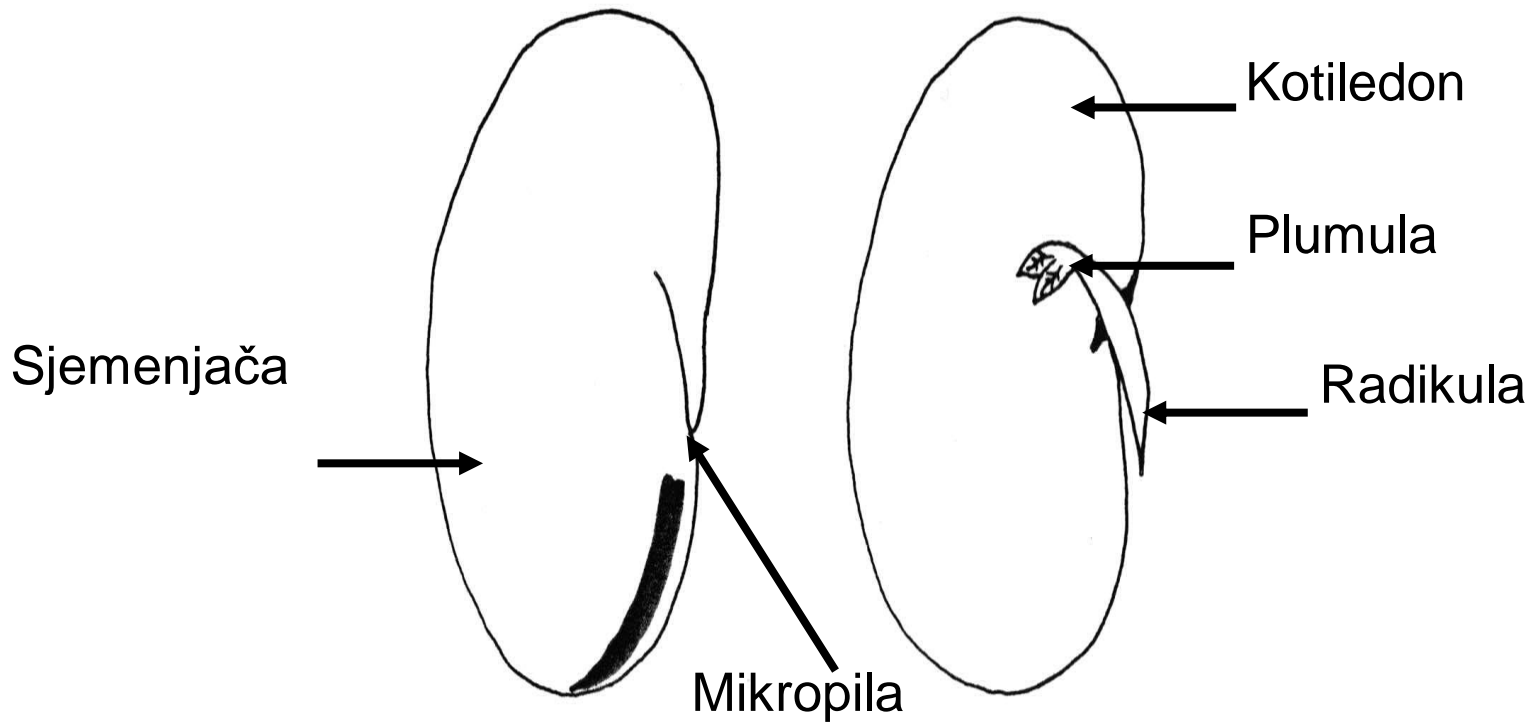
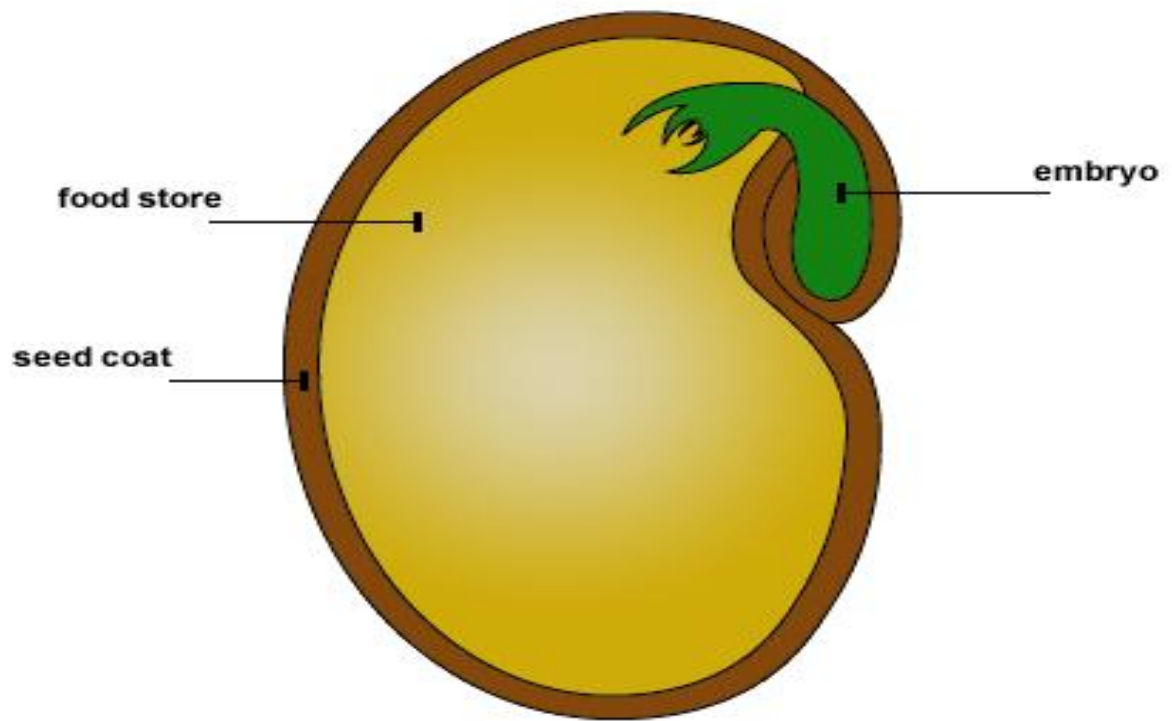


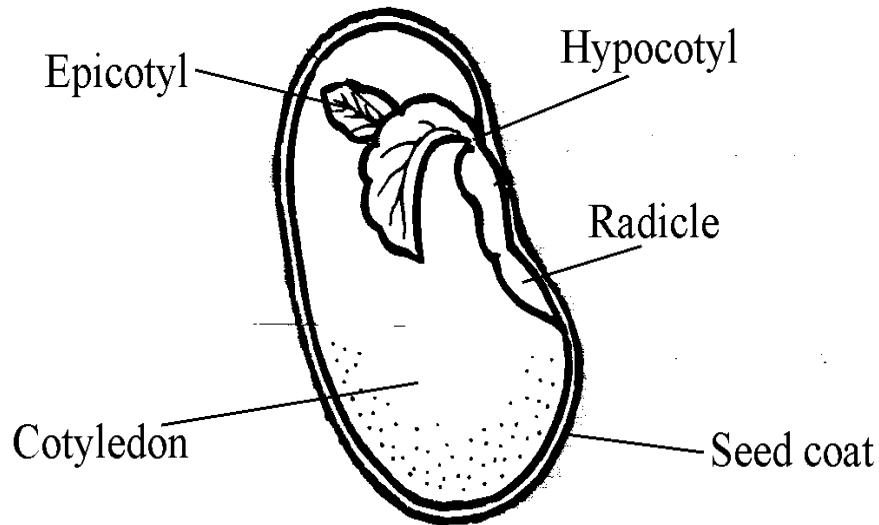
Sjeme

- Organ za polno razmnožavanje golosjemenica i skrivenosjemenica; nastaje iz sjemenog zametka
- Sjemenjača (od integumenta); klica (od oplodene jajne ćelije); endosperm (od oplodene centralne ćelije)
- Raznovrsnost: oblik (loptast, elipsoidan, valjkast...), veličina, debljina i boja sjemenjače, izgled površine, težina...

Grada sjemena





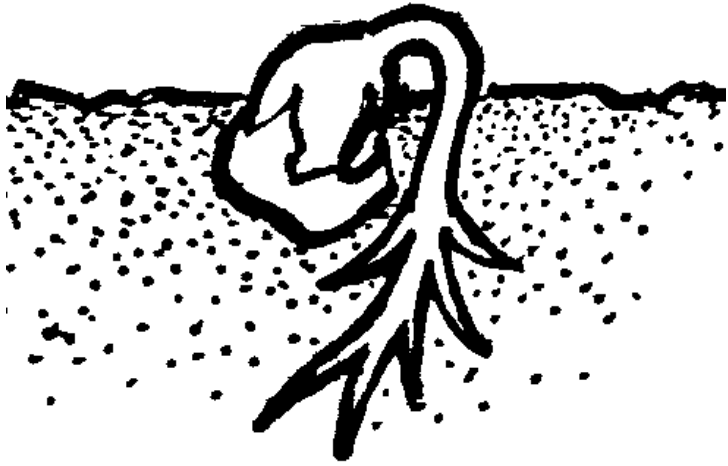


Bean seed (dicot)

Epikotil (nastaje nadzemni dio – stablo i listovi)

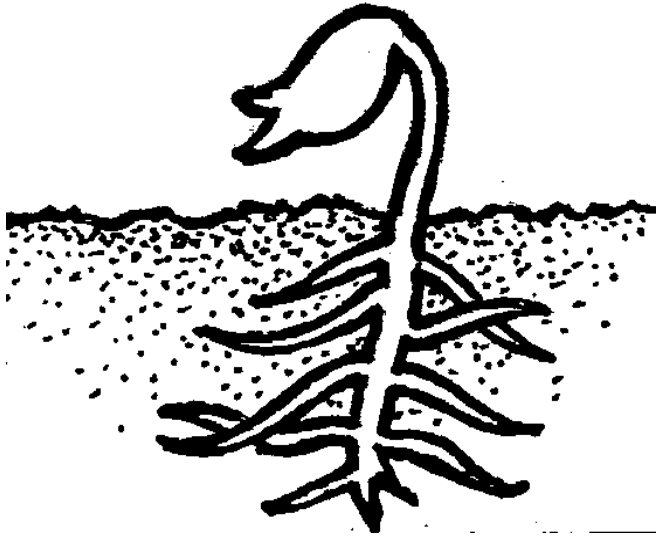
Radikula (embrionalni korjen)

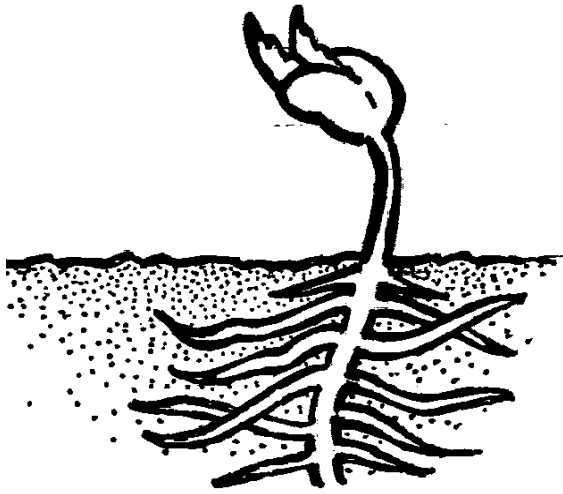
Hipokotil (veza između kotiledona i korjenčića)



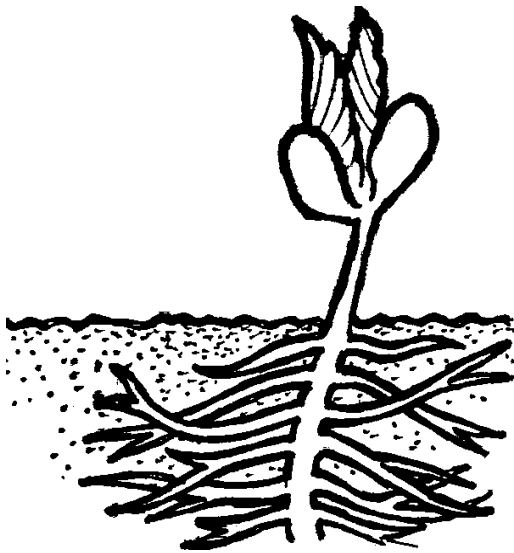
Radikula probija sjemenjaču i dolazi do zemljišta

