ADVANCED BIOLOGY: REPRODUCTION AND DOMESTICATION OF FLOWERING PLANTS

(USE CHAPTER 38 AS A RESOURCE)

FLOWERS, DOUBLE FERTILIZATION, AND FRUITS ARE UNIQUE FEATURES OF THE ANGIOSPERM LIFE CYCLE

1. Flower Structure and Function



Complete flowers

Incomplete flowers

1. Flower formation
2. Development of Female Gametophytes
3. Development of Male Gametophytes in Pollen Grains



1. Pollination
2. Double Fertilization
3. Seed Development, Form, and Function
4. Endosperm Development
5. Embryo Development
6. Structure of the Mature Seed



1. Seed Dormancy: An Adaptation for Tough Times
2. Seed Germination and Seedling Development
3. Imbibition
4. Dicots
5. Monocots
6. Fruit Form and Function





FLOWERING PLANTS REPRODUCE SEXUALLY, ASEXUALLY, OR BOTH

1. Mechanisms of Asexual Reproduction
2. Fragmentation
3. Apomixis
4. Advantages and Disadvantages of Asexual Versus Sexual Reproduction
5. Mechanisms That Prevent Self-Fertilization
6. Dioecious species
7. Self-Incompatibility
8. Totipotency, Vegetative Reproduction, and Tissue Culture
9. Totipotent
10. Vegetative Propagation and Grafting
11. Test-Tube Cloning and Related Techniques

PEOPLE MODIFY CROPS THROUGH BREEDING AND GENETIC ENGINEERING

1. Plant Breeding
2. Plant Biotechnology and Genetic Engineering
3. Reducing World Hunger and Malnutrition
4. Reducing Fossil Fuel Dependency
5. The Debate over Plant Biotechnology
6. Issues of Human Health
7. Possible Effects on Nontarget Organisms
8. Addressing the Problem of Transgene Escape