



# The Ferrers Sixth Form



# Biology

# Transition Tasks

## Expectation:

- Complete all tasks. Make sure to include all working.

## Specification:

- AQA – A Level Biology - <https://www.aqa.org.uk/subjects/science/as-and-a-level/biology-7401-7402/specification-at-a-glance>

## Key Resources:

- AQA Biology, A level Year 1 and AS, 2<sup>nd</sup> edition textbook – Glenn Toole & Susan Toole
- [AQA | AS and A-level | Biology | Assessment resources](#)
- [Biology library | Science | Khan Academy](#)
- [A Level Biology Revision | Notes, Exam Booklets](#)



# Summer Task:



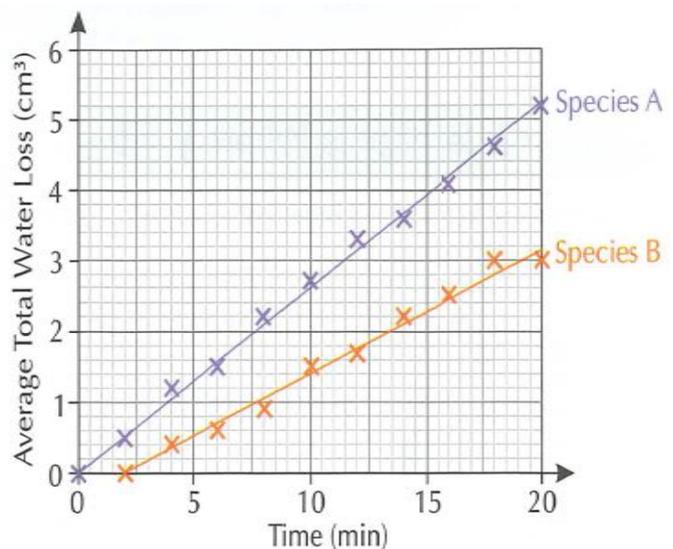
Task 1: At least 10% of the A level biology grade will be made up of being able to understand and implement several key mathematical skills. You will also need to be able to use these skills during required practical's. One of these key skills is graph drawing and being able to use a graph to calculate rate.



- Explain how rate can be calculated from a line graph.
- Describe when you would need to use a tangent to calculate rate from a graph.
- Explain how you would calculate rate using a tangent.
- Complete the practice questions below

Q2 An investigation into transpiration rate was carried out using two different plant species. The average total water loss per 100 g for each species was recorded every two minutes. The results are shown in the graph on the right.

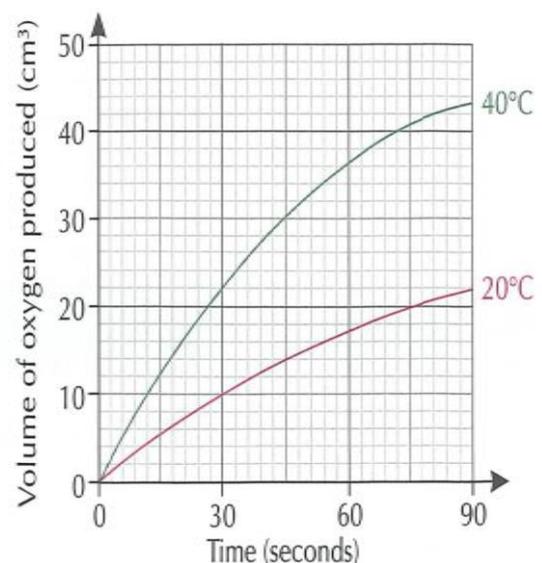
- Which plant species had a faster transpiration rate? Explain your answer.
- Use the graph to calculate the transpiration rate for Species B.



## Practice Question

Q1 Carol was investigating the effect of temperature on the rate that catalase breaks down hydrogen peroxide. She used the volume of oxygen produced as a measure of the progress of the reaction. The graph on the right shows her results.

- What was the rate of oxygen formation at 45 seconds for the reaction at 40 °C?
- What was the rate of oxygen formation at 30 seconds for the reaction at 20 °C? Give your answer in  $\text{cm}^3 \text{min}^{-1}$  to 1 decimal place.



Task 2: There are several key cell transport processes that you need to recognise as they underpin understanding across the specification. These processes are

- Diffusion
- Osmosis
- Facilitated diffusion
- Active transport.



Review your understanding of the transport systems from GCSE and research any you are unsure of. Write a paragraph comparing the different cell transport methods.

Task 3: In biology it is important to be able to understand the difference between correlation and causation. This is especially important when looking at risk factors for contracting certain diseases.

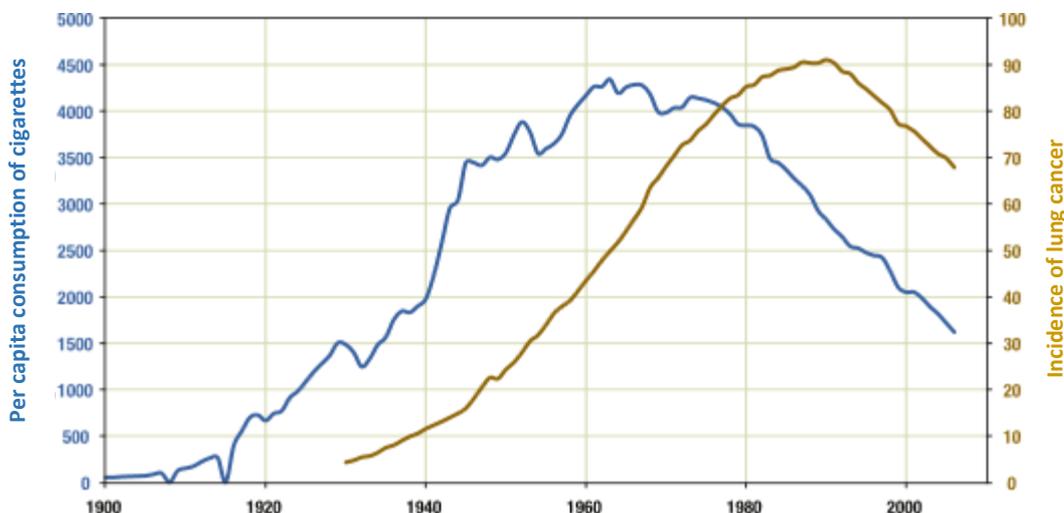


Use the following website and any other resources to complete the tasks.

\*\* [Correlations & Causal Relationships – The Lungs \(3.2.11\) | AQA A Level Biology Revision Notes 2017 | Save My Exams](#)

- Describe the difference between correlation and causation.
- Draw a sketch graph to show a positive and negative correlation.
- Explain how you would calculate percentage increase and decrease.
- What is a risk factor?
- Discuss some of the risk factors for lung diseases.

The graph shows the consumption of cigarettes and the incidence of lung cancer between 1900 and 2010.



(a) What is the percentage increase in the incidence of lung cancer between 1940 and 1980? Give your answer to 3 sf. (2)

(b) Explain why the cases of lung cancer increased over this period. (2)

(c) Even though cigarette consumption started to drop after 1965, the incidence of lung cancer continued to rise until 1990. Suggest why. (2)

(d) The graph illustrates a correlation. What does this mean? (1)

(e) Is the relationship between cigarette consumption and the incidence of lung cancer a causal relationship? Explain your answer. (2)

# Success Criteria:

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## Task 1:

- State the calculation to work out rate from a graph.
- Use a sketch graph to clearly show how you would use two points on a line graph to calculate rate
- Use a sketch graph to clearly show how you would draw a tangent and use this to calculate rate
- Show working for all questions.

## Task 2:

- Description of the 4 different cell transport processes.
- Describe similarities between the 4 different transport processes.
- Describe difference between the 4 different transport processes.
- Challenge: Research osmosis in terms of water potential. Write an explanation of how water moves by osmosis in terms of water potential.



## Task 3:

- Clear description of key terms and calculations.
- Describing at least 5 risk factors for lung diseases.
- Show working for all questions
- Challenge: Research the main causes of lung cancer and how it effects the body. Explain why it is difficult to say for sure what causes lung cancer.