Primarni korjen je razvijen kao i hipokotil,
kotiledoni izlaze na površinu zemljišta

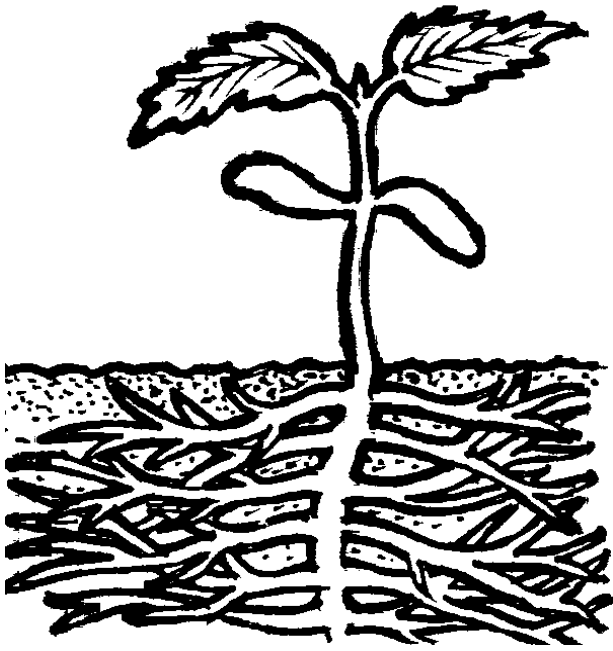




Klijanac se ispravlja a i kotiledoni sa njim

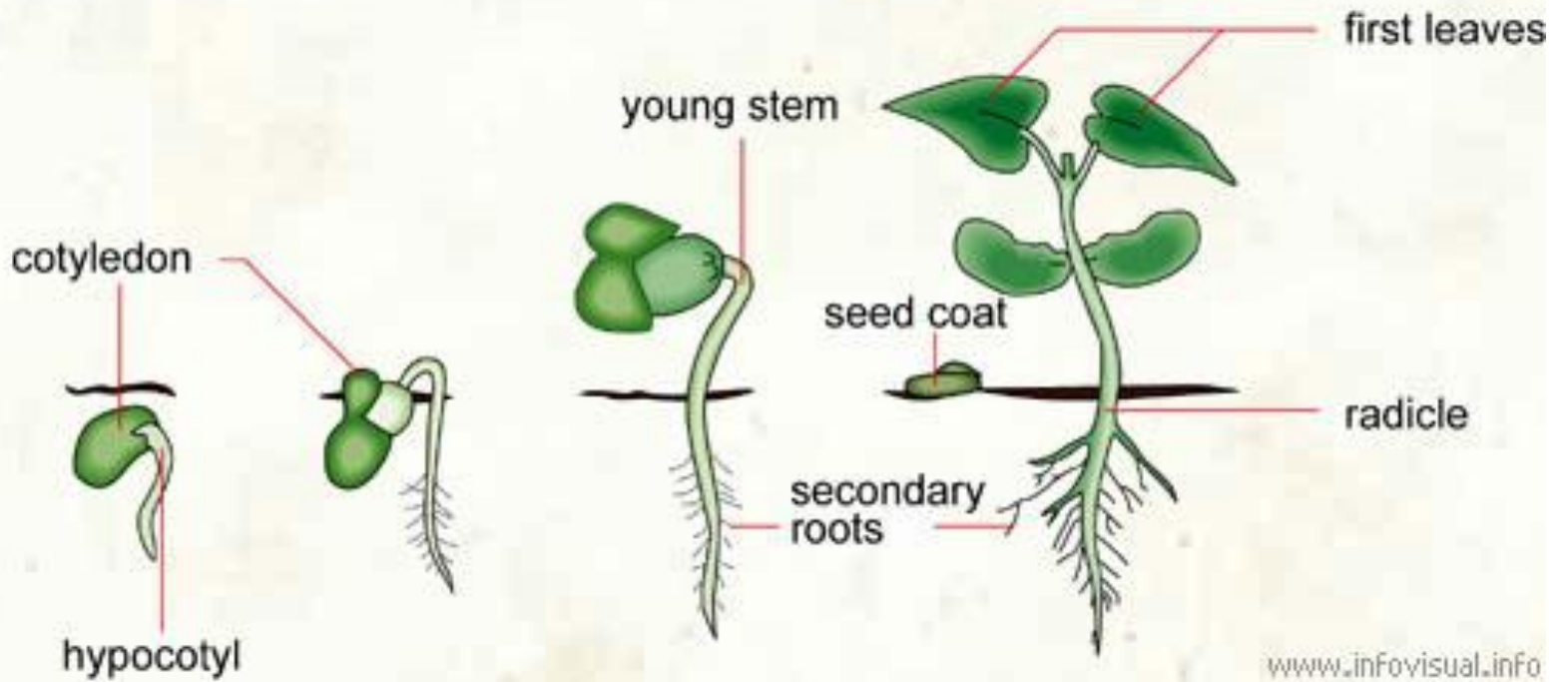


