

Biology B9 - Respiration

Aiming for Grade 4

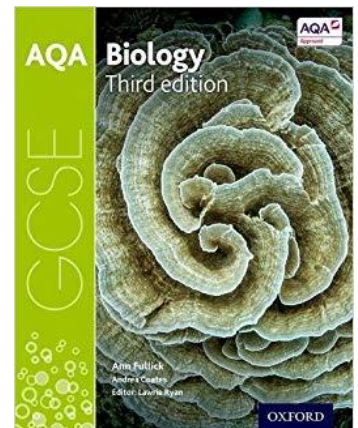
Name

Please hand in a completed printed version at the end of the topic

The online text book access to support this homework can be accessed through your Kerboodle account at www.kerboodle.com.

The username is your first initial and surname (no gap).

If you have not accessed the book before the password will be the same as your username. If you have logged on before you will have changed the password to your own choice.



Click onto the science 9-1 tile and then onto the digital book.

Resources to support this homework can be found in the online student book

- **Respiration pages 134-143**

B9 Respiration – Aiming for Grade 4

Aims

The aim of this homework is to help you revise the main topics in Chapter B9.

Learning outcomes

After completing this homework, you should be able to:

- state the word equation for aerobic respiration
- state the effects of exercise on respiration
- state the uses of energy released from respiration
- state the differences between aerobic and anaerobic respiration.

Task

Question 1 You will be completing the respiration circus activity in small groups and drawing conclusions.

Question 2 You will be completing a revision sheet on the topics of aerobic and anaerobic respiration.

Questions

1 Observe the video clips or diagrams of experiments. Answer the following questions about each one.

Task 1: Watch this clip - Breathe on the cold mirrors. – Watch this clip – (Breathing on cold mirror – <https://www.youtube.com/watch?v=Y0nCzFUeql8>)

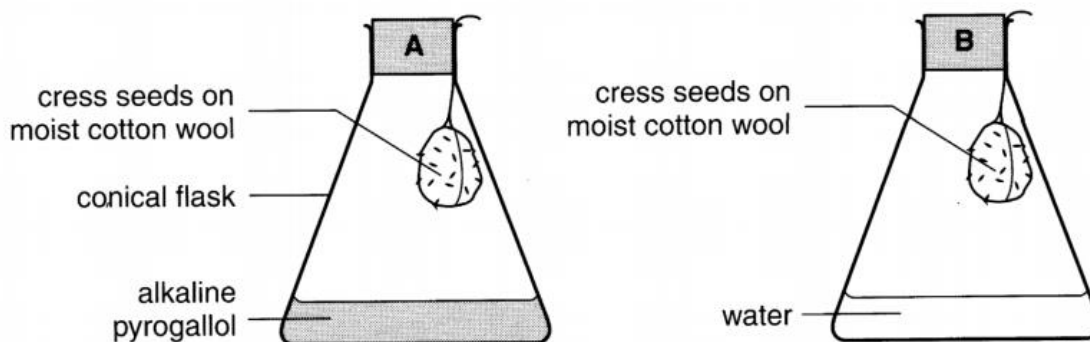
What is the substance that forms on the mirrors?

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Task 2: Watch this clip (<https://www.youtube.com/watch?v=xvQNaAFkE6c> Science Experiment : Carbon Dioxide and Limewater Breath Test) What change do you observe in the limewater? What substance caused this change in the limewater?

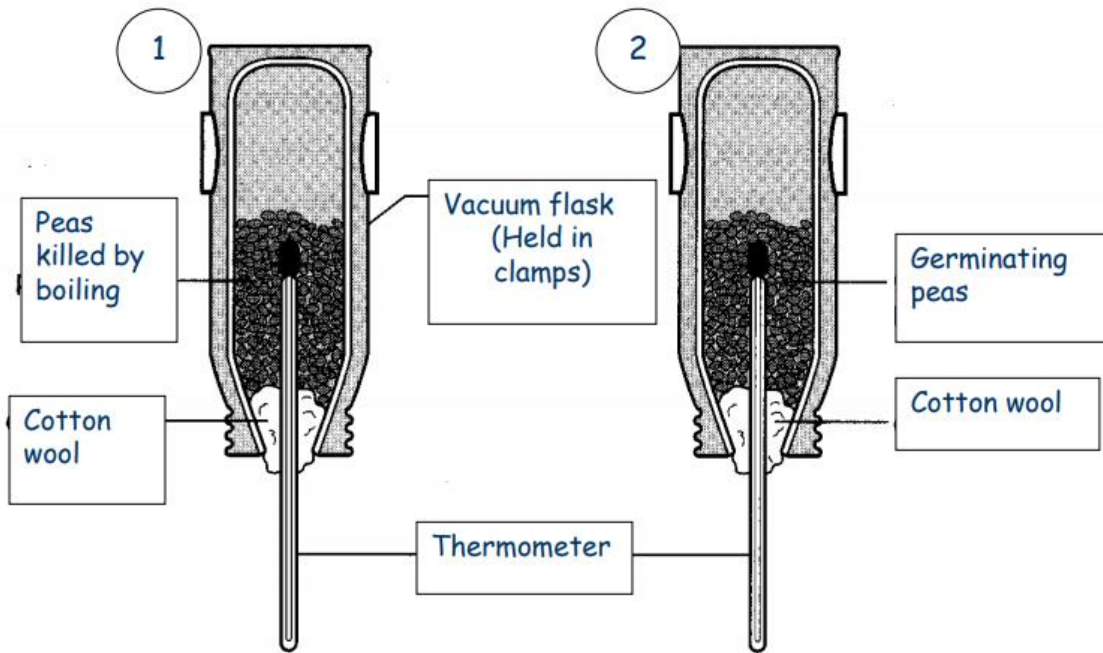
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Task 3: Why did the cress seeds in flask A die? (Hint: Pyrogallol removes oxygen.)



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Task 4: The temperature reading for the flask containing boiled peas is lower than the temperature reading for the flask containing germinating peas. What is the difference between them? Can you explain these differences?



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Task 5: Watch this clip of respiring yeast. Can you tell what products are being made? (<https://www.youtube.com/watch?v=HFGJrOHvIb8> (Bread Rising Time Lapse — It's Alive!))

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Question 2

Use your notes, the digital textbook and the internet to help you complete the following revision sheet on aerobic and anaerobic respiration.

Aerobic respiration reactants:

- 1.
- 2.

Aerobic respiration products:

- 1.
- 2.

Exothermic/
endothermic?

Aerobic respiration equation:

Uses of energy:

- 1.
- 2.
- 3.
- 4.

Anaerobic respiration in animals
reactant:

Anaerobic respiration in animals
product:

Anaerobic respiration in animals equation:

During exercise what happens to:

1. Heart rate
2. Breathing rate

Where in the cell
does respiration
happen?

Write down three differences between aerobic and anaerobic
respiration:

- 1.
- 2.
- 3.

What is oxygen
debt?

Write down one other fact about respiration: