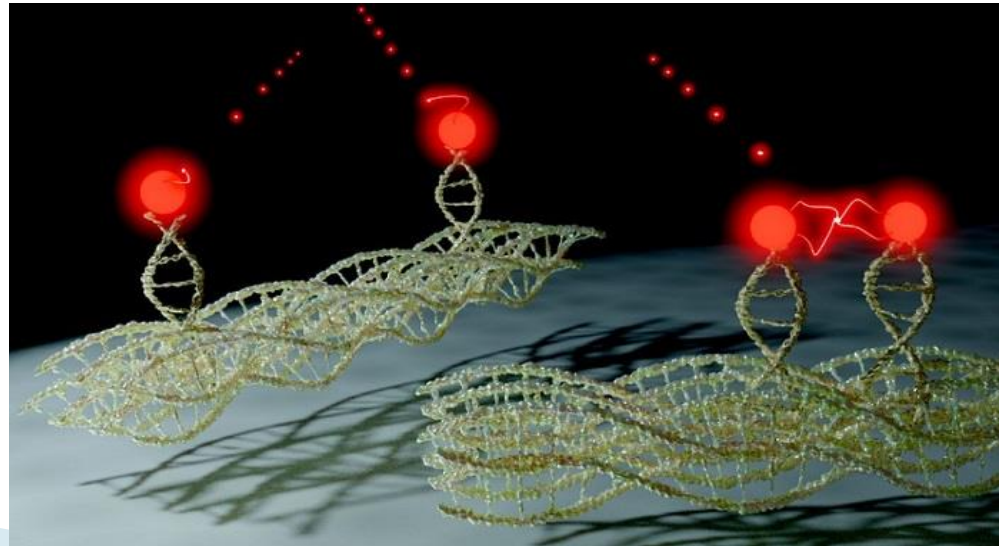
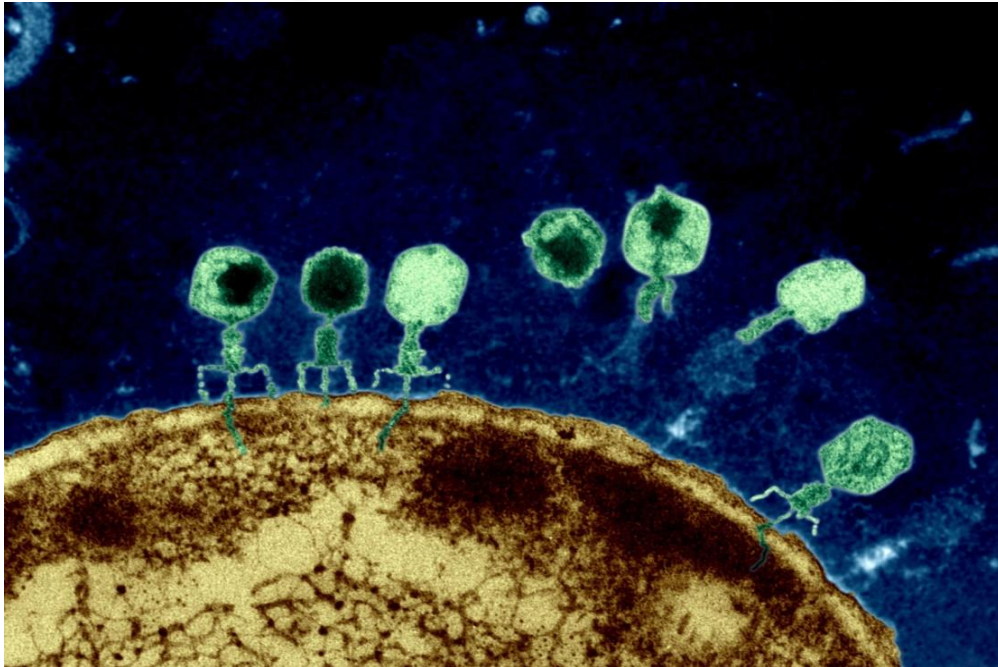


A level Biology



Why is Biology important?



Why study A-Level Biology?