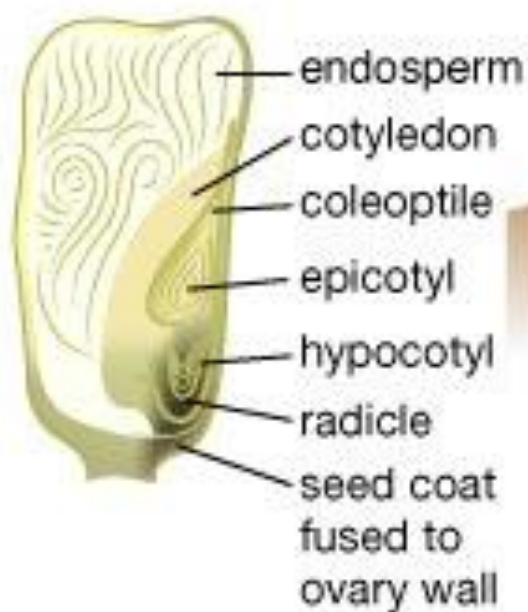
Početak odvijanja primarnih listova i
izduživanja stabla



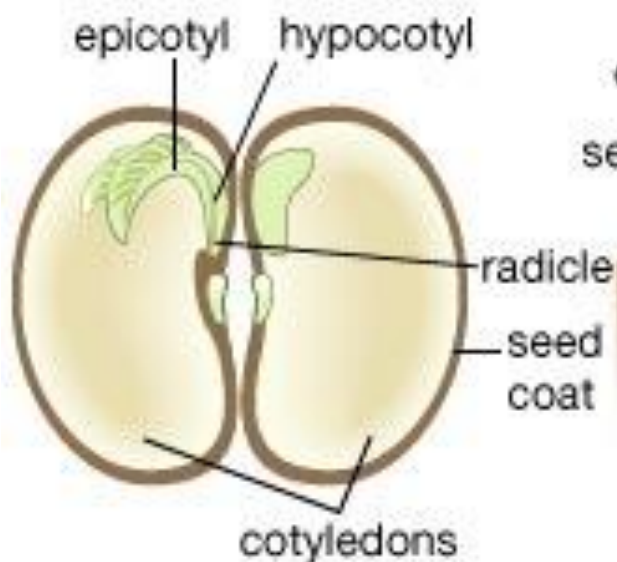
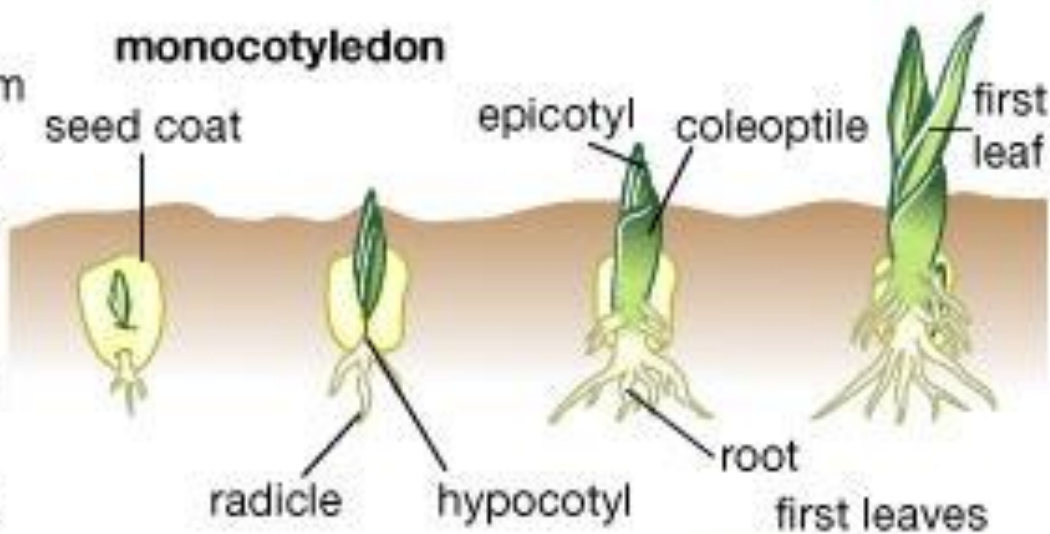
Listovi formirani, kotiledoni padaju

