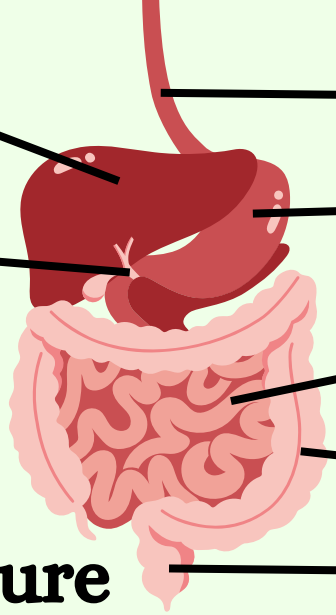
# DIGESTIVE SYSTEM

TOP MARKS SCIENCE

## Structure



Liver: Produce bile

Bile duct: Release bile

Oesophagus: Tube that squeezes food down to stomach

Stomach: Organ that mechanically digests food by muscle contractions and chemically by enzymes to make them soluble.

Small intestine: Absorb soluble food

Large intestine: Absorb water

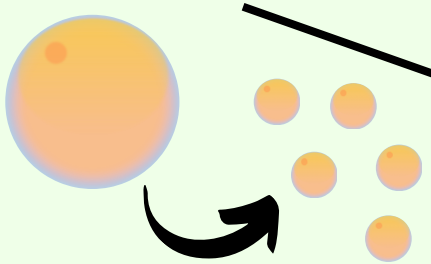
Rectum: Store faeces, Anus: Exit faeces

Order food goes through digestive system:

1. Mouth, oesophagus
2. Stomach
3. Small intestine
4. Large intestine
5. Rectum
6. Anus

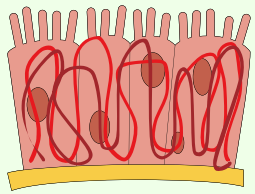
## Efficiency

### Surface Area



Bile emulsifies fat into smaller droplets

Mechanical digestion by chewing before swallowing food



Small intestine lining has villi to increase absorption

### Temperature

Core body temp: 37oC

Optimum enzyme temp: 37oC

### Changes in pH

Optimum enzyme pH

Pepsin (stomach) pH: 2

Why?- Acidic env

Small intestine enzymes: Acid or Alkaline?

Production of bile in the liver

Neutralises stomach acid to protect lining of the small intestine

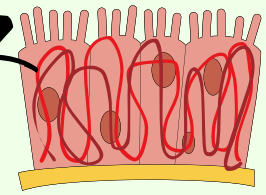
## Adaptations

Mucus lines the stomach to stop damage to tissue from strong acid

Small intestine lining

Increases surface area

Villi



Continuous blood supply of villi

Maintains a concentration gradient for diffusion and active transport