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**DESIGN AND TECHNOLOGY**

**0445/13**

Paper 1 Design

**October/November 2014**

**1 hour 15 minutes**

Candidates answer on the pre-printed A3 Answer Sheets.

Additional Materials: Standard drawing equipment

**To be taken together with the optional paper for which you have been entered in one session of 2 hours and 15 minutes.**

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**READ THESE INSTRUCTIONS FIRST**

Write your Centre number, candidate number and name in the spaces on **both** printed Answer Sheets.

Write in dark blue or black pen.

You may use an HB pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, glue or correction fluid.

**DO NOT WRITE IN ANY BARCODES.**

Answer **one** question.

Write/draw your answers in the spaces provided on the Answer Sheets.

You may use a calculator.

At the end of the examination, fasten all your work securely together.

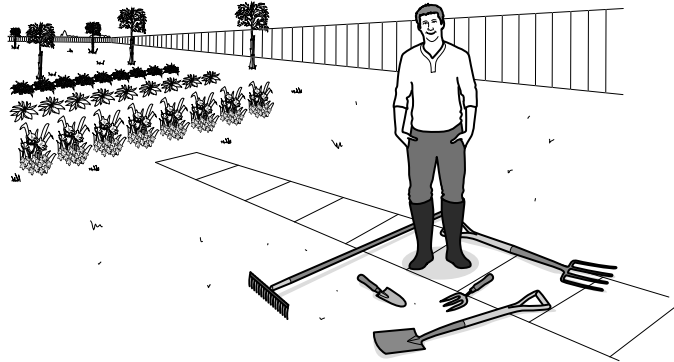
The number of marks is given in brackets [ ] at the end of each question or part question.

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This document consists of **4** printed A4 pages and **2** A3 Inserts.

Answer **one** question only on the A3 pre-printed answer sheets provided.

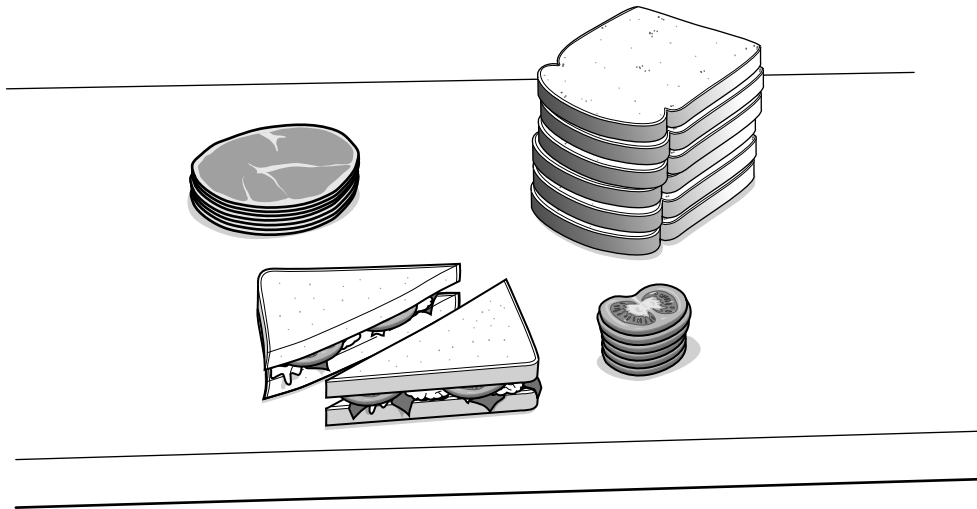
- 1 People who grow vegetables and flowers need to use a number of garden tools.



Design a device to hold a number of garden tools so that they can be moved around the garden.

- (a) List **four** additional points about the function of such a device. [4]
- (b) Use sketches and notes to show **two** different methods by which garden tools could be held in place when being moved. [4]
- (c) Develop and sketch **three** ideas for the device. [12]
- (d) Evaluate your ideas and justify why you have chosen **one** idea to develop more fully. [8]
- (e) Draw, using a method of your own choice, a full solution to the problem. Include construction details and major dimensions. [12]
- (f) Suggest suitable specific materials for your solution and give reasons for your choice. [4]
- (g) Outline a method used to manufacture **one** part of your solution in the school workshop. [6]

- 2 Food manufacturers need to show customers the contents of a sandwich in an attractive way.



Design a package for two triangular sandwiches which shows the filling in each sandwich. Add a logo to the package which promotes healthy living.

- (a) List **four** additional points about the function of such a sandwich package. [4]
- (b) Use sketches and notes to show **two** different manufacturing methods for a sandwich package. [4]
- (c) Develop and sketch **three** ideas for the sandwich package. [12]
- (d) Evaluate your ideas and justify why you have chosen **one** idea to develop more fully. [8]
- (e) Draw, using a method of your own choice, a full solution to the problem. Include construction details and major dimensions. [12]
- (f) Suggest suitable specific materials for your solution and give reasons for your choice. [4]
- (g) Outline a method of producing a prototype of your solution in the school graphics studio. [6]

- 3 Computer screens need to be used at a height and angle which matches the individual user.



Design a system which allows a computer screen to be easily adjusted in height and angle to suit the needs of an individual user.

- (a) List **four** additional points about the function of such a system. [4]
- (b) Use sketches and notes to show **two** different methods by which the adjustments can be made. [4]
- (c) Develop and sketch **three** ideas for the system. [12]
- (d) Evaluate your ideas and justify why you have chosen **one** idea to develop more fully. [8]
- (e) Draw, using a method of your own choice, a full solution to the problem. Include construction details and major dimensions. [12]
- (f) Suggest suitable specific materials for your solution and give reasons for your choice. [4]
- (g) Outline a method used to manufacture **one** part of your solution in the school workshop. [6]

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