GERMINATION - BEAN

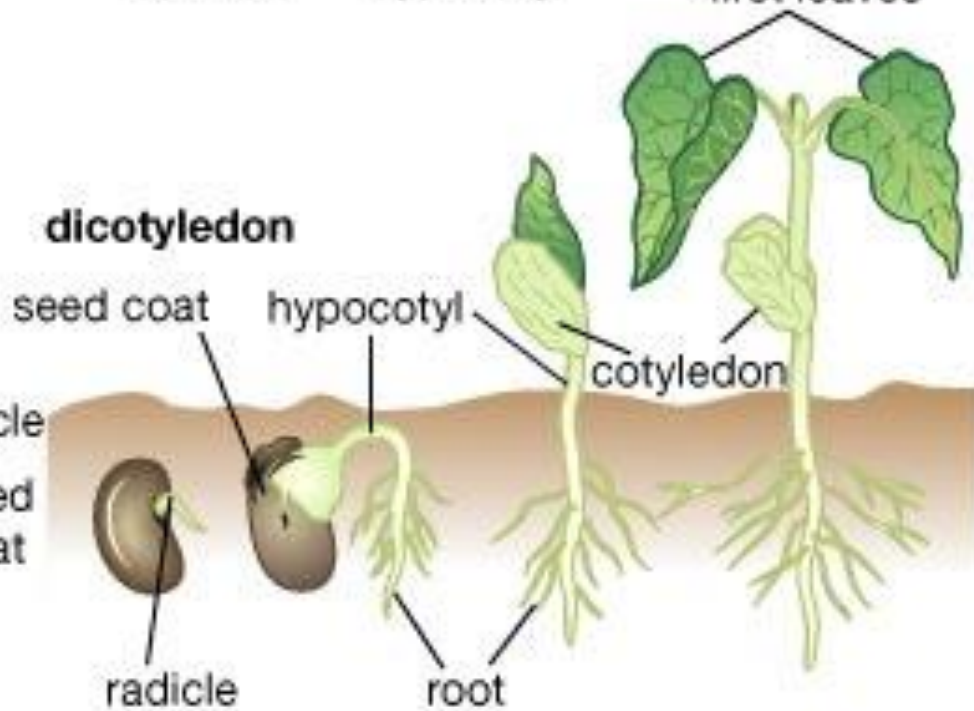




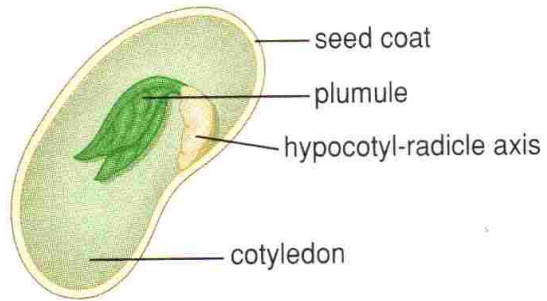
monocotyledon