Broad understanding of key Biological concepts

Application of understanding

Practical and organisational skills

Interpret and critically analyse data

Evaluative skills

Research skills

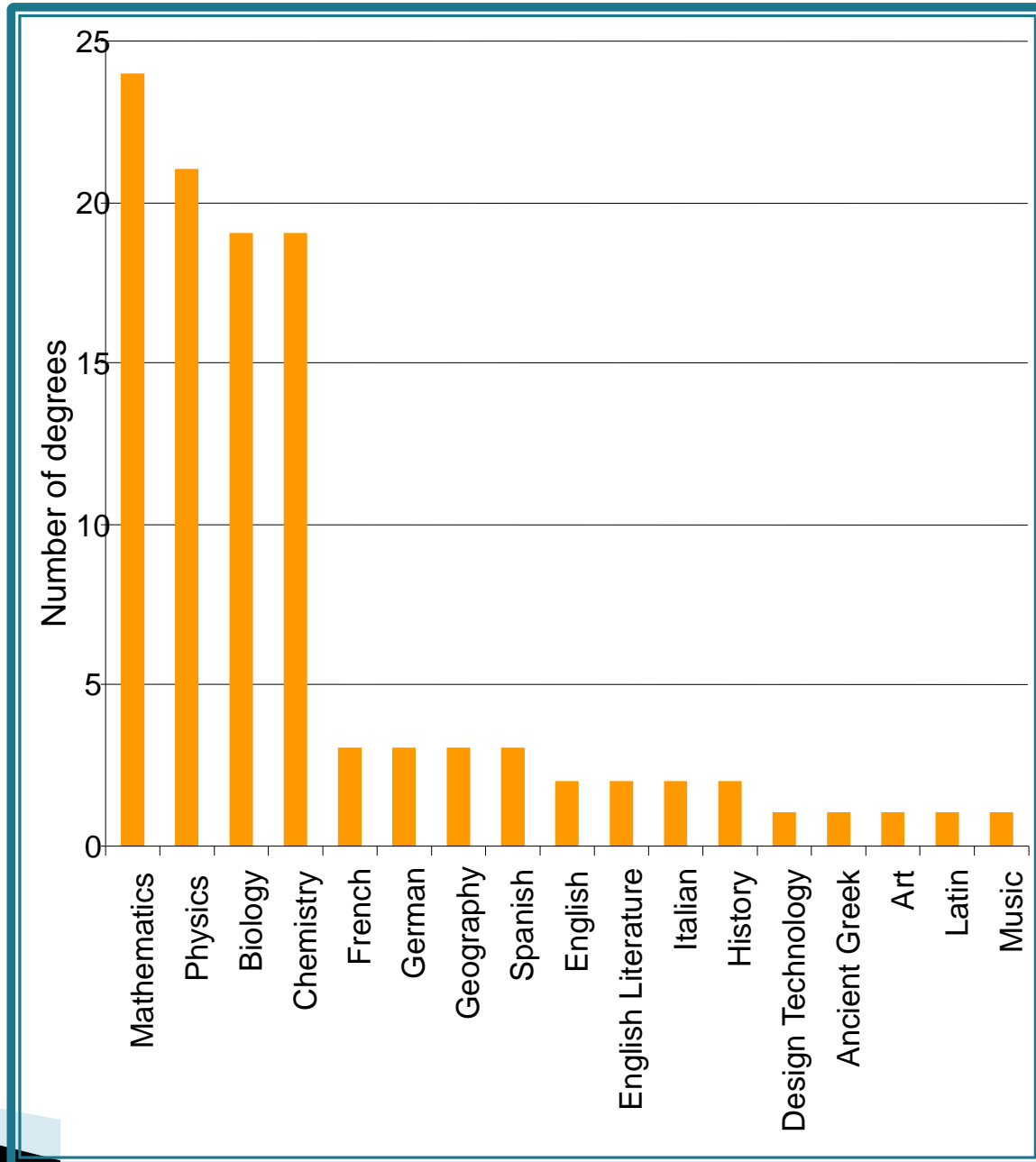
Problem solving

Excellent foundation for further study



Post-18 opportunities

- ▶ Highly valued as a facilitating subject for many courses
- ▶ Russell group Universities value Biology as one of their preferred subjects
- ▶ Ever increasing number of apprenticeships offered in the field of Biology
- ▶ Encompasses a vast number of disciplines and skills that are valuable to employers



Biotechnology **Paramedical** **Audiology**
work **Forensics**
Psychiatry **Dentistry** **Ophthalmics**
Medicine **Marine** **Food**
Physiotherapy **biology** **science**
Pharmacology **Prosthetics**
Laboratory **Dietetics** **Finance**
work **Radiography** **Engineering**





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THOMAS ALLEYNE'S

Opportunity Progress Individuality



THOMAS ALLEYNE'S
HIGH SCHOOL

Post-18 Recent Biologist Destinations

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About the course...



Core content

- 1 [Biological molecules](#) (page 11)
- 2 [Cells](#) (page 19)
- 3 [Organisms exchange substances with their environment](#) (page 25)
- 4 [Genetic information, variation and relationships between organisms](#) (page 30)
- 5 [Energy transfers in and between organisms](#) (A-level only) (page 36)
- 6 [Organisms respond to changes in their internal and external environments](#) (A-level only) (page 41)
- 7 [Genetics, populations, evolution and ecosystems](#) (A-level only) (page 47)
- 8 [The control of gene expression](#) (A-level only) (page 51)

Assessments

Paper 1

What's assessed

- Any content from topics 1–4, including relevant practical skills

Assessed

- written exam: 2 hours
- 91 marks
- 35% of A-level

Questions

- 76 marks: a mixture of short and long answer questions
- 15 marks: extended response questions



Paper 2

What's assessed

- Any content from topics 5–8, including relevant practical skills

Assessed

- written exam: 2 hours
- 91 marks
- 35% of A-level

Questions

- 76 marks: a mixture of short and long answer questions
- 15 marks: comprehension question



