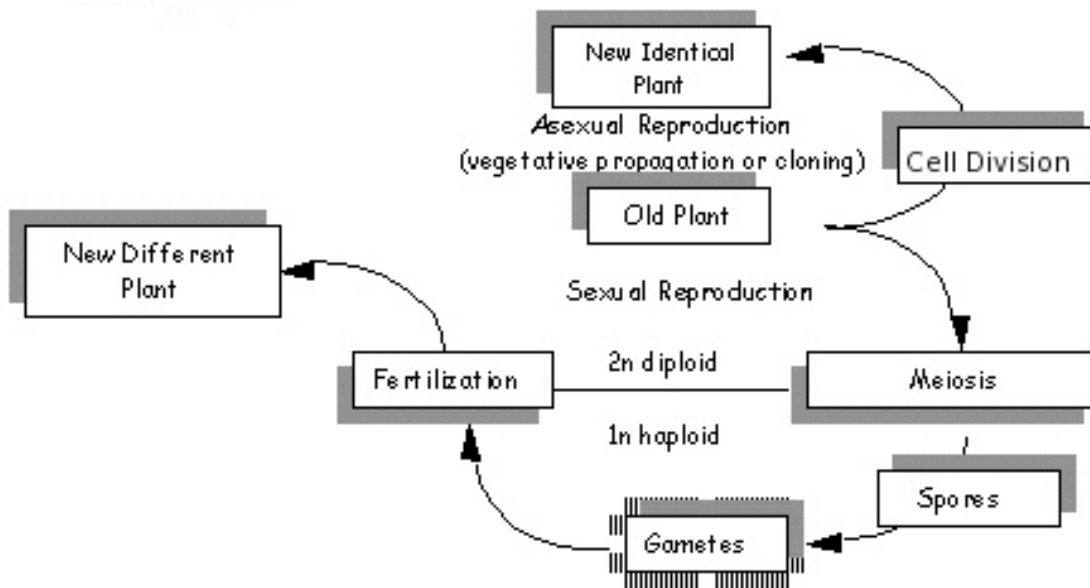
\* Advantages

\* Types

- o Suckers
- o Rhizome
- o Tuber
- o Bulb
- o Corm
- o Stolon
- o Plantlet

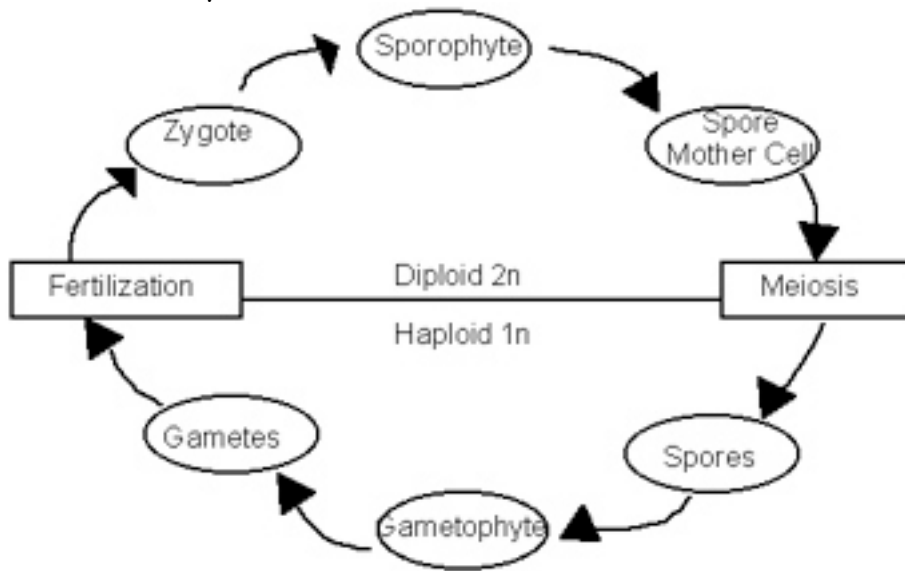
\* Commercial Use

### 3. The general reproductive cycle in flowering plants



o Advantages and disadvantages of sexual reproduction

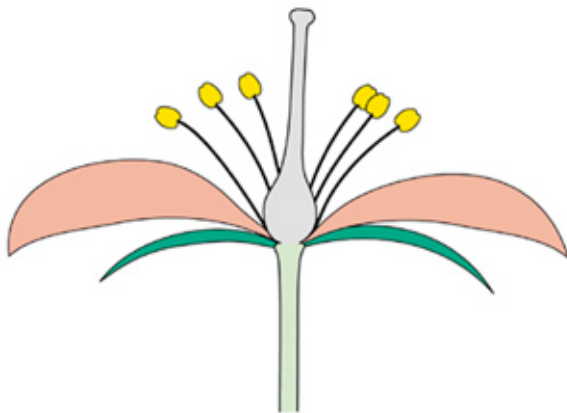
#### 4. Sexual life cycle



o The importance of meiosis in the sexual life cycle

#### 5. Flowers, the site of meiosis

\* Flower structure-general arrangement of floral organs (See Fig. 5.1)

