

Make it: a phone stand

Plan every stage, tool and safety step for an acrylic phone stand.



NAME _____ CLASS _____ DATE _____

LEARNING GOAL

Plan how a product is made: the stages in order, with the right tools, PPE and quality checks.

SUCCESS CRITERIA

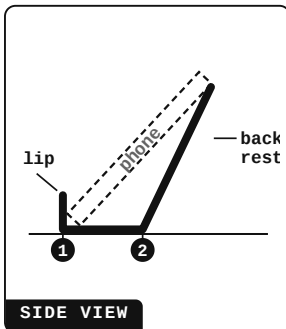
- ☐ I can put the making stages in a safe, logical order.
- ☐ I can choose tools, equipment and PPE for each stage.
- ☐ I can plan quality checks and say what to do if one fails.

1 Meet the product

PART A

2 Stay safe

PART B



MATERIAL

Acrylic sheet with a protective film

PROCESSES

Laser cutting, then line bending

BENDS

Bend 1 makes the lip; bend 2 the back rest



Must: wear eye protection when your teacher tells you to.



Warning: the laser cutter is staff supervised, with extraction running. Never leave it unattended.



Do not touch the line bender heater. Bent acrylic stays hot until it cools.

Follow your school's machine rules and your teacher's instructions.

3 Complete the flowchart

PART C

3 marks

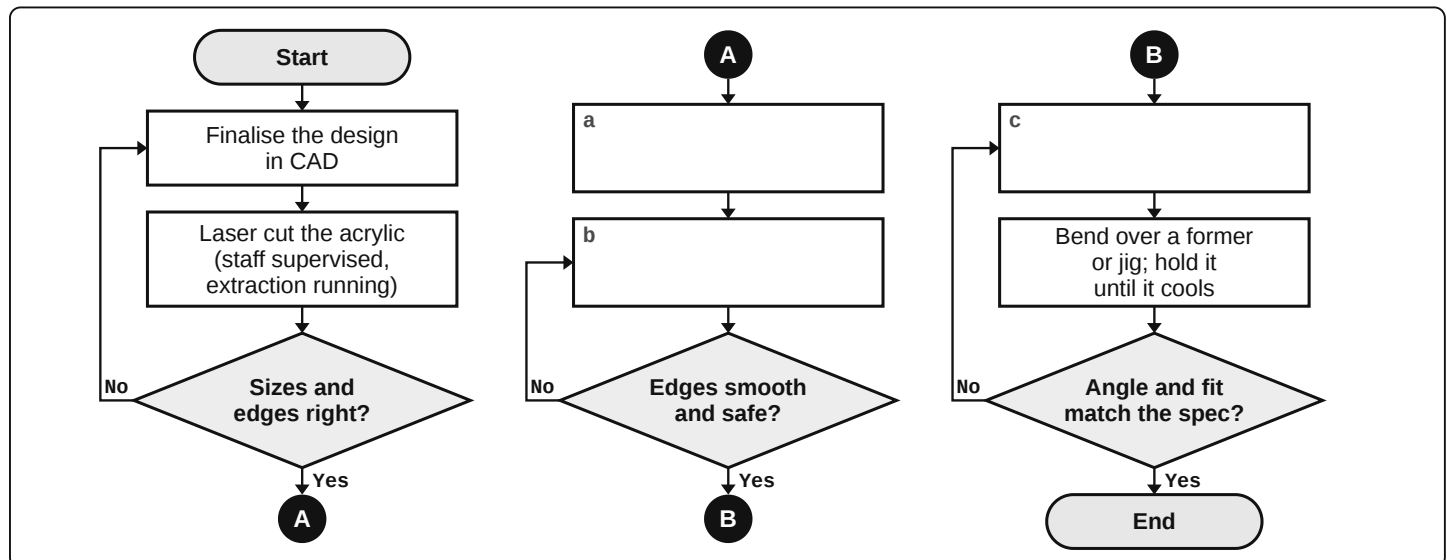
Write the three missing stages in boxes a, b and c, in the right order. Use the stage bank.

STAGE BANK

? Heat the bend line

? Peel off the protective film

? Smooth the edges



Start or end Process (a stage) Decision: a quality check Connector: carry on at the same letter



Plan your production, stage by stage

4 Production plan

PART P

15 marks

Fill in one row for each stage. Read the **model** row first. Give your best time estimate.

STAGE	TOOLS AND EQUIPMENT	PPE	QUALITY CHECK	TIME
1 MODEL Design in CAD	Computer with CAD software	None needed at the computer	Sizes match my design; my teacher checks the file	About 30 min
2 Laser cut the acrylic				
3 Peel off the film				
4 Smooth the edges				
5 Heat and bend				
6 Check against the specification				

5 What could go wrong?

PART R

4 marks

For each problem, explain why it might happen and how you will prevent it.

PROBLEM	WHY IT MIGHT HAPPEN	HOW I WILL PREVENT IT
A MODEL The acrylic cracks at the bend	The bend line was not heated enough before bending.	Heat the line evenly until it softens. Never force the bend.
B The edges are rough or sharp		
C The bend is in the wrong place		