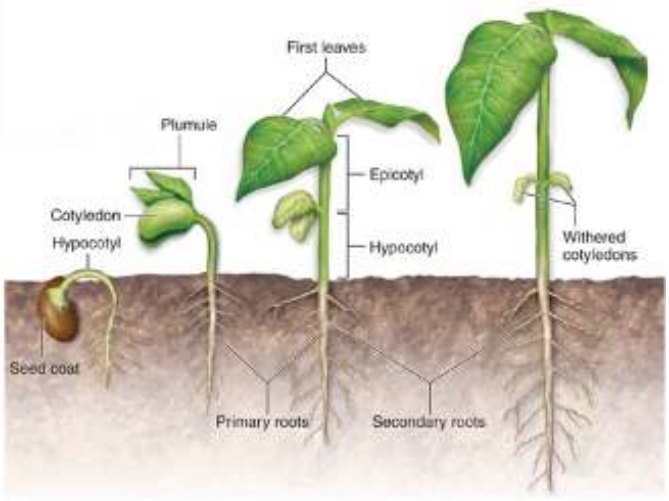
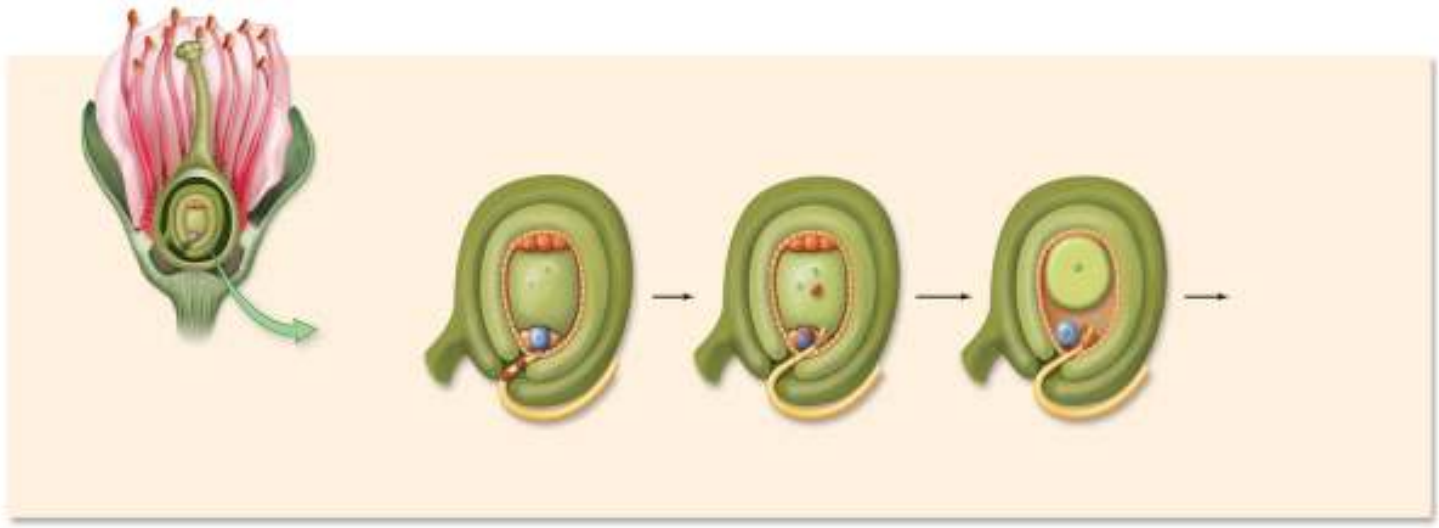
Chapter 37 – Vegetative Plant Development



1. Before we discuss embryo development, we need to *review* the very important process of double fertilization in angiosperms. Refer to the diagram below and <u>label</u> the following: **pollen tube**, **polar nuclei** (2), **egg cell**, **sperm cells** (2), **integuments (ovule wall)**, **micropyle** (appropriately labeled in figure **37.1**), **3n endosperm**, and **2n zygote**. <u>Explain</u> the process of double fertilization in angiosperms.



2. The 1st division of the zygote of a flowering plant is asymmetrical. What is the role of each of these very differently sized first two cells?

3. The root-shoot axis depends on the location of cells relative to the _____ .

4. What are the 3 basic tissue systems that organize radially around the root-shoot axis? What does each tissue system eventually give rise to?

5. What ultimately causes the morphogenesis of plant embryos?

6. *Review*: What are **cotyledons**?

7. *Review*: What are **apical meristems**? **lateral meristems**? **intercalary meristems**?

8. While the embryo of an angiosperm is developing, what 3 critical events are occurring as well?

9. Food reserves during embryogenesis are stored in _____ or _____.

10. Discuss 4 reasons why **seeds** are such an important adaptation.

11. *Review*: What is a **fruit**? What is the primary function of a fruit?

12. What causes the diversity of fruit types ... from fleshy to dry and hard?

13. Complete the following table:

Type of Fruit:	Morphology	Example
True Berries		
Legumes		
Drupes		
Samaras		
Aggregate Fruits		
Multiple Fruits		

14. Provide multiple examples of fruit dispersal.

15. How is **germination** defined by botanists?

16. What triggers germination?

17. The seeds of many plants will not germinate unless they have been **stratified**. What does that mean? Why is this important to the plant's survival?

18. What is meant by a **seed bank**?

19. Which molecules provide the energy for germination?

20. _____, a hormone produced by the embryo, initiates starch metabolism. Starch metabolism can also be inhibited by another plant hormone called _____ .

21. How do monocots protect the embryonic root and shoot?

22. How do eudicots protect the embryonic root and shoot?

23. When does the seedling enter the postembryonic phase of growth and development?