

Level 2 Principal Learning in Engineering (2760-02)

Summer 2013

Unit 1: The engineered world

Preparation Sheet for the 15 May 2013 examination

Instructions

This Preparation Sheet will be given to you on or after 01 April 2013. The context for **some** of the examination questions is given.

Between 01 April and the examination date you will have the opportunity to research the context with the guidance of your teacher.

This Preparation Sheet may be taken into the examination room. Do **not** annotate or write on this sheet. No other material should be taken into the examination room.

An essential requirement of this unit is that you will form into a team and divide the work fairly between yourselves. Each member will then report their findings back to the rest of the team who will record the relevant information. Team members should make a note of the role(s) they each played and the essential features of how a successful team should function.

Research context: Developments in materials technology

Theme: Body armour

The armed services, police and security services use body armour to provide physical protection against injury or harm. Developments in materials technology have led to products that provide improved protection.

1 Research the developments in the materials used for body armour over the last 100 years, including:

- the type of protection that needs to be provided
- how and why the materials used have changed
- the development of synthetic materials for body armour
- the impact of the protection on the people that use the equipment.

2 Consider how these developments in materials have had an impact upon:

- industry
- other products
- people's lives.

3. Investigate types of engineering jobs and typical activities of people associated with the manufacture of the materials (ie within the Chemical Engineering sector).

Suggested websites (correct at the time of going to press):

- <http://science.howstuffworks.com/body-armor.htm>
- http://en.wikipedia.org/wiki/Personal_armor
- http://www.army.mod.uk/documents/general/20120215-Osprey_Mk4_Instruction_Booklet-R.pdf
- <https://www.gov.uk/government/news/body-armour-saves-uk-soldiers-in-helmand-fire-fight>