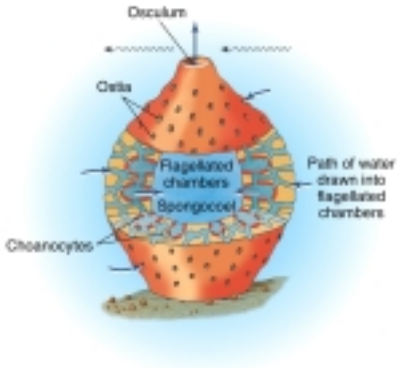
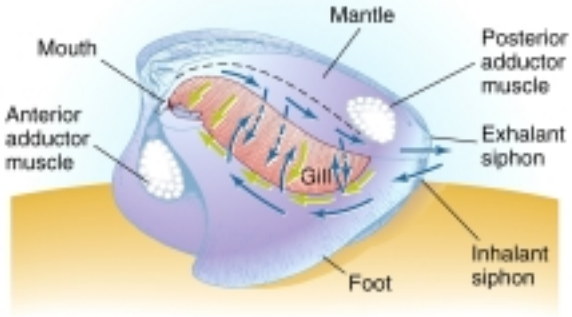
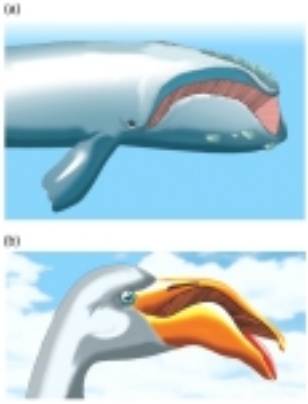
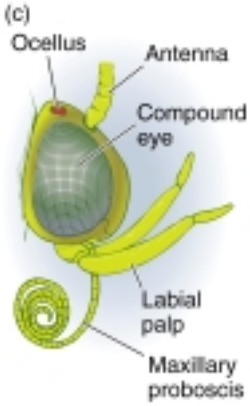

Osculum
Ostia
Flagellated chambers
Spongocoel
Choanocytes
Path of water drawn into flagellated chambers

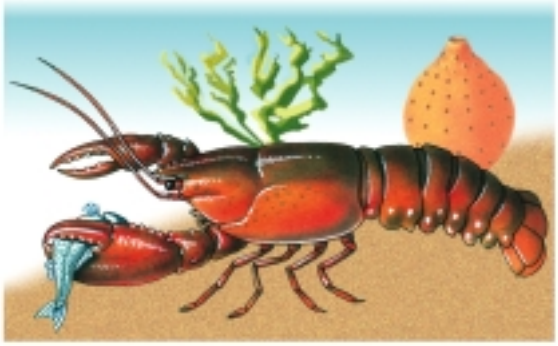

Mantle
Mouth
Posterior adductor muscle
Anterior adductor muscle
Exhalant siphon
Gill
Inhalant siphon
Foot


(a)
(b)


(c)
Ocellus
Antenna
Compound eye
Labial palp
Maxillary proboscis

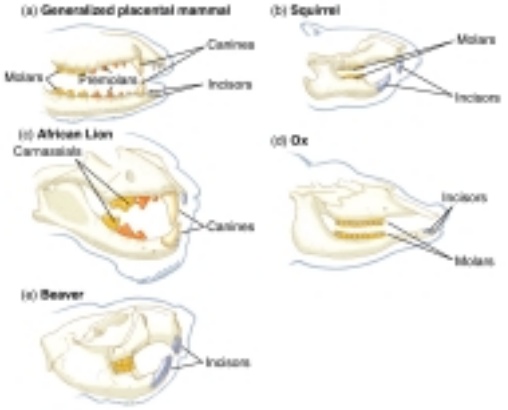
(a)

(b)

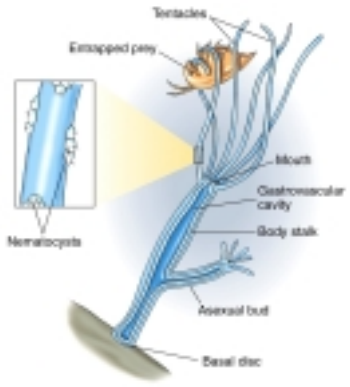


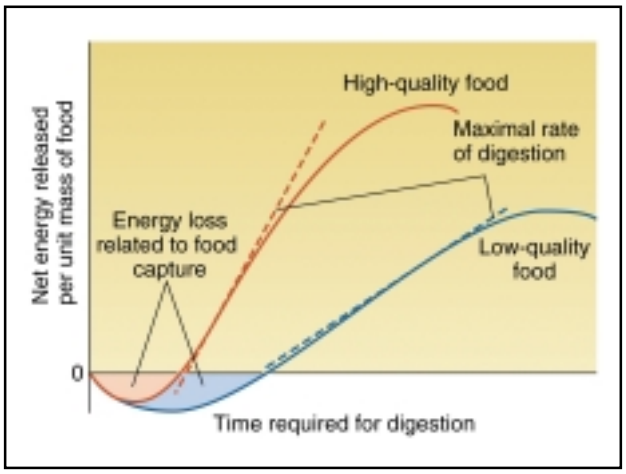
(a)

