

Applied Science Biology  
work to be brought in next  
term in the first lesson and  
handed to Mr Warren.

Hi all

This work needs to be completed **for next term**.

I handed out a paper copy of this document in the taster lessons and have spares, if you come into school and collect one from me. Just bring this work in on your first lesson of Applied science with Mr Warren next term.

Many thanks in advance and we look forward to teaching you next year.

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# Applied Science Summer Work – **Biology to be handed in after the Summer holidays**

This work is preparing you for the first Biology unit in Applied Science looking at Chromatography. Eventually you will have to write up a research and practical report looking at different types of chromatography. The questions here are getting you to research the theory and practical of chromatography so that when you start the course in September you have a good basic understanding of what is going on in Chromatography.

## Section 1 - Basic terms

Research and write out definitions of the following, you can include diagrams if that is helpful:

- Mobile phase

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- Stationary phase

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- Solvent front

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- Rf Value

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- Dissolve

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## Section 2 - writing style

In your practical report you have to write up the method that you used in a specific way.

Below is a quote from the exam board

“Learners are expected to follow scientific convention by using past tense and a passive voice in writing up the investigations.”

For example:

A pencil line was drawn approximately 1cm from the end of the TLC plate using minimum pressure in order not to damage the silica surface of the slide. A small amount of the supernatant was withdrawn from the watch glass using the capillary tube a small dot of the extract was dotted onto the pencil line. Each dot was dried using the hairdryer, then a second spot of plant extract was added to the first. This process was repeated 5 times to make sure that the spot of plant extract was very concentrated and dark green in colour.

This means that instead of writing:

“I poured 10ml of solvent into the beaker”

You should write:

“10ml of solvent were poured into the beaker.”

This means that instead of writing:

“I made sure to not touch the front of the TLC plate”

You should write:

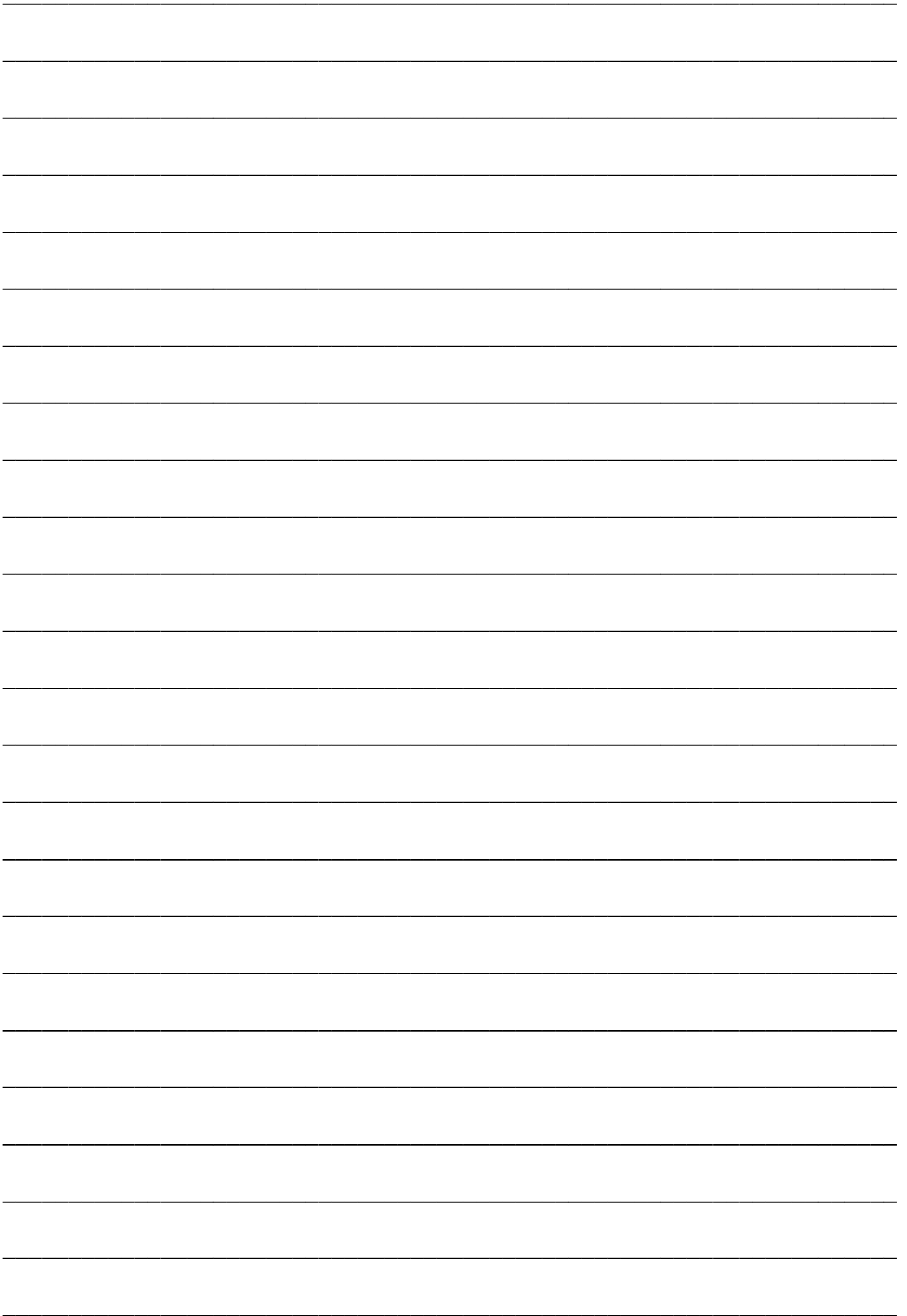
“care was taken so that no foreign substances were transferred to the TLC plate”

Task:

Visit the following web link:

[https://www.nyrp.org/wp-content/uploads/2021/03/Chlorophyll\\_Experiment.pdf](https://www.nyrp.org/wp-content/uploads/2021/03/Chlorophyll_Experiment.pdf)

Convert the method on that page into the past tense and passive voice. Write this out on the following page.



### Section 3 - different types of chromatography

You need to know about the different types of chromatography to write your report, answer the questions in this section to help you learn about the different types.

1. What is the difference between TLC and paper chromatography?

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2. What are the advantages to using TLC over paper chromatography?

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3. Briefly describe how to perform gas chromatography.

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4. What are the advantages of using gas chromatography?

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5. What is dynamic equilibrium in chromatography?

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6. How does dynamic equilibrium affect how a substance moves up the stationary phase?

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