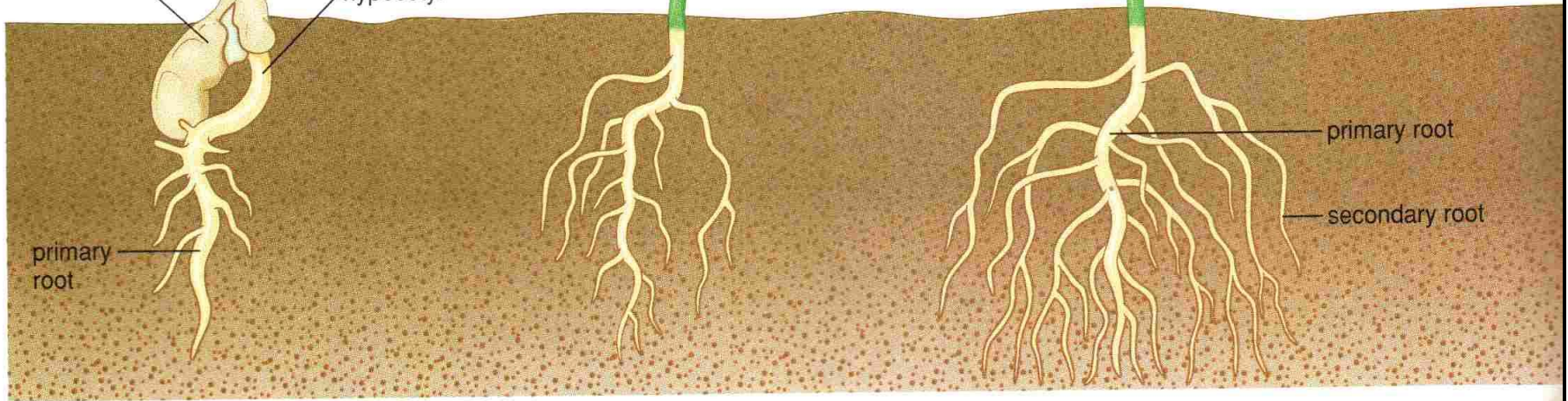
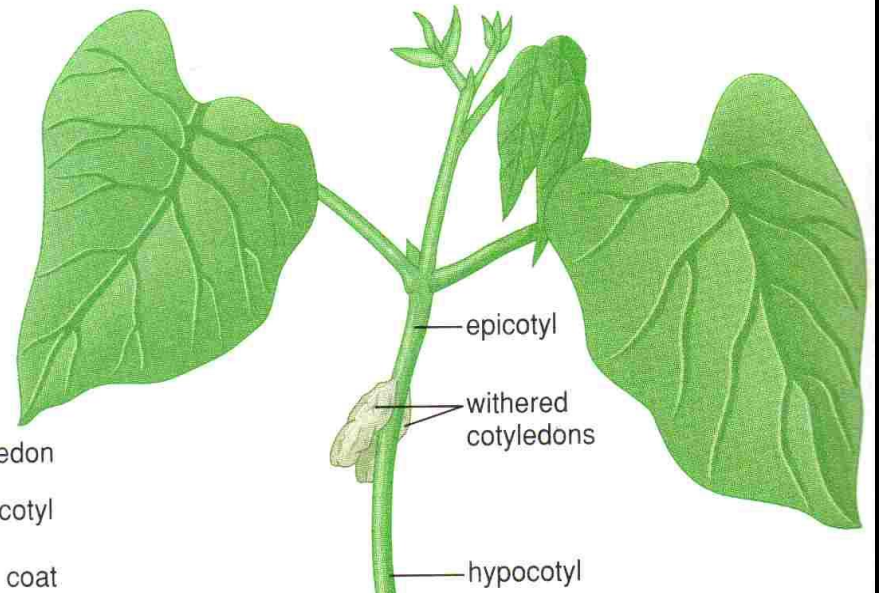
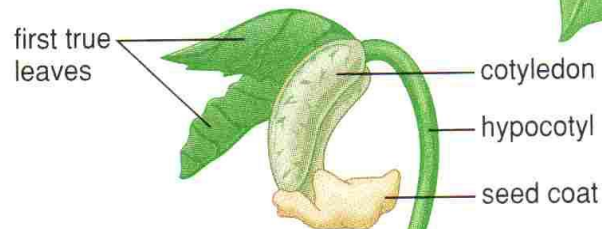
dicotyledon

