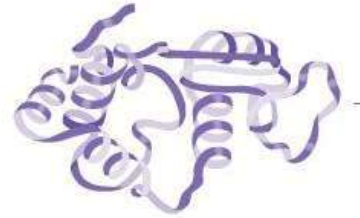
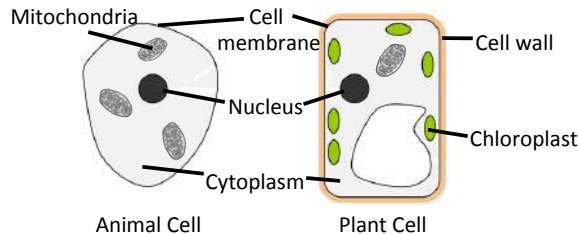


VIDEO SUMMARIES: CELLS

ENERGY AND ENZYMES

What you need to know:

1. Cells:



2. ATP is the “energy currency” of cells

3. Enzymes are proteins that speed up reactions

Factors that affect protein function:

- Temperature
- pH
- Co-factor/co-enzyme
- Enzyme concentration
- Substrate concentration

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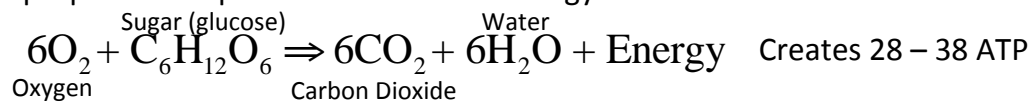


CELLULAR RESPIRATION (1/2)

What you need to know:

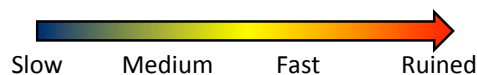
(Aerobic) respiration is the process where organisms obtain energy from (organic) molecules

The purpose of respiration is to release energy from food



Factors that affect cellular respiration:

- Amount of nutrients
- Temperature
- State of cell – growth and repair
- Nature (high energy requirements)



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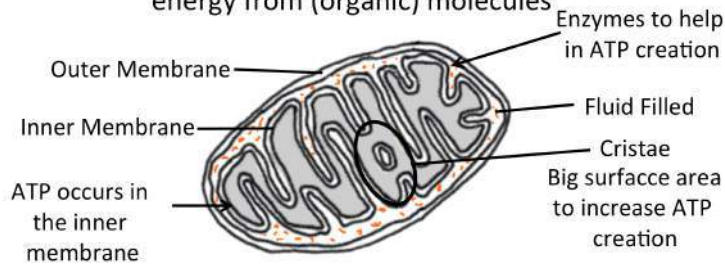


VIDEO SUMMARIES: CELLS

CELLULAR RESPIRATION (2/2)

What you need to know:

(Aerobic) respiration is the process where organisms obtain energy from (organic) molecules



The purpose of respiration is to release energy from food

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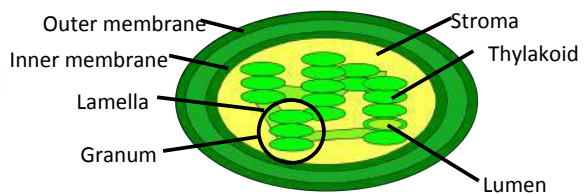
PHOTOSYNTHESIS

What you need to know:

Photosynthesis is the process by which green plants synthesise (make) food, using sunlight.

