

Pearson Edexcel GCE

Applied Information and Communication Technology Unit 3: The Knowledge Worker

May 2014

Scenario

Paper Reference

6953/01

The scenario should be distributed to candidates at least three working weeks before the examination.

Practice files: GemPowder_practice.txt, PixiePlates_practice.xlsx

This scenario should be used for the purposes of preparing candidates for the examination. This copy **must not** be taken into the examination. The information contained in the scenario will be included in the examination paper.

Further details are in the Instructions of the Conduct of Examinations (ICE), available from the Edexcel website for this qualification.

Edexcel will not accept any request for special consideration should candidates be given the incorrect scenario for the examination they are sitting.

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Scenario

Pixie Plates

Pixie Plates were the idea of Amanda Lemmons, a fine arts student at Leeds Metropolitan University. On her course Amanda studied a unit on computer graphics. She became fascinated with the pixilation that occurs when a bitmap graphic is expanded too much. She experimented with 10 by 10 grids and came up with an idea for a physical manifestation of pixilation. She used 1 mm square wire mesh to create a 10 by 10 grid and inserted small semi-precious gems into each section of the grid to form a pattern or design. A simple fastener was attached to the wire mesh, which clipped onto special chains to form necklaces and bracelets. She paid her way through university selling this homemade jewellery on market stalls in and around the Leeds area.

On leaving university she sold the idea to LFG plc, a large jewellery manufacturer with retail shops throughout the country. This gave her enough money to follow her profession as an artist without having to worry about how to pay for food and shelter.

LFG made a few minor modifications to the idea. It developed a method of producing artificial stones by compressing the powder produced when gems were shaped for other jewellery. This means that LFG can make money from the waste product of the manufacturing processes.

The artificial stones are identically sized and shaped to fit into the wire mesh. The weight of the stones is measured in carats, each carat being 0.2 of a gram. The weight of a stone produced by compressing the powder is half a carat.

LFG also produces display cases for Pixie Plates and has designed clip and pin-and-butterfly fixings to which single Pixie Plates can be attached, making earrings.

Demand for Pixie Plates took off when Rebecca Rose, the celebrated actress, wore a necklace of Pixie Plates when she received an award for best actress for her role in 'La Feuille Nouvelle'.

The popularity of Pixie Plates is helped by the current trend in jewellery collection. Pixie Plate collectors are always on the lookout for new designs to add to their collections. Demand for the new designs can be predicted. LFG has developed a formula to do this based on their retail price.

Each month LFG produces three new designs for Pixie Plates. To appeal to all potential customers it sets the designer the target of producing one to retail at between £50 and £100, one in the range £500 to £750 and one which would be between £1,000 and £2,000.

As the amount and type of gem powder available each month varies, depending on other jewellery LFG has produced, the designer is asked to design the new Pixie Plates to use up what is available. For example, one month it has a lot of citrine so the designs would be mostly orange.

The previous designer started to work on a spreadsheet model to help her with the design process. It was not only to help her with what the designs would look like but also to calculate how many of each design would be needed and whether she had enough raw material to produce the predicted number of Pixie Plates. Unfortunately for LFG, she got a new job as a designer of crystal for a famous glass producer in Ireland. She left the unfinished model with notes for the next Pixie Plate designer.

Worksheet	Description
Designs	This is the worksheet I was going to use to put together the actual designs. As well as three areas to try out different designs, there is a corresponding area for each design that will calculate how many stones of each kind are used and how much a Pixie Plate will cost to produce. There will also be a totals area to keep track of the total number of stones required for this month's orders and the amount of raw material remaining.
Stones	This worksheet will contain the amount of gem powder I have available for this month's designs.
Stock Control	This worksheet will keep track of the amount of gem powder I have used for each design and also the amount remaining.

Some cells in the model are password protected. Should you wish to experiment with the model, the password is *edexcel*. Be aware that if you change the contents of any protected cell the model may not work.