

FORENSICS & CRIMINAL INVESTIGATION - LEVEL 3

SUMMER TASK

OBJECTIVES:

1. To provide a bridge from level 2 to level 3 and lead into the early stages of the course
2. To engage you in independent learning & research which is required at level 3
3. To encourage you to develop a good work ethic and commitment to study
4. To assess your scientific knowledge, critical/logical thinking, mathematical and problem-solving skills

USEFUL WEBSITES:

Please look through the specification before starting the course and you should be aware that Forensic & Criminal Investigate contains significant scientific content. Having a keen interest in Science will help you to succeed in this course.

Forensics:

<https://qualifications.pearson.com/content/dam/pdf/BTEC-Nationals/Forensics-and-Criminology/2017/Specification/BTEC-Nat-FDip-ForSci-Spec.pdf>

Basics of photography, useful for the forensic photography unit:

<https://expertphotography.com/a-beginners-guide-to-photography/>

How to write a risk assessment, useful for forensic investigation and practical units:

<https://www.rosa.com/rosapaweb/docs/campaigns-fundraising/hse-five-steps-to-risk-assessment.pdf>

If you need to look answers up that is fine and expected, this is not a test.

Please star questions where you needed to get help. Hand in at your first Chemistry lesson. It should take approx. 2 hours.



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FORENSIC INVESTIGATION

1 a. Look up and explain the following terms:

- (i) personal protective equipment
-
- (ii) scene preservation
-
- (iii) contamination
-
- (iv) cross contamination
- (4 marks)

1 b. What should a Crime Scene Investigator (CSI) wear when attending the following scenes and why?

- (i) scene of a burglary in a house
-
-
- (ii) scene of a suspicious fire in a house
-
- (4 marks)

FORENSIC PHOTOGRAPHY

2. You will need to be familiar with the basics of photography. Can you research and explain in your own words the following terms:

Useful website: <https://expertphotography.com/a-beginners-guide-to-photography/>

- DSLR
 - Aperture
 - Shutter Speed
 - ISO
 - What is the difference between mobile phone cameras and DSLR
- (5 marks)

BIOLOGY

3. Cellular Structures Task: produce a large hand drawn & labelled diagrams of a virus and a bacterium cell. Do this on plain, A4 paper.

Useful links

Bacterium cells <https://www.bbc.co.uk/bitesize/guides/zyhrng8/revision/2>

Virus cells <https://www.youtube.com/watch?v=Ld-o5mZ3Rok>

(6 marks)

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CHEMISTRY

4a

- Write the chemical formula of carbon dioxide
- Write the chemical formula of hydrochloric acid (1 mark)

4b. How many elements are there in a molecule of carbon dioxide? (1 mark)

5a. What do you understand by the term 'redox'?.....
.....(1 mark)

5b. Is this equation balanced? $H_2SO_4 + NaOH \rightarrow Na_2SO_4 + H_2O$ (1 mark)

5c. Hydrochloric acid reacts with sodium hydroxide to produce a salt and water. Write a balanced equation for this reaction and write the name of the salt.

.....
..... (1 mark)

5d. Define the Chemistry term 'mole'
..... (1 mark)

(6 marks)

PHYSICS

5 Define the following key terms and draw some diagrams to help explain the definition:

- Frequency
- Amplitude
- Wavelength
- Displacement
- Longitudinal Wave
- Transverse Wave

(6 marks)