

- For each topic being taught a knowledge organiser (KO) has been produced outlining the key knowledge required to fully understand a topic.

Section 1- Cell structures

Prokaryotic cell

Eukaryotic cells

Section 4- Photosynthesis

$$\text{carbon dioxide} + \text{water} \rightarrow \text{oxygen} + \text{glucose}$$

$$6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$$

Soda lime absorbs CO_2

Oxygen test-glowing splint will relight oxygen

Limiting factors- affect rate of photosynthesis

Section 2- Microscopy

17 Magnification	Tells you how many times bigger a microscope makes an object. Magnification = length of magnified object ÷ length of actual object
18 Resolution	The ability of a microscope to distinguish between 2 separate points.
19 Light Microscope	Uses light, cheap, live or dead specimens, natural colours seen. Can magnify objects $\times 1500$
20 Electron Microscope	Uses electrons, expensive, dead specimens, black and white images but colour can be added. Can magnify objects $\times 2,000,000$

Section 5- DNA

- Codes for proteins
- Double helix
- Made of nucleotides
- Complementary base pairing

- DNA copied into mRNA during transcription
- mRNA travels to ribosome
- protein made by translation

Section 3- Respiration

Aerobic (with oxygen)

$$\text{glucose} + \text{oxygen} \rightarrow \text{carbon dioxide} + \text{water}$$

$$\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O}$$

- Produces ATP
- Occurs in mitochondria

Anaerobic (without oxygen)

$$\text{glucose} \rightarrow \text{lactic Acid}$$

- Produces less ATP
- Occurs in muscles during exercise

Fermentation in microorganisms

$$\text{glucose} \rightarrow \text{ethanol} + \text{carbon dioxide}$$

Section 6- Enzymes

- Proteins
- Catalysts
- Specific shape
- Rate affected by temp, pH, substrate conc, enzyme conc.

Enzyme	Substrates	Products
Carbohydrase	carbohydrates	Sugars
Protease	Proteins	Amino acids
Lipase	Lipids	Fatty acids and glycerol

- Students will be set a specific part of the KO for homework. This will run alongside the kerboodle quizzes currently being set.
- Students will complete the task in their red KO exercise books correcting work with green pens.

E.g.

Week 1 homework will always be KO's,

Week 2 homework will always be a Kerboodle task.

- A mini quiz will then be given to assess how well the students have memorised, and understood, the section of knowledge set.

Students are required to apply the 'KO code of working' which is:

LOOK
SAY
COVER
WRITE
CHECK
x3

LOOK – Read the specific part they need to learn for homework.

SAY – Read out loud the specific part they need to learn.

COVER – Cover the KO.

WRITE – Write out everything you can remember from the specific part of the KO in your workbook.

CHECK – Check that you have all the content needed and it is correct. Any content that this missing or incorrect use a **green pen** to illustrate the gaps in your knowledge that you have corrected.

x3 – Repeat 3 times.