Paper 3

What's assessed

- Any content from topics 1–8, including relevant practical skills

Assessed

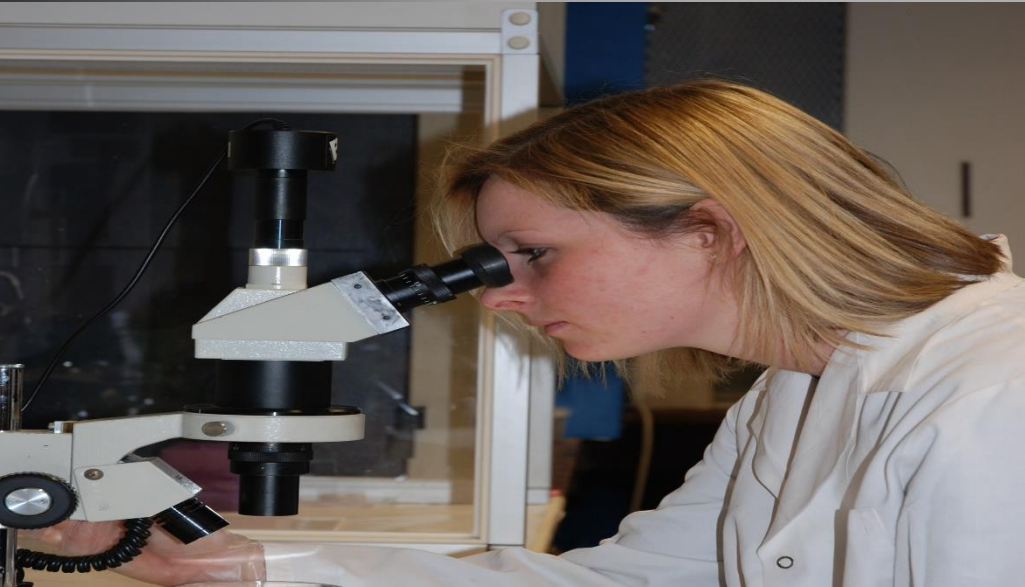
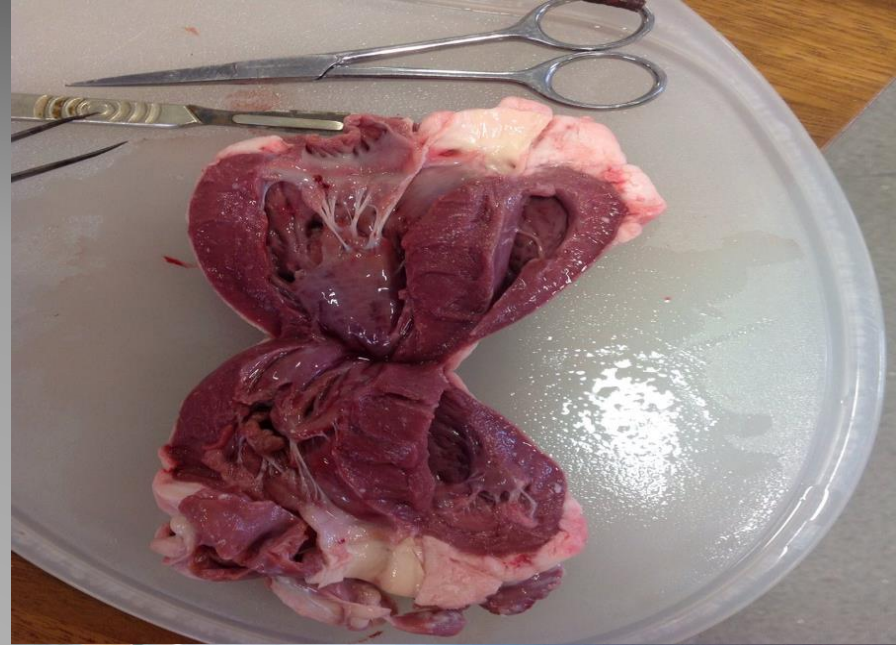
- written exam: 2 hours
- 78 marks
- 30% of A-level

Questions

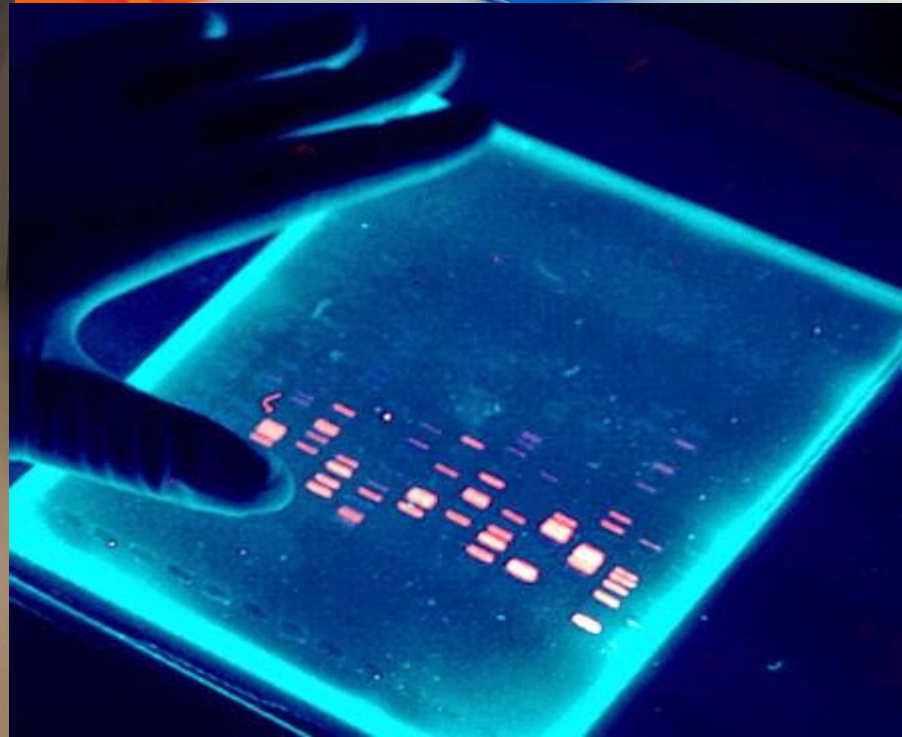
- 38 marks: structured questions, including practical techniques
- 15 marks: critical analysis of given experimental data
- 25 marks: one essay from a choice of two titles

Practical work

- ▶ Some of the practical content is required by AQA and you will be assessed on these both during the activity and in the exams.
- ▶ You will keep a lab book of the practicals as evidence.
- ▶ You will do 12 of these over 2 years.
- ▶ One practical will be on the fieldtrip in the summer of year 12.
- ▶ Successful completion leads to a practical endorsement certificate.