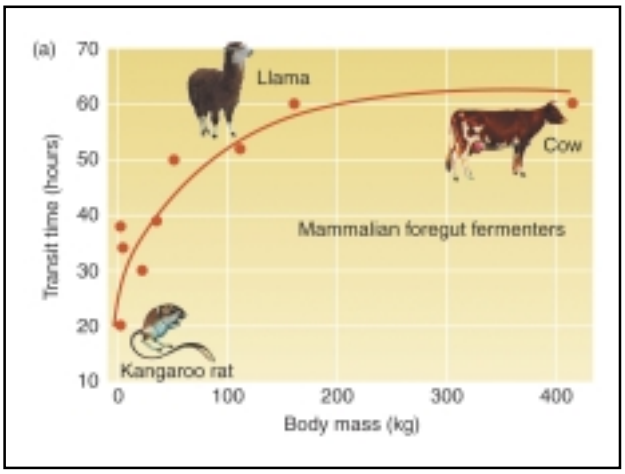
(b)

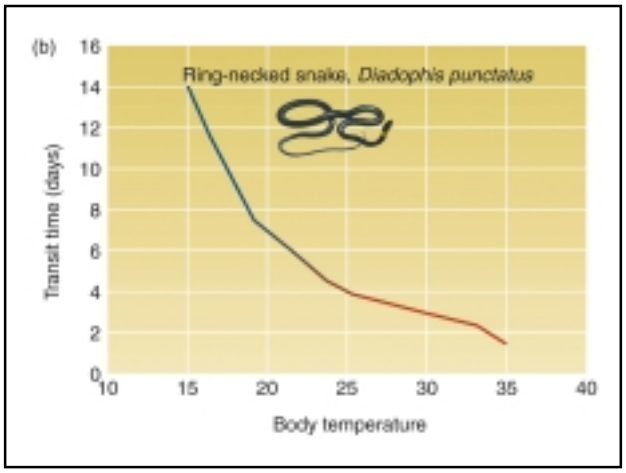

(a) Generalized placental mammal
Canines
Molars
Premolars
Incisors
(b) Squirrel
Molars
Incisors
(c) African Lion
Carnassials
Canines
(d) Ox
Incisors
Molars
(e) Beaver
Incisors

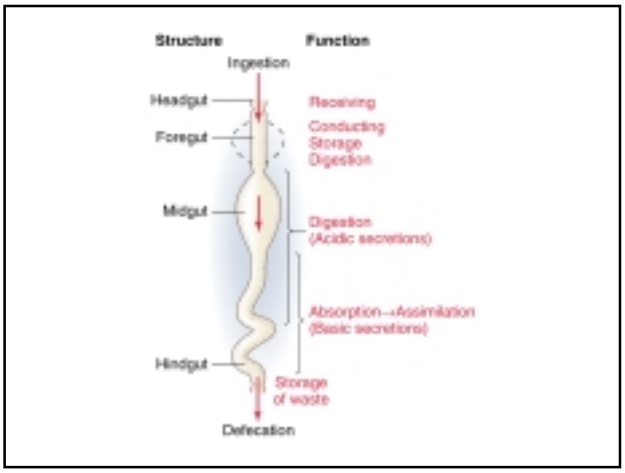
Finch
Seed-cracking
Poorwill
Insect-catching
Hawk
Cutting
Duck
Sieving
Probing
Snipe

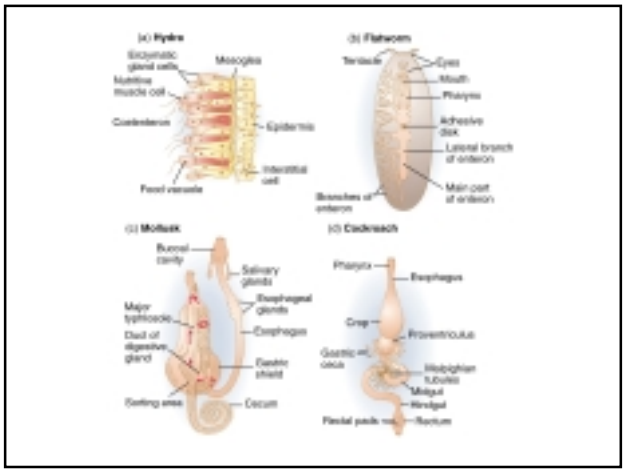

Tentacles
Entrapped prey
Mouth
Gastrovascular cavity
Body stalk
Nematocysts
Asexual bud
Basal disc