Purpose: plants is to make food for energy
animals to make O_2 to breath

Occurs in leaves
– they are flat for maximum light exposure



Factors that affect photosynthesis:

- Light Intensity
- Temperature
- Increase in reactants

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VIDEO SUMMARIES: CELLS

MOVEMENT

What you need to know:

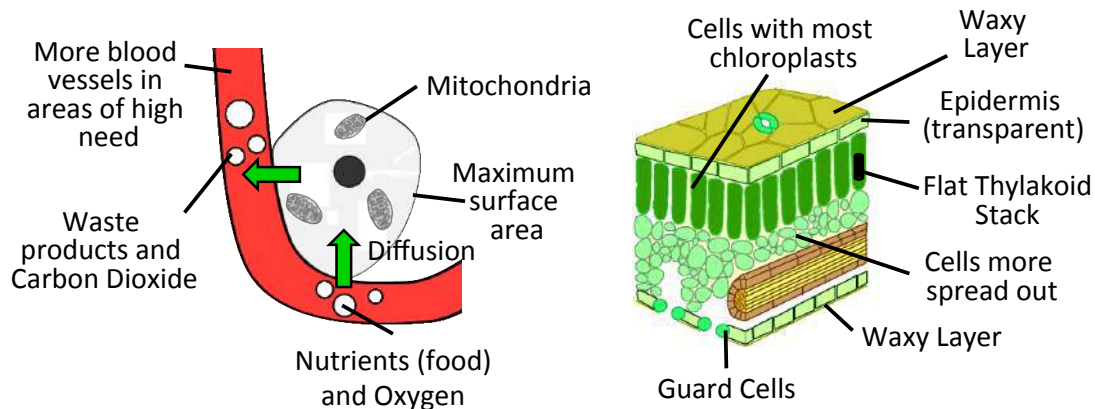
	Definition	Purpose	Animal e.g.	Plant e.g.
Diffusion	The spread of particles in random motion from high concentrations to low concentrations (until concentrations are equal)	balance gas concentrations	CO ₂ in blood diffuses to the lungs	CO ₂ diffuses from the atmosphere to the cells in the leaf
Osmosis	The movement of water from an area of high concentration to low concentration through a semi-permeable membrane until concentrations are equal	balance concentrations	Water in body being absorbed in the gut	Water being absorbed into roots in a tree
Active Transport	The movement of ions/molecules across a cell membrane to a region of high concentration. Uses ATP (energy) and needs enzyme help	allow a cell to maintain and regulate its internal function	Sodium potassium pump	Getting minerals in to roots

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STRUCTURE OF CELLS

What you need to know:



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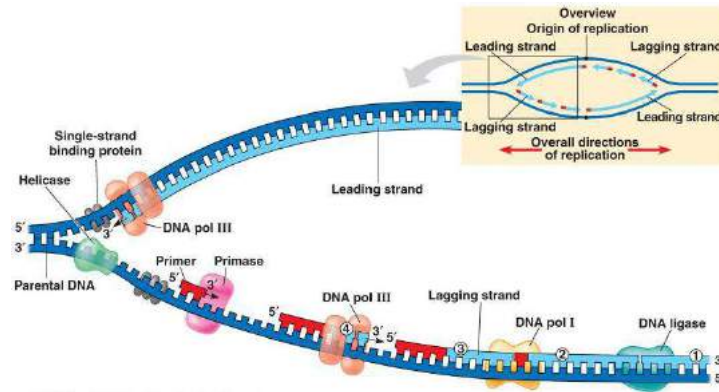


VIDEO SUMMARIES: CELLS

CELLULAR REPRODUCTION

What you need to know:

- Semi-conservative
- Enzymes work 3' → 5'
- Helicase unzips DNA
- DNA polymerase makes new strand
- Leading strand: DNA polymerase follow helicase 3' → 5'
- Lagging strand: DNA polymerase doesn't follow helicase 3' → 5'
- Okazaki fragments



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CELLULAR REPRODUCTION

What you need to know:

The purpose of cellular reproduction is to create two complete sets of DNA

Mitosis

Purpose: Growth and Repair

One cell splits to two identical daughter cells

Meiosis

Purpose: Sexual reproduction and variation

One cell goes to 4 different cells each with half the no of chromosomes

Factors that affect DNA replication:

pH
Temperature

Conc. of enzymes

Co-factors/Co-enzymes

Locations:

Body: Hair

Bone Marrow

Injuries

Plants: Shoots

Roots

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