

R105 – Design briefs, designs specifications and user requirements

Production Costs

Instructions and answers for teachers

These instructions should accompany the OCR resource 'Production Costs' activity which supports OCR Cambridge Nationals in Engineering.



The Activity:

This resource comprises of 1 task.



This activity offers an opportunity for English skills development.



This activity offers an opportunity for maths skills development.

Associated materials:

- 'Production Costs' activity sheet
- 'Production Costs' example spreadsheet

Suggested timings:

Task 1: 1 hour

Learning Outcome 2: Understand the requirements of design specifications for the development of a new product

Task 1:

In this activity learners are required to understand production costs involved with designing and manufacturing a halogen lamp for OCR Electrical.



The teacher might first begin by explaining that production costs are made up from direct costs to manufacture the particular item (such as materials and labour) and indirect costs (such as research and design time, electricity and rent).

Learners are first required to identify which of the production costs are direct and which are indirect.

In the example direct costs include all materials and labour. Indirect costs include research and design time, electricity and rent. Learners are required to calculate the indirect costs per lamp. A simple table has been provided on the following page to support the activity and it might be possible for learners to produce a spreadsheet when solving the problem (thereby developing ICT skills).

The lamp costs £1.50 to produce (per unit). If OCR Electrical can sell each lamp for £1.95 this gives a profit of £0.45 per lamp.

Halogen Lamp	Lamps /Batch	1000		R&D Recovery	10000 lamps
Production Costs Example	Elec/Batch	£200.00		R&D Cost	£1,000.00
	Rent/Batch	£200.00			
Direct Costs			Indirect Costs		
Metal	£0.20		Electricity	£0.20	
Tungsten	£0.10		Rent	£0.20	
Copper	£0.10		Design and Development	£0.10	
Glass	£0.20				
Halogen Gas	£0.20				
Labour	£0.20			£0.50	
	£1.00				
Total Cost/Lamp	£1.50				
Sells for/Lamp	£1.95				
Profit for Lamp	£0.45				

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OCR Resources: *the small print*

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