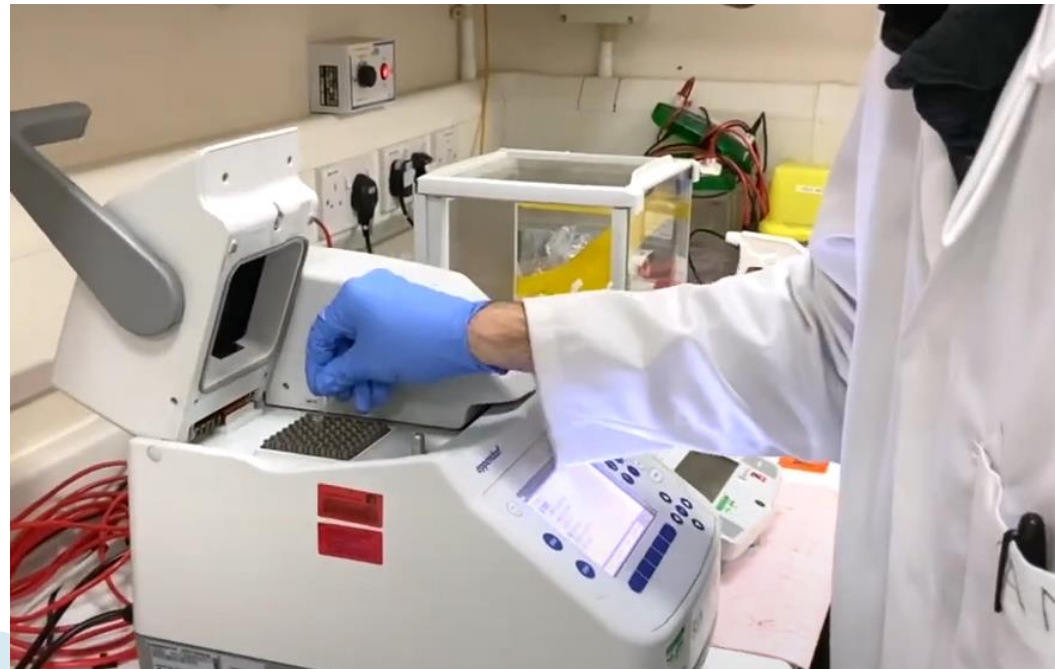


The Institute for
Research in Schools

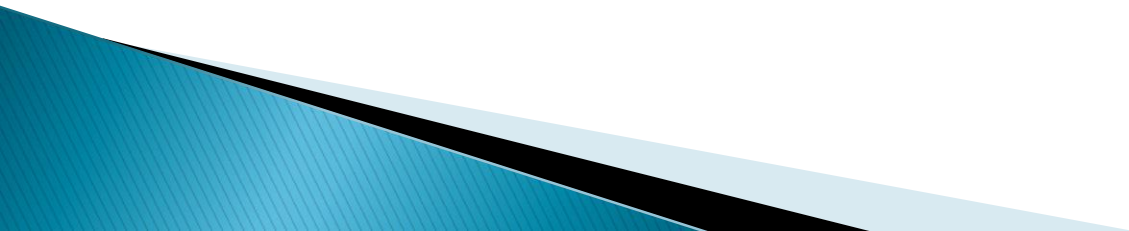
Background research & skills development: students develop the knowledge and skills required to successfully complete research. This includes gaining secure level of knowledge and understanding of caDNAno software.

Design stage: Students design their own DNA nanostructure and get a chance to synthesise a predesigned DNA origami structure.

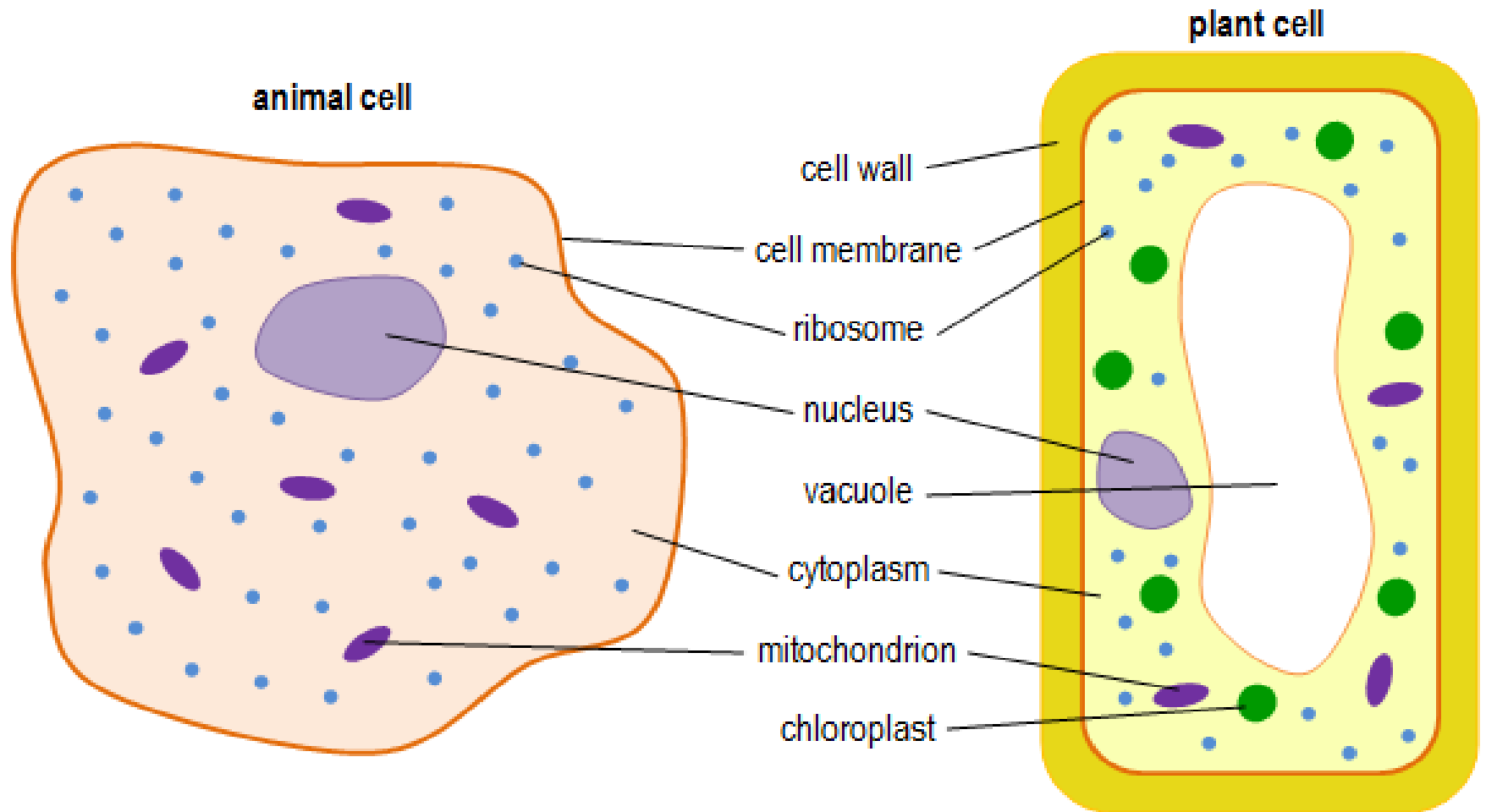
Artefact development and conference: Students produce an article, academic poster presentation or academic paper, based on their research process and/or findings with the aim of exhibiting at IRIS' conference.



