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

1 Repair workers need to transport a variety of items with them when they visit a house to fix a problem.

Design a portable unit that will organise repair items.

(a) List four additional points about the function of such a portable unit that you consider to be important. [4]

(b) Use sketches and notes to show two methods of making the unit portable. [4]

(c) Develop and sketch three ideas for the portable unit. [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 important dimensions. [12]

(f) Suggest two 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. [6]
A shop wishes to promote the sale of a new range of screws.

Design a free standing unit which will promote the sale of this new range of screws.

(a) List four additional points about the function of such a promotional unit that you consider to be important. [4]

(b) Use sketches and notes to show two different methods that could be used to strengthen cardboard. [4]

(c) Develop and sketch three ideas for the promotional unit. [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 important dimensions. [12]

(f) Suggest two 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. [6]
Design a mechanical puppet which will promote the sale of a product in this shop.

(a) List **four** additional points about the function of such a mechanical puppet that you consider to be important.  

(b) Use sketches and notes to show **two** different mechanisms by which reciprocating movement can be achieved.  

(c) Develop and sketch **three** ideas for the mechanical puppet.  

(d) Evaluate your ideas and justify why you have chosen **one** idea to develop more fully.  

(e) Draw, using a method of your own choice, a full solution to the problem. Include construction details and important dimensions.  

(f) Suggest **two** suitable specific materials for your solution and give reasons for your choice.  

(g) Outline a method used to manufacture **one** part of your solution.  

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