



## **Summer Tasks July**

### **BTEC Level 3 Medical Science**

#### **Summer Task Title/Instructions:**

Complete task 1 and 2 on this sheet.

If you have any questions with regards to this task, please email [r.moore@springwoodhighschool.co.uk](mailto:r.moore@springwoodhighschool.co.uk)

**Please submit the task to your teacher on the first lesson in September.**

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|------------------------------|-------------------------------------------------------------------------------|
| <b>Qualification</b>         | Pearson BTEC Level 3 National Extended Certificate in Medical Science Pearson |
| <b>Unit number and title</b> | <b>Summer Task 2026</b>                                                       |
| <b>Assignment title</b>      | <b>Microbiology</b>                                                           |
| <b>Learning aims(s)</b>      | To show your organisational, practical and documentations skills.             |
| <b>Issue date</b>            |                                                                               |
| <b>Hand in deadline</b>      | First BTEC lesson back in September                                           |

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| <b>Vocational Scenario or Context</b> | You are working in a biomedical sciences lab in a hospital. A patient has been admitted with a urinary tract infection. A sample has been taken from the patient and the bacteria have been isolated. These bacteria have been delivered to your lab. The doctor treating this patient would like to know which antibiotic would be most appropriate to prescribe to the patient. Please complete the task below in order to determine which antibiotics to prescribe the patient. |
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| <b>Task 1</b>                         | <p><b>Please complete the following:</b></p> <ul style="list-style-type: none"><li>A. Complete the equipment list and method for this practical. Answer the questions about the method.</li><li>B. Analyse the example results from this investigation</li><li>C. Draw a results table and populate with results using the example results</li><li>D. Write a short conclusion for this investigation stating which antibiotic to prescribe the patient.</li></ul> |
| <b>Checklist of evidence required</b> | <p><b>A report documenting:</b></p> <ul style="list-style-type: none"><li>● A completed method</li><li>● Calculations of results</li></ul>                                                                                                                                                                                                                                                                                                                         |

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|                                                                   | <ul style="list-style-type: none"> <li>• A results table with results</li> <li>• A short conclusion stating which antibiotic to prescribe the patient.</li> </ul>                                                                                                                                                                                                   |
| <b>Sources of information to support you with this Assignment</b> | <a href="https://www.youtube.com/watch?v=BkblI2mAMP8&amp;t=2s">https://www.youtube.com/watch?v=BkblI2mAMP8&amp;t=2s</a><br><a href="https://www.youtube.com/watch?v=sl2Dp5fNdDY">https://www.youtube.com/watch?v=sl2Dp5fNdDY</a><br><a href="https://www.bbc.co.uk/bitesize/guides/z8fkmsg/revision/7">https://www.bbc.co.uk/bitesize/guides/z8fkmsg/revision/7</a> |

## **Task 1 - Microbiology**

### **A. Microbiology method:**

Please complete the equipment list and method below:

#### Equipment list

- P\_\_\_\_\_ d\_\_\_\_\_ with an a\_\_\_\_\_ growth medium (to grown the bacteria in)
- S\_\_\_\_\_ (to make sure the bacteria are spread around the petri dish)
- B\_\_\_\_\_ b\_\_\_\_\_ (to ensure you are following aseptic technique)
- D\_\_\_\_\_ (to spray the bench where you are working)
- S\_\_\_\_\_ P\_\_\_\_\_ (for transferring the bacterial sample onto the petri dish)

#### Method

1. Spray the bench where you are working with d\_\_\_\_\_ and wipe with blue roll.
2. Wash your hands with s\_\_\_\_\_. Do not use hand sanitiser.
3. Light a B\_\_\_\_\_ b\_\_\_\_\_ onto a yellow flame. Make sure you work under the blue flame of a Bunsen burner for the duration of the investigation.
4. Using the i\_\_\_\_\_ l\_\_\_\_\_ and pass it through the flame of the b\_\_\_\_\_ b\_\_\_\_\_. Collect a sample of bacteria from the bottle. Make sure the flame the neck of the bottle once you have opened it and before you close it.
5. Lift the lid of the p\_\_\_\_\_ d\_\_\_\_\_ slightly and place the bacterial sample inside.
6. Using the g\_\_\_\_\_ s\_\_\_\_\_, ensure the bacterial sample is covering the whole of the p\_\_\_\_\_ d\_\_\_\_\_.
7. Close the lid of the p\_\_\_\_\_ d\_\_\_\_\_.
8. Place the a\_\_\_\_\_ r\_\_\_\_\_ into the p\_\_\_\_\_ d\_\_\_\_\_.
9. Close the lid of the p\_\_\_\_\_ d\_\_\_\_\_ again.
10. Secure the lid in two places using tape. Do not seal the petri dish completely.
11. Spray the bench where you are working with d\_\_\_\_\_ and blue roll.
12. Wash your hands with s\_\_\_\_\_.

### Questions:

1. What steps in the method are used to prevent contamination of the patient sample?
2. What are the techniques used in microbiology that prevent contamination of the sample?
3. Why do you not completely seal the petri dish once you have completed the investigation?
4. Why do you need to work under a Bunsen burner?
5. Why must the Bunsen burner be on a blue flame?
6. Why can't you use hand sanitiser in step 2?

### Risk Assessment

For the lawn plate practical you carried out on induction day, please complete a risk assessment. Use the three headings: Risk, Hazard and Precaution

## **Task 2 – Command words**

Please answer the questions below on scientific command words.

1. What does the word appraise mean?

2. What does the word evaluate mean?

3. What word is this the definition for?

'Identify separate factors; say how they are related & how each one contributes to the topic'.

4. What word is this the definition for?

'Give reasons or evidence to support your opinion to show how you came to your conclusion'.

5. What does the word interpret mean?

Please complete the gap fill below.

Words: micrometres, functions, metre, irregular, tissues, glucose, regular, membrane, cytoplasm, small, nucleus, tissues, organs, cell, dead, plastic, single.

The \_\_\_\_\_ is the basic unit of life. Microorganisms such as bacteria, yeast, and amoebae exist as single cells. By contrast, the adult human is made up of about 30 trillion cells which are mostly organized into collectives called \_\_\_\_\_. Tissues are made from cells of a similar type.

Organs are made from \_\_\_\_\_, and systems are made from several \_\_\_\_\_ working together. Some cells have specialised \_\_\_\_\_. Cells are usually \_\_\_\_\_ with lengths measured in \_\_\_\_\_ ( $\mu\text{m}$ , where  $1000 \mu\text{m} = 1 \text{ mm}$ ).

The first person to observe and record cells was Robert Hooke (1635–1703) who described the cells (open spaces) of plant tissues. Animal cells usually have an \_\_\_\_\_ shape, and plant cells usually have a \_\_\_\_\_ shape. Cells are made up of different parts. Animal cells and plant cells both contain: cell surface \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.