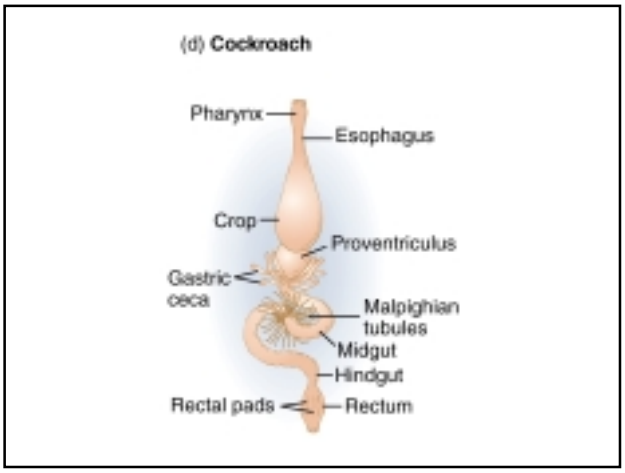

Net energy released per unit mass of food
High-quality food
Maximal rate of digestion
Energy loss related to food capture
Low-quality food
0
Time required for digestion

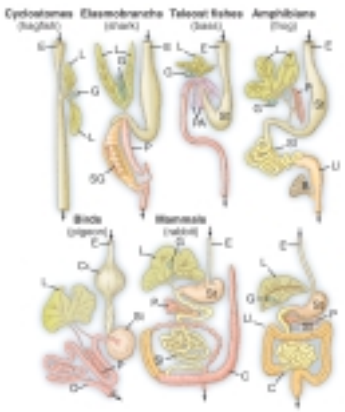

(a)
Transit time (hours)
70
60
50
40
30
20
10
Llama
Cow
Mammalian foregut fermenters
Kangaroo rat
0
100
200
300
400
Body mass (kg)

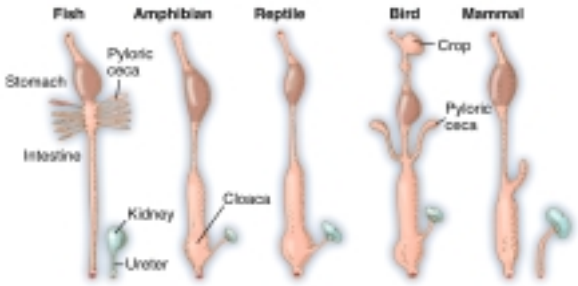

(b)
Ring-necked snake, Diadophis punctatus
Transit time (days)
16
14
12
10
8
6
4
2
0
10
15
20
25
30
35
40
Body temperature

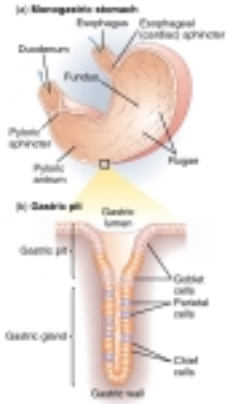

Structure
Function
Ingestion
Headgut
Foregut
Midgut
Hindgut
Receiving
Conducting
Storage
Digestion
Digestion
(Acidic secretions)
Absorption→Assimilation
(Basic secretions)
Storage
of waste
Defecation

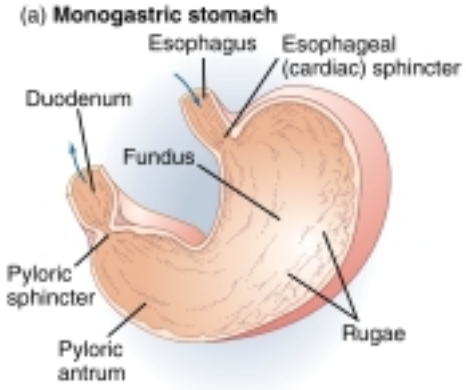



(d) Cockroach
Pharynx
Esophagus
Crop
Proventriculus
Gastric ceca
Malpighian tubules
Midgut
Hindgut
Rectal pads
Rectum

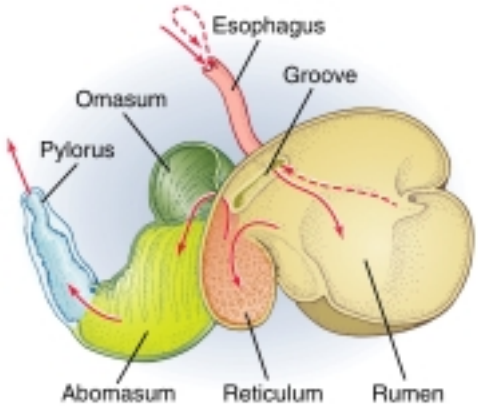



Fish
Amphibian
Reptile
Bird
Mammal
Stomach
Pyloric ceca
Intestine
Kidney
Ureter
Cloaca
Crop
Pyloric ceca




(a) Monogastric stomach
Esophagus
Esophageal (cardiac) sphincter
Duodenum
Fundus
Pyloric sphincter
Pyloric antrum
Rugae

(b) Gastric pit
Gastric lumen
Gastric pit
Goblet cells
Parietal cells
Gastric gland
Chief cells
Gastric wall


Esophagus
Groove
Omasum
Pylorus
Abomasum
Reticulum
Rumen