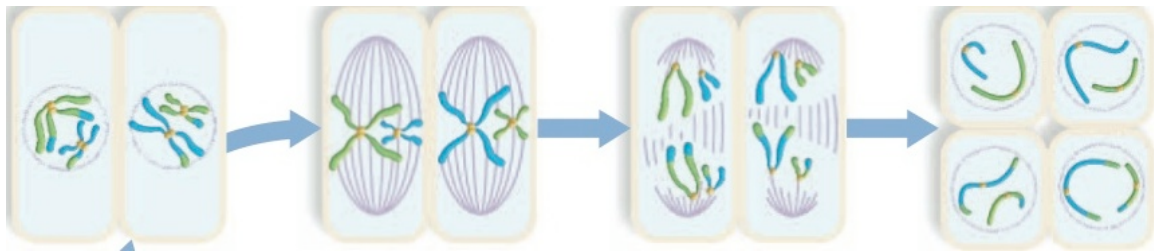
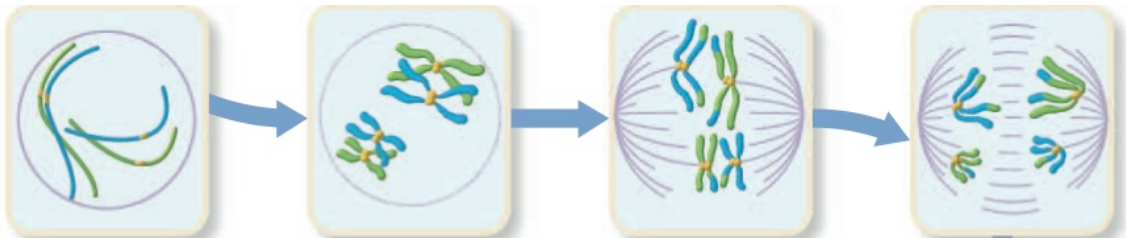


## 6. Meiosis

- \* Where it occurs in the plant body

- \* Chromosome structure

- o The process

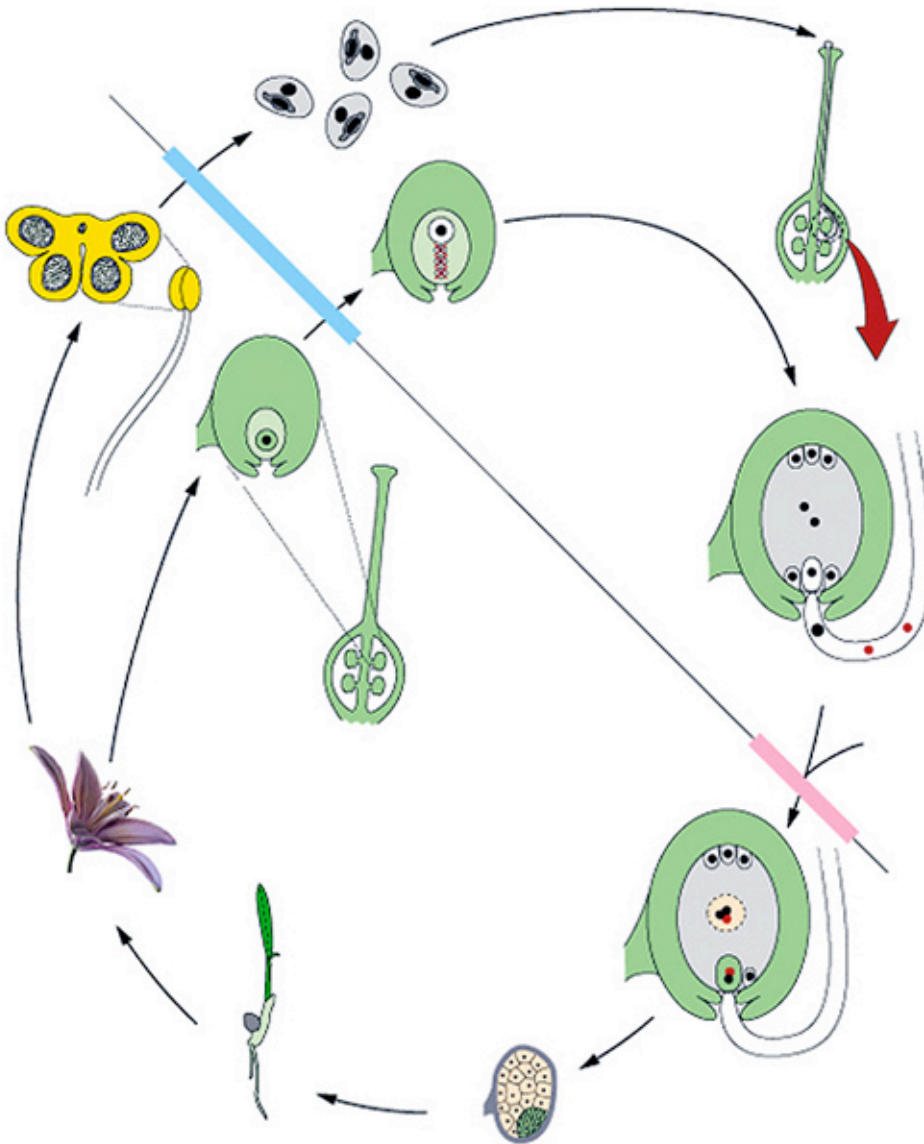


- \* Crossing over

- \* Independent assortment

\* The end product

7. Flowering plant sexual life cycle, Fig. 5.8



For the next lecture on Pollination and Bee Colony Collapse, read Ch.5 in Leventin and HoneyBeeQuiet.com. Be able to answer the following question:

- \* What kind of flowers would you plant to attract bees to your yard?
- \* How would the world food supply suffer if honeybees disappeared?