A big step up...



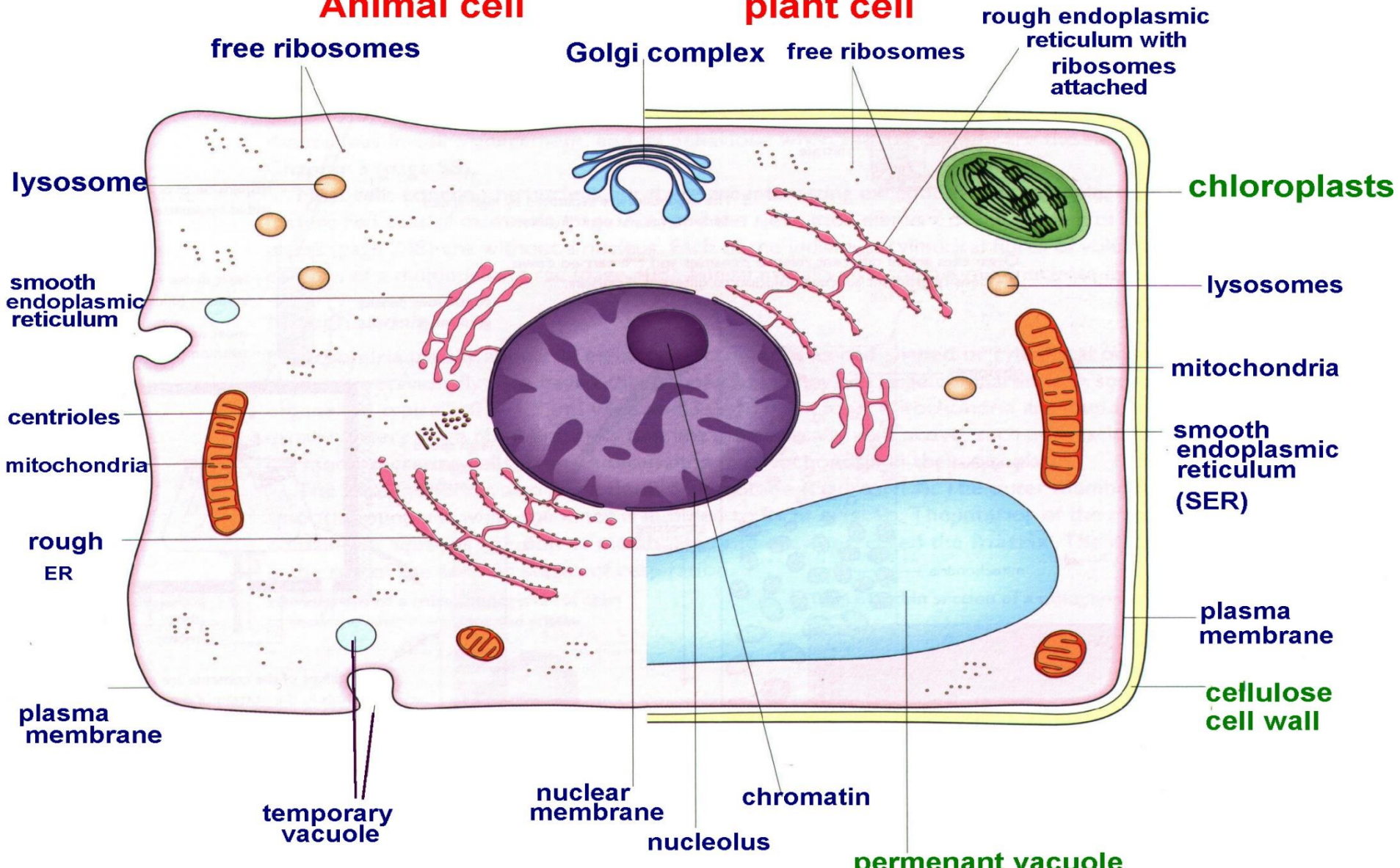
GCSE Cells

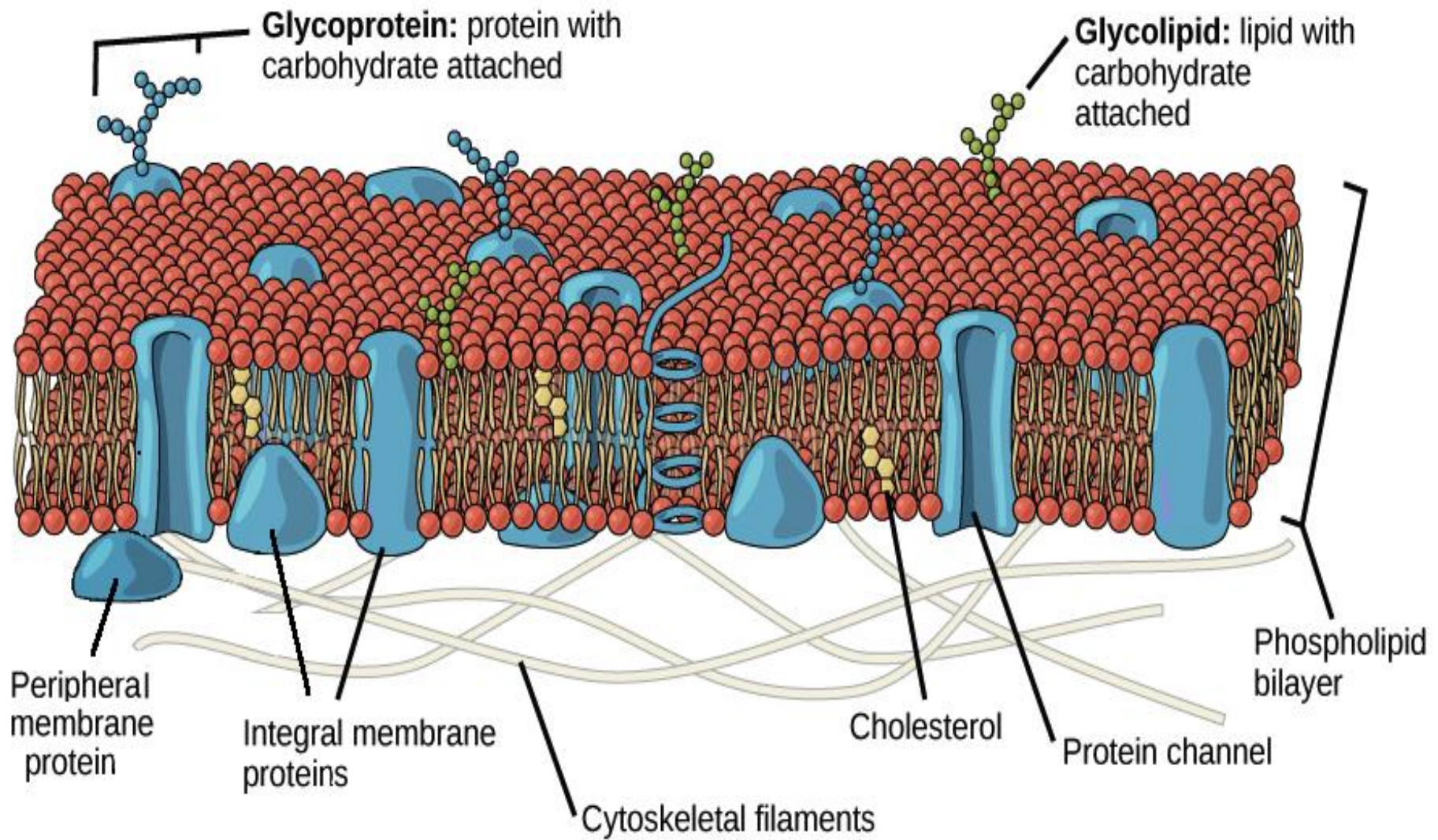


A level Cells

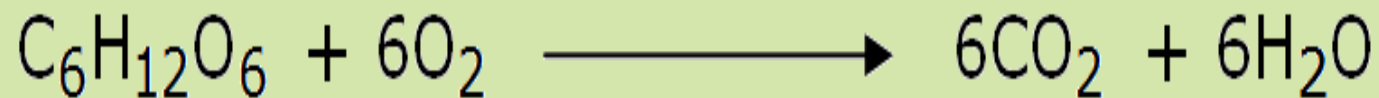
Animal cell

plant cell



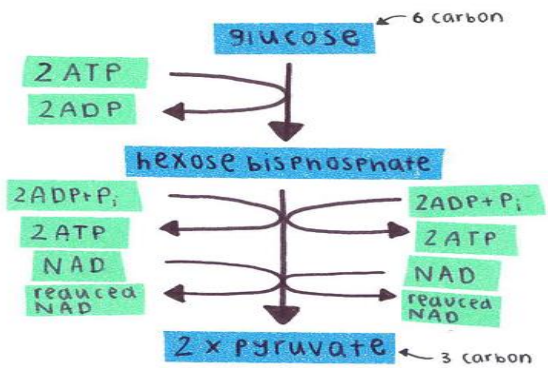


glucose + oxygen \longrightarrow carbon dioxide + water



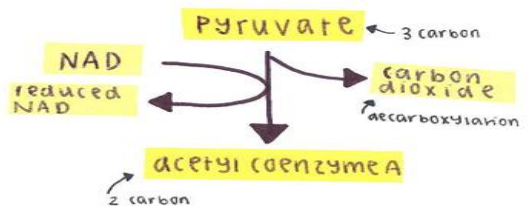
Much more detail!

GLYCOLYSIS • occurs in the cytoplasm

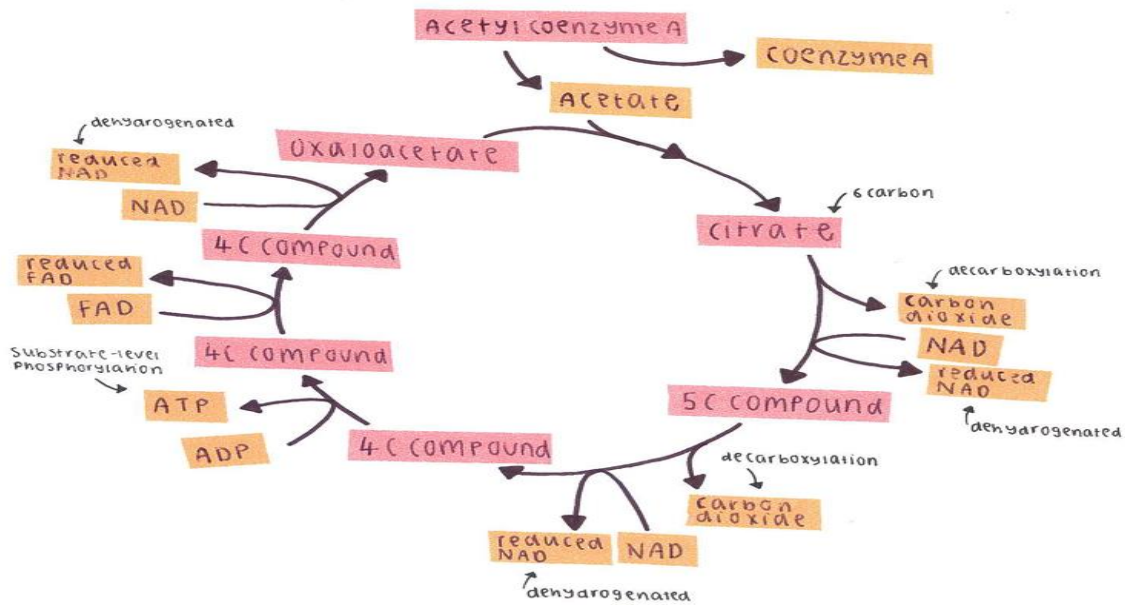


Products (net): 2 ATP

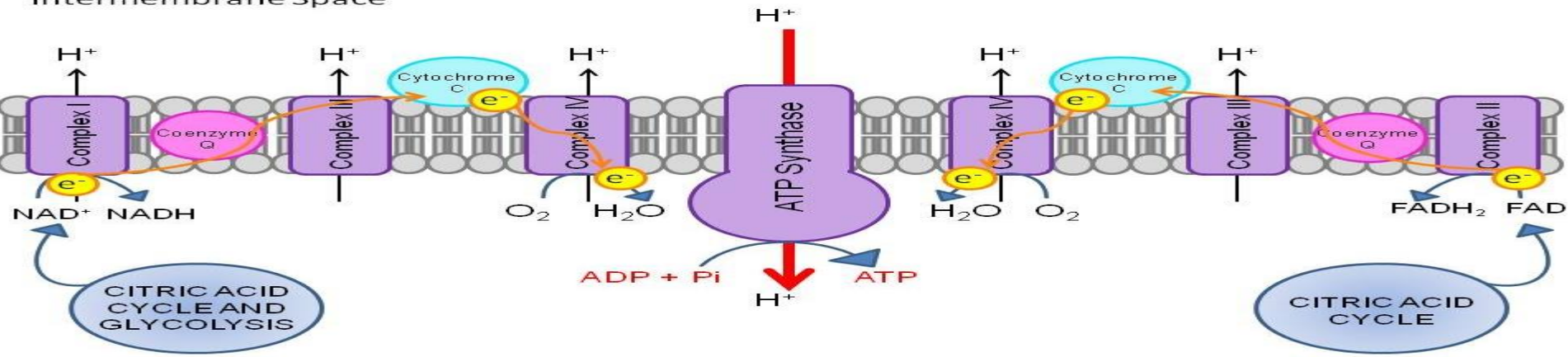
LINK REACTION • occurs in the matrix



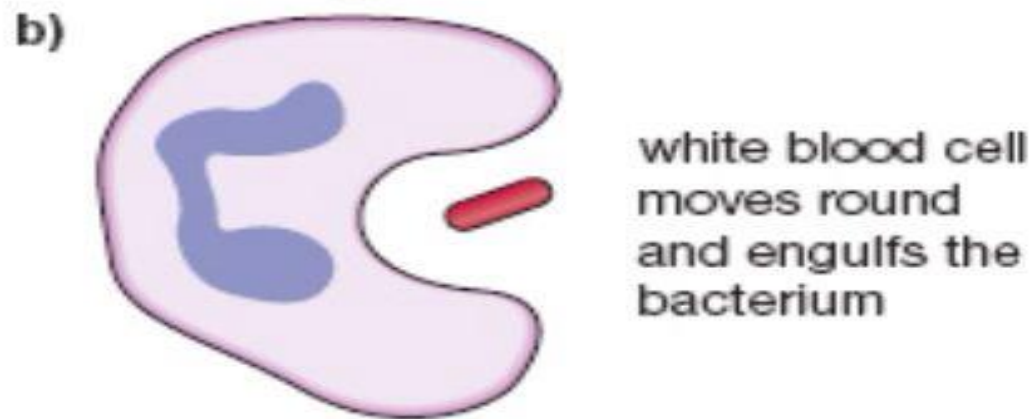
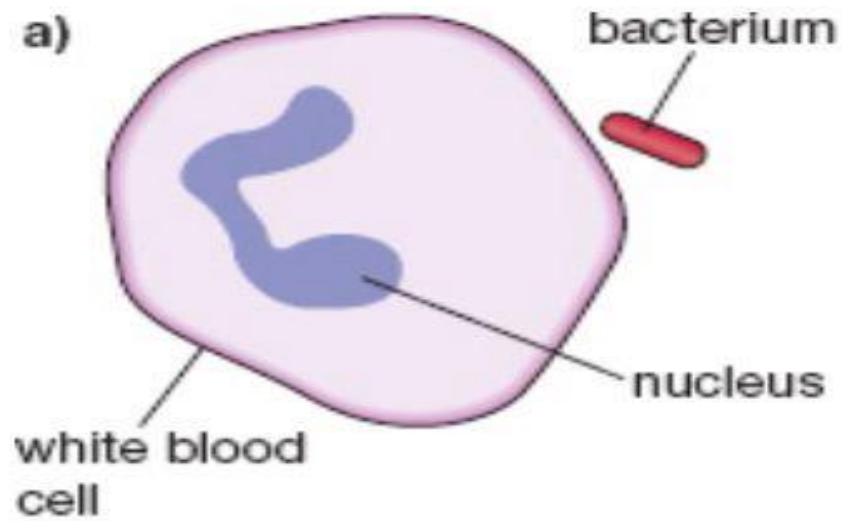
KREBS CYCLE • occurs in the matrix



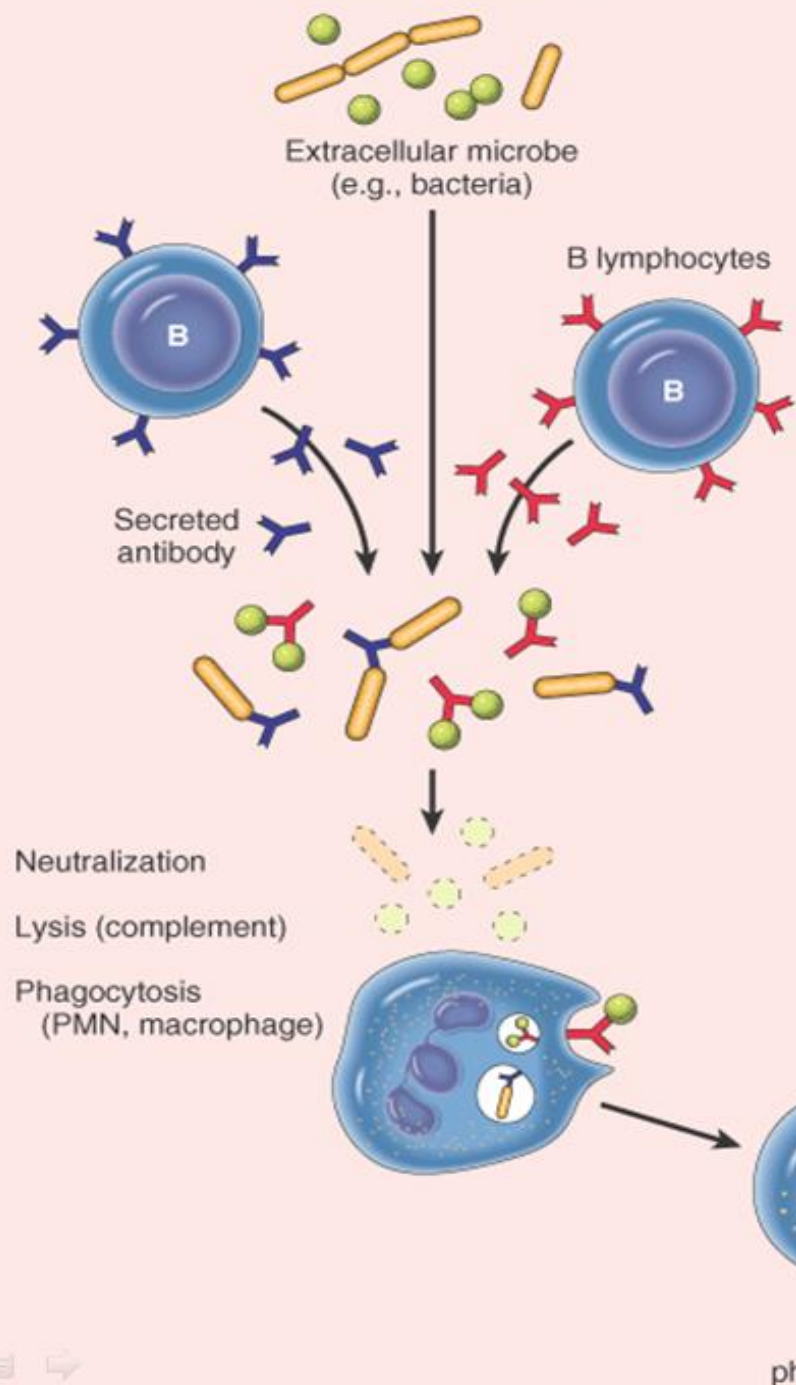
Intermembrane Space



Mitochondrial Matrix



HUMORAL IMMUNITY



CELLULAR IMMUNITY