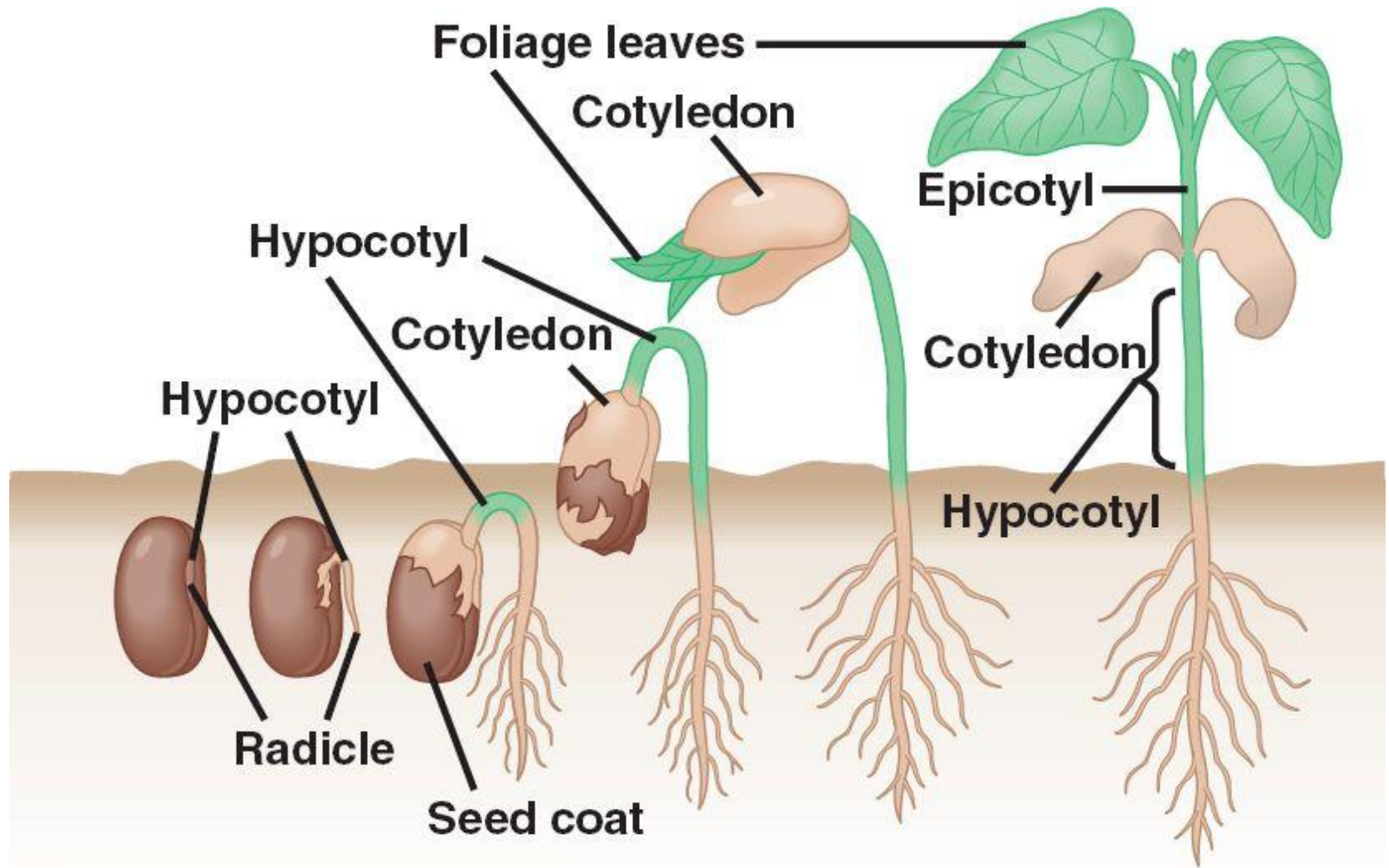


Common garden bean. a. Seed structure. b. Germination.



a.





Common garden bean

KLIJANJE

FAZA	DEŠAVANJA
PREDKLIJANJE	<ul style="list-style-type: none">(a) Rehidracija– imbibicija vode(b) Stimulacija RNA i sinteze proteina(c) Povećano disanje(d) Razlaganje rezervi hrane pod uticajem enzima(e) Promjene u ćelijskoj strukturi i indukcija ćelijske diobe i rasta ćelija
KLIJANJE	<ul style="list-style-type: none">(a) Ruptura sjemenjače(b) Pojava korjenčića
POSILIJE KLIJANJA	<ul style="list-style-type: none">(a) Kontrolisan rast korjena i nadzemnog dijela(b) Kontrolisan transport rezervnih materija prema rastućem dijelu (osi)(c) Starenje tkiva za skladištenje hrane