

Summer Bridging Work: Biology Y12 → Y13

Introduction

In the last 4 weeks of the summer term you have studied Topic 5 Energy for biological processes. The concepts in this topic underpin the whole of Biology: an excellent understanding of this topic is essential to ensuring success at A-level. To ensure you have an excellent understanding of the concepts covered in Topic 5, please complete the following tasks:

Compulsory Task 1 (all students must complete this)

Create up to date revision notes on Topic 5. Complete the Exam Style Questions on Topic 5 pages 24-25 from the A-Level Biology B Book 2. Bring this in to your FIRST Biology Lesson back (this could be the first day of school).

Compulsory Task 2 (all students must complete this)

Research for core practical 12

For core practical 12 (Investigate the rate of growth of bacteria in liquid culture) you will be assessed on CPAC statements 2c, 3a and 5b. To meet the requirements of statements 2c, 3a and 5b you need to do the following:

- Research how to use aseptic techniques when working with bacteria. Write a paragraph of your findings and reference this correctly.
- Research possible methods for investigating the rate of growth of bacteria in liquid culture. Select the one you think is most valid and will work in the lab and print this off. Annotate any changes you will make, if any.
- For your selected method, write down the independent, dependent and control variables. For each control variable, explain how you plan to control it in the lab.
- Complete a full risk assessment for the practical include the hazard, risk, level of risk, prevention and emergency measures.

Bring this in to your FIRST Biology Lesson back (this could be the first day of school).

Compulsory Task 3 (all students must complete this)

Make sure your Biology Folders are up to date for Topic 1 to 4. That should include all revision notes, answers to textbook questions, class notes, and exam questions and papers.

Bring this in to your FIRST Biology Lesson back (this could be the first day of school).

Choice of Task (please complete the relevant task)

If you achieved less than a D in the AS exam

For one of the topics below, design and produce a **revision quiz** (50 questions with separate answer sheet). You will present your activity in September.

- Structure of ATP and ADP and how hydrolysis of ATP releases energy
- Structure and function of a ribosome
- Anaerobic respiration
- Aerobic respiration (glycolysis, the link reaction and the krebs cycle)
- Structure and function of chloroplasts
- Limiting factors in photosynthesis

If you achieved a D or above in the AS exam

Research online for a scientific article or journal based on one of the following areas of Biology Topic 5:

- Investigating the rate of respiration (using whole organisms)
- Investigating the site of ATP synthesis (using cell fragments)
- Aerobic respiration, including glycolysis, the link reaction and the krebs cycle
- Oxidative phosphorylation
- The light-dependent reaction of photosynthesis
- The light independent reaction of photosynthesis

Select one article that you find most interesting. Read the article and produce a **research poster** summarising the article and explaining the biology behind it. You will be present this in September.

Bring this in to your FIRST Biology Lesson back (this could be the first day of school).

Assessment

Please bring in ALL completed work to your FIRST Biology lesson in September. There will be a Topic 5 test in the first few weeks of term.