1.11 User-centred design: 10-minute Pack

AQA 8552 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions.

1 Fictional trial of a kitchen timer designed for users with low vision: requirement is numerals at least 12 mm high and audible alarm at least 60 dB at 1 m. Prototype numerals are 10 mm; alarm measures 63 dB. Give a justified design change for the failed requirement and a retest that checks both requirements.

(Total for Question 1 is 4 marks)

2 Fictional user trial for an adjustable craft cutting guide: requirement is to clamp boards 10 to 25 mm thick and remain in position under a 15 N sideways push. Prototype clamp adjusts 12 to 28 mm; it slips at 13 N on a 20 mm board. Six of 8 users found the adjustment knob reachable. Evaluate compliance, propose a change and set out a measurable retest.

(Total for Question 2 is 5 marks)

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Mark scheme · 1.11 User-centred design: 10-minute Pack

Question 1

Enlarge numerals to at least 12 mm	**B1**
Alarm passes at 63 dB against 60 dB	**B1**
Measure numeral height and sound at 1 m after redesign	**M1**
Confirm at least 12 mm and at least 60 dB; include users checking legibility.	**A1**

Answer: Increase numeral height to at least 12 mm; the 63 dB alarm passes. Remeasure numeral height and alarm at 1 m, and ask intended users to confirm legibility.

Question 2

Range misses 10 mm and sideways force test fails at 13 N, below 15 N	**B1**
Six of eight found knob reachable; retain access but the two other responses merit follow-up	**B1**
Extend range to 10 to 25 mm and improve clamp grip or locking	**M1**
Test 10, 20 and 25 mm boards; apply 15 N sideways and confirm no movement, then repeat user reach trial.	**A1**
Repeat trials to see whether the reach finding and clamp performance are consistent.	**B1**

Answer: The prototype fails its lower clamp endpoint and slips before 15 N. Six of eight users found the knob reachable. Extend the range to 10 to 25 mm, improve locking, and retest three thicknesses at 15 N